NAME III Document
MD15/7(version 4)
14/09/15

Using NWP data in NAME – a practical guide

Andrew R Jones

The aim of this document is to provide a quick-start guide for using NWP met data in NAME. The appendices also provide further in-depth information about the various NWP data sets that are available for NAME.

1 Introduction

NAME, like any atmospheric dispersion model, requires flow information such as 3-dimensional winds, temperature, cloud and rainfall in order to perform its dispersion calculations. NAME handles such information via its met[1] and flow modules structure. Here, the job of a met module is to read and process an input meteorological data set, while the role of a flow module is to make that information subsequently available to the dispersion model as and when it is required, and in the form in which it is required.

A number of distinct met and flow structures exist to accommodate the various different types of flow information that can be used by NAME. For instance, there are met and flow modules associated with the use of single-site met data or the use of gridded NWP data files. Modules also exist for handling other information such as ancillary surface fields or radar-derived rainfall rates, and two small-scale flow modules are designed for treating local terrain effects (via the use of the LINCOM linear flow model) and building effects (via an internal model representing the effect on the large-scale flow of an isolated cuboid-shaped building). The current document only considers the use of NWP met data in NAME (see general NAME model documentation for further information about using other types of met and flow modules).

The first part of this report (Sections 2, 3 and 4) will cover the needs of most users seeking to use NWP data sets in NAME. Section 2 looks at the general approach that a user needs to follow for setting up NWP met and flow modules in a NAME input file. Sections 3 and 4 then describe the various NWP met data sets that are currently available to run NAME, and how these can be implemented in a NAME run. More detailed information on these NWP datasets is provided in a series of appendices at the end of this report.

The second part of this report is intended for advanced users of NAME (e.g. where a user may be configuring their own NWP model to produce output fields suitable for running NAME), and aims to provide an in-depth description of the NWP meteorological fields that are required by NAME and how NAME subsequently uses those fields. In Section 5, the general requirements for NWP fields are discussed, and a summary is presented of the available options for supplying the required meteorological inputs. NAME applies various checks to the supplied fields and attempts to 'fix-up' any missing or incomplete field. Section 6 then describes the specific NWP met fields produced for NAME from different NWP modelling systems.

[1] In the meteorological community, we commonly use the word 'met' as an abbreviation for 'meteorology' or 'meteorological'.

2 Setting up the met/flow information in a NAME input file

Once a user has identified the NWP met data set that they wish to use in their NAME run (e.g. from the tables listed in the following sections), it should then be a fairly straightforward step to apply this choice in their NAME input file. In most situations, the user will be using a single set of met files – this is the simplest case to consider and will be described in the first subsection below. More advanced set ups, such as using nested NWP meteorology or a user's own NWP met files, will be briefly commented on below but our general advice to any user considering this type of NAME run would be to ask us for further guidance.

2.1 Simple case of a single met/flow module instance

The most common configuration for a NAME run is where a single NWP met and flow module instance are being used. There are three main blocks in the input file(s) which generally need to be considered here:

- `Input Files:`
- `NWP Met Module Instances:`
- `NWP Flow Module Instances:`

To aid in the present discussion, these three blocks are reproduced here from the example file "Example_NWPMet.txt" in the /Runs folder of the NAME distribution.

```
Input Files:
 File names
 ..\Resources\Defns\ MetDefnUM5R.txt

NWP Met Module Instances:
 Name,       Min B L Depth,   Max B L Depth,   Use NWP BL Depth?,   Restore Met Script,   Delete Met?,
 Regional,            80.0,          4000.0,                 Yes,                     ,            No,
 ...         Met Folder,    Topography Folder,   Met Definition Name
 ...   ..\Resources\Met,   ..\Resources\Topog,                UM5R

NWP Flow Module Instances:
 Name,       Met Module,        Met,        Domain
 Regional,      NWP Met,   Regional,    UM5R Whole
```

The entries highlighted in red specify the met/flow definition that will be used. The name of the met definition file should be specified under the entry '`File names`' in the Input Files block (note that other input files may also be listed here in any particular NAME run). NAME will then read this standard met definition file and, behind the scenes, will set up the corresponding definitions required for that NWP met module and flow module. These modules use predefined names, as listed in the relevant table in Sections 3 or 4, which need to be replicated under the entries '`Met Definition Name`' and '`Domain`' in the NWP Met Module Instances block and NWP Flow Module Instances block, respectively.

So should the user wish to change one of their existing NAME input files to use a different set of NWP met data, then they would need to look up the relevant entry in the tables and use the specified met definition filename, met definition name and flow domain. For instance,

to change the above example so as to use UM5 mesoscale data instead of UM5 regional data, one would just make the following substitutions:

`File names:`	`MetDefnUM5R.txt`	⟶	`MetDefnUM5M.txt`
`Met Definition Name:`	`UM5R`	⟶	`UM5M`
`Domain:`	`UM5R Whole`	⟶	`UM5M Whole`

In essence, these met and flow definitions can be largely treated as a 'black box' by the user, who just needs to 'plug in' the appropriate definition file for their requirements. There is no need to fully understand the intricate details of each NWP data set (although some general understanding of the met data characteristics is obviously helpful).

Some other changes to the input file might also be necessary or are sometimes desirable. In fact, most entries in the NWP Met Module Instances or NWP Flow Module Instances blocks could potentially be changed (although most such changes would be unusual). The most likely ones to be changed have been highlighted in blue. The '`Met Folder`' should reference the directory storing the NWP met data files that are being used for the NAME run. It is quite likely that different NWP data sets would be stored in distinct directories on your system. It is also a good idea to give sensible '`Name`'s to the NWP Met Module Instance and NWP Flow Module Instance. These are the local names that NAME uses to refer to these met module and flow module instances (as distinct to the 'Met Definition Name' considered above). The names are somewhat arbitrary but should be specified by the user to be descriptive of the met data. Although the met module instance and flow module instance have the same name in the above example (they are both called '`Regional`'), they actually refer to two distinct entities – one is a met module instance and the other is a flow module instance. The fact that these have the same internal name in this example is purely by choice, but using the same name can also be a little confusing. So some users prefer to give them distinct names (for instance, the above flow module instance could have been called '`Regional_Flow`' to differentiate it from the associated met module instance). Note also that if the name of the NWP Flow Module Instance changes then subsequent references to this in the following Flow, Cloud, Rain, Convert and Update blocks should also be modified.

2.2 Multiple and nested met/flow module instances

NAME is capable of using information from multiple instances of flow modules within a single model run. Here the multiple flow modules might be nested (i.e. where one module is embedded within the domain of another), or they might cover disjoint space-time domains, or possibly a combination of these types. To set up multiple met/flow modules, the user needs to define each of them in turn in their NAME input file. That is, they need to define a sequence of met module instances in the NWP Met Module Instances block and of flow module instances in the NWP Flow Module Instances block. They also need to add these flow module instances into the subsequent Flow, Cloud, Rain, Convert and Update blocks and here the specific ordering can be important. Further advice on this should be sought from us.

2.3 User-written met/flow module instances

With a little experience it is not too difficult to set up new met definition files for use with a user's own NWP datasets (see also Sections 5 and 6). Once again, advice should be sought from us if you are interested in doing this.

3 NWP met definitions for Met Office datasets

3.1 Met Office Global NWP Models (including 'cut-out' regions)

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
01/01/1999 – 09/02/2001	UMHG UMHG Whole	MetDefnUMHG.txt HPDDMMYY.GLOH
01/01/1999 – 06/08/2002	UMHR UMHH2001R Whole	MetDefnUMHR.txt HPDDMMYY.REGH
01/01/2001 – 07/08/2002	UMH2001G UMH2001G Whole	MetDefnUMH2001G.txt HPYYYYMMDDhhmm.GLOH2001
01/01/2001 – 07/08/2002	UMH2001R UMH2001R18 Whole	MetDefnUMH2001R.txt HPYYYYMMDDhhmm.REGH2001
24/07/2002 – 06/12/2005	UM5G UM5G Whole	MetDefnUM5G.txt HPYYYYMMDDhhmm.GLOUM5
24/07/2002 – 19/12/2005	UM5R UM5R Whole	MetDefnUM5R.txt HPYYYYMMDDhhmm.REGUM5
13/12/2005 – 04/03/2009	UM6G UM6G Whole	MetDefnUM6G.txt HPYYYYMMDDhhmm.GLOUM6
01/12/2007 – 10/11/2009	UM6G UM6G Whole	MetDefnUM6Gpp.txt HPYYYYMMDDhhmm.GLOUM6.pp
13/12/2005 – 04/03/2009	UM6R UM6R Whole	MetDefnUM6R.txt HPYYYYMMDDhhmm.REGUM6
01/12/2007 – 10/11/2009	UM6R UM6R Whole	MetDefnUM6Rpp.txt HPYYYYMMDDhhmm.REGUM6.pp
10/11/2009 – 09/03/2010	UMG_Mk5_L52pp UMG_Mk5_L52pp Whole	MetDefnUMG_Mk5_L52pp.txt MOYYYYMMDDhhmm.UMG_Mk5_L52.pp
10/11/2009 – 09/03/2010	UMR_Mk5_L52pp UMR_Mk5_L52pp Whole	MetDefnUMR_Mk5_L52pp.txt MOYYYYMMDDhhmm.UMR_Mk5_L52.pp

Table 1: Overview of the datasets available for NAME from Met Office Global NWP Models (including cut-out regions, such as 'Regional Met' for historic versions of the UM and 'chopped-up' global files for recent versions of the UM global model).

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
09/03/2010 – 30/04/2013	UMG_Mk6_L59pp UMG_Mk6_L59pp Whole	MetDefnUMG_Mk6_L59pp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT1pp UMG_Mk6_L59PT1pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT1.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT2pp UMG_Mk6_L59PT2pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT2.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT3pp UMG_Mk6_L59PT3pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT3.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT4pp UMG_Mk6_L59PT4pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT4.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT5pp UMG_Mk6_L59PT5pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT5.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT6pp UMG_Mk6_L59PT6pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT6.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT7pp UMG_Mk6_L59PT7pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT7.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT8pp UMG_Mk6_L59PT8pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT8.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT9pp UMG_Mk6_L59PT9pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT9.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT10pp UMG_Mk6_L59PT10pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT10.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT11pp UMG_Mk6_L59PT11pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT11.pp

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Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT12pp UMG_Mk6_L59PT12pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT12.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT13pp UMG_Mk6_L59PT13pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT13.pp
09/03/2010 – 30/04/2013	UMG_Mk6_L59PT14pp UMG_Mk6_L59PT14pp Whole	MetDefnUMG_Mk6_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk6_L59PT14.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59pp UMG_Mk6_L59pp Whole	MetDefnUMG_Mk7_L59pp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT1pp UMG_Mk6_L59PT1pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT1.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT2pp UMG_Mk6_L59PT2pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT2.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT3pp UMG_Mk6_L59PT3pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT3.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT4pp UMG_Mk6_L59PT4pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT4.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT5pp UMG_Mk6_L59PT5pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT5.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT6pp UMG_Mk6_L59PT6pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT6.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT7pp UMG_Mk6_L59PT7pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT7.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT8pp UMG_Mk6_L59PT8pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT8.pp

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Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT9pp UMG_Mk6_L59PT9pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT9.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT10pp UMG_Mk6_L59PT10pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT10.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT11pp UMG_Mk6_L59PT11pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT11.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT12pp UMG_Mk6_L59PT12pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT12.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT13pp UMG_Mk6_L59PT13pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT13.pp
30/04/2013 – 15/07/2014	UMG_Mk7_L59PT14pp UMG_Mk6_L59PT14pp Whole	MetDefnUMG_Mk7_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk7_[IM]_L59PT14.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59pp UMG_Mk8_L59pp Whole	MetDefnUMG_Mk8_L59pp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT1pp UMG_Mk8_L59PT1pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT1.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT2pp UMG_Mk8_L59PT2pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT2.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT3pp UMG_Mk8_L59PT3pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT3.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT4pp UMG_Mk8_L59PT4pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT4.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT5pp UMG_Mk8_L59PT5pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT5.pp

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Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT6pp UMG_Mk8_L59PT6pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT6.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT7pp UMG_Mk8_L59PT7pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT7.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT8pp UMG_Mk8_L59PT8pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT8.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT9pp UMG_Mk8_L59PT9pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT9.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT10pp UMG_Mk8_L59PT10pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT10.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT11pp UMG_Mk8_L59PT11pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT11.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT12pp UMG_Mk8_L59PT12pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT12.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT13pp UMG_Mk8_L59PT13pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT13.pp
15/07/2014 – 25/08/2015	UMG_Mk8_L59PT14pp UMG_Mk8_L59PT14pp Whole	MetDefnUMG_Mk8_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk8_[IM]_L59PT14.pp
25/08/2015 – present	UMG_Mk9_L59pp UMG_Mk8_L59pp Whole	MetDefnUMG_Mk9_L59pp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59.pp
25/08/2015 – present	UMG_Mk9_L59PT1pp UMG_Mk8_L59PT1pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT1.pp
25/08/2015 – present	UMG_Mk9_L59PT2pp UMG_Mk8_L59PT2pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT2.pp

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Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
25/08/2015 – present	UMG_Mk9_L59PT3pp UMG_Mk8_L59PT3pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT3.pp
25/08/2015 – present	UMG_Mk9_L59PT4pp UMG_Mk8_L59PT4pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT4.pp
25/08/2015 – present	UMG_Mk9_L59PT5pp UMG_Mk8_L59PT5pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT5.pp
25/08/2015 – present	UMG_Mk9_L59PT6pp UMG_Mk8_L59PT6pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT6.pp
25/08/2015 – present	UMG_Mk9_L59PT7pp UMG_Mk8_L59PT7pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT7.pp
25/08/2015 – present	UMG_Mk9_L59PT8pp UMG_Mk8_L59PT8pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT8.pp
25/08/2015 – present	UMG_Mk9_L59PT9pp UMG_Mk8_L59PT9pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT9.pp
25/08/2015 – present	UMG_Mk9_L59PT10pp UMG_Mk8_L59PT10pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT10.pp
25/08/2015 – present	UMG_Mk9_L59PT11pp UMG_Mk8_L59PT11pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT11.pp
25/08/2015 – present	UMG_Mk9_L59PT12pp UMG_Mk8_L59PT12pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT12.pp
25/08/2015 – present	UMG_Mk9_L59PT13pp UMG_Mk8_L59PT13pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT13.pp
25/08/2015 – present	UMG_Mk9_L59PT14pp UMG_Mk8_L59PT14pp Whole	MetDefnUMG_Mk9_L59PTpp.txt MOYYYYMMDDhhmm.UMG_Mk9_[IM]_L59PT14.pp

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3.2 Met Office Limited Area Models over the UK region

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
01/01/1995 – 01/01/1999	UMV3R UMV3R Whole	MetDefnUMV3R.txt HPDDMMYY.REGV3
01/01/1996 – 31/12/1997	UMV3M UMV3M Whole	MetDefnUMV3M.txt HPDDMMYY.MESV3
01/01/1999 – 09/02/2001	UMHM UMHH2001M Whole	MetDefnUMHM.txt HPDDMMYY.MESH
01/01/2001 – 07/08/2002	UMH2001M UMHH2001M Whole	MetDefnUMH2001M.txt HPYYYYMMDDhhmm.MESH2001
07/08/2002 – 04/03/2009	UM5M UM5M Whole	MetDefnUM5MDt1.txt HPYYYYMMDDhhmm.MESUM5
12/12/2005 – 13/06/2006	UM6REGNAEDt3 UM6REGNAE Whole	MetDefnUM6REGNAEDt3pp.txt HPYYYYMMDDhhmm.REGNAEUM6.pp
07/09/2006 – 09/03/2010	UM6REGNAE UM6REGNAE Whole	MetDefnUM6REGNAEpp.txt HPYYYYMMDDhhmm.REGNAEUM6.pp
01/01/2007 – 09/03/2010	UMNAE_Mk2_L4UKpp UMNAE_Mk2_L4UKpp Whole	MetDefnUMNAE_Mk2_L4UKpp.txt HPYYYYMMDDhhmm.UK12KM.pp
09/03/2010 – 10/01/2014	UMNAE_Mk3_L42Rpp UMNAE_Mk3_L42Rpp Whole	MetDefnUMNAE_Mk3_L42Rpp.txt MOYYYYMMDDhhmm.UMNAE_Mk3_L42R.pp
09/03/2010 – 10/01/2014	UMNAE_Mk3_L6UKpp UMNAE_Mk3_L6UKpp Whole	MetDefnUMNAE_Mk3_L6UKpp.txt MOYYYYMMDDhhmm.UMNAE_Mk3_L6UK.pp
01/01/2014 – 03/02/2015	UME4_Mk1_L57NWpp UME4_Mk1_L57NWpp Whole	MetDefnUME4_Mk1_L57NWpp.txt MOYYYYMMDDhhmm.UME4_Mk1_L57NW.pp
01/01/2014 – 03/02/2015	UME4_Mk1_L57ICEpp UME4_Mk1_L57ICEpp Whole	MetDefnUME4_Mk1_L57ICEpp.txt MOYYYYMMDDhhmm.UME4_Mk1_L57ICE.pp

Table 2: Overview of the datasets available for NAME from Met Office Limited Area Models over the UK region.

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
03/02/2015 – present	UME4_Mk2_L57NWpp UME4_Mk2_L57NWpp Whole	MetDefnUME4_Mk2_L57NWpp.txt MOYYYYMMDDhhmm.UME4_Mk2_L57NW.pp
03/02/2015 – present	UME4_Mk2_L57ICEpp UME4_Mk2_L57ICEpp Whole	MetDefnUME4_Mk2_L57ICEpp.txt MOYYYYMMDDhhmm.UME4_Mk2_L57ICE.pp
31/12/2006 – 27/11/2007	UM4kmMk2 UM4kmMk2 Whole	MetDefnUM4kmMk2pp.txt HPYYYYMMDDhhmm.4KM2_UM6.pp
26/11/2007 – 18/02/2013	UM4kmMk3_L50 UM4kmMk3_L50 Whole	MetDefnUM4kmMk3_L50pp.txt HPYYYYMMDDhhmm.4KM50L_UM6.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57pp UM1p5km_Mk1_L57pp Whole	MetDefnUM1p5km_Mk1_L57pp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT1pp UM1p5km_Mk1_L57PT1pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT1.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT2pp UM1p5km_Mk1_L57PT2pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT2.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT3pp UM1p5km_Mk1_L57PT3pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT3.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT4pp UM1p5km_Mk1_L57PT4pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT4.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT5pp UM1p5km_Mk1_L57PT5pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT5.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT6pp UM1p5km_Mk1_L57PT6pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT6.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT7pp UM1p5km_Mk1_L57PT7pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT7.pp

Table 2: Overview of the datasets available for NAME from Met Office Limited Area Models over the UK region.

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT8pp UM1p5km_Mk1_L57PT8pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT8.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT9pp UM1p5km_Mk1_L57PT9pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT9.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT10pp UM1p5km_Mk1_L57PT10pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT10.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT11pp UM1p5km_Mk1_L57PT11pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT11.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT12pp UM1p5km_Mk1_L57PT12pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT12.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT13pp UM1p5km_Mk1_L57PT13pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT13.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT14pp UM1p5km_Mk1_L57PT14pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT14.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT15pp UM1p5km_Mk1_L57PT15pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT15.pp
14/07/2010 – 30/07/2013	UM1p5km_Mk1_L57PT16pp UM1p5km_Mk1_L57PT16pp Whole	MetDefnUM1p5km_Mk1_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk1_L57PT16.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57pp UM1p5km_Mk1_L57pp Whole	MetDefnUM1p5km_Mk2_L57pp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT1pp UM1p5km_Mk1_L57PT1pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT1.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT2pp UM1p5km_Mk1_L57PT2pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT2.pp

Table 2: Overview of the datasets available for NAME from Met Office Limited Area Models over the UK region.

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT3pp UM1p5km_Mk1_L57PT3pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT3.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT4pp UM1p5km_Mk1_L57PT4pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT4.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT5pp UM1p5km_Mk1_L57PT5pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT5.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT6pp UM1p5km_Mk1_L57PT6pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT6.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT7pp UM1p5km_Mk1_L57PT7pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT7.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT8pp UM1p5km_Mk1_L57PT8pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT8.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT9pp UM1p5km_Mk1_L57PT9pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT9.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT10pp UM1p5km_Mk1_L57PT10pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT10.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT11pp UM1p5km_Mk1_L57PT11pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT11.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT12pp UM1p5km_Mk1_L57PT12pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT12.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT13pp UM1p5km_Mk1_L57PT13pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT13.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT14pp UM1p5km_Mk1_L57PT14pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT14.pp

Table 2: Overview of the datasets available for NAME from Met Office Limited Area Models over the UK region.

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT15pp UM1p5km_Mk1_L57PT15pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT15.pp
30/07/2013 – 03/02/2015	UM1p5km_Mk2_L57PT16pp UM1p5km_Mk1_L57PT16pp Whole	MetDefnUM1p5km_Mk2_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk2_[IM]_L57PT16.pp
03/02/2015 – present	UM1p5km_Mk3_L57pp UM1p5km_Mk3_L57pp Whole	MetDefnUM1p5km_Mk3_L57pp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT1pp UM1p5km_Mk3_L57PT1pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT1.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT2pp UM1p5km_Mk3_L57PT2pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT2.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT3pp UM1p5km_Mk3_L57PT3pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT3.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT4pp UM1p5km_Mk3_L57PT4pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT4.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT5pp UM1p5km_Mk3_L57PT5pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT5.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT6pp UM1p5km_Mk3_L57PT6pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT6.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT7pp UM1p5km_Mk3_L57PT7pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT7.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT8pp UM1p5km_Mk3_L57PT8pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT8.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT9pp UM1p5km_Mk3_L57PT9pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT9.pp

Table 2: Overview of the datasets available for NAME from Met Office Limited Area Models over the UK region.

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
03/02/2015 – present	UM1p5km_Mk3_L57PT10pp UM1p5km_Mk3_L57PT10pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT10.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT11pp UM1p5km_Mk3_L57PT11pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT11.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT12pp UM1p5km_Mk3_L57PT12pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT12.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT13pp UM1p5km_Mk3_L57PT13pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT13.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT14pp UM1p5km_Mk3_L57PT14pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT14.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT15pp UM1p5km_Mk3_L57PT15pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT15.pp
03/02/2015 – present	UM1p5km_Mk3_L57PT16pp UM1p5km_Mk3_L57PT16pp Whole	MetDefnUM1p5km_Mk3_L57PTpp.txt MOYYYYMMDDhhmm.UM1p5km_Mk3_[IM]_L57PT16.pp

Table 2: Overview of the datasets available for NAME from Met Office Limited Area Models over the UK region.

4 NWP met definitions for datasets from other centres

4.1 NWP datasets from ECMWF

Dates	Met Defn Name Flow Domain	Met Defn File Met Data Filenames
26/01/2010 – 18/05/2011	ECMWF OPER Mk1 L55R ECMWF OPER Mk1 L55R	MetDefnECMWF_OPER_Mk1_L55R.txt ECMWFYYYYMMDDhhmm.OPER_Mk1_L55R090W20N090E90N.grb
18/05/2011 – 25/06/2013	ECMWF OPER Mk2 L55R ECMWF OPER Mk2 L55R	MetDefnECMWF_OPER_Mk2_L55R.txt ECMWFYYYYMMDDhhmm.OPER_Mk2_L55R090W20N090E90N.grb
25/06/2013 – present	ECMWF OPER Mk3 L72R ECMWF OPER Mk3 L72R	MetDefnECMWF_OPER_Mk3_L72R.txt ECMWFYYYYMMDDhhmm.OPER_Mk3_L72R090W20N090E90N.grb
10/05/2010 – 31/12/2010	ECMWF EPS Mk1 L26R ECMWF EPS Mk1 L26R	MetDefnECMWF_EPS_Mk1_L26R.txt ECMWFYYYYMMDDhhmm.EPS_Mk1_L26R090W20N090E90N.grb
21/05/2011 – present	ECMWF EPS Mk2 L26R ECMWF EPS Mk2 L26R	MetDefnECMWF_EPS_Mk2_L26R.txt ECMWFYYYYMMDDhhmm.EPS_Mk2_L26R090W20N090E90N.grb
01/01/1986 – 01/01/1987	ECMWF ERA40 Regional ECMWF ERA40 Regional	MetDefnECMWF_ERA40_Regional.txt ECMWFYYYYMMDDhhmm.ERA40_108W09N063E81N
25/02/2000 – 01/03/2000	ECMWF ERA40 NEurope ECMWF ERA40 NEurope	MetDefnECMWF_ERA40_NEurope.txt ECMWFYYYYMMDDhhmm.ERA40_045W54N063E85N
01/05/1980 – 01/06/1980	ECMWF ERA40 NAmerica ECMWF ERA40 NAmerica	MetDefnECMWF_ERA40_NAmerica.txt ECMWFYYYYMMDDhhmm.ERA40_180W18N063W63N
01/06/1982 – 01/07/1982	ECMWF ERA40 WPacific ECMWF ERA40 WPacific	MetDefnECMWF_ERA40_WPacific.txt ECMWFYYYYMMDDhhmm.ERA40_045E45S180E45N
01/01/1989 – 01/01/2011	ECMWF ERAInt Regional ECMWF ERAInt Regional	MetDefnECMWF_ERAInt_Regional.txt ECMWFYYYYMMDDhhmm.ERAInt_105W09N060E81N
01/06/1991 – 01/07/1991	ECMWF ERAInt WPacific ECMWF ERAInt WPacific	MetDefnECMWF_ERAInt_WPacific.txt ECMWFYYYYMMDDhhmm.ERAInt_090E45S180E45N
01/08/2008 – 01/09/2008	ECMWF ERAInt Alaska ECMWF ERAInt Alaska	MetDefnECMWF_ERAInt_Alaska.txt ECMWFYYYYMMDDhhmm.ERAInt_150E30N090W90N
01/01/2000 – 01/01/2001	ECMWF ERAInt Australia ECMWF ERAInt Australia	MetDefnECMWF_ERAInt_Australia.txt ECMWFYYYYMMDDhhmm.ERAInt_045E75S120W30N

Table 3: Details of the datasets available for NAME from ECMWF.

5 General requirements of NAME for NWP meteorological fields

NAME can read several formats of data files created from NWP models. A legacy internal format, known as 'NAME II fields files' is used for older data from the Met Office's Unified Model[2]. More recent Unified Model data is stored in the Met Office's own 'PP format' files. Versions of NAME from v6.5 onwards also support reading of 'packed' PP files ('packing' constrains the precision of stored data values, reducing data volumes typically by around a factor of 5). While no existing UM data sets for NAME use 'packed' PP format, it is likely that packed data will be used at some point in the future. NAME II fields files and PP files are similar in that they both store their fields as unformatted binary data in a succession of header record and data record pairs. Here, each pair of records represents a single two-dimensional field, with the header containing information about the field contents and the data record containing the field data values.

NAME also supports the reading of NWP data files in GRIB and NetCDF formats, using the ECMWF GRIB-API and the Unidata NetCDF API, respectively. GRIB (GRIdded Binary) is a standard binary file format used by operational weather prediction centres for the transmission and storage of gridded met data fields. GRIB files consist of a succession of GRIB messages, where each GRIB message stores a single two-dimensional field in an encoded binary form. Each GRIB message is automatically decoded in NAME using the GRIB-API to extract its header information and field values. As an aside, note that GRIB-2 also supports messages containing multiple fields, although this functionality is not used in NAME. NetCDF (Network Common Data Form) is a set of software libraries and self-describing, machine-independent data formats that support the creation, access, and sharing of array-oriented scientific data. As with GRIB, a NetCDF file can be read and decoded automatically in NAME using the NetCDF API software package.

Although each logical field in a NAME met file is a single two-dimensional (horizontal) field, it is possible for multiple such fields to be defined for specific meteorological parameters. Typically this enables a three-dimensional field, such as temperature, to be constructed as a stack of 2-d horizontal fields at different vertical levels in the atmosphere. A 3-d meteorological variable extending over multiple heights in the atmosphere should ideally be output on the 'native' model levels used by the NWP model and, as such, is then referred to as a 'model-level' field. Using other vertical levels (e.g. standard pressure levels) for the vertical grid should be avoided if at all possible because there is an extra interpolation step involved in the NWP model when calculating the meteorological variable on the new vertical grid, which degrades both the accuracy and mass-consistency of the resulting flow field.

A single 2-d meteorological field that is not part of a 3-d field is referred to as a 'single-level' field (or is sometimes called a 'standard-level' field). Such a parameter could be defined at a specific vertical level (e.g. 2 metre temperature) or it could be independent of the vertical coordinate level (e.g. convective rainfall rate). Furthermore, several different 'levels' might be present in multiple fields which do not refer to the vertical levels of the NWP model, but instead they may reference, for instance, different 'pseudo-levels' (e.g. soil moisture at different depths) or perhaps the different 'tiles' used in a land-surface scheme. In the following discussion, we will discriminate between 2-d and 3-d fields where this is appropriate, but otherwise we will use the generic term 'field' to refer to the data that is associated with a meteorological parameter

[2]For those users familiar with the Unified Model, please note that 'NAME II fields files' are different to 'UM fieldsfiles'. The similarity in naming conventions being an unfortunate coincidence here.

(which, depending on the parameter, could be either 2-d or 3-d).

A sequence of NWP met files for NAME should all contain the same set of meteorological parameters output from the relevant NWP model at a regular interval. The output frequency is usually three-hourly for global model fields and hourly for fields generated by higher resolution limited-area models (although this need not necessarily be the case). Typically each NWP met file contains a set of fields valid at one specific time, in which case the filename is tagged with that particular date and time, viz. *YYYYMMDDhhmm*. NAME can also support the option where all fields for a specific date are grouped together into a single file (so that there are multiple times within that file), in which case the filename is tagged with the date, viz. *DDMMYY*. This second approach is only used for older met files in the Unified Model archive, and we would generally advise that successive output times from an NWP model should be written to separate met files.

The set of meteorological parameters being output from the NWP model at each time step need to be sufficiently comprehensive to enable NAME to recreate its 'model atmosphere' to a reasonable approximation and level of detail. In principle, one might consider writing out all possible NWP model parameters here, but in practice this is unlikely to be feasible or indeed desirable given the time constraints imposed by operational forecasting needs. Furthermore, NAME might not require (or be able to use) some NWP model parameters (such as radiation fluxes). Therefore a more selective choice of meteorological parameters from the NWP model is selected for NAME aiming to capture the main features of the flow field, thermodynamic structure of the atmosphere and important physical features such as cloud and precipitation (i.e., the meteorological variables that can exert a significant influence on the transport and dispersion and other processes modelled within NAME).

A *standard set* of meteorological parameters can currently be read by NAME (see Table 4), although not all these parameters may be available from any given NWP model configuration. Also NAME does not necessarily require all these parameters to be present (e.g. soil moisture is only needed for certain types of NAME run such as dust modelling). In broad terms, the most recent Met Office Unified Model files contain the full set of fields listed here, whereas older met files generally have fewer fields, especially for surface parameters. For instance, soil moisture information was added in 2007, while canopy information was included in 2009 to support a more elaborate land-use dependent dry deposition scheme. The main exception here is the UK 1.5 km model, also referred to as the UKV model[3], which does not use a convection parametrisation scheme but instead resolves cloud and precipitation within the 'convection permitting' dynamics. Consequently the UKV does not produce separate convective cloud and precipitation fields but assumes that convective processes are included implicitly in their resolved counterparts.

The meteorological parameters that NAME *expects* to find in any particular collection of NWP met files are listed in the corresponding NWP met definition file (specifically, in its `NWP Met File Structure Definition` block). When reading NAME II fields files or PP files, the order of the individual fields in each met data file is important and needs to be consistent with the ordering prescribed by the met definition and with 3-d fields written in order of

[3]The UKV is a Limited Area Model for the UK region that uses a Variable grid resolution – it has an inner core area with a uniform grid point spacing at 1.5 km surrounded by an outer region with a gradually increasing grid point spacing. The variable resolution in the outer area is beneficial for forcing the UKV using lateral boundary conditions from the global model. The UKV met files produced for NAME are constrained to the inner (fixed resolution) area only.

3-d fields	**2-d fields**
U component of wind (m/s)	roughness length (m)
V component of wind (m/s)	U component of surface stress (N/m^2)
W component of wind (*see Note 1*)	V component of surface stress (N/m^2)
temperature (K)	surface sensible heat flux (W/m^2)
specific humidity (kg/kg)	boundary layer depth (m)
cloud liquid water (kg/kg)	mean sea level pressure (Pa)
cloud ice (kg/kg)	convective cloud amount (0-1)
pressure (Pa)	convective cloud base (*see Note 1*)
	convective cloud top (*see Note 1*)
	high cloud amount (0-1)
	medium cloud amount (0-1)
	low cloud amount (0-1)
	convective rain rate ($kg/(m^2\ s)$)
	convective snow rate ($kg/(m^2\ s)$)
	dynamic rain rate ($kg/(m^2\ s)$)
	dynamic snow rate ($kg/(m^2\ s)$)
	soil moisture in layer (kg/m^2)
	canopy height (m)
	canopy water (kg/m^2)
	stomatal conductance (m/s)

Notes:

1. The vertical coordinate systems that are used in the descriptions of the vertical wind component and cloud height fields in the NWP model are prescribed in the relevant met definition file for NAME. Both height-based and pressure-based vertical coordinates are supported (e.g. cloud height could be supplied in *'metres above ground level'* or as *'pressure in Pa'*).

2. The following conventions for cloud heights are adopted in NAME (height values have been rounded here and so are only approximate): low cloud (0.1 km – 2 km), medium cloud (2 km – 5 km), high cloud (5 km – 10 km) when defined in metres above ground level coordinates. Roughly comparable values are adopted when using pressure-based vertical coordinates.

3. All fields are in S.I. Units or are dimensionless (unless otherwise specified for fields in Note 1).

4. The 2-d fields highlighted in *italic text* can be defined on multiple pseudo-levels or tiles. The soil moisture parameter is available in current UM data sets for four sub-surface layers, although NAME only uses the upper-most layer adjacent to the surface. Similarly, canopy parameters might exist for various tiles in the NWP model's land-surface scheme.

Table 4: NWP meteorological parameters that can currently be read by NAME

increasing NAME vertical levels (i.e. from the lowest vertical level supplying met information to the highest level supplying met). When reading GRIB and NetCDF files, the ordering of the individual GRIB messages is not important as the GRIB-API (or NetCDF API) will return the appropriate field that is requested.

If any field listed in the met definition is missing from a met file, or if it is incomplete or does not have the expected header information, then NAME might attempt to 'fix-up' this field. This will depend on whether a suitable fix-up has been suggested for this particular parameter and whether this fix-up has been enabled. Current settings for 'fixing-up' missing met fields are listed below in Tables 5 and 6. The settings are statically coded at the moment, and can only be modified by changes to the NAME source code. NAME will also attempt to fix-up any fields that are not listed in the met definition (e.g. convective cloud and precipitation fields in the case of the UK 1.5 km model) using the same set of rules. That is, missing parameters are handled in the same way whether they are generically missing from all the met files or are locally missing because of a problem with just one or a few individual met files.

Conversely, NAME does not expect any fields to be present in the met files other than those listed in the met definition, and any additional fields can potentially cause problems. This is specifically an issue for NAME II fields files and PP files where extra fields should not be inserted *within* the expected set of fields (because NAME will be expecting to read a different parameter at that point and will then incorrectly label that expected parameter as missing even though it exists further on in the met file). Extra fields may be safely appended at the end of a NAME II fields file or PP file (as these fields will never be read by NAME). Extra fields may also be safely included in any GRIB or NetCDF met file without causing any problems (provided that such fields are clearly distinguishable by their header contents from the fields that NAME is expecting to find in the file).

Once any missing fields have been dealt with, some additional checks and processing of the input meteorological fields are carried out (summarised in Table 7) after which the 'main arrays' of NWP met data will become accessible for use by NAME. Further flow information (e.g. turbulence estimates) are then calculated on request from this basic set of meteorological information in later sections of the NAME code (these subsequent calculations of other flow properties is documented elsewhere).

Most fields are taken to be 'spot' values at their specified validity time (i.e. snapshots in time), although there are a few exceptions to this noted here. Firstly, the surface heat flux parameter can be an average value calculated over the time interval between the previous met time and the current met time. In this situation, one would not wish NAME to interpolate in time between two adjacent time values of the field (but instead to use the value at the later time step). This option can be invoked by setting the variable `Next Heat Flux` to 'Yes' in the met definition, and is appropriate for global met files from the Unified Model and also for some data sets obtained from ECMWF. A similar issue arises with cloud fields and precipitation fields, where spot values are used for historical data sets from the Unified Model, whereas time-mean cloud and precipitation fields are used from recent UM configurations – see discussion in the next section). The default behaviour of using spot values for cloud and precipitation parameters can be switched to use average values over the current time interval by setting the met definition variables `Next Cloud` and `Next Precipitation`, respectively, to 'Yes'. Use of `Next Precipitation` is also appropriate when reading ECMWF precipitation fields, which are output from their model as accumulations up to a time rather than as instantaneous rates (the conversion from accumulations to average rates over each interval has been carried out in a

3-d fields	
Wind - U component *Wind - V component* *Wind - W component*	Vertical interpolation or extrapolation from neighbouring model levels is allowed if just a few levels are missing (i.e. any interpolation/extrapolation step is not over too large a vertical distance). Note that no persistence in time is allowed for the 3-d wind field. A default fix would be to zero but this is presently disabled.
Temperature	Vertical interpolation or extrapolation from neighbouring model levels is allowed if just a few levels are missing (i.e. any interpolation/extrapolation step is not over too large a vertical distance). Note that no persistence in time is allowed for the 3-d temp field. A default fix would be to 273.15 K but this is presently disabled.
Specific humidity *Cloud liquid water* *Cloud ice*	i) Above the surface (i.e. NAME model level >= 3), persistence is allowed from the previous time step (with fields set to 0 if missing at the first time step). ii) Adjacent to the surface (i.e. NAME model level <= 2), fields are fixed up to the value at the level above.
Pressure	The raw 3-d pressure field from the NWP model input is **not** used. Instead, the pressure field is recalculated from surface pressure and temperature by assuming a hydrostatic atmosphere (see below for a potential fix up to the surface pressure field prior to this step).

Table 5: Rules for handling missing 3-d meteorological parameters within NAME.

prior offline processing step for ECMWF met files).

The following section gives further details specific to each NWP modelling system.

2-d fields	
Roughness length	a) persistence is allowed from the previous time step. b) field set to a default value depending on the topography value (as a proxy for a land-sea mask): z_0 is set to 0.1 m for presumed land points (topog $>$ 0) and 0.0001 m for sea points (topog $<=$ 0).
Mean sea level pressure	a) persistence is allowed from the previous time step. b) field set to a default value of 101325.0 Pa (ICAO standard pressure at mean sea level).
Surface pressure	a) field is computed from mean sea level pressure and/or lowest available pressure on model levels. b) field is computed from ICAO standard atmosphere value of mean sea level pressure.
Boundary layer depth	The field is computed by NAME if missing from a met file or if the input file instructs NAME to ignore the NWP field (only recommended for pre-UM5 data prior to 2002). The boundary layer depth is calculated using both a Richardson number method and a dry adiabat method, and the maximum of these two separate values is taken. Minimum/maximum boundary layer depth limits are also applied (these limits are specified in the input file).
Convective rain rate *Convective snow rate*	Fields are set to a default value of 0 (no convective precipitation). Note that no persistence in time is allowed for any convective cloud or precipitation fields.
Convective cloud amount	Field is set to a default value of 0 (i.e. no convective cloud).
Convective cloud base *Convective cloud top*	Fields are set to a default value to indicate no convective cloud.
Canopy water *Stomatal conductance*	For the global version of the Unified Model, only a grid-box average value is supplied (as pseudo-level 1). The pseudo-levels 2 to 5 are fixed to the same value.

Table 6: Rules for handling missing 2-d meteorological parameters within NAME. Note that where two rules a), b) are listed, missing data are estimated using the first rule that is valid.

3-d Wind Field	The $u/v/w$ components of the wind velocity are set to zero at the ground surface (NAME model level = 1). The vertical wind component w is also converted from its input coordinate frame to the rate of change of height above ground (m/s).
Height above ground	i) When using a pressure-based terrain-following vertical coordinate system, the 3-d height field is calculated from the pressure and temperature fields assuming a hydrostatic atmosphere. ii) When using a height-based terrain-following vertical coordinate system, the 3-d height field is calculated from surface topography.
Density *Potential temperature*	These 3-d fields are calculated from the pressure and temperature fields assuming a hydrostatic atmosphere.
Dynamic precipitation rate *Convective precipitation rate*	The four input precipitation fields (for dynamic rain, dynamic snow, convective rain and convective snow) are converted from units of kg/(m^2 s) to rates in mm/hr. The individual rain and snow components are then summed to give a combined dynamic precipitation rate and a combined convective precipitation rate. These values are also checked to ensure they are non-negative.
2-d (total) cloud amount *3-d (total) cloud amount*	A 2-d and 3-d representation of the total cloud within each atmospheric column is reconstructed using the input cloud information (the 3-d cloud liquid water and cloud ice fields in conjunction with the various 2-d cloud fields). The details of the calculation here depend on whether the 'total or dynamic' cloud fields refer to 'total' clouds or the 'dynamic' component only. In the latter case, the calculation will add in the convective cloud component.
Total/Dynamic cloud base *Total/Dynamic cloud top*	The approximate description of the 3-d cloud structure reconstructed above is similarly used to define 2-d fields giving the total (or dynamic) cloud base and cloud top.
Convective cloud base *Convective cloud top*	These are converted from the input vertical coordinate system (which is often pressure) to height above ground in metres, and are also checked to ensure that they are specified consistently (i.e. they are either both positive (where cloud is present) or are both negative (no cloud)).

Table 7: Additional checks and processing of input met fields by NAME.

6 NAME configurations for specific NWP modelling systems

This section is intended to provide information about data sets from specific NWP modelling systems that are available for use in NAME, and how NAME uses such NWP met files. Up to now, NAME has been run using meteorological fields obtained from the Met Office Unified Model (see 6.1) and also using both forecast data and reanalysis data sets from the European Centre for Medium-Range Weather Forecasts, ECMWF (see 6.2). However, in principle, there is no reason why model output fields from other NWP modelling systems could not be used to drive NAME, and our expectation is that model output from other operational forecasting centres or research models might be applied in this way in the future. Further subsections will be added below as support is extended to cover additional NWP models.

Currently any NWP model that is capable of producing the standard set of meteorological parameters listed in Table 4 (or an appropriate subset thereof) in GRIB or NetCDF format could be supported with a little effort.[4] NWP output fields in other formats could be supported by including calls to an appropriate decoder or API for that format. Of course, other NWP models might not output precisely the same set of variables as those required by NAME and, in this case, additional coding would be required to enable NAME to read and use the available NWP fields. A longer term aim for NAME development is to generally improve the flexibility of NAME to handle different combinations of NWP input fields.

[4] assuming that the NWP model uses the standard horizontal and vertical coordinate systems and grids supported by NAME

6.1 Using Met Office Unified Model data in NAME

Note that at the time of writing this version of the NWP User Guide, met files are produced for NAME from three operational forecast configurations of the Unified Model, viz. the Global, Euro4 and UKV model configurations.

This section describes general features of data sets from the Met Office Unified Model. Further details for specific met definitions are given in the relevant appendix.

NAME met files from the Unified Model are in NAME II fields file format for older data sets and in PP format for more recent data sets. Archived met data are stored as gzipped files, which need to be unzipped before they can be read by NAME. For precipitation, the Unified Model produces separate fields to represent the dynamic (i.e. large-scale 'resolved' systems such as weather fronts) and convective (i.e. showers) components, except for the highest resolution mesoscale model (see UM1p5km / UKV in the appendix) where the convection is resolved explicitly and all precipitation is captured in the dynamic fields (and there are no convective fields). For cloud, the situation is slightly more complicated. Recent versions of the Unified Model often give 'total' cloud fields and also some additional convective cloud fields, whereas earlier versions of the UM provided separate dynamic and convective cloud information. Once again there are no convective fields for the high resolution UKV model where the convective cloud is captured explicitly.

'Spot' values have traditionally been used for cloud and precipitation parameters from the Unified Model, but problems can arise with such an approach when the temporal resolution of the fields is insufficient to adequately capture the spatial advection of cloud and rainfall features with time. For instance, discrete 'banding' can occur associated with the transit of fronts or 'speckling' due to showers, which can result in an unrealistic representation of these features. For this reason, recent configurations of the Unified Model have provided NAME with time-mean cloud and precipitation parameters (e.g. the Global and UKV configurations transitioned from 'spot' to 'mean' values in 2013), which has improved the spatial representation of wet deposition in NAME.

The met files in each archived data set consist of a series of short-range forecasts obtained from successive operational forecast cycles of the Unified Model. The forecast update frequency varies between model configurations. For instance, forecasts are updated on a six-hour cycle for the Global and Euro4 configurations (at 00 UTC, 06 UTC, 12 UTC and 18 UTC daily) so that each forecast run therefore provides met files covering a six-hour time period. For the UKV configuration of the Unified Model, updates occur on a three-hour cycle with 8 forecast runs per day (at 00 UTC, 03 UTC, 06 UTC, 09 UTC, 12 UTC, 15 UTC, 18 UTC and 21 UTC) each providing met files covering a three-hour time window.

For UM configurations using 4-d variational data assimilation, the analysed model state at T+0 (i.e. the model 'analysis') provides a physically realistic set of meteorological fields and so the T+0 output file is used in the NAME data sets (the exception here is for time-meaned cloud and precipitation parameters, see further discussion below). However our NAME data sets are/were not always produced by 4-d Var UM configurations, and because certain fields might not be available or are not properly 'spun up' in these cases consequently the T+0 analysis might be unsuitable for use in NAME. This is the case, for example, when using down-scaling UM configurations in the absence of 4-d Var (such as the Euro4) or for historical datasets from older versions of the UM.

The use of time-meaned cloud and precipitation fields complicates the above picture somewhat. Although 'spot' values are thought to be realistic at T+0 when using 4-d Var, the contributions before this time to the time-mean values for cloud and precipitation at T+0 are less robust due to model spin-up effects, and the recommendation has been not to use time-mean values for these parameters at T+0. A dual-file approach is therefore adopted in these situations with the 'instantaneous' fields[5] supplied at T+0 and at later time steps, whereas the 'mean' cloud and precipitation fields are only available at these subsequent time steps (not at T+0). This approach retains the benefits of the increased skill associated with the T+0 instantaneous fields (in comparison with, say, a set of T+6 fields) while also ensuring that realistic cloud and precipitation information is used. The dual-file scheme for NWP met was implemented at version 6.3 of NAME and is not supported by earlier model versions.

Table 8 illustrates the archive structure for NWP met files from the Global UM (which are output at a three-hourly frequency) for the current and historical data sets. In recent Global data, the dual-file approach is adopted (see (a)) in which fields have been split between two separate sets of files. Here one file contains mainly 'instantaneous' fields that are available at T+0 for each forecast cycle whereas the other file contains cloud and precipitation 'mean' fields that are only supplied from T+3 onwards, and hence the 'instantaneous' files alternate between a T+0 analysis and a T+3 forecast and the 'mean' files alternate between a T+3 forecast and a T+6 forecast. For Mk6 and earlier data, all fields were contained in a single file per time step: for versions of the Global UM using 4-d Var, these files alternate (see (b)) between a T+0 analysis and a T+3 forecast, whereas, for older data sets, they alternate (see (c)) between a T+3 forecast and a T+6 forecast.

Table 9 shows equivalent information for NWP met files from the Euro4 version of the Unified Model, which are output at a hourly frequency. As the Euro4 is a downscaler configuration of the UM (which does not run its own data assimilation cycle), then only forecast steps are used by NAME (i.e. the analysis state at T+0 is not used). The met archive therefore consists of a T+1, T+2, T+3, T+4, T+5 and T+6 from successive forecast cycles. The dual-file approach is not required in this case.

Table 10 shows the archive structure for NWP met files from the UKV (i.e. UK 1.5 km) configuration of the Unified Model, which are output at a hourly frequency. The UKV was introduced in 2010 and initially (for Mk1 data) a single-file approach using the T+0 analysis was adopted (see (b)). This, along with the Global UM, was revised to a dual-file approach (see (a)) with the introduction of Mk2 data in 2013.

On rare occasions, more notably with older historical data, short-range forecast files might not be available from a particular run of the forecast model. For instance, there could have been problems encountered with the operational forecast run itself on that day, or other upstream problems in the production process which meant that expected files for use in NAME were not received. On these occasions, older met files from the previous forecast cycle (or the most

[5]Technically, the 'instantaneous' files do not always consist entirely of 'instantaneous' fields. For example, the 'instantaneous' files for the Global UM contain a time-mean value for the heat flux parameter. In the main, however, the fields are instantaneous 'spot' values and, for the sake of simplicity, the pairs of files are referred to using the descriptors 'instantaneous' and 'mean'.

(a) Dual-file data sets with separate 'instantaneous' and 'mean' files

Validity Time		00	03	06	09	12	15	18	21	00	···
18 UTC model run	M	T+6									
00 UTC model run	I	T+0	T+3								
–	M		T+3	T+6							
06 UTC model run	I			T+0	T+3						
–	M				T+3	T+6					
12 UTC model run	I					T+0	T+3				
–	M						T+3	T+6			
18 UTC model run	I							T+0	T+3		
–	M								T+3	T+6	
00 UTC model run	I									T+0	···

(b) Single-file data sets: short-range forecasts including T+0 analyses

Validity Time	00	03	06	09	12	15	18	21	00	···
00 UTC model run	T+0	T+3								
06 UTC model run			T+0	T+3						
12 UTC model run					T+0	T+3				
18 UTC model run							T+0	T+3		
00 UTC model run									T+0	···

(c) Single-file data sets: short-range forecasts only (with no T+0 analyses)

Validity Time	00	03	06	09	12	15	18	21	00	···
18 UTC model run	T+6									
00 UTC model run		T+3	T+6							
06 UTC model run				T+3	T+6					
12 UTC model run						T+3	T+6			
18 UTC model run								T+3	T+6	
00 UTC model run										···

Table 8: Sequencing of files from the Global configuration of the Unified Model. a) Dual-file data sets with separate 'instantaneous' and 'mean' files. Note that 'I' and 'M' refer here to the 'instantaneous' and 'mean' files, which alternate between T+0/T+3 and T+3/T+6, respectively. b) Single-file data sets: short-range forecasts including T+0 analyses. c) Single-file data sets: short-range forecasts only (with no T+0 analyses).

Short-range forecasts only (with no T+0 analyses)

Validity Time	00	01	02	03	04	05	06	07	08	···
18 UTC model run	T+6									
00 UTC model run		T+1	T+2	T+3	T+4	T+5	T+6			
06 UTC model run								T+1	T+2	···
Validity Time	···	09	10	11	12	13	14	15	16	···
06 UTC model run	···	T+3	T+4	T+5	T+6					
12 UTC model run						T+1	T+2	T+3	T+4	···
Validity Time	···	17	18	19	20	21	22	23	00	···
12 UTC model run	···	T+5	T+6							
18 UTC model run				T+1	T+2	T+3	T+4	T+5	T+6	
00 UTC model run										···

Table 9: Sequencing of files from the Euro4 configuration of the Unified Model

recent successful forecast if more than one forecast run was affected) are used instead. These older met files with the same validity time are identified by their sub-optimal forecast step (e.g. in the absence of a T+3 forecast file being produced by an operational Global UM run, the T+9 forecast file from the previous model run six hours earlier might be used instead).

(a) Dual-file data sets with separate 'instantaneous' and 'mean' files

Validity Time		00	01	02	03	04	05	06	07	08	···
18 UTC model run	M	T+6									
00 UTC model run	I	T+0	T+1	T+2	T+3	T+4	T+5				
–	M		T+1	T+2	T+3	T+4	T+5	T+6			
06 UTC model run	I							T+0	T+1	T+2	···
–	M								T+1	T+2	···

Validity Time		···	09	10	11	12	13	14	15	16	···
06 UTC model run	I	···	T+3	T+4	T+5						
–	M	···	T+3	T+4	T+5	T+6					
12 UTC model run	I					T+0	T+1	T+2	T+3	T+4	···
–	M						T+1	T+2	T+3	T+4	···

Validity Time		···	17	18	19	20	21	22	23	00	···
12 UTC model run	I	···	T+5								
–	M	···	T+5	T+6							
18 UTC model run	I			T+0	T+1	T+2	T+3	T+4	T+5		
–	M				T+1	T+2	T+3	T+4	T+5	T+6	
00 UTC model run	I									T+0	···

(b) Single-file data sets: short-range forecasts including T+0 analyses

Validity Time	00	01	02	03	04	05	06	07	08	···
00 UTC model run	T+0	T+1	T+2	T+3	T+4	T+5				
06 UTC model run							T+0	T+1	T+2	···

Validity Time	···	09	10	11	12	13	14	15	16	···
06 UTC model run	···	T+3	T+4	T+5						
12 UTC model run					T+0	T+1	T+2	T+3	T+4	···

Validity Time	···	17	18	19	20	21	22	23	00	···
12 UTC model run	···	T+5								
18 UTC model run			T+0	T+1	T+2	T+3	T+4	T+5		
00 UTC model run									T+0	···

Table 10: Sequencing of files from the UKV configuration of the Unified Model. a) Dual-file data sets with separate 'instantaneous' and 'mean' files. Note that 'I' and 'M' refer here to the 'instantaneous' and 'mean' files, which range from T+0 to T+5 and T+1 to T+6, respectively. b) Single-file data sets: short-range forecasts including T+0 analyses.

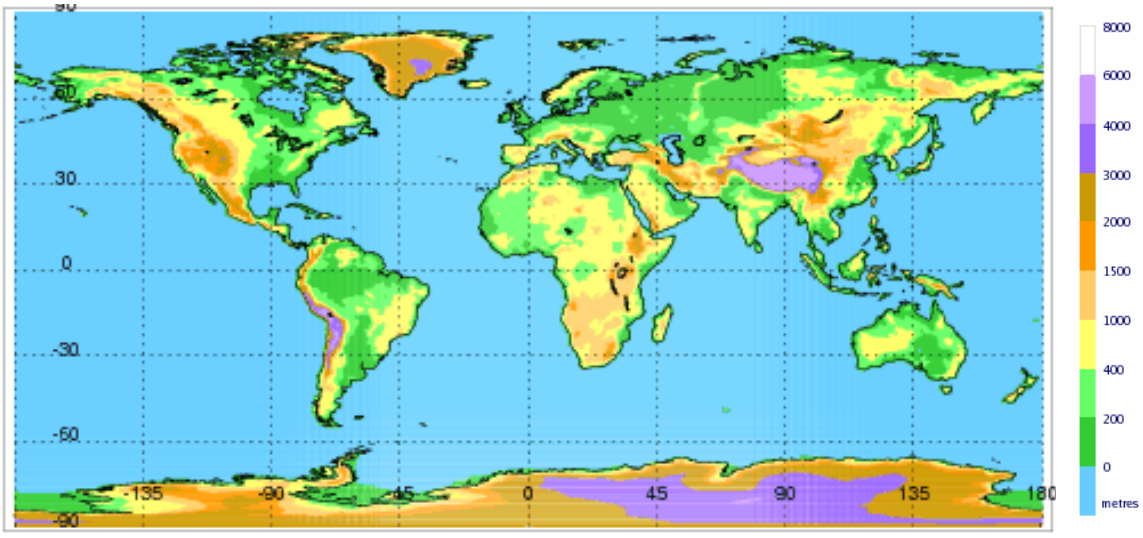
6.2 Using ECMWF data in NAME

This section will describe general features of data sets from ECMWF. Further details for specific met definitions are given in the relevant appendix.

A NWP met definitions for Met Office datasets

A.1 Met Office Global NWP Models (including 'cut-out' regions)

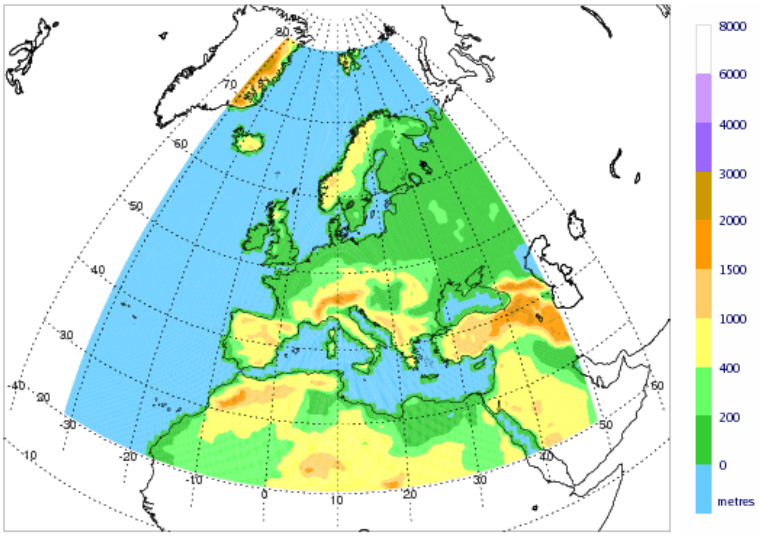
UMHG			
Start Time	**01/01/1999**	End Time	**09/02/2001**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMHG.txt** **UMHG** **UMHG Whole**		
Met File Name	**HP***DDMMYY*.**GLOH**		
Met File Type	**NameII**	Approx Filesize MB	**90* (250)**
Global Data ?	**Yes**	Time Frequency hr	**6**
H-Coord Main Grid nX	**LL** **432**	Pole Main Grid nY	**(90.0, 0.0)** **325**
Approx Resolution km	**60**	Actual Resolution °	**0.8333 × 0.5555**
Z-Coord	**P_eta**	nLevels / Max Height	**13 / ? km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMHG' global met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

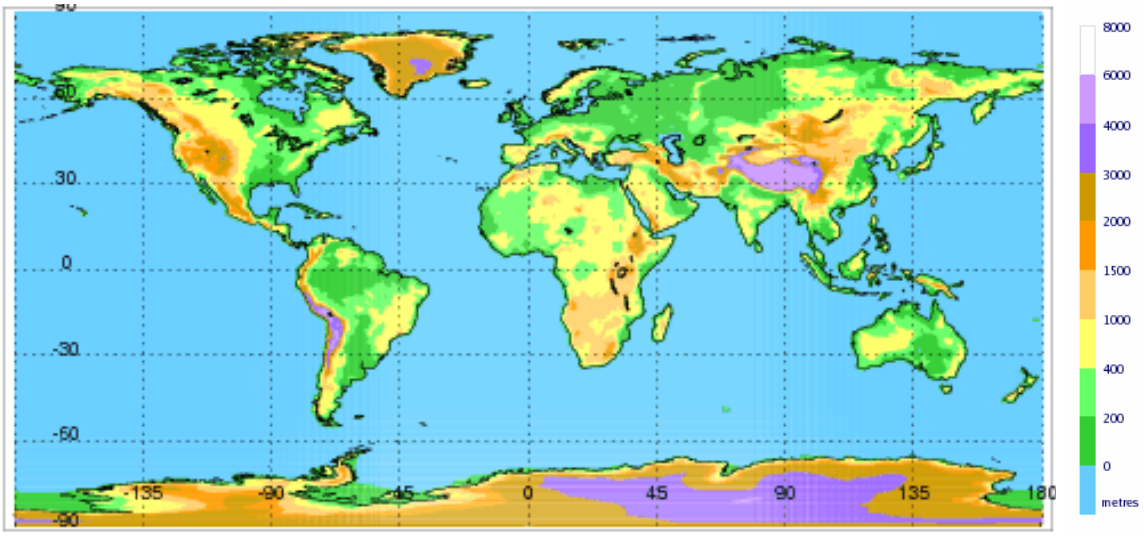
UMHR			
Start Time	**01/01/1999**	End Time	**06/08/2002**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMHR.txt** **UMHR** **UMHH2001R Whole**		
Met File Name	**HP***DDMMYY*.**REGH**		
Met File Type	**NameII**	Approx Filesize MB	**20* (56)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **98**	Pole Main Grid nY	**(90.0, 0.0)** **110**
Approx Resolution km	**60**	Actual Resolution °	**0.8333 × 0.5555**
Z-Coord	**P_eta**	nLevels / Max Height	**20 / ? km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMHR' regional met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

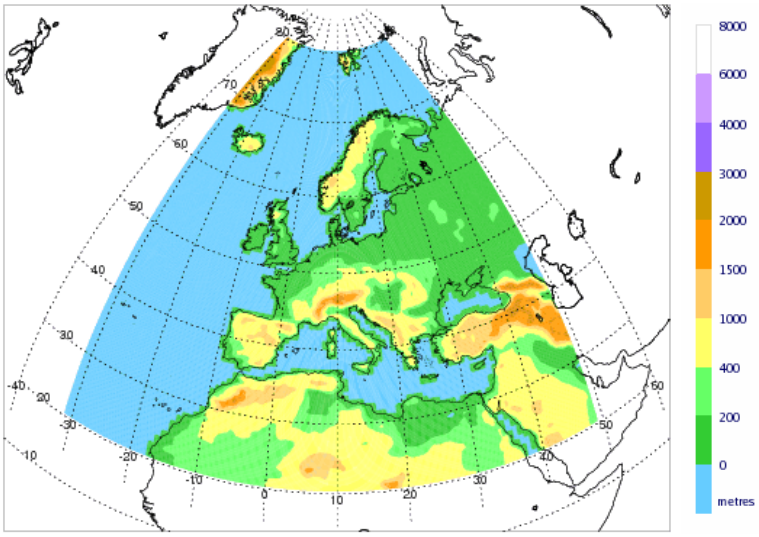
UMH2001G			
Start Time	**01/01/2001**	End Time	**07/08/2002**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMH2001G.txt** **UMH2001G** **UMH2001G Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**GLOH2001**		
Met File Type	**NameII**	Approx Filesize MB	**32 (90)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **432**	Pole Main Grid nY	**(90.0, 0.0)** **325**
Approx Resolution km	**60**	Actual Resolution °	**0.8333 × 0.5555**
Z-Coord	**P_eta**	nLevels / Max Height	**20 / 18 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMH2001G' global met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

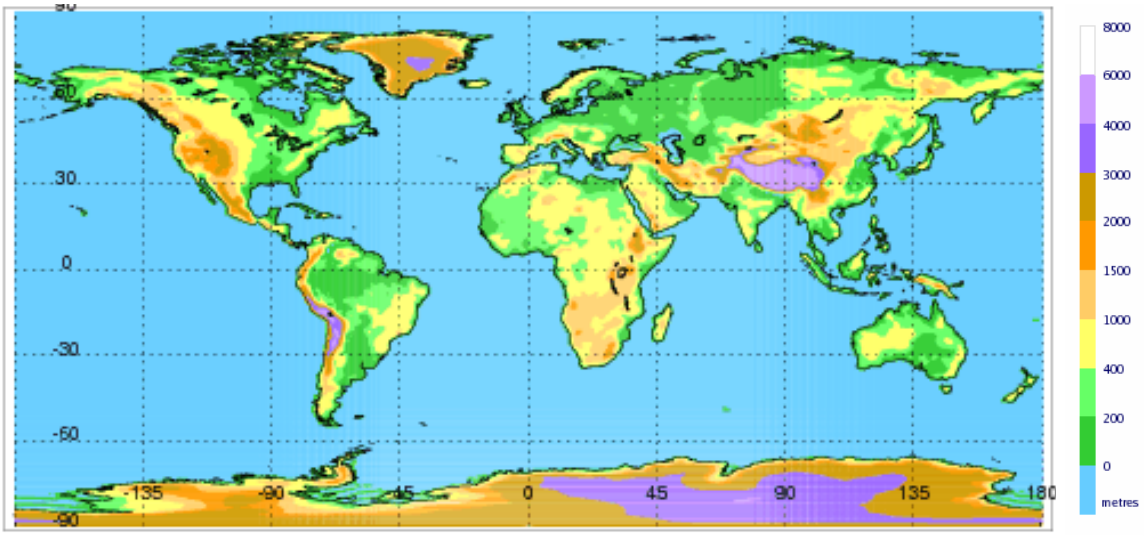
UMH2001R			
Start Time	**01/01/2001**	End Time	**07/08/2002**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMH2001R.txt** **UMH2001R** **UMH2001R18 Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**REGH2001**		
Met File Type	**NameII**	Approx Filesize MB	**3 (7)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **98**	Pole Main Grid nY	**(90.0, 0.0)** **110**
Approx Resolution km	**60**	Actual Resolution °	**0.8333 × 0.5555**
Z-Coord	**P_eta**	nLevels / Max Height	**20 / 18 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMH2001R' regional met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

UM5G			
Start Time	**24/07/2002**	End Time	**06/12/2005**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM5G.txt** **UM5G** **UM5G Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**GLOUM5**		
Met File Type	**NameII**	Approx Filesize MB	**48 (150)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **432**	Pole Main Grid nY	**(90.0, 0.0)** **325**
Approx Resolution km	**60**	Actual Resolution °	**0.8333 × 0.5555**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UM5G' global met data.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- roughness length
- boundary layer depth

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). Remaining fields are defined on single levels or are level-independent.

Vertical levels:
38-level global version of UM with a model top at $\sim$ 39 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

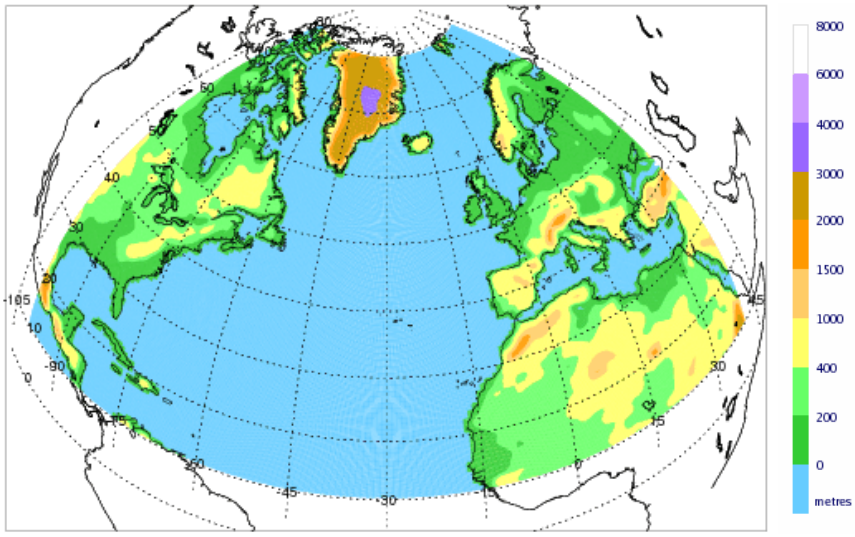
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.4
12	2650.0	28	15137.7
13	3130.0	29	16285.0
14	3650.0	30	17507.0
15	4210.0	31	18820.8

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.8
12	2880.0	28	15694.6
13	3380.0	29	16875.3
14	3920.0	30	18138.6
15	4500.0	31	19503.0

UM5R			
Start Time	**24/07/2002**	End Time	**19/12/2005**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM5R.txt** **UM5R** **UM5R Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**REGUM5**		
Met File Type	**NameII**	Approx Filesize MB	**7 (23)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **169**	Pole Main Grid nY	**(90.0, 0.0)** **127**
Approx Resolution km	**60**	Actual Resolution °	**0.8333 × 0.5555**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UM5R' regional met data (i.e. the 'regional' cut-out from the 'UM5G' global met files).

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate (kg/(m^2 s))
- convective rain rate (kg/(m^2 s))
- dynamic snow rate (kg/(m^2 s))
- convective snow rate (kg/(m^2 s))
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- roughness length
- boundary layer depth

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). Remaining fields are defined on single levels or are level-independent.

Vertical levels:
38-level global version of UM with a model top at $\sim$ 39 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

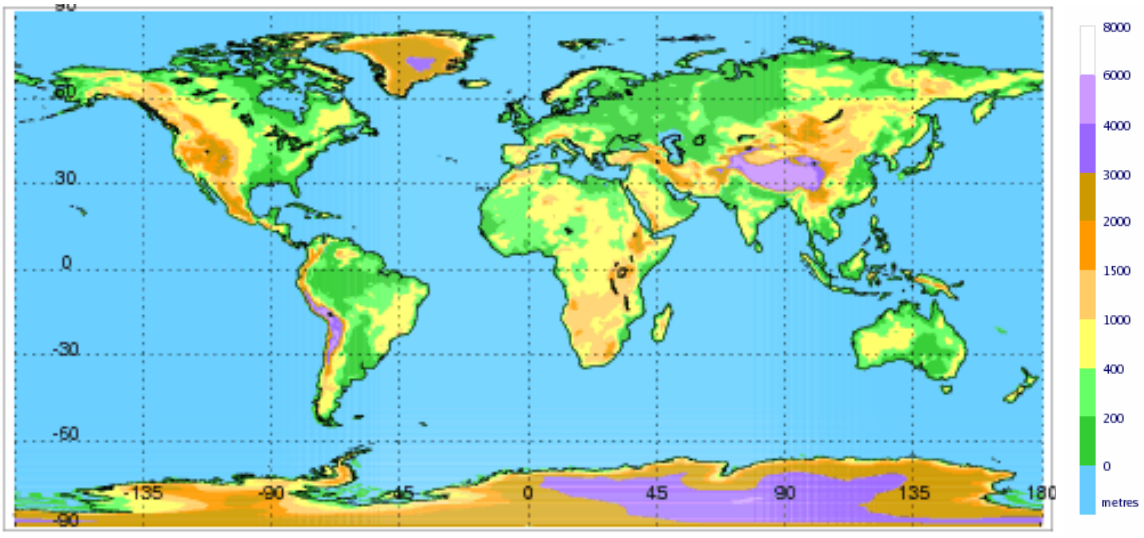
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.4
12	2650.0	28	15137.7
13	3130.0	29	16285.0
14	3650.0	30	17507.0
15	4210.0	31	18820.8

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.8
12	2880.0	28	15694.6
13	3380.0	29	16875.3
14	3920.0	30	18138.6
15	4500.0	31	19503.0

UM6G			
Start Time	**13/12/2005**	End Time	**04/03/2009**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM6G.txt** **UM6G** **UM6G Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**GLOUM6**		
Met File Type	**NameII**	Approx Filesize MB	**87 (325)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **640**	Pole Main Grid nY	**(90.0, 0.0)** **481**
Approx Resolution km	**40**	Actual Resolution °	**0.5625 × 0.375**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UM6G' global met data in **NAME II fields file format**. A complementary NWP met definition also exists for 'UM6G' global met data in PP file format. [Note that apart from the difference in file format, the PP files also contain a second roughness length field (UM stash 3026) and the soil moisture parameter on 4 layers.] Unfortunately the naming convention does not adequately distinguish between these two definitions (as they are both referred to as 'UM6G') and so care needs to be exercised when using this definition.

Note also that the files original received from the GPCS contained global data on 40 vertical levels (using the NWP met definition **UM6GL40**). These files were processed to extract the lowest 31 vertical levels, and only the 31-level 'UM6G' global data is archived. It is unlikely that any 40-level met files now exist, in which case the UM6GL40 met definition is redundant.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- roughness length
- boundary layer depth

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). Remaining fields are defined on single levels or are level-independent.

Vertical levels:
50-level global version of UM with a model top at $\sim$ 63 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

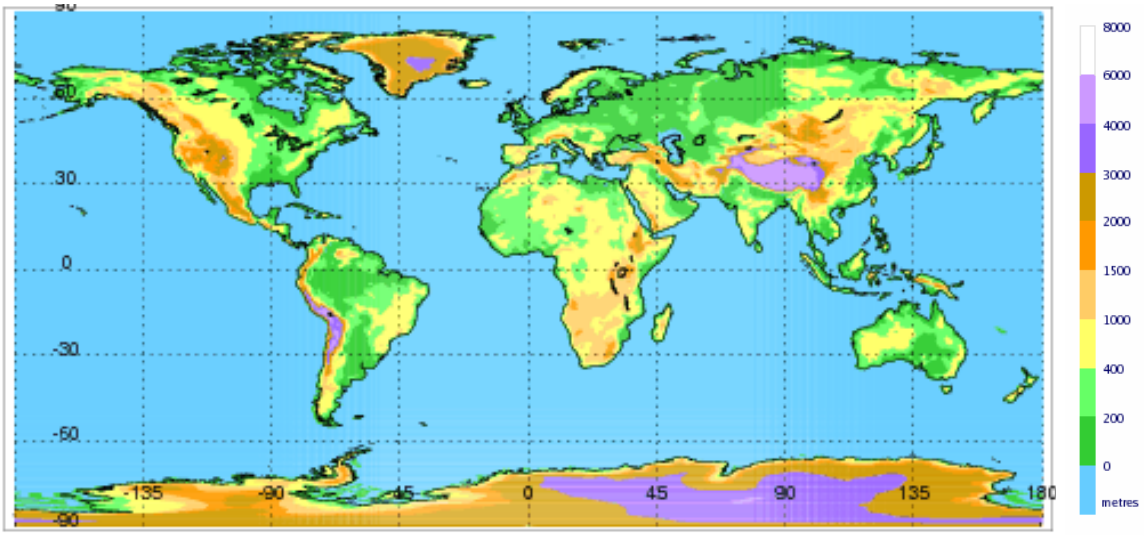
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.0
12	2650.0	28	15130.0
13	3130.0	29	16250.0
14	3650.0	30	17410.0
15	4210.0	31	18590.0

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.0
12	2880.0	28	15680.0
13	3380.0	29	16820.0
14	3920.0	30	18000.0
15	4500.0	31	19180.0

UM6G			
Start Time	**01/12/2007**	End Time	**10/11/2009**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM6Gpp.txt** **UM6G** **UM6G Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**GLOUM6.pp**		
Met File Type	**PP**	Approx Filesize MB	**87 (330)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **640**	Pole Main Grid nY	**(90.0, 0.0)** **481**
Approx Resolution km	**40**	Actual Resolution °	**0.5625 × 0.375**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UM6G' global met data in **PP file format**. A complementary NWP met definition also exists for 'UM6G' global met data in NAME II fields file format. Note that apart from the difference in file format, the PP files also contain a second roughness length field (UM stash 3026) and the soil moisture parameter on 4 layers. Unfortunately the naming convention does not adequately distinguish between these two definitions (as they are both referred to as 'UM6G') and so care needs to be exercised when using this definition.

Note also that the files original received from the GPCS contained global data on 40 vertical levels (using the NWP met definition **UM6GL40**). These files were processed to extract the lowest 31 vertical levels, and only the 31-level 'UM6G' global data is archived. It is unlikely that any 40-level met files now exist, in which case the UM6GL40 met definition is redundant.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
50-level global version of UM with a model top at $\sim$ 63 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

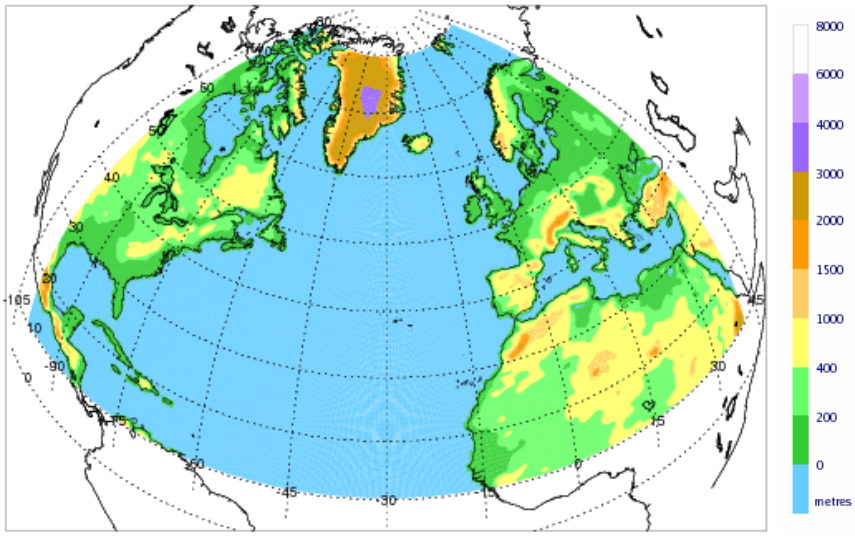
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.0
12	2650.0	28	15130.0
13	3130.0	29	16250.0
14	3650.0	30	17410.0
15	4210.0	31	18590.0

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.0
12	2880.0	28	15680.0
13	3380.0	29	16820.0
14	3920.0	30	18000.0
15	4500.0	31	19180.0

UM6R			
Start Time	**13/12/2005**	End Time	**04/03/2009**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM6R.txt** **UM6R** **UM6R Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**REGUM6**		
Met File Type	**NameII**	Approx Filesize MB	**14 (50)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **250**	Pole Main Grid nY	**(90.0, 0.0)** **187**
Approx Resolution km	**40**	Actual Resolution °	**0.5625 × 0.375**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UM6R' regional met data (i.e. the 'regional' cut-out from the 'UM6G' global met files) in **NAME II fields file format**. A complementary NWP met definition also exists for 'UM6R' regional met data in PP file format. [Note that apart from the difference in file format, the PP files also contain a second roughness length field (UM stash 3026) and the soil moisture parameter on 4 layers.] Unfortunately the naming convention does not adequately distinguish between these two definitions (as they are both referred to as 'UM6R') and so care needs to be exercised when using this definition.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- roughness length
- boundary layer depth

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). Remaining fields are defined on single levels or are level-independent.

Vertical levels:
50-level global version of UM with a model top at $\sim$ 63 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

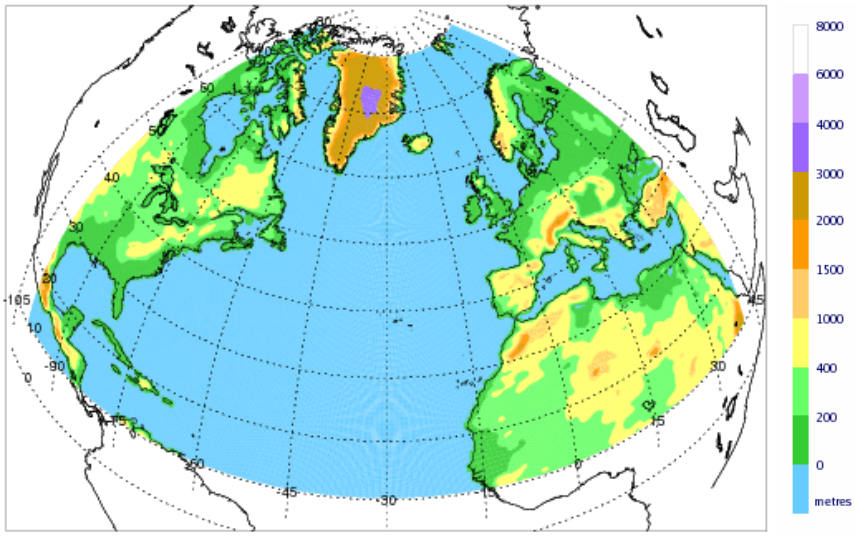
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.0
12	2650.0	28	15130.0
13	3130.0	29	16250.0
14	3650.0	30	17410.0
15	4210.0	31	18590.0

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.0
12	2880.0	28	15680.0
13	3380.0	29	16820.0
14	3920.0	30	18000.0
15	4500.0	31	19180.0

UM6R			
Start Time	**01/12/2007**	End Time	**10/11/2009**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM6Rpp.txt** **UM6R** **UM6R Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**REGUM6.pp**		
Met File Type	**PP**	Approx Filesize MB	**14 (50)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **250**	Pole Main Grid nY	**(90.0, 0.0)** **187**
Approx Resolution km	**40**	Actual Resolution °	**0.5625 × 0.375**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UM6R' regional met data (i.e. the 'regional' cut-out from the 'UM6G' global met files) in **PP file format**. A complementary NWP met definition also exists for 'UM6R' regional met data in NAME II fields file format. Note that apart from the difference in file format, the PP files also contain a second roughness length field (UM stash 3026) and the soil moisture parameter on 4 layers. Unfortunately the naming convention does not adequately distinguish between these two definitions (as they are both referred to as 'UM6R') and so care needs to be exercised when using this definition.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
50-level global version of UM with a model top at $\sim$ 63 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

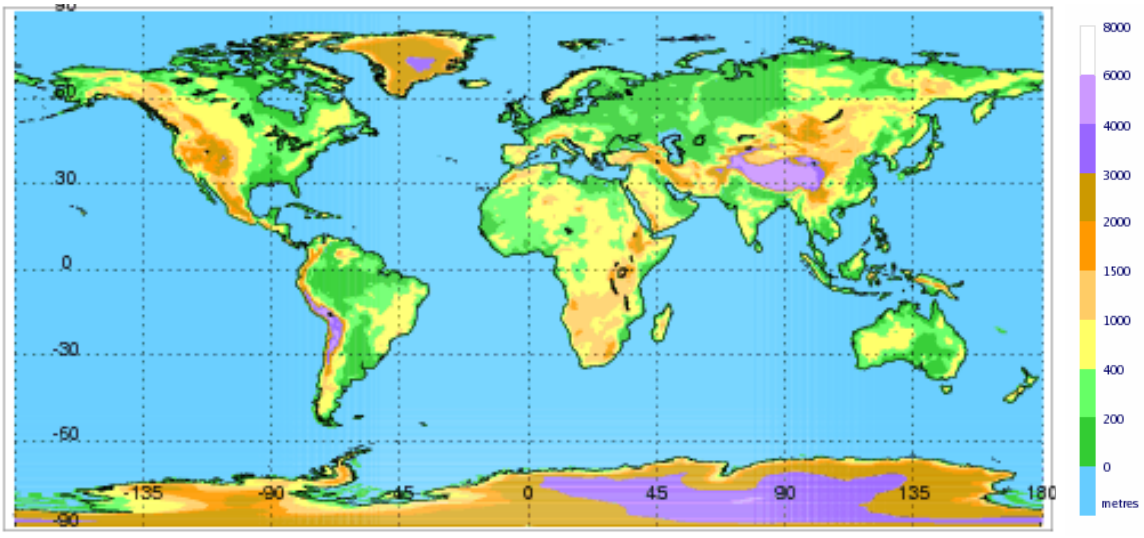
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.0
12	2650.0	28	15130.0
13	3130.0	29	16250.0
14	3650.0	30	17410.0
15	4210.0	31	18590.0

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.0
12	2880.0	28	15680.0
13	3380.0	29	16820.0
14	3920.0	30	18000.0
15	4500.0	31	19180.0

UMG_Mk5_L52pp			
Start Time	**10/11/2009**	End Time	**09/03/2010**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk5_L52pp.txt** **UMG_Mk5_L52pp** **UMG_Mk5_L52pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk5_L52.pp**		
Met File Type	**PP**	Approx Filesize MB	**145 (550)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **640**	Pole Main Grid nY	**(90.0, 0.0)** **481**
Approx Resolution km	**40**	Actual Resolution °	**0.5625 × 0.375**
Z-Coord	**Z_eta**	nLevels / Max Height	**52 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'Mk 5' UM global met data files on 52 vertical levels.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height is available on five tiles; canopy water and stomatal conductance are available for the first tile only. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level global version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

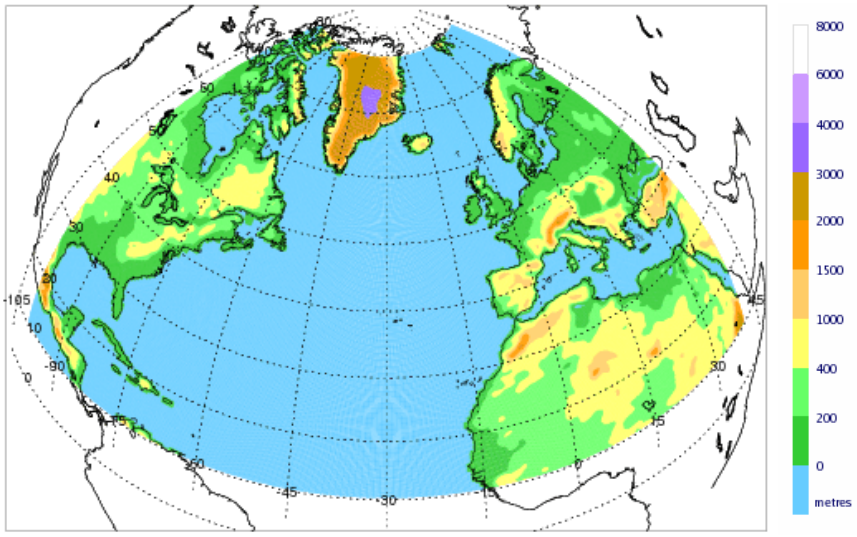
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	6196.6
1	10.0	31	6610.0
2	36.6	32	7036.6
3	76.6	33	7476.6
4	130.0	34	7930.0
5	196.6	35	8396.9
6	276.6	36	8877.3
7	370.0	37	9371.4
8	476.6	38	9879.5
9	596.6	39	10402.2
10	730.0	40	10939.9
11	876.6	41	11493.7
12	1036.6	42	12064.6
13	1210.0	43	12654.2
14	1396.6	44	13264.5
15	1596.6	45	13898.1
16	1810.0	46	14558.2
17	2036.6	47	15248.9
18	2276.6	48	15975.0
19	2530.0	49	16742.5
20	2796.6	50	17558.5
21	3076.6	51	18431.7
22	3370.0	52	19372.3
23	3676.6		
24	3996.6		
25	4330.0		
26	4676.6		
27	5036.6		
28	5410.0		
29	5796.6		

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	6400.0
1	20.0	31	6820.0
2	53.3	32	7253.3
3	100.0	33	7700.0
4	160.0	34	8160.1
5	233.3	35	8633.7
6	320.0	36	9120.9
7	420.0	37	9621.9
8	533.3	38	10137.2
9	660.0	39	10667.2
10	800.0	40	11212.7
11	953.3	41	11774.7
12	1120.0	42	12354.5
13	1300.0	43	12953.9
14	1493.3	44	13575.1
15	1700.0	45	14221.1
16	1920.0	46	14895.4
17	2153.3	47	15602.4
18	2400.0	48	16347.6
19	2660.0	49	17137.4
20	2933.3	50	17979.7
21	3220.0	51	18883.8
22	3520.0	52	19860.7
23	3833.3		
24	4160.0		
25	4500.0		
26	4853.3		
27	5220.0		
28	5600.0		
29	5993.3		

UMR_Mk5_L52pp			
Start Time	**10/11/2009**	End Time	**09/03/2010**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMR_Mk5_L52pp.txt** **UMR_Mk5_L52pp** **UMR_Mk5_L52pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMR_Mk5_L52.pp**		
Met File Type	**PP**	Approx Filesize MB	**24 (83)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **250**	Pole Main Grid nY	**(90.0, 0.0)** **187**
Approx Resolution km	**40**	Actual Resolution °	**0.5625 × 0.375**
Z-Coord	**Z_eta**	nLevels / Max Height	**52 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'Mk 5' UM regional met data files (i.e. the 'regional' cut-out on 52 vertical levels from the 'Mk 5' global met files).

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height is available on five tiles; canopy water and stomatal conductance are available for the first tile only. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level global version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

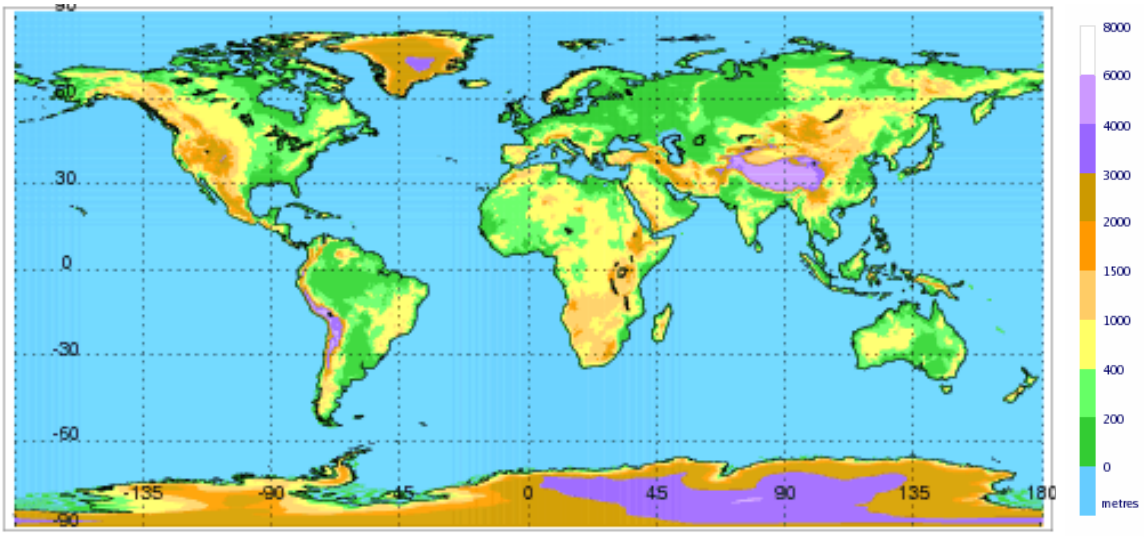
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	6196.6
1	10.0	31	6610.0
2	36.6	32	7036.6
3	76.6	33	7476.6
4	130.0	34	7930.0
5	196.6	35	8396.9
6	276.6	36	8877.3
7	370.0	37	9371.4
8	476.6	38	9879.5
9	596.6	39	10402.2
10	730.0	40	10939.9
11	876.6	41	11493.7
12	1036.6	42	12064.6
13	1210.0	43	12654.2
14	1396.6	44	13264.5
15	1596.6	45	13898.1
16	1810.0	46	14558.2
17	2036.6	47	15248.9
18	2276.6	48	15975.0
19	2530.0	49	16742.5
20	2796.6	50	17558.5
21	3076.6	51	18431.7
22	3370.0	52	19372.3
23	3676.6		
24	3996.6		
25	4330.0		
26	4676.6		
27	5036.6		
28	5410.0		
29	5796.6		

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	6400.0
1	20.0	31	6820.0
2	53.3	32	7253.3
3	100.0	33	7700.0
4	160.0	34	8160.1
5	233.3	35	8633.7
6	320.0	36	9120.9
7	420.0	37	9621.9
8	533.3	38	10137.2
9	660.0	39	10667.2
10	800.0	40	11212.7
11	953.3	41	11774.7
12	1120.0	42	12354.5
13	1300.0	43	12953.9
14	1493.3	44	13575.1
15	1700.0	45	14221.1
16	1920.0	46	14895.4
17	2153.3	47	15602.4
18	2400.0	48	16347.6
19	2660.0	49	17137.4
20	2933.3	50	17979.7
21	3220.0	51	18883.8
22	3520.0	52	19860.7
23	3833.3		
24	4160.0		
25	4500.0		
26	4853.3		
27	5220.0		
28	5600.0		
29	5993.3		

UMG_Mk6_L59pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59pp.txt** **UMG_Mk6_L59pp** **UMG_Mk6_L59pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59.pp**		
Met File Type	**PP**	Approx Filesize MB	**375 (1580)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1024**	Pole Main Grid nY	**(90.0, 0.0)** **769**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



Additional notes:
This is the NWP met definition suitable for use with full 'Mk 6' UM global met data (i.e. with fields covering the full global domain). It is not ordinarily used for NAME runs for reasons of efficiency. Instead, domain-decomposed met data are provided in a sequence of met definitions **UMG_Mk6_L59PT[1-14]pp** (see subsequent pages). The domain-decomposed global met data can be loaded 'on demand' as and when they are required in NAME (by setting the `"Update On Demand?"` variable to `Yes` in the relevant NWP met/flow module instances).

Note that there are also 52-level met definitions **UMG_Mk6_L52PT[1-14]pp**. These are provided for additional efficiency when upper level data (above approximately 20 km) is not required. NAME reads the same (59-level) met files but ignores the uppermost levels.

The characteristics described below for UMG_Mk6_L59pp also apply to each of the domain-decomposed met files for UMG_Mk6_L59PT[1-14]pp.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate (kg/(m^2 s))
- convective rain rate (kg/(m^2 s))
- dynamic snow rate (kg/(m^2 s))
- convective snow rate (kg/(m^2 s))
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height is available on five tiles; canopy water and stomatal conductance are available for the first tile only. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level global version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

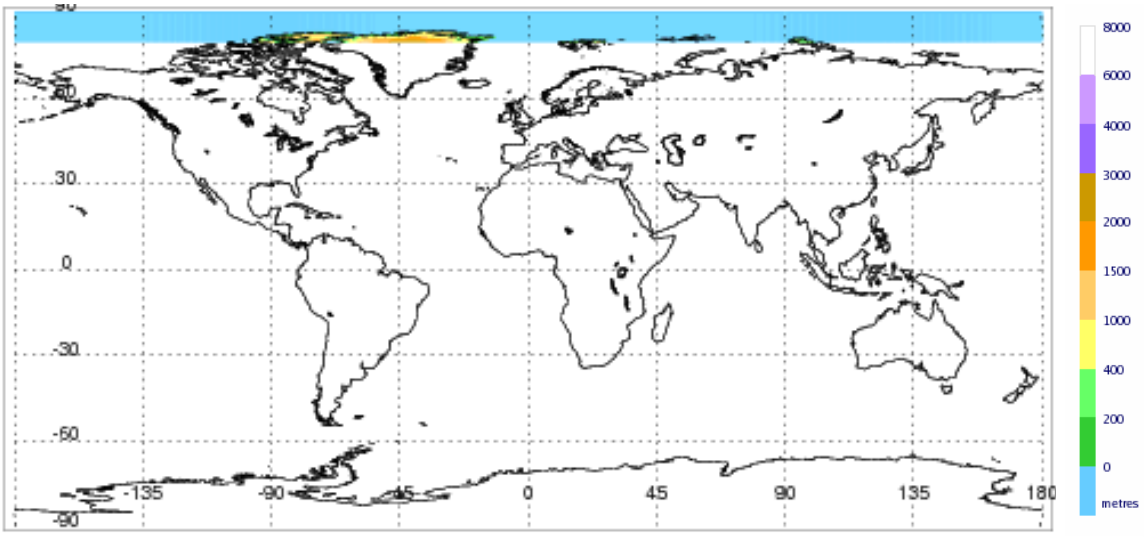
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	6196.6
1	10.0	31	6610.0
2	36.6	32	7036.6
3	76.6	33	7476.6
4	130.0	34	7930.0
5	196.6	35	8396.9
6	276.6	36	8877.3
7	370.0	37	9371.4
8	476.6	38	9879.5
9	596.6	39	10402.2
10	730.0	40	10939.9
11	876.6	41	11493.7
12	1036.6	42	12064.6
13	1210.0	43	12654.2
14	1396.6	44	13264.5
15	1596.6	45	13898.1
16	1810.0	46	14558.2
17	2036.6	47	15248.9
18	2276.6	48	15975.0
19	2530.0	49	16742.5
20	2796.6	50	17558.5
21	3076.6	51	18431.7
22	3370.0	52	19372.3
23	3676.6	53	20392.1
24	3996.6	54	21505.1
25	4330.0	55	22727.8
26	4676.6	56	24078.8
27	5036.6	57	25580.0
28	5410.0	58	27256.1
29	5796.6	59	29135.4

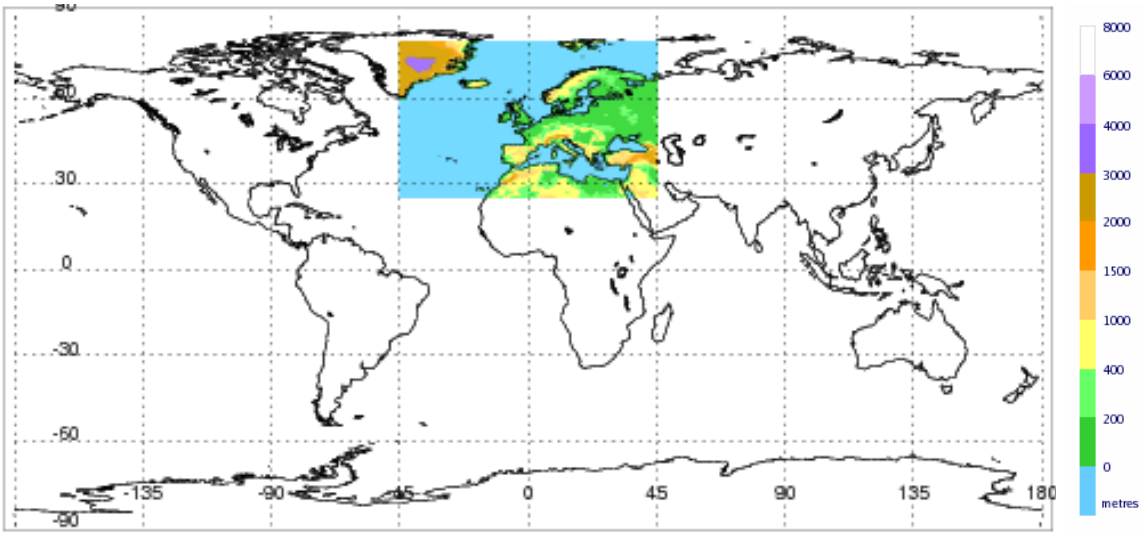
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	6400.0
1	20.0	31	6820.0
2	53.3	32	7253.3
3	100.0	33	7700.0
4	160.0	34	8160.1
5	233.3	35	8633.7
6	320.0	36	9120.9
7	420.0	37	9621.9
8	533.3	38	10137.2
9	660.0	39	10667.2
10	800.0	40	11212.7
11	953.3	41	11774.7
12	1120.0	42	12354.5
13	1300.0	43	12953.9
14	1493.3	44	13575.1
15	1700.0	45	14221.1
16	1920.0	46	14895.4
17	2153.3	47	15602.4
18	2400.0	48	16347.6
19	2660.0	49	17137.4
20	2933.3	50	17979.7
21	3220.0	51	18883.8
22	3520.0	52	19860.7
23	3833.3	53	20923.4
24	4160.0	54	22086.9
25	4500.0	55	23368.7
26	4853.3	56	24789.0
27	5220.0	57	26371.0
28	5600.0	58	28141.2
29	5993.3	59	30129.7

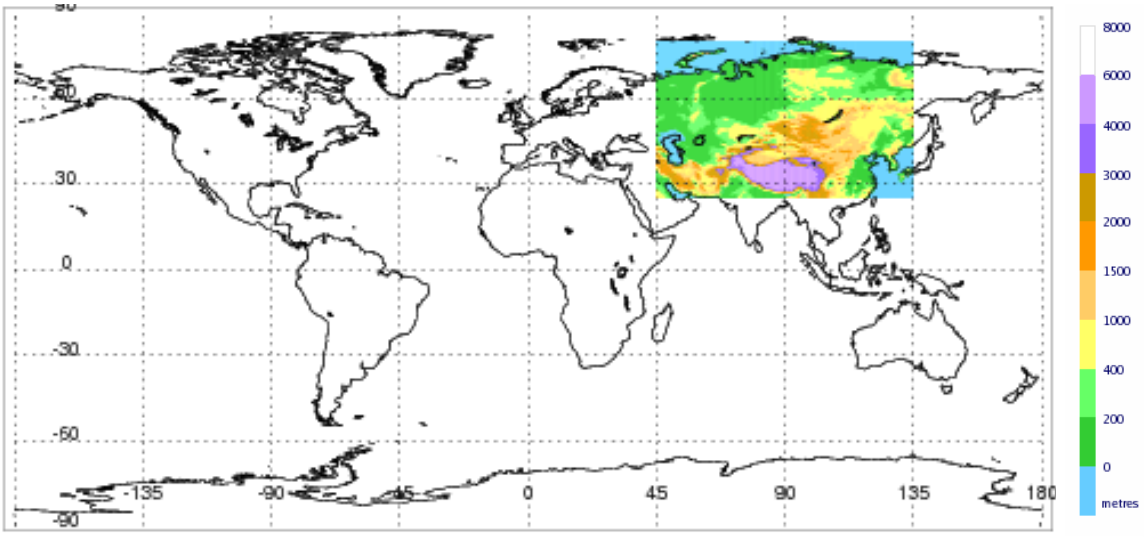
UMG_Mk6_L59PT1pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT1pp** **UMG_Mk6_L59PT1pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk6_L59PT1.pp**		
Met File Type	**PP**	Approx Filesize MB	**14 (92)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1024**	Pole Main Grid nY	**(90.0, 0.0)** **45**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



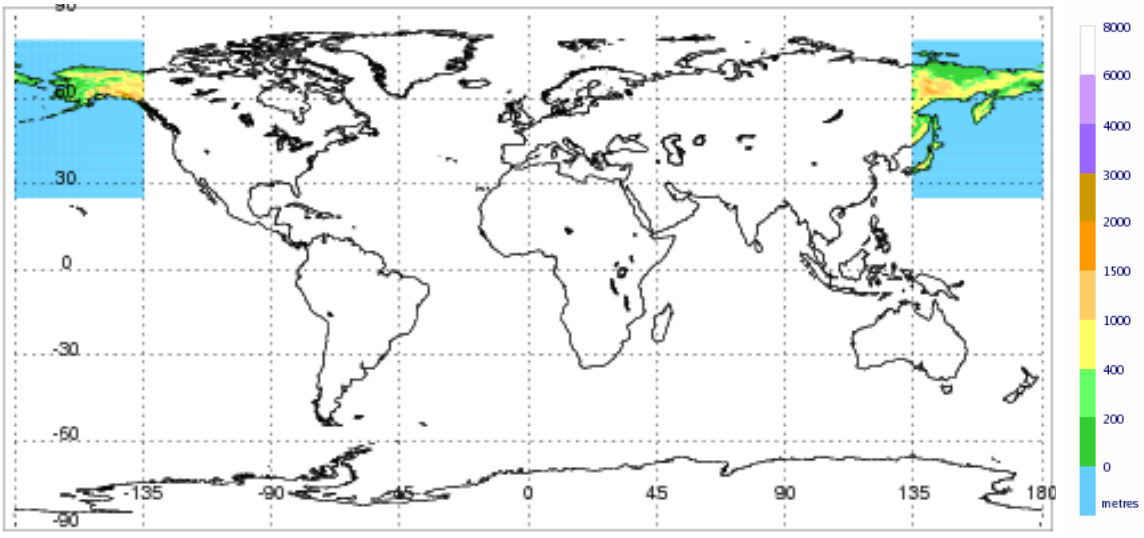
UMG_Mk6_L59PT2pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT2pp** **UMG_Mk6_L59PT2pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT2.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



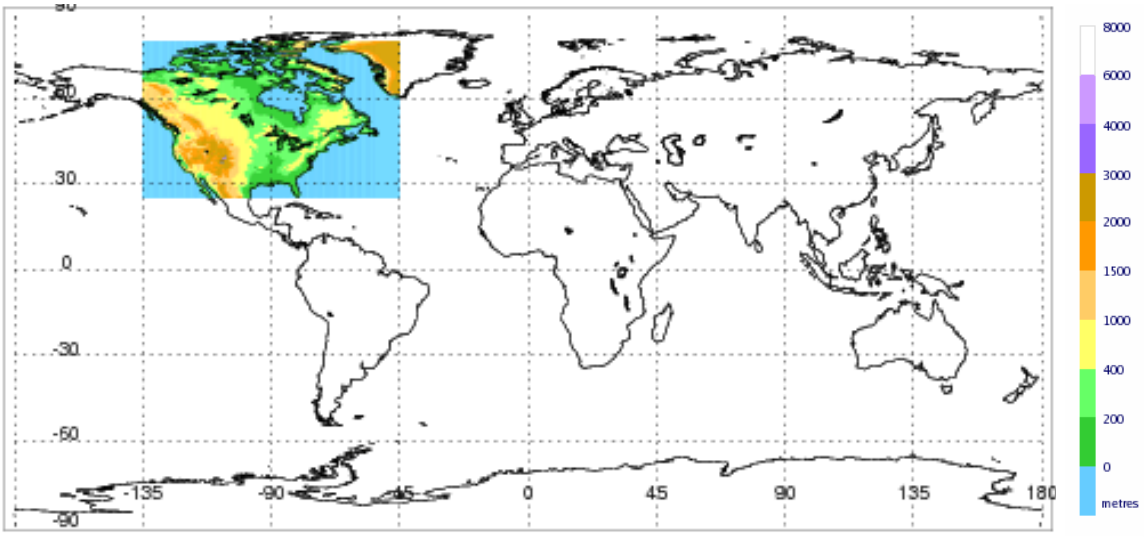
UMG_Mk6_L59PT3pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT3pp** **UMG_Mk6_L59PT3pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT3.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



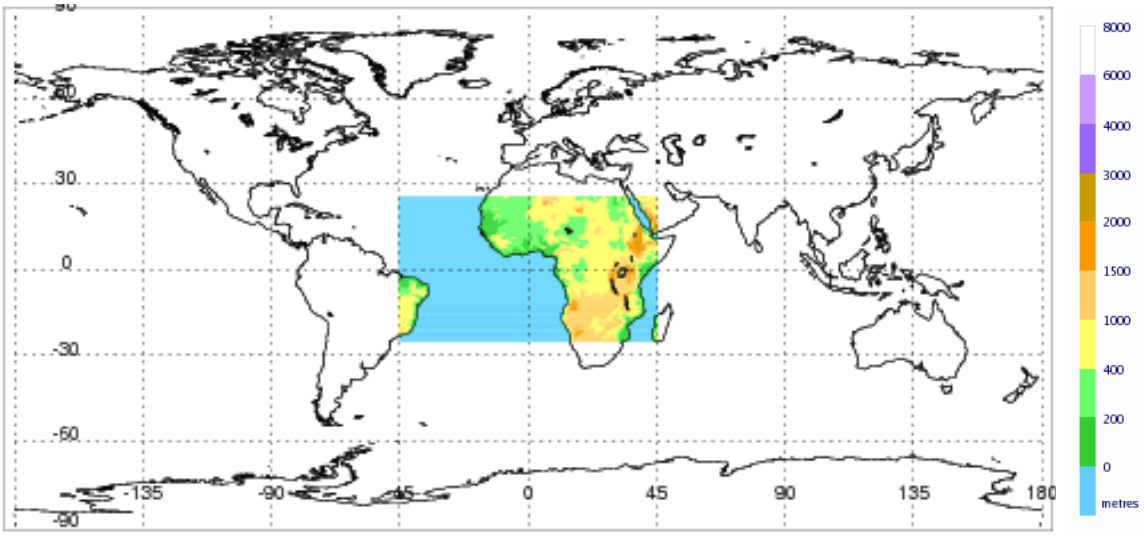
UMG_Mk6_L59PT4pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT4pp** **UMG_Mk6_L59PT4pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT4.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



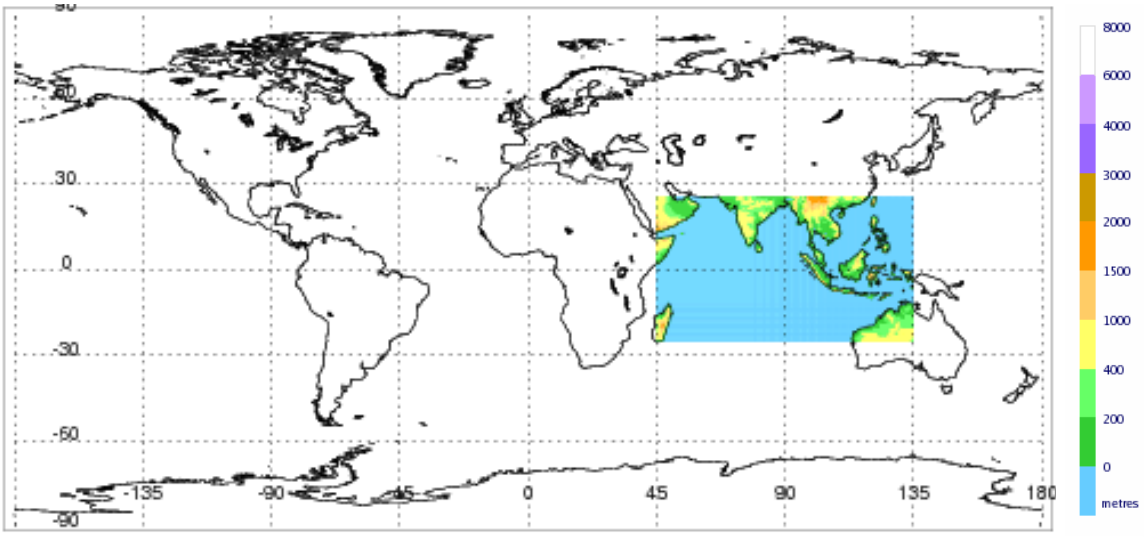
UMG_Mk6_L59PT5pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT5pp** **UMG_Mk6_L59PT5pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT5.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



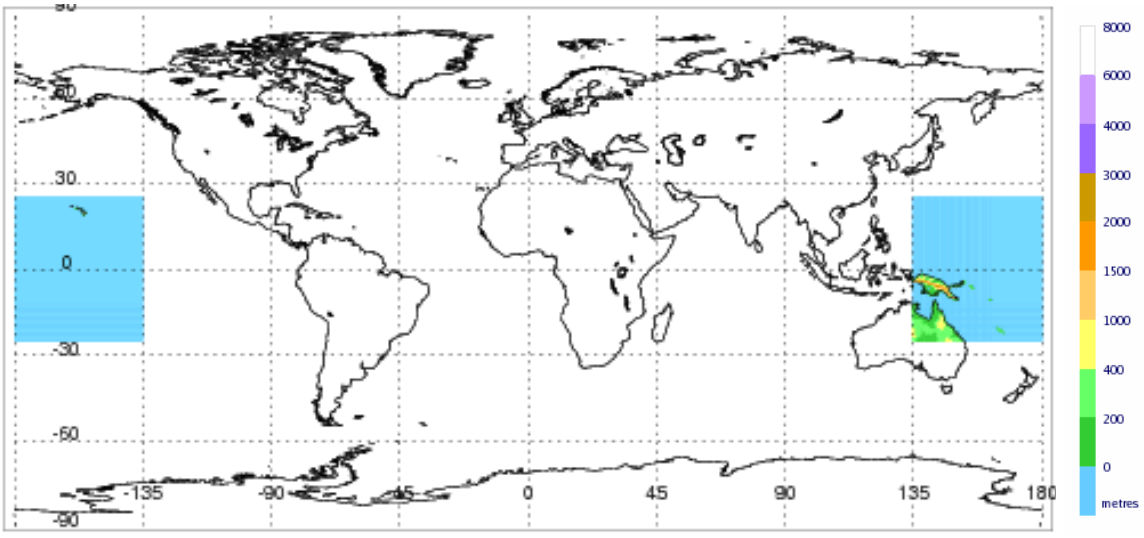
UMG_Mk6_L59PT6pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT6pp** **UMG_Mk6_L59PT6pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT6.pp**		
Met File Type	**PP**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



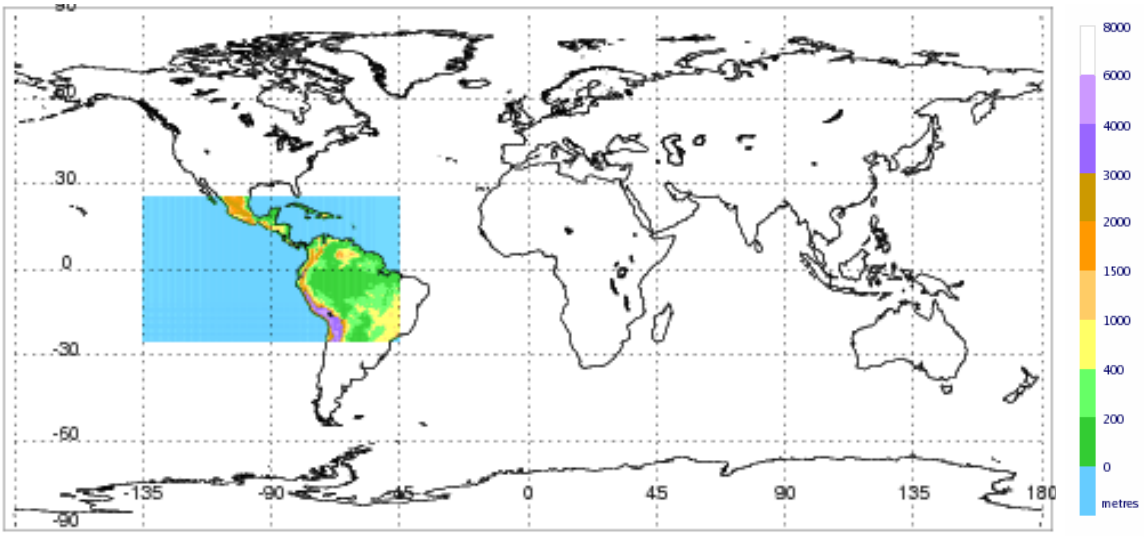
UMG_Mk6_L59PT7pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT7pp** **UMG_Mk6_L59PT7pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT7.pp**		
Met File Type	**PP**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



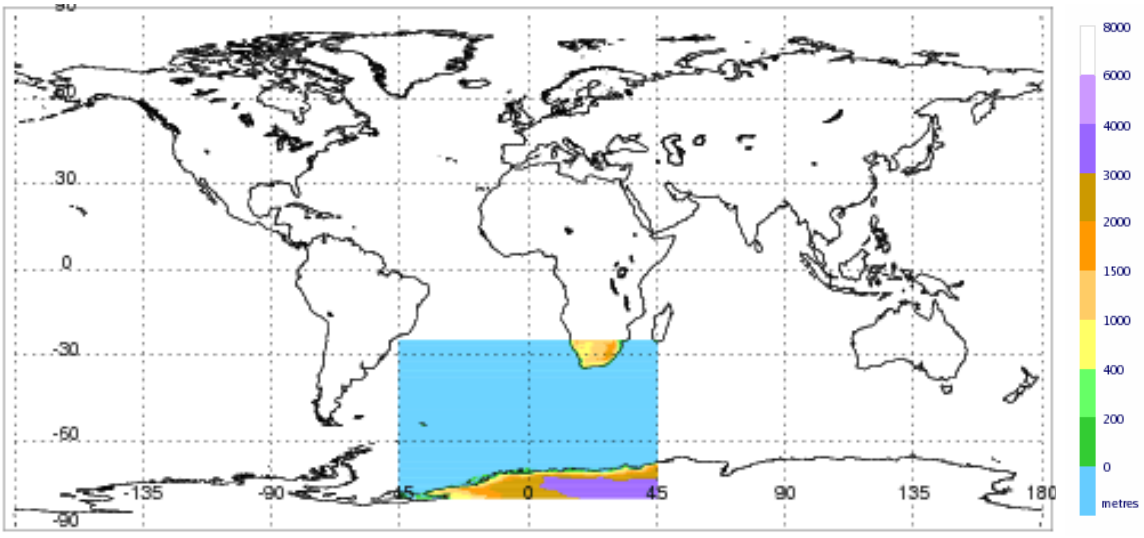
UMG_Mk6_L59PT8pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT8pp** **UMG_Mk6_L59PT8pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT8.pp**		
Met File Type	**PP**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



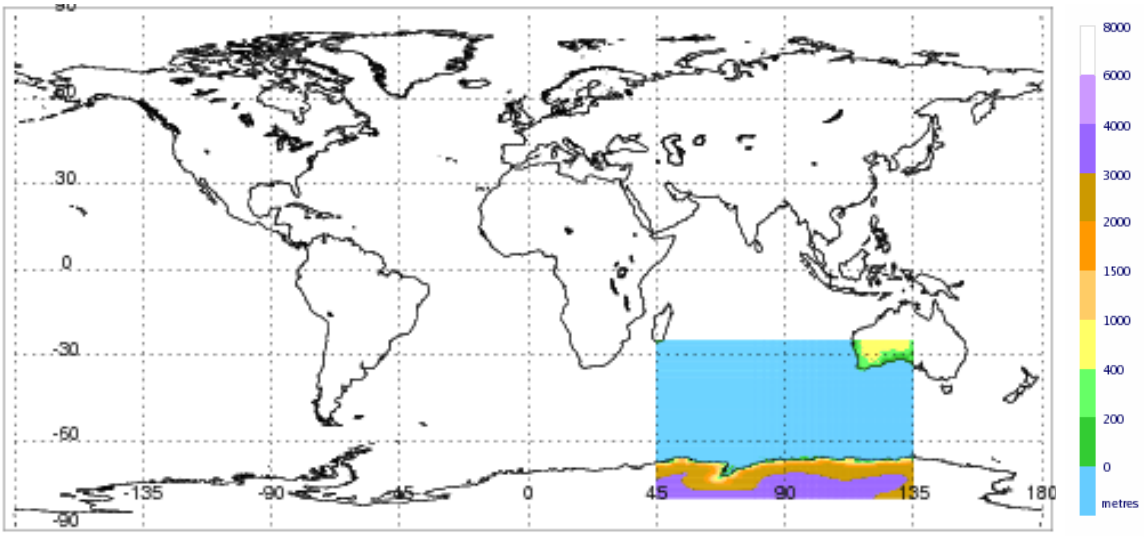
UMG_Mk6_L59PT9pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT9pp** **UMG_Mk6_L59PT9pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT9.pp**		
Met File Type	**PP**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



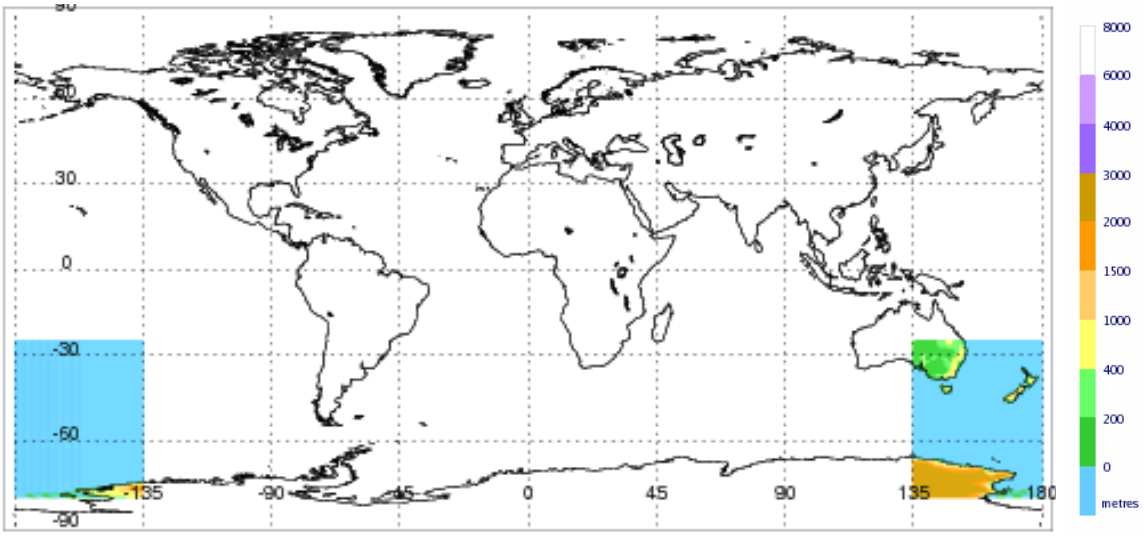
UMG_Mk6_L59PT10pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT10pp** **UMG_Mk6_L59PT10pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk6_L59PT10.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



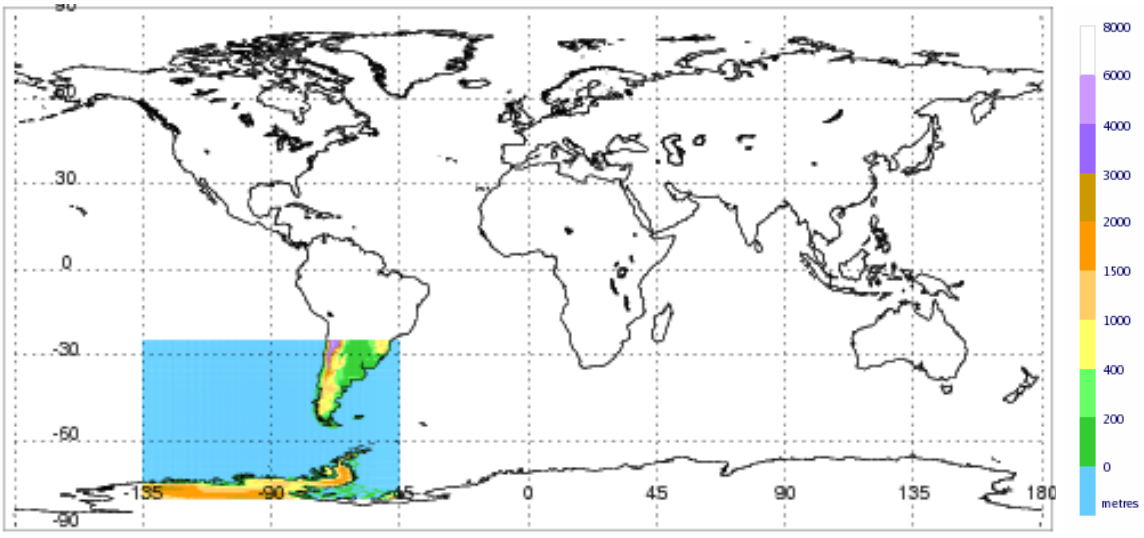
UMG_Mk6_L59PT11pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT11pp** **UMG_Mk6_L59PT11pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT11.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



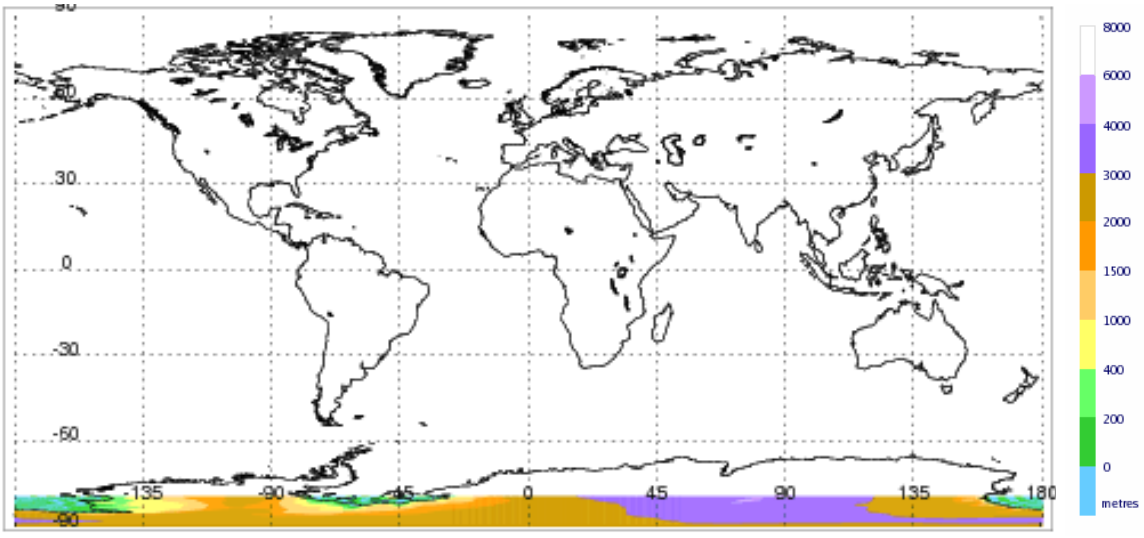
UMG_Mk6_L59PT12pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT12pp** **UMG_Mk6_L59PT12pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT12.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



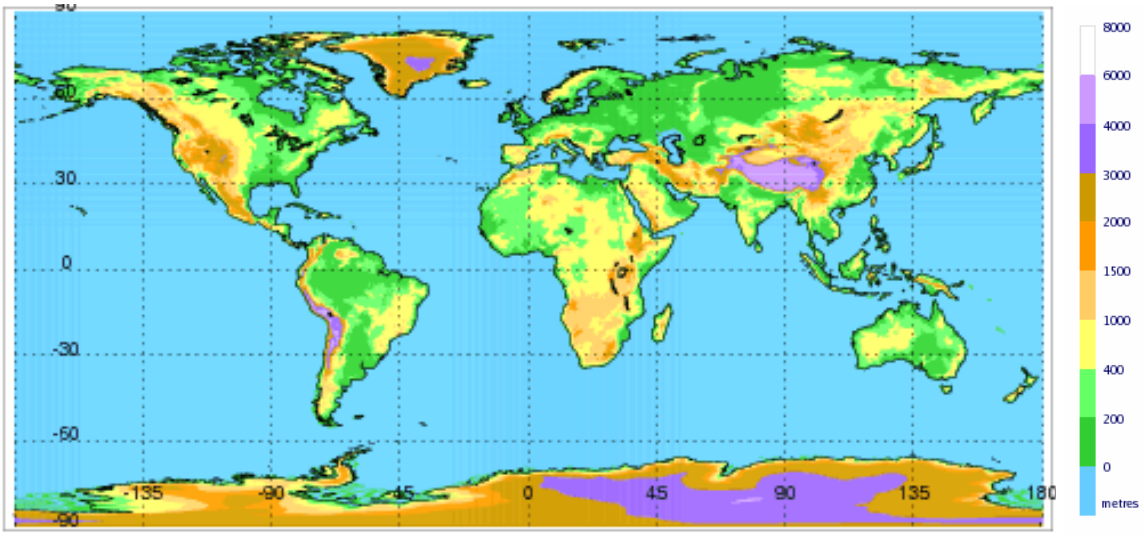
UMG_Mk6_L59PT13pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT13pp** **UMG_Mk6_L59PT13pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT13.pp**		
Met File Type	**PP**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



UMG_Mk6_L59PT14pp			
Start Time	**09/03/2010**	End Time	**30/04/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk6_L59PTpp.txt** **UMG_Mk6_L59PT14pp** **UMG_Mk6_L59PT14pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk6_L59PT14.pp**		
Met File Type	**PP**	Approx Filesize MB	**14 (92)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1024**	Pole Main Grid nY	**(90.0, 0.0)** **45**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



UMG_Mk7_L59pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59pp.txt** **UMG_Mk7_L59pp** **UMG_Mk6_L59pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**375 (1580)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1024**	Pole Main Grid nY	**(90.0, 0.0)** **769**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



Additional notes:
This is the NWP met definition suitable for use with full 'Mk 7' UM global met data (i.e. with fields covering the full global domain). It is not ordinarily used for NAME runs for reasons of efficiency. Instead, domain-decomposed met data are provided in a sequence of met definitions **UMG_Mk7_L59PT[1-14]pp** (see subsequent pages). The domain-decomposed global met data can be loaded 'on demand' as and when they are required in NAME (by setting the `"Update On Demand?"` variable to `Yes` in the relevant NWP met/flow module instances).

Note that there are also 52-level met definitions **UMG_Mk7_L52PT[1-14]pp**. These are provided for additional efficiency when upper level data (above approximately 20 km) is not required. NAME reads the same (59-level) met files but ignores the uppermost levels.

The characteristics described below for UMG_Mk7_L59pp also apply to each of the domain-decomposed met files for UMG_Mk7_L59PT[1-14]pp.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate (kg/(m^2 s))
- convective rain rate (kg/(m^2 s))
- dynamic snow rate (kg/(m^2 s))
- convective snow rate (kg/(m^2 s))
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

Fields are separated across two sets of input files: instantaneous, or 'spot', fields and three-hourly mean fields. The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height is available on five tiles; canopy water

and stomatal conductance are available for the first tile only. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level global version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

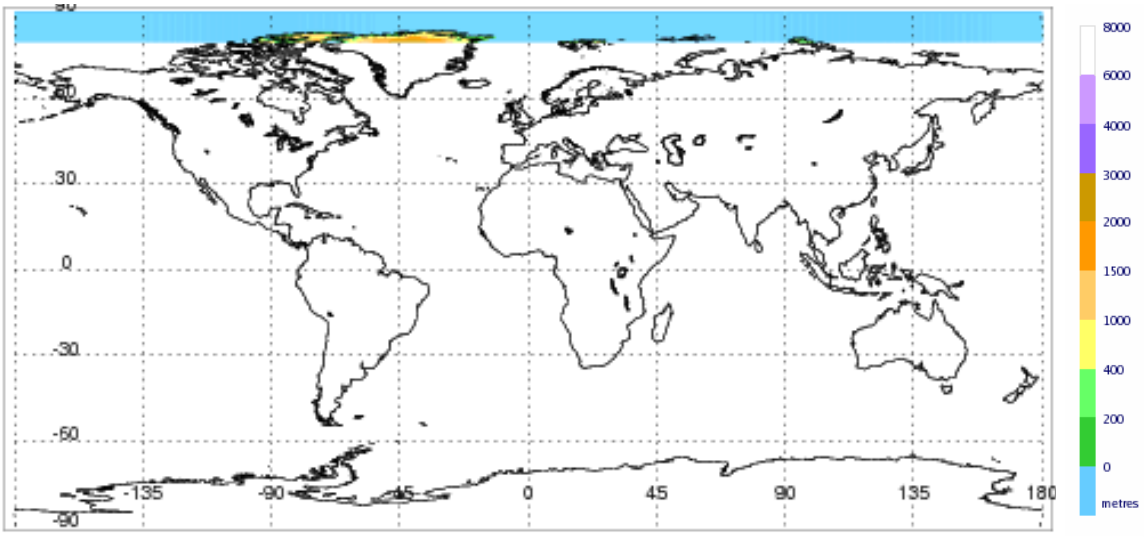
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	6196.6
1	10.0	31	6610.0
2	36.6	32	7036.6
3	76.6	33	7476.6
4	130.0	34	7930.0
5	196.6	35	8396.9
6	276.6	36	8877.3
7	370.0	37	9371.4
8	476.6	38	9879.5
9	596.6	39	10402.2
10	730.0	40	10939.9
11	876.6	41	11493.7
12	1036.6	42	12064.6
13	1210.0	43	12654.2
14	1396.6	44	13264.5
15	1596.6	45	13898.1
16	1810.0	46	14558.2
17	2036.6	47	15248.9
18	2276.6	48	15975.0
19	2530.0	49	16742.5
20	2796.6	50	17558.5
21	3076.6	51	18431.7
22	3370.0	52	19372.3
23	3676.6	53	20392.1
24	3996.6	54	21505.1
25	4330.0	55	22727.8
26	4676.6	56	24078.8
27	5036.6	57	25580.0
28	5410.0	58	27256.1
29	5796.6	59	29135.4

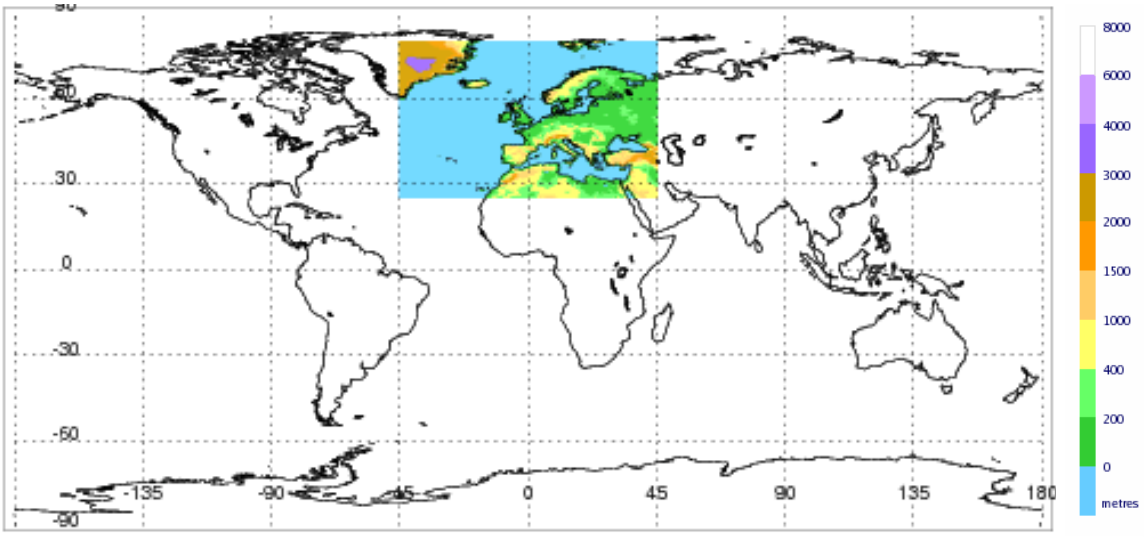
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	6400.0
1	20.0	31	6820.0
2	53.3	32	7253.3
3	100.0	33	7700.0
4	160.0	34	8160.1
5	233.3	35	8633.7
6	320.0	36	9120.9
7	420.0	37	9621.9
8	533.3	38	10137.2
9	660.0	39	10667.2
10	800.0	40	11212.7
11	953.3	41	11774.7
12	1120.0	42	12354.5
13	1300.0	43	12953.9
14	1493.3	44	13575.1
15	1700.0	45	14221.1
16	1920.0	46	14895.4
17	2153.3	47	15602.4
18	2400.0	48	16347.6
19	2660.0	49	17137.4
20	2933.3	50	17979.7
21	3220.0	51	18883.8
22	3520.0	52	19860.7
23	3833.3	53	20923.4
24	4160.0	54	22086.9
25	4500.0	55	23368.7
26	4853.3	56	24789.0
27	5220.0	57	26371.0
28	5600.0	58	28141.2
29	5993.3	59	30129.7

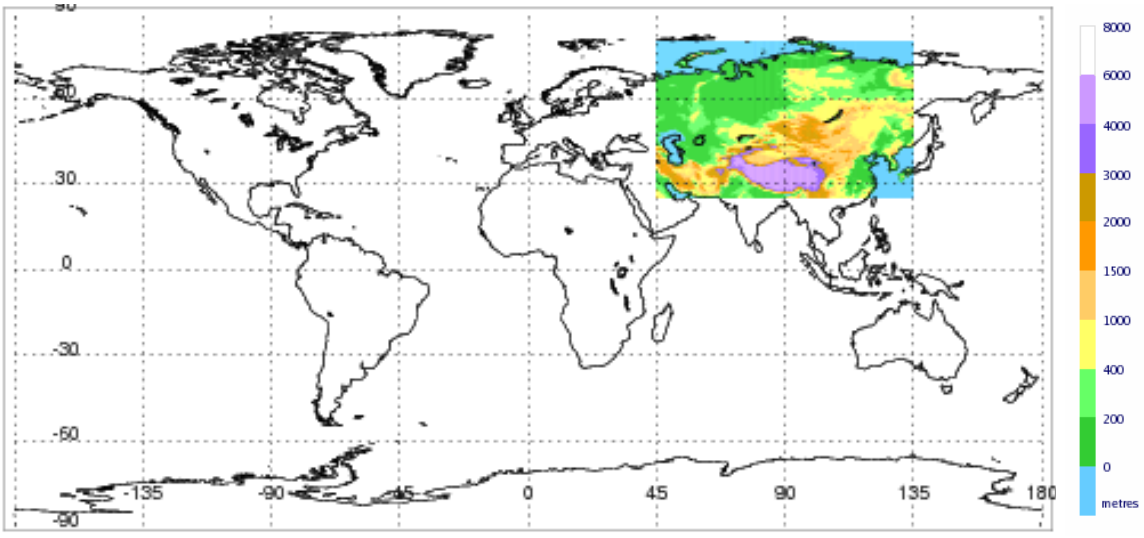
UMG_Mk7_L59PT1pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT1pp** **UMG_Mk6_L59PT1pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT1.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**14 (92)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1024**	Pole Main Grid nY	**(90.0, 0.0)** **45**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



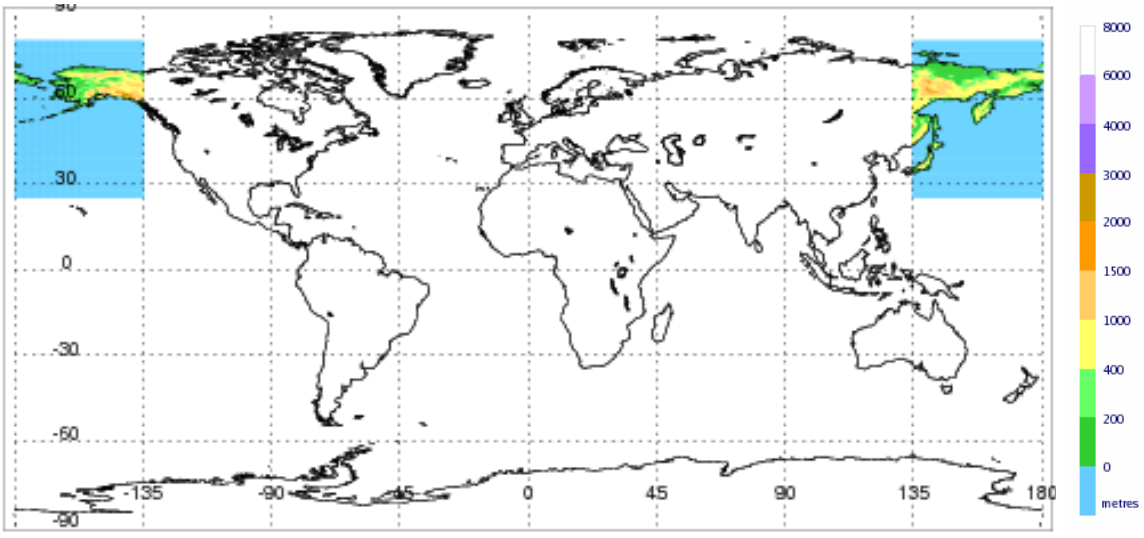
UMG_Mk7_L59PT2pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT2pp** **UMG_Mk6_L59PT2pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT2.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



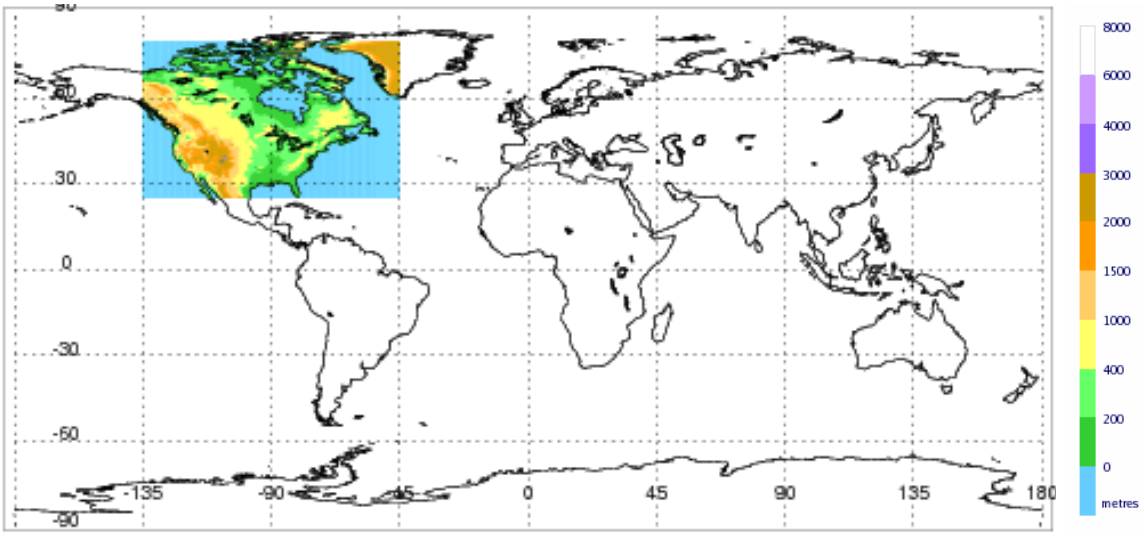
UMG_Mk7_L59PT3pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT3pp** **UMG_Mk6_L59PT3pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT3.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



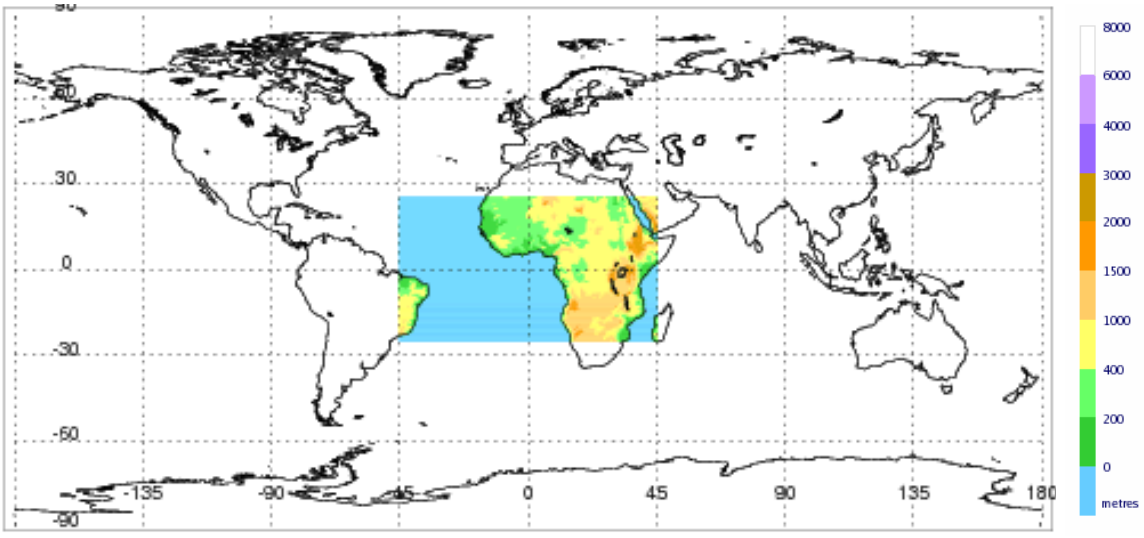
UMG_Mk7_L59PT4pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT4pp** **UMG_Mk6_L59PT4pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT4.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



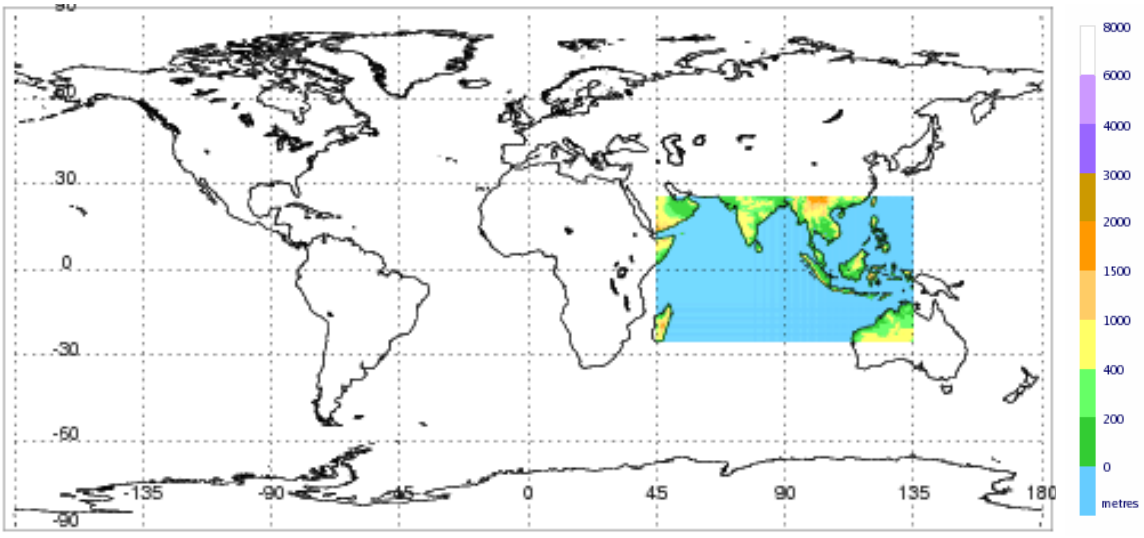
UMG_Mk7_L59PT5pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT5pp** **UMG_Mk6_L59PT5pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT5.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



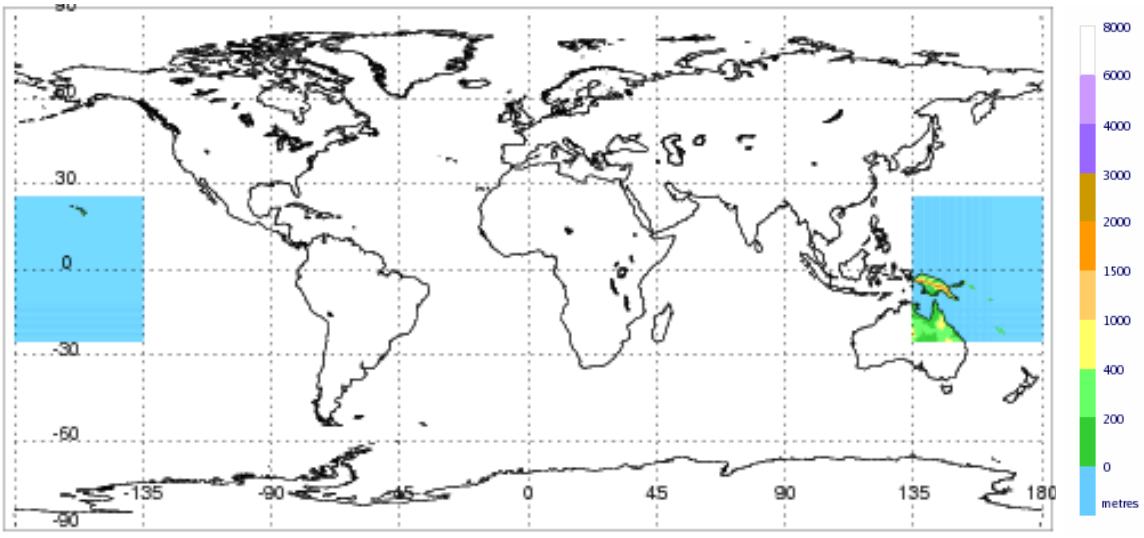
UMG_Mk7_L59PT6pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT6pp** **UMG_Mk6_L59PT6pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT6.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



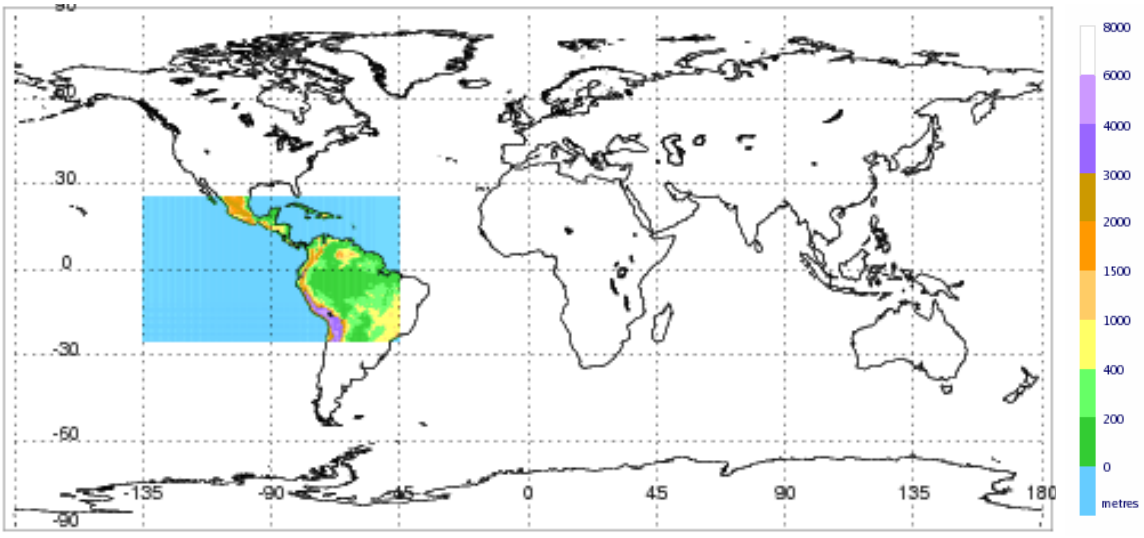
UMG_Mk7_L59PT7pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT7pp** **UMG_Mk6_L59PT7pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT7.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



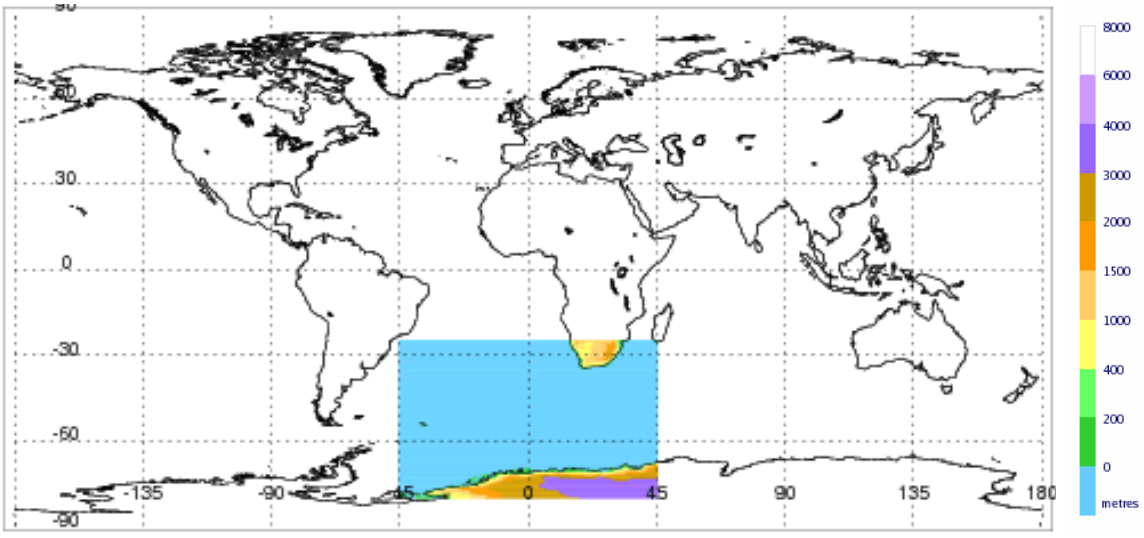
UMG_Mk7_L59PT8pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT8pp** **UMG_Mk6_L59PT8pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT8.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



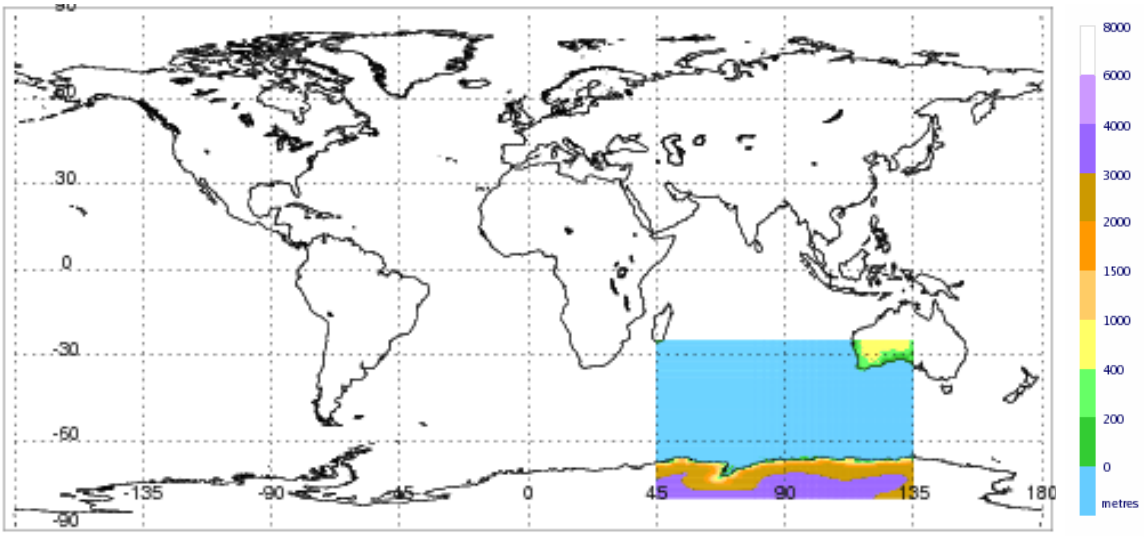
UMG_Mk7_L59PT9pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT9pp** **UMG_Mk6_L59PT9pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT9.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**28 (112)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **217**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



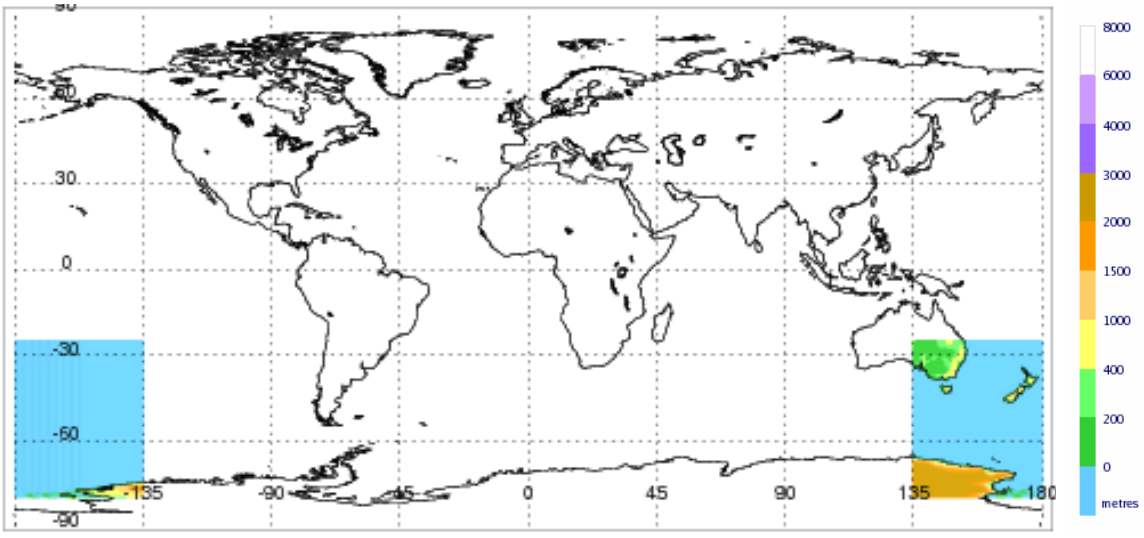
UMG_Mk7_L59PT10pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT10pp** **UMG_Mk6_L59PT10pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT10.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



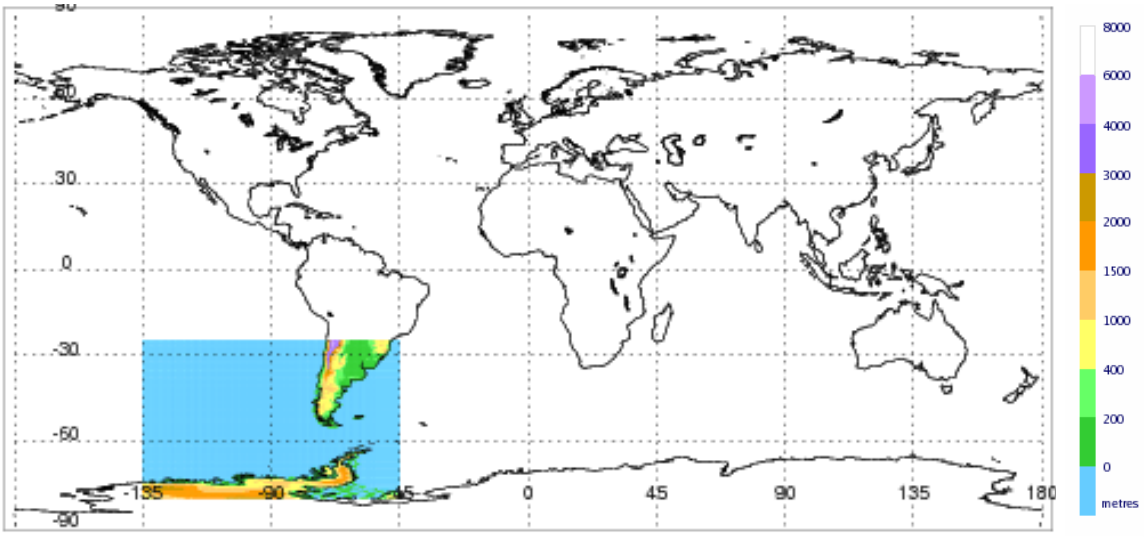
UMG_Mk7_L59PT11pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT11pp** **UMG_Mk6_L59PT11pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT11.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



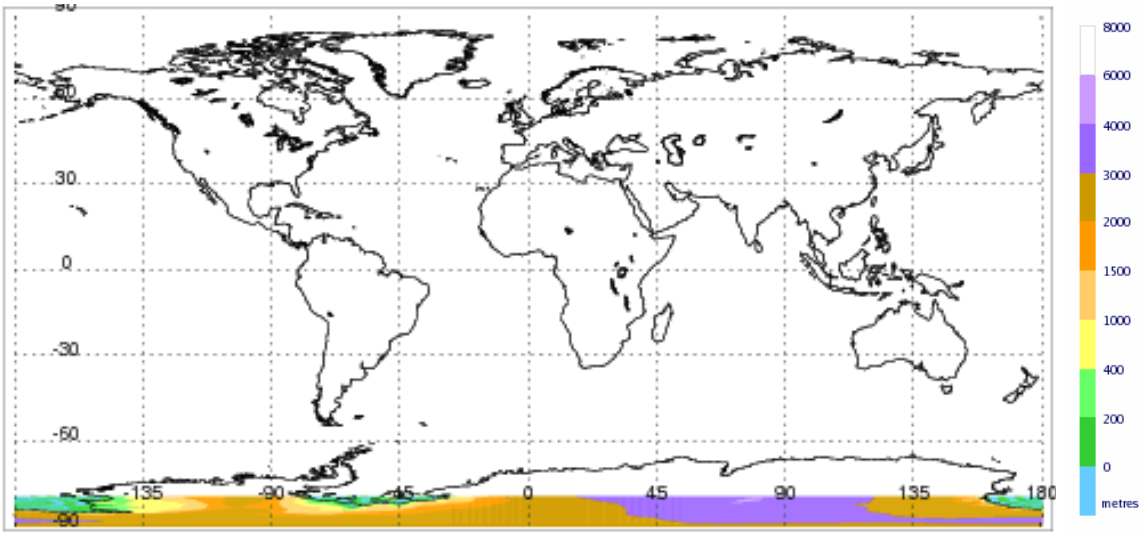
UMG_Mk7_L59PT12pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT12pp** **UMG_Mk6_L59PT12pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT12.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



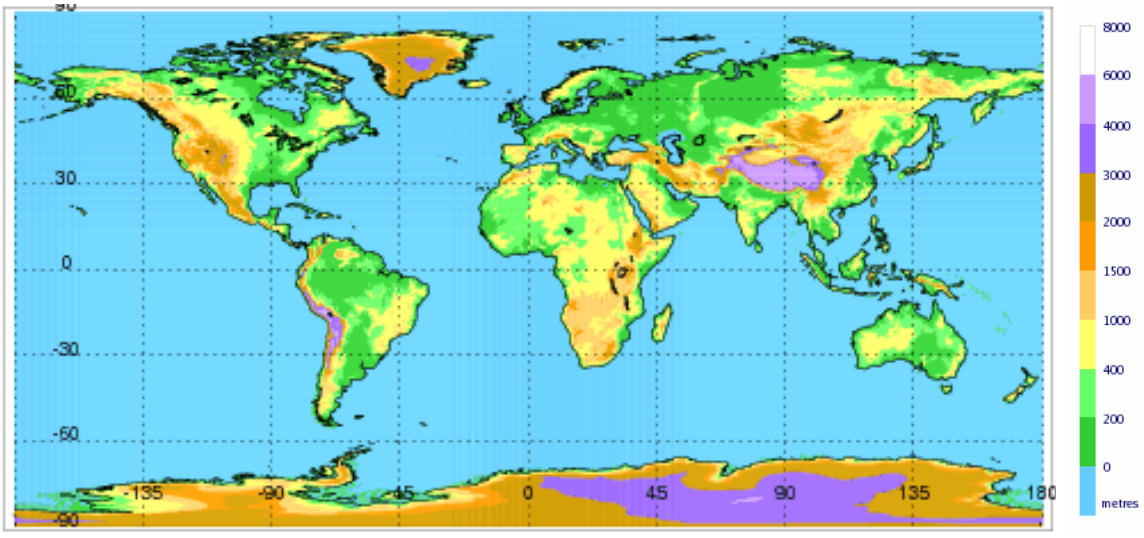
UMG_Mk7_L59PT13pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT13pp** **UMG_Mk6_L59PT13pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT13.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**32 (122)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **258**	Pole Main Grid nY	**(90.0, 0.0)** **237**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



UMG_Mk7_L59PT14pp			
Start Time	**30/04/2013**	End Time	**15/07/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk7_L59PTpp.txt** **UMG_Mk7_L59PT14pp** **UMG_Mk6_L59PT14pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UMG_Mk7_[IM]_L59PT14.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**14 (92)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1024**	Pole Main Grid nY	**(90.0, 0.0)** **45**
Approx Resolution km	**25**	Actual Resolution °	**0.3516 × 0.2344**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



UMG_Mk8_L59pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59pp.txt** **UMG_Mk8_L59pp** **UMG_Mk8_L59pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**860 (3380)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1536**	Pole Main Grid nY	**(90.0, 0.0)** **1152**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



Additional notes:
This is the NWP met definition suitable for use with full 'Mk 8' UM global met data (i.e. with fields covering the full global domain). It is not ordinarily used for NAME runs for reasons of efficiency. Instead, domain-decomposed met data are provided in a sequence of met definitions **UMG_Mk8_L59PT[1-14]pp** (see subsequent pages). The domain-decomposed global met data can be loaded 'on demand' as and when they are required in NAME (by setting the `"Update On Demand?"` variable to `Yes` in the relevant NWP met/flow module instances).

Note that there are also 52-level met definitions **UMG_Mk8_L52PT[1-14]pp**. These are provided for additional efficiency when upper level data (above approximately 20 km) is not required. NAME reads the same (59-level) met files but ignores the uppermost levels.

The characteristics described below for UMG_Mk8_L59pp also apply to each of the domain-decomposed met files for UMG_Mk8_L59PT[1-14]pp.

Note that 'Mk 8' is the first global UM configuration to use the ENDGame dynamical core.
List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate (kg/(m^2 s))
- convective rain rate (kg/(m^2 s))
- dynamic snow rate (kg/(m^2 s))
- convective snow rate (kg/(m^2 s))
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

Fields are separated across two sets of input files: instantaneous, or 'spot', fields and three-hourly mean fields. The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height is available on five tiles; canopy water

and stomatal conductance are available for the first tile only. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level global version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

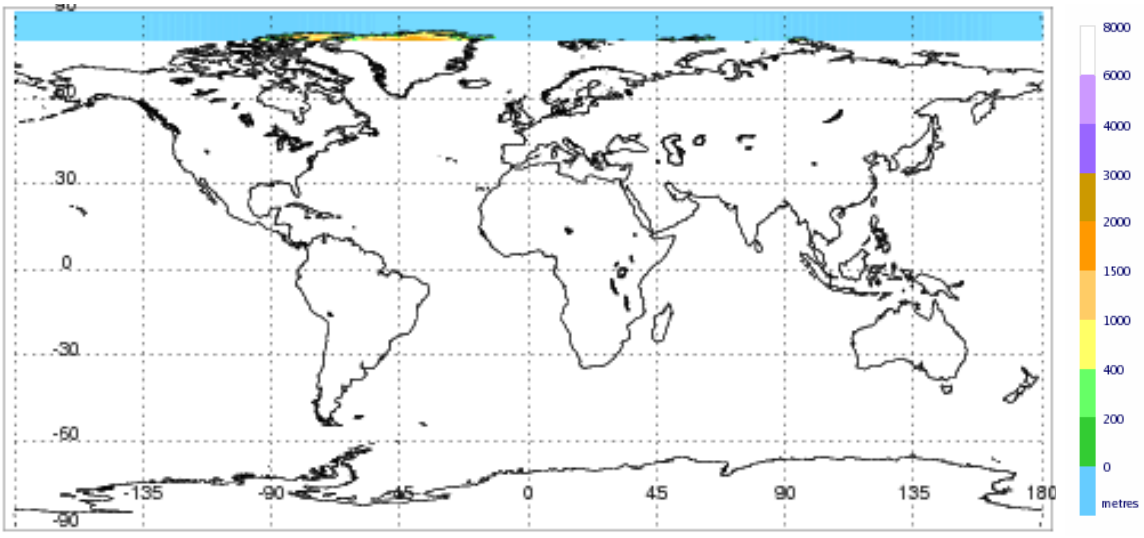
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	6196.6
1	10.0	31	6610.0
2	36.6	32	7036.6
3	76.6	33	7476.6
4	130.0	34	7930.0
5	196.6	35	8396.9
6	276.6	36	8877.3
7	370.0	37	9371.4
8	476.6	38	9879.5
9	596.6	39	10402.2
10	730.0	40	10939.9
11	876.6	41	11493.7
12	1036.6	42	12064.6
13	1210.0	43	12654.2
14	1396.6	44	13264.5
15	1596.6	45	13898.1
16	1810.0	46	14558.2
17	2036.6	47	15248.9
18	2276.6	48	15975.0
19	2530.0	49	16742.5
20	2796.6	50	17558.5
21	3076.6	51	18431.7
22	3370.0	52	19372.3
23	3676.6	53	20392.1
24	3996.6	54	21505.1
25	4330.0	55	22727.8
26	4676.6	56	24078.8
27	5036.6	57	25580.0
28	5410.0	58	27256.1
29	5796.6	59	29135.4

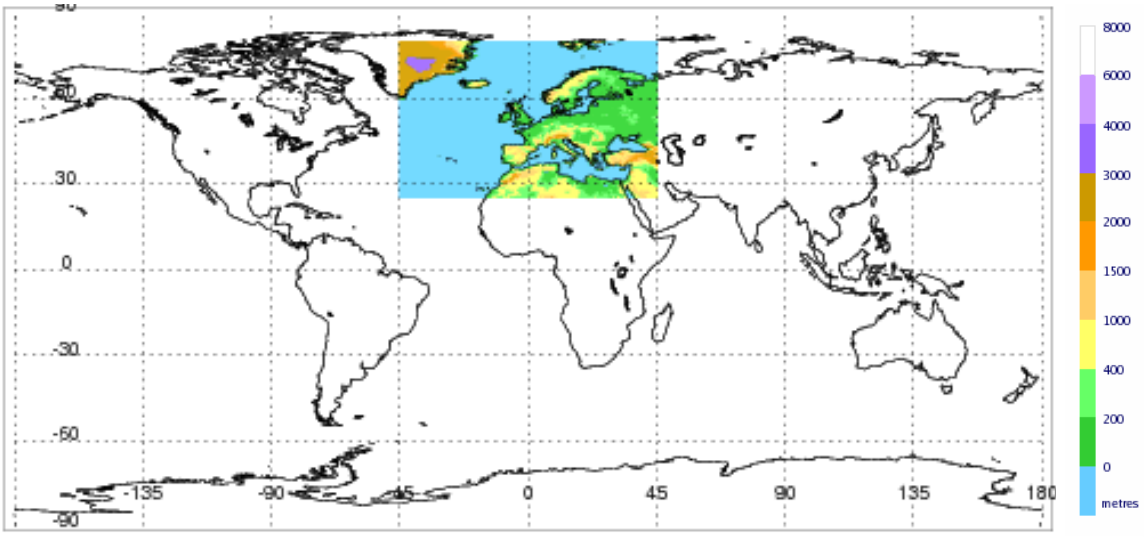
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	6400.0
1	20.0	31	6820.0
2	53.3	32	7253.3
3	100.0	33	7700.0
4	160.0	34	8160.1
5	233.3	35	8633.7
6	320.0	36	9120.9
7	420.0	37	9621.9
8	533.3	38	10137.2
9	660.0	39	10667.2
10	800.0	40	11212.7
11	953.3	41	11774.7
12	1120.0	42	12354.5
13	1300.0	43	12953.9
14	1493.3	44	13575.1
15	1700.0	45	14221.1
16	1920.0	46	14895.4
17	2153.3	47	15602.4
18	2400.0	48	16347.6
19	2660.0	49	17137.4
20	2933.3	50	17979.7
21	3220.0	51	18883.8
22	3520.0	52	19860.7
23	3833.3	53	20923.4
24	4160.0	54	22086.9
25	4500.0	55	23368.7
26	4853.3	56	24789.0
27	5220.0	57	26371.0
28	5600.0	58	28141.2
29	5993.3	59	30129.7

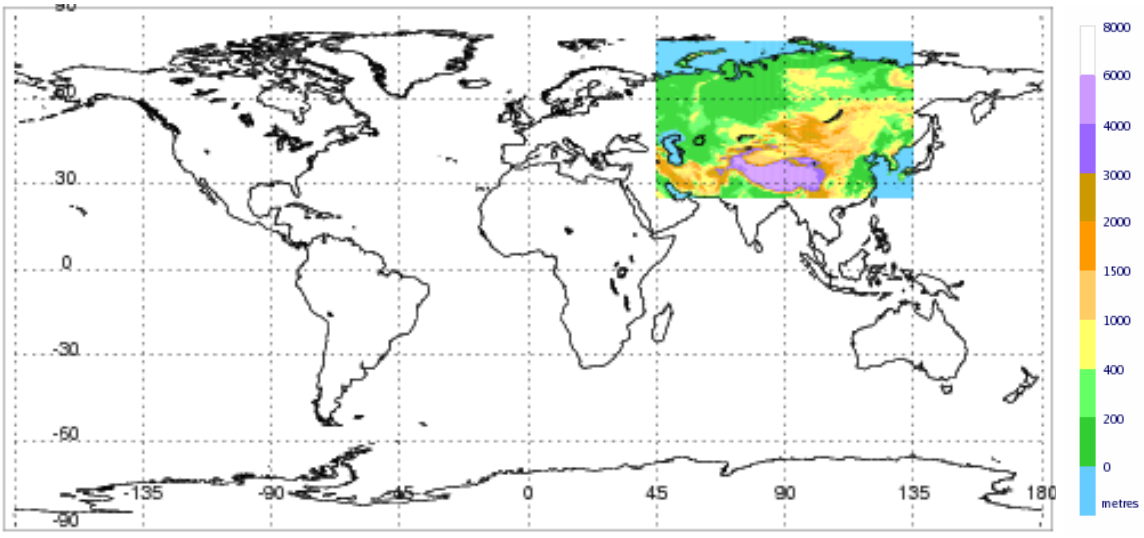
UMG_Mk8_L59PT1pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT1pp** **UMG_Mk8_L59PT1pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT1.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**30 (192)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1536**	Pole Main Grid nY	**(90.0, 0.0)** **65**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



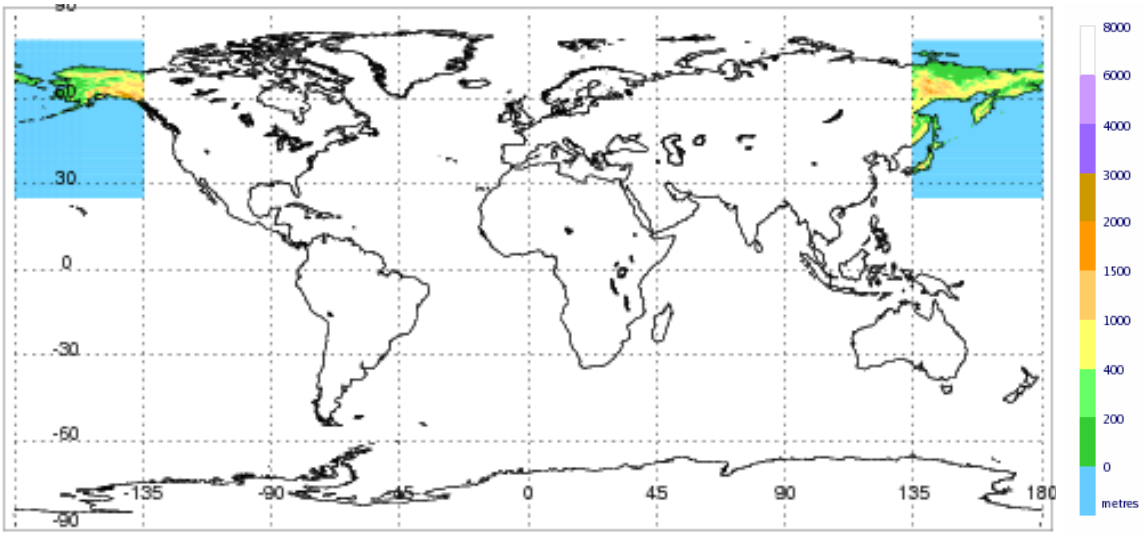
UMG_Mk8_L59PT2pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT2pp** **UMG_Mk8_L59PT2pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT2.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



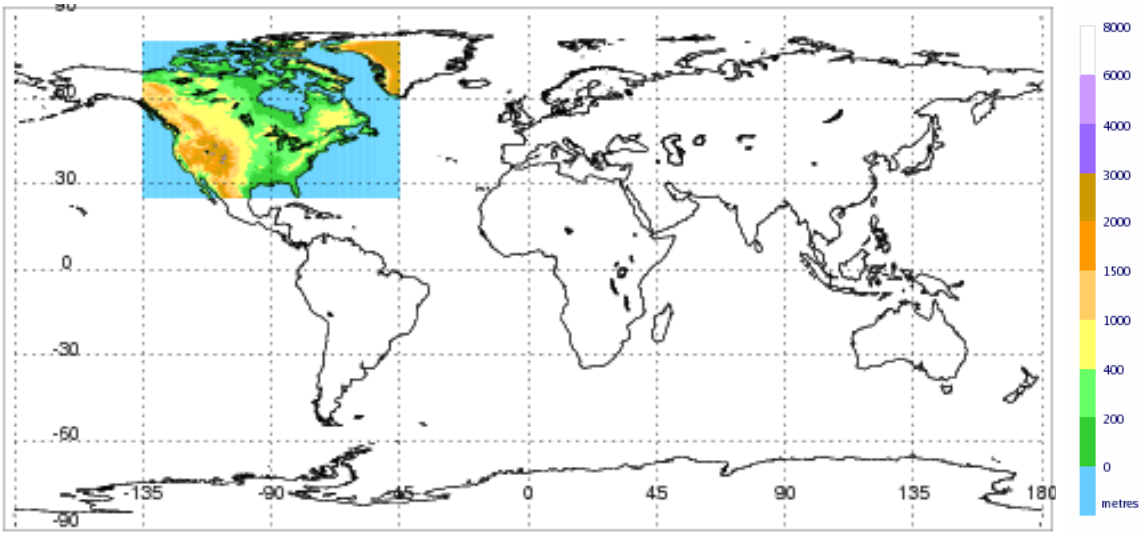
UMG_Mk8_L59PT3pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT3pp** **UMG_Mk8_L59PT3pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT3.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



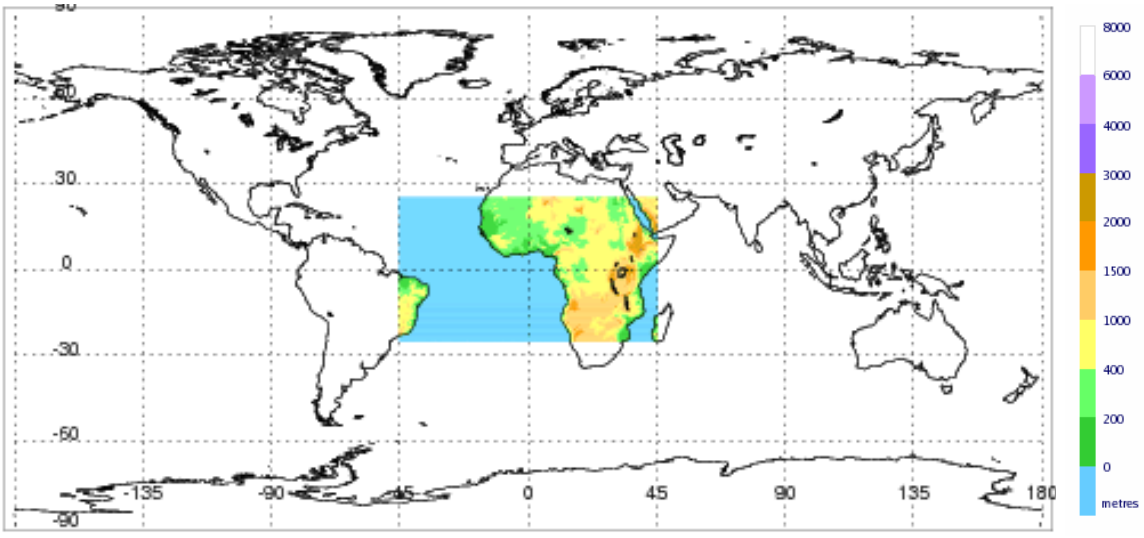
UMG_Mk8_L59PT4pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT4pp** **UMG_Mk8_L59PT4pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT4.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



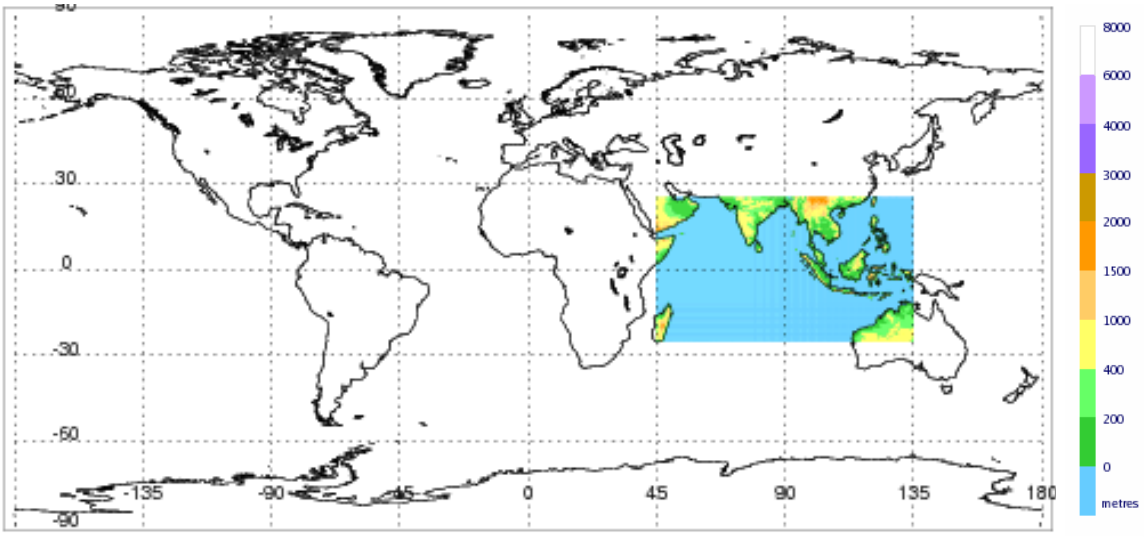
UMG_Mk8_L59PT5pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT5pp** **UMG_Mk8_L59PT5pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT5.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



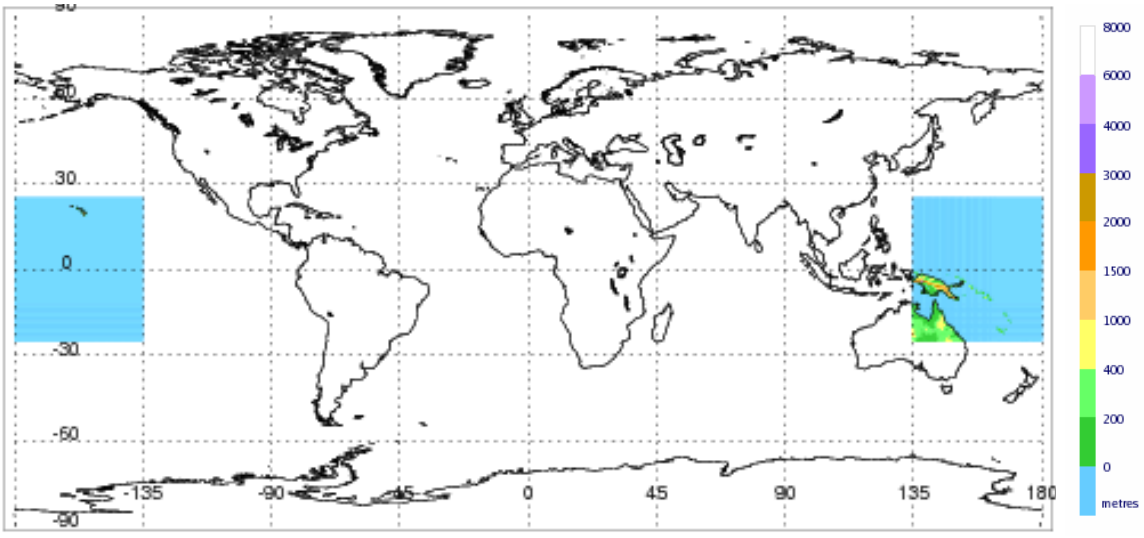
UMG_Mk8_L59PT6pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT6pp** **UMG_Mk8_L59PT6pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT6.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



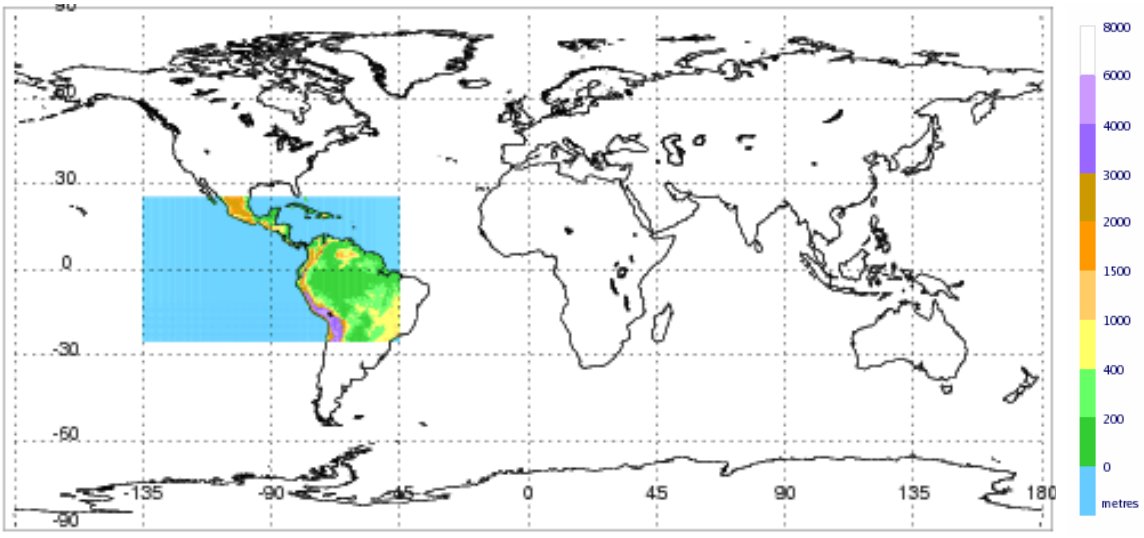
UMG_Mk8_L59PT7pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT7pp** **UMG_Mk8_L59PT7pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT7.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



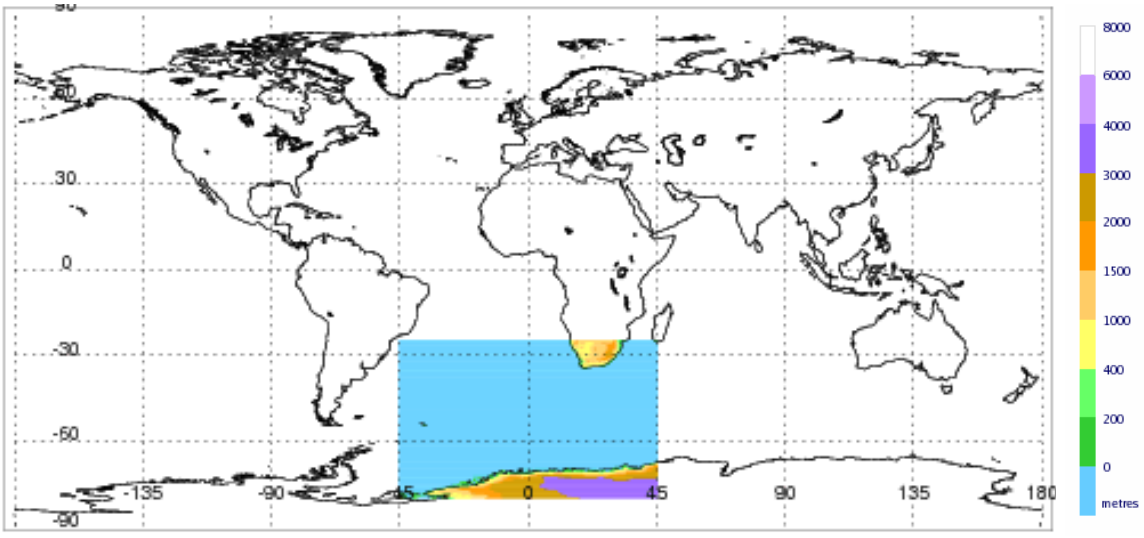
UMG_Mk8_L59PT8pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT8pp** **UMG_Mk8_L59PT8pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT8.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



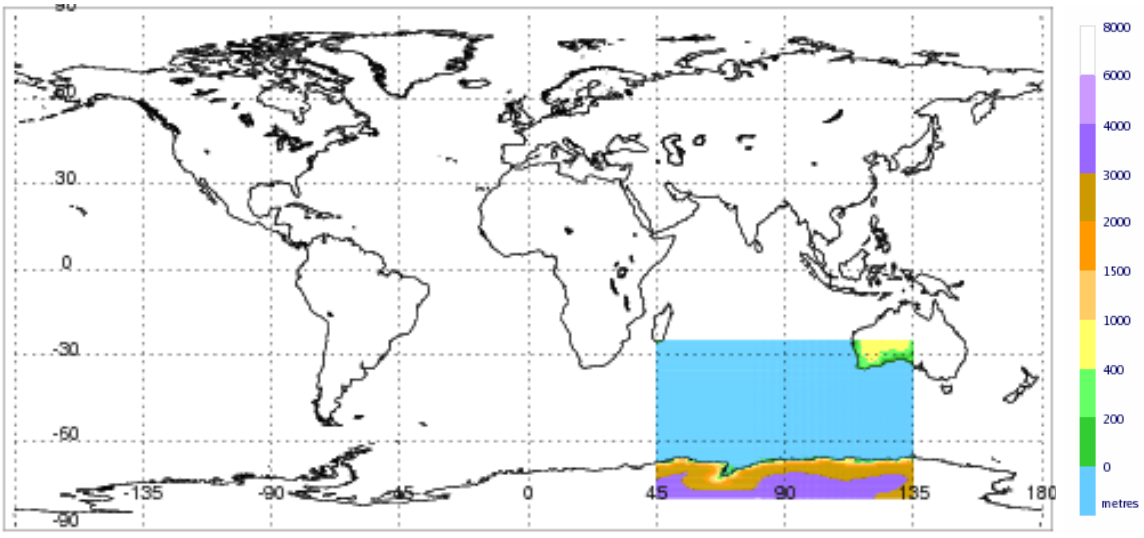
UMG_Mk8_L59PT9pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT9pp** **UMG_Mk8_L59PT9pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT9.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



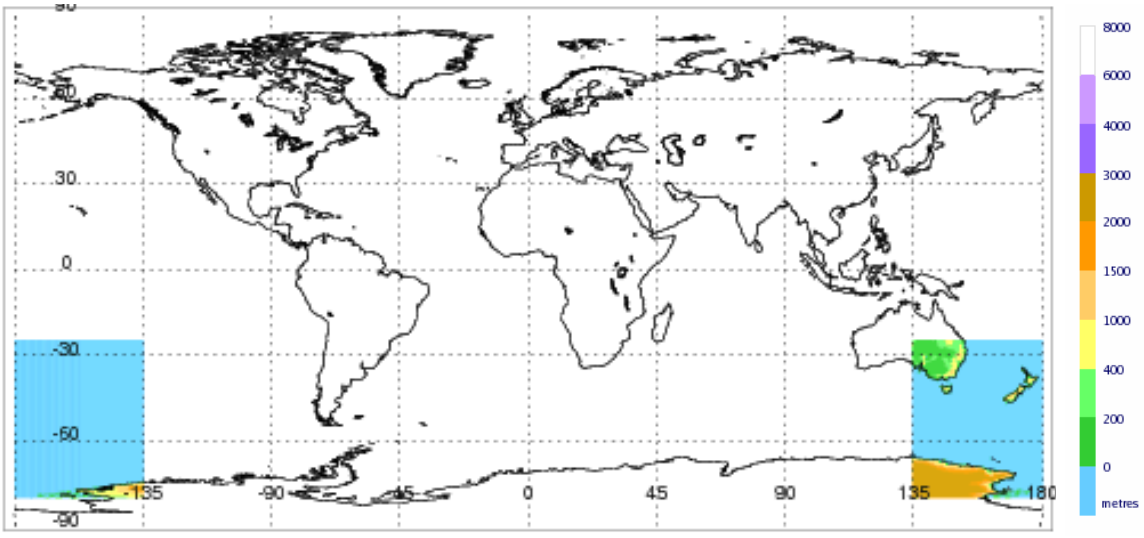
UMG_Mk8_L59PT10pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT10pp** **UMG_Mk8_L59PT10pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT10.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



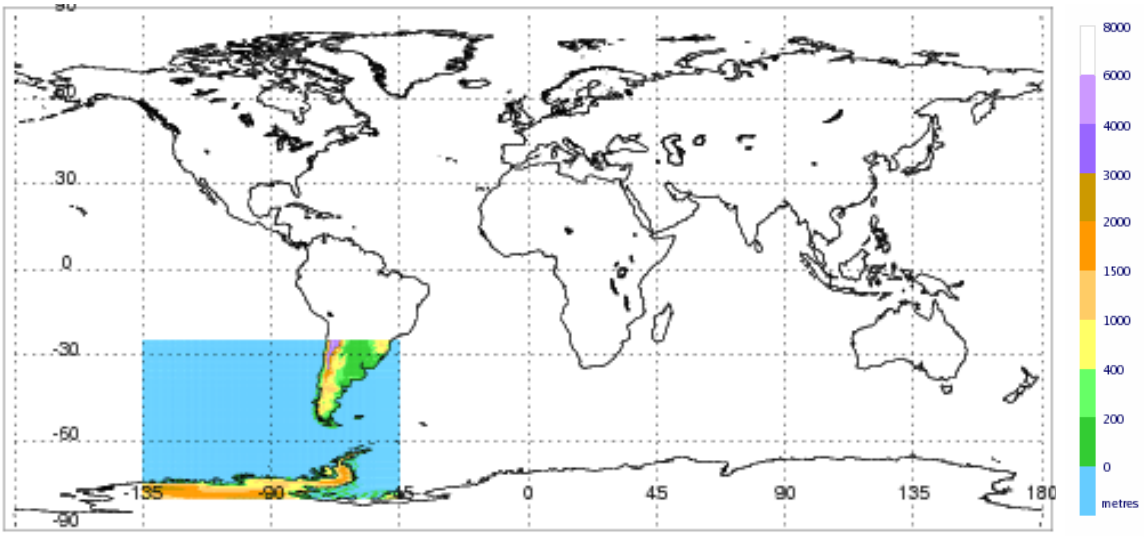
UMG_Mk8_L59PT11pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT11pp** **UMG_Mk8_L59PT11pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT11.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



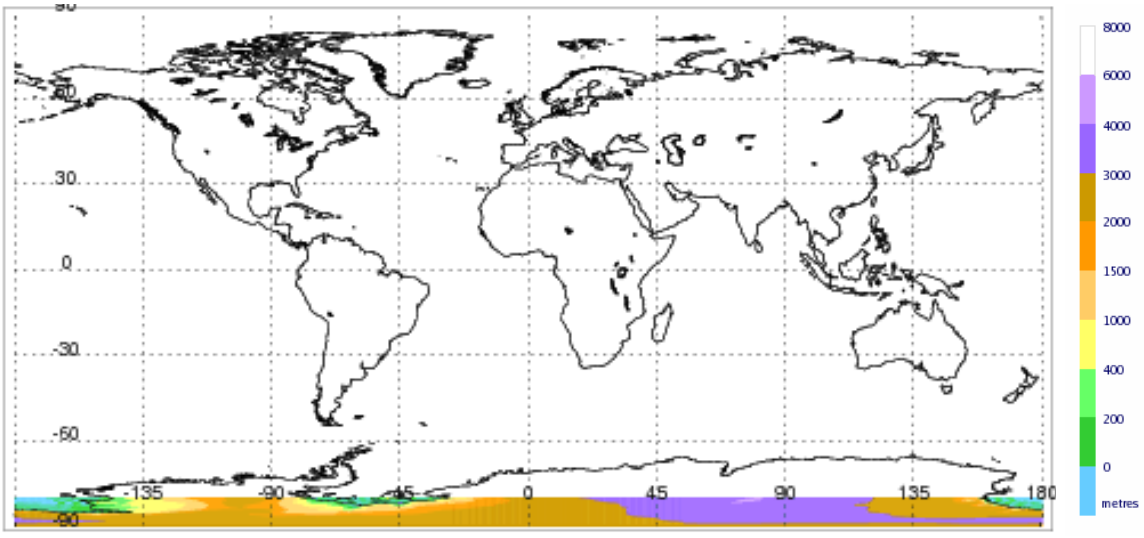
UMG_Mk8_L59PT12pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT12pp** **UMG_Mk8_L59PT12pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT12.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



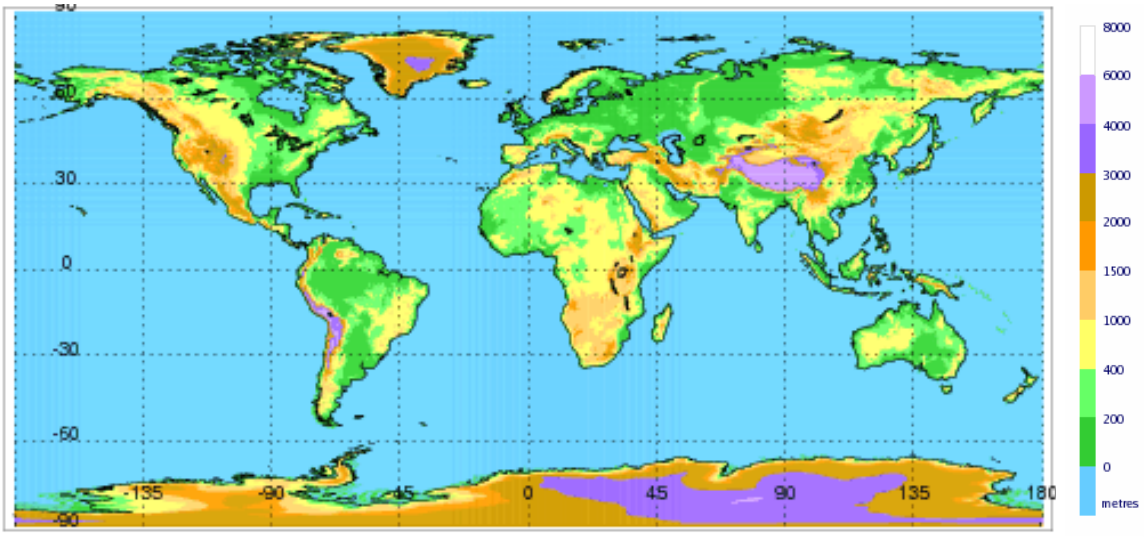
UMG_Mk8_L59PT13pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT13pp** **UMG_Mk8_L59PT13pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT13.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



UMG_Mk8_L59PT14pp			
Start Time	**15/07/2014**	End Time	**25/08/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk8_L59PTpp.txt** **UMG_Mk8_L59PT14pp** **UMG_Mk8_L59PT14pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk8_[IM]_L59PT14.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**30 (192)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1536**	Pole Main Grid nY	**(90.0, 0.0)** **65**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



UMG_Mk9_L59pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59pp.txt** **UMG_Mk9_L59pp** **UMG_Mk8_L59pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**860 (3380)**
Global Data ?	**Yes**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1536**	Pole Main Grid nY	**(90.0, 0.0)** **1152**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



Additional notes:
This is the NWP met definition suitable for use with full 'Mk 9' UM global met data (i.e. with fields covering the full global domain). It is not ordinarily used for NAME runs for reasons of efficiency. Instead, domain-decomposed met data are provided in a sequence of met definitions **UMG_Mk9_L59PT[1-14]pp** (see subsequent pages). The domain-decomposed global met data can be loaded 'on demand' as and when they are required in NAME (by setting the `"Update On Demand?"` variable to `Yes` in the relevant NWP met/flow module instances).

Note that there are also 52-level met definitions **UMG_Mk9_L52PT[1-14]pp**. These are provided for additional efficiency when upper level data (above approximately 20 km) is not required. NAME reads the same (59-level) met files but ignores the uppermost levels.

The characteristics described below for UMG_Mk9_L59pp also apply to each of the domain-decomposed met files for UMG_Mk9_L59PT[1-14]pp.

The only difference between 'Mk 8' and 'Mk 9' global met is a revision to the topography file.
List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate (kg/(m^2 s))
- convective rain rate (kg/(m^2 s))
- dynamic snow rate (kg/(m^2 s))
- convective snow rate (kg/(m^2 s))
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

Fields are separated across two sets of input files: instantaneous, or 'spot', fields and three-hourly mean fields. The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only

the uppermost layer is used by NAME. Canopy height is available on five tiles; canopy water and stomatal conductance are available for the first tile only. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level global version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

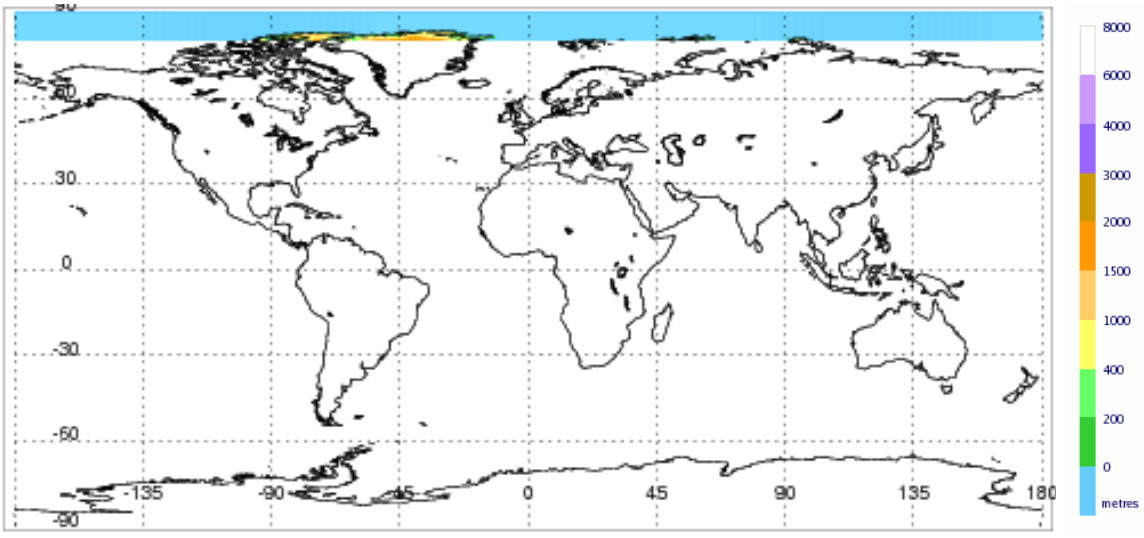
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	6196.6
1	10.0	31	6610.0
2	36.6	32	7036.6
3	76.6	33	7476.6
4	130.0	34	7930.0
5	196.6	35	8396.9
6	276.6	36	8877.3
7	370.0	37	9371.4
8	476.6	38	9879.5
9	596.6	39	10402.2
10	730.0	40	10939.9
11	876.6	41	11493.7
12	1036.6	42	12064.6
13	1210.0	43	12654.2
14	1396.6	44	13264.5
15	1596.6	45	13898.1
16	1810.0	46	14558.2
17	2036.6	47	15248.9
18	2276.6	48	15975.0
19	2530.0	49	16742.5
20	2796.6	50	17558.5
21	3076.6	51	18431.7
22	3370.0	52	19372.3
23	3676.6	53	20392.1
24	3996.6	54	21505.1
25	4330.0	55	22727.8
26	4676.6	56	24078.8
27	5036.6	57	25580.0
28	5410.0	58	27256.1
29	5796.6	59	29135.4

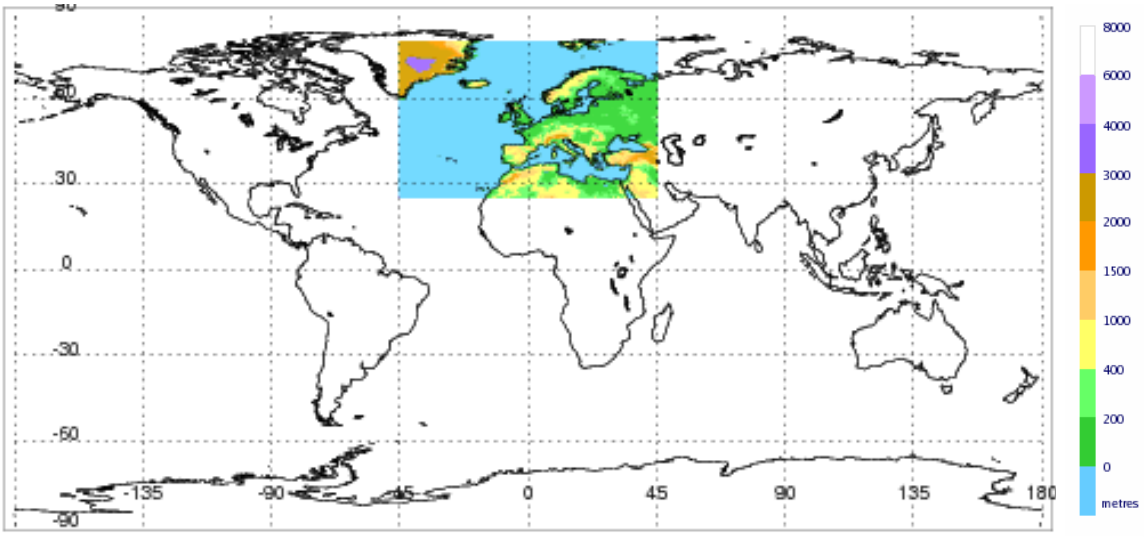
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	6400.0
1	20.0	31	6820.0
2	53.3	32	7253.3
3	100.0	33	7700.0
4	160.0	34	8160.1
5	233.3	35	8633.7
6	320.0	36	9120.9
7	420.0	37	9621.9
8	533.3	38	10137.2
9	660.0	39	10667.2
10	800.0	40	11212.7
11	953.3	41	11774.7
12	1120.0	42	12354.5
13	1300.0	43	12953.9
14	1493.3	44	13575.1
15	1700.0	45	14221.1
16	1920.0	46	14895.4
17	2153.3	47	15602.4
18	2400.0	48	16347.6
19	2660.0	49	17137.4
20	2933.3	50	17979.7
21	3220.0	51	18883.8
22	3520.0	52	19860.7
23	3833.3	53	20923.4
24	4160.0	54	22086.9
25	4500.0	55	23368.7
26	4853.3	56	24789.0
27	5220.0	57	26371.0
28	5600.0	58	28141.2
29	5993.3	59	30129.7

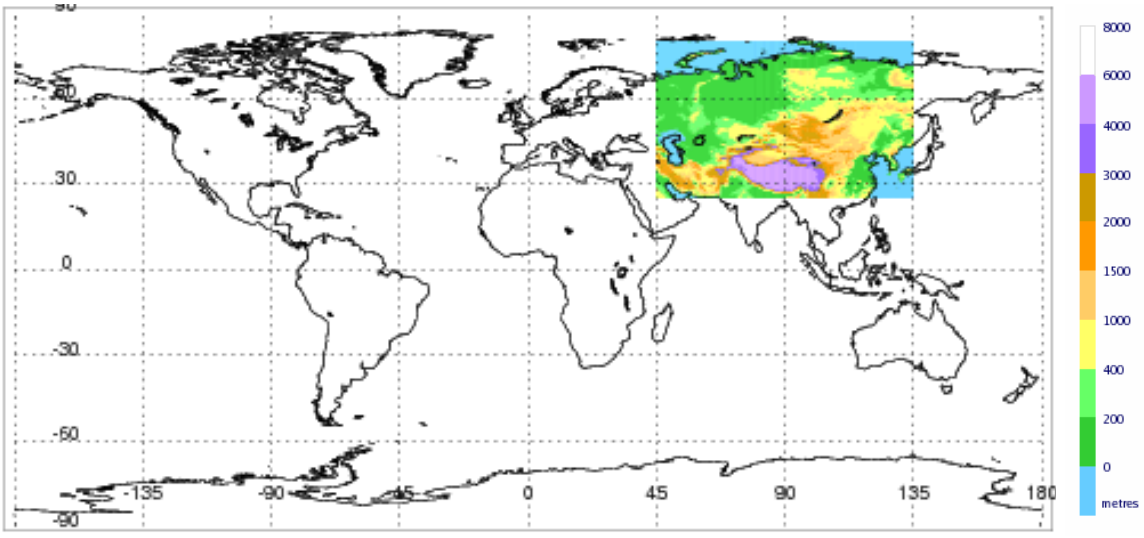
UMG_Mk9_L59PT1pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT1pp** **UMG_Mk8_L59PT1pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT1.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**30 (192)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1536**	Pole Main Grid nY	**(90.0, 0.0)** **65**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



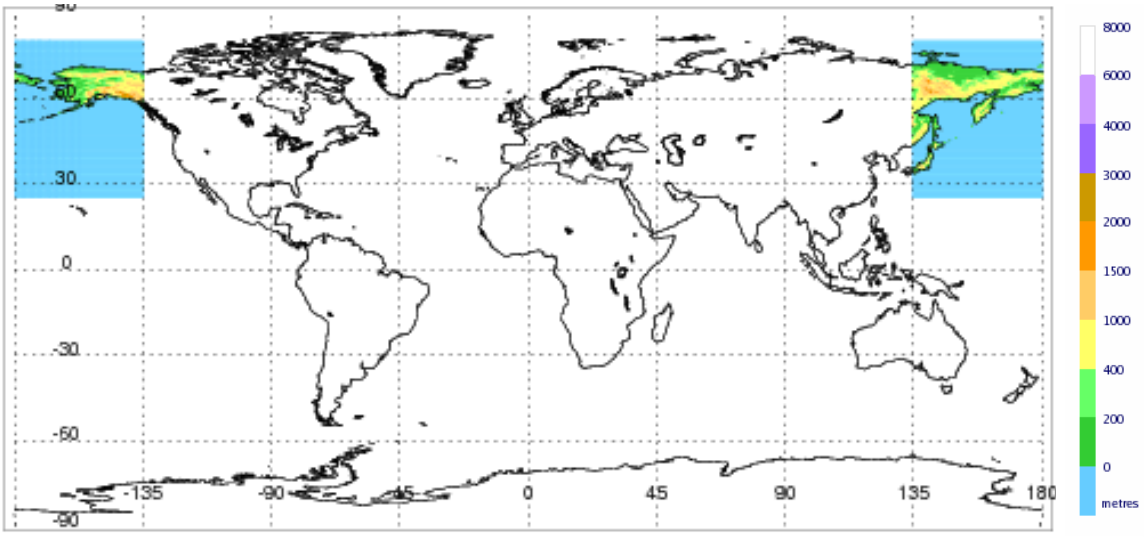
UMG_Mk9_L59PT2pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT2pp** **UMG_Mk8_L59PT2pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT2.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



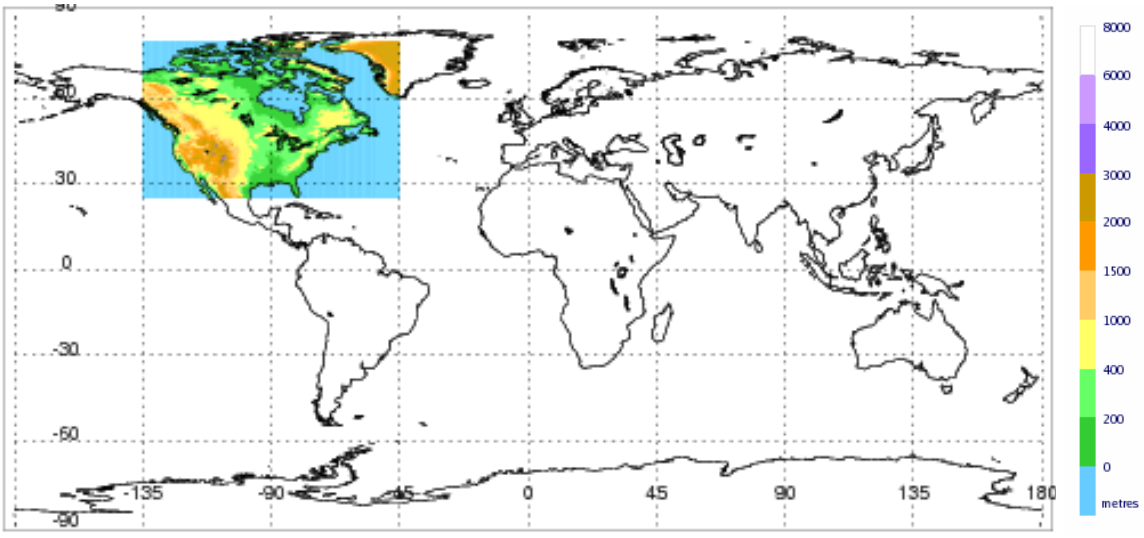
UMG_Mk9_L59PT3pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT3pp** **UMG_Mk8_L59PT3pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT3.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



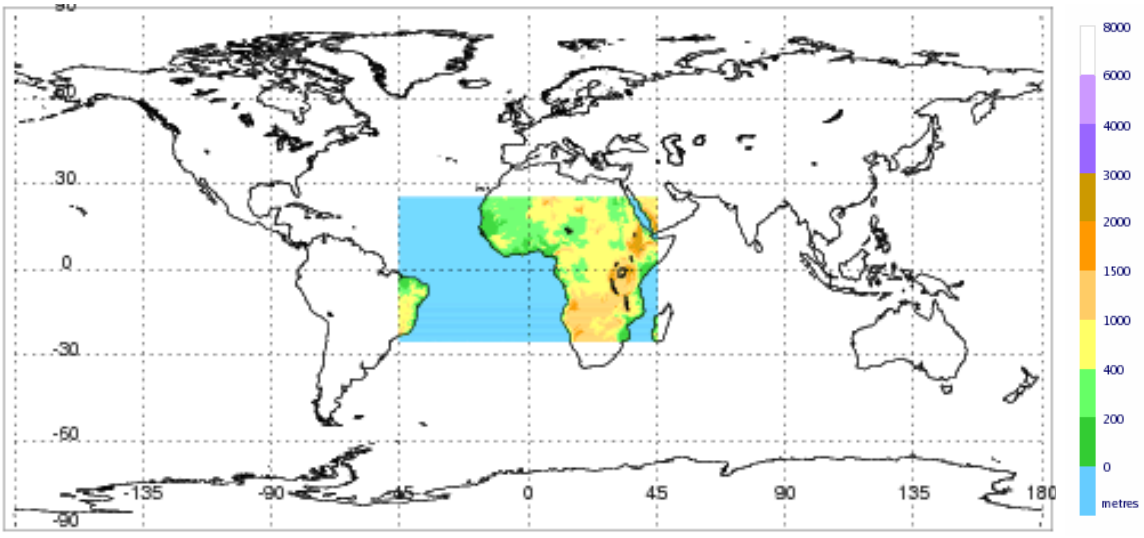
UMG_Mk9_L59PT4pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT4pp** **UMG_Mk8_L59PT4pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT4.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



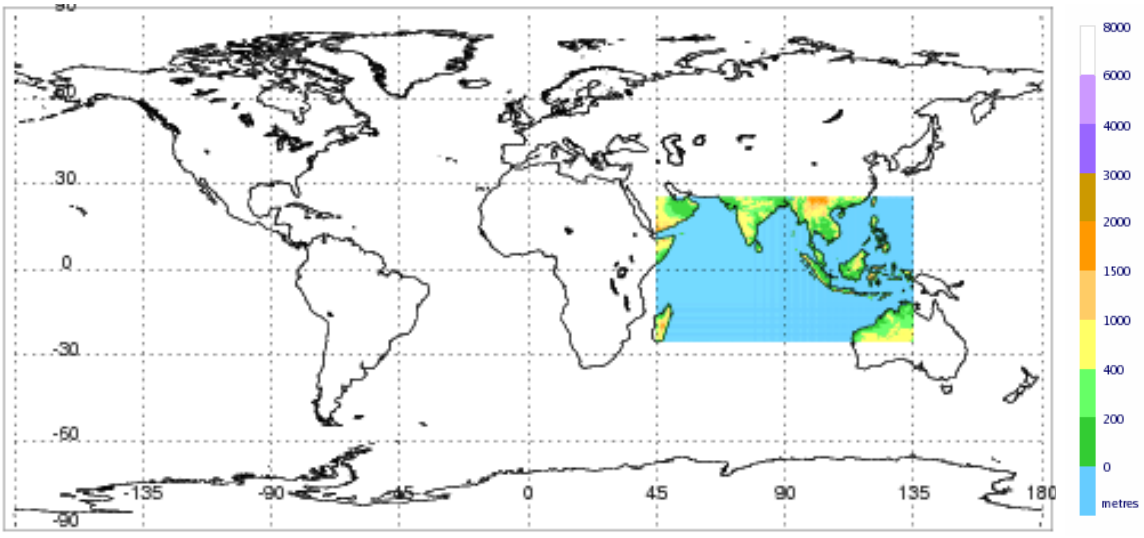
UMG_Mk9_L59PT5pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT5pp** **UMG_Mk8_L59PT5pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT5.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



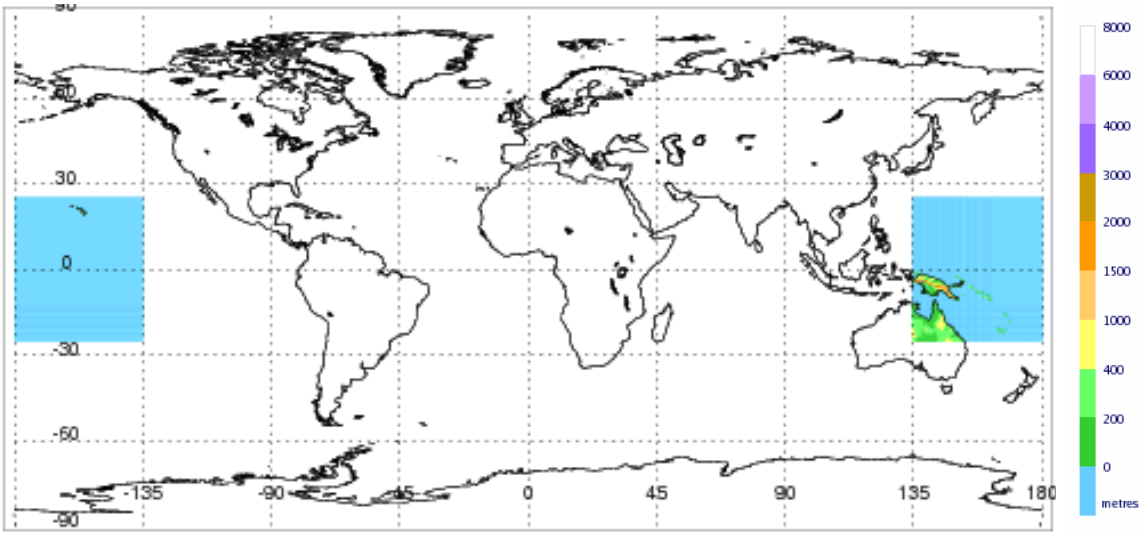
UMG_Mk9_L59PT6pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT6pp** **UMG_Mk8_L59PT6pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT6.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



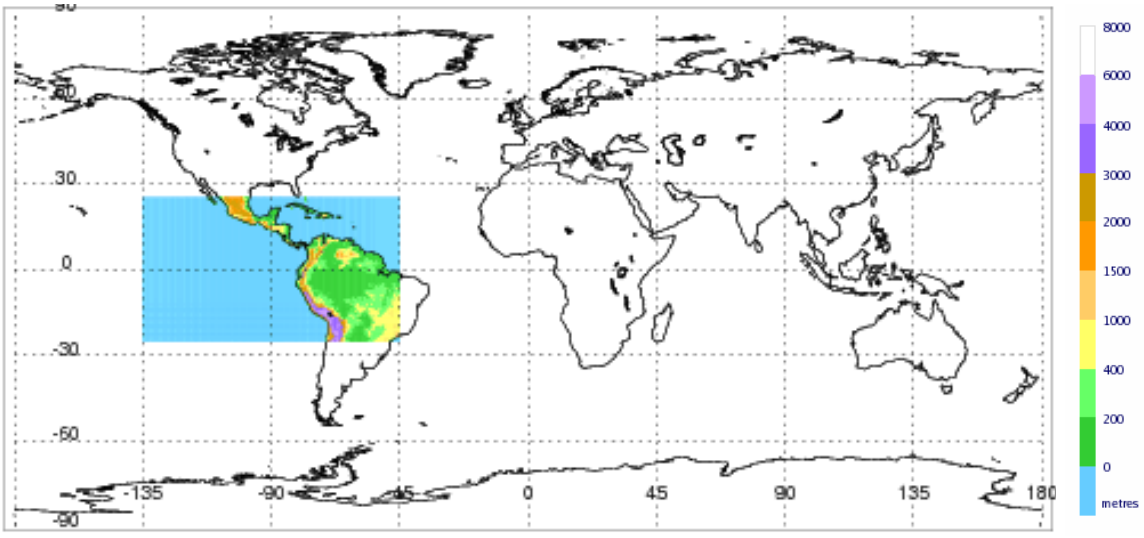
UMG_Mk9_L59PT7pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT7pp** **UMG_Mk8_L59PT7pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT7.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



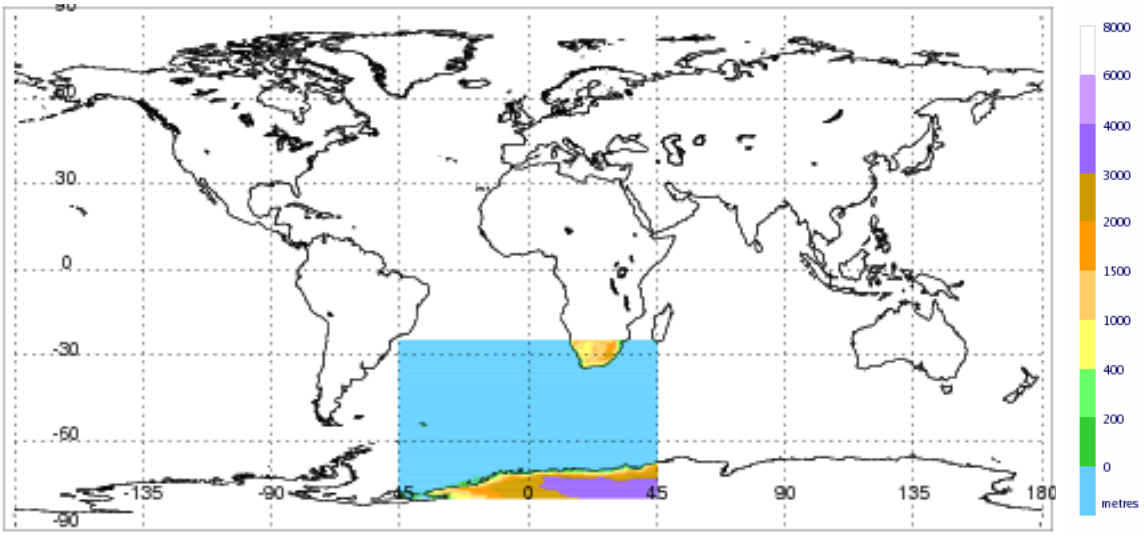
UMG_Mk9_L59PT8pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT8pp** **UMG_Mk8_L59PT8pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT8.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



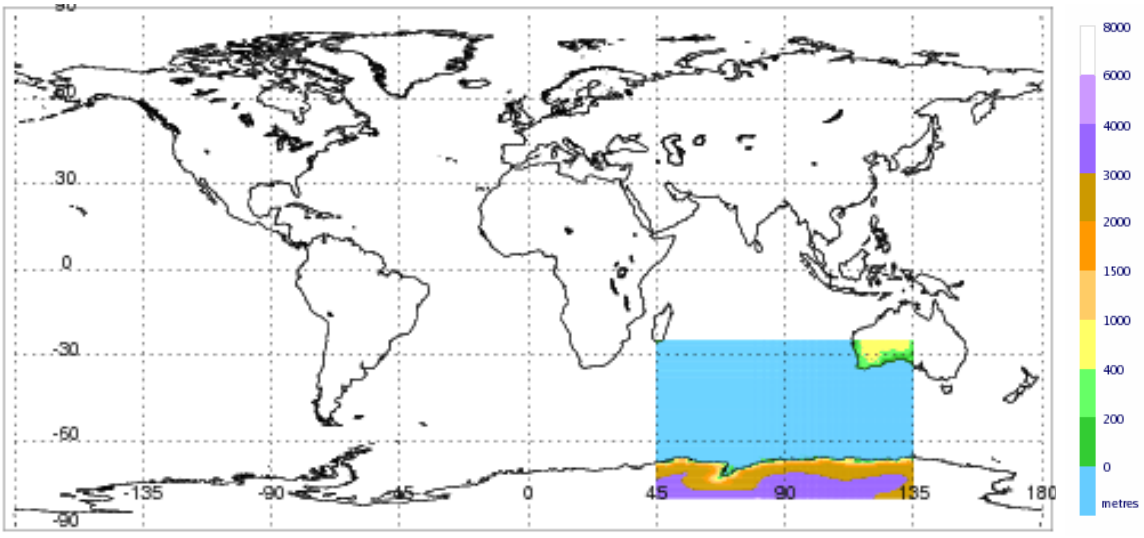
UMG_Mk9_L59PT9pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT9pp** **UMG_Mk8_L59PT9pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT9.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**62 (238)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **322**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



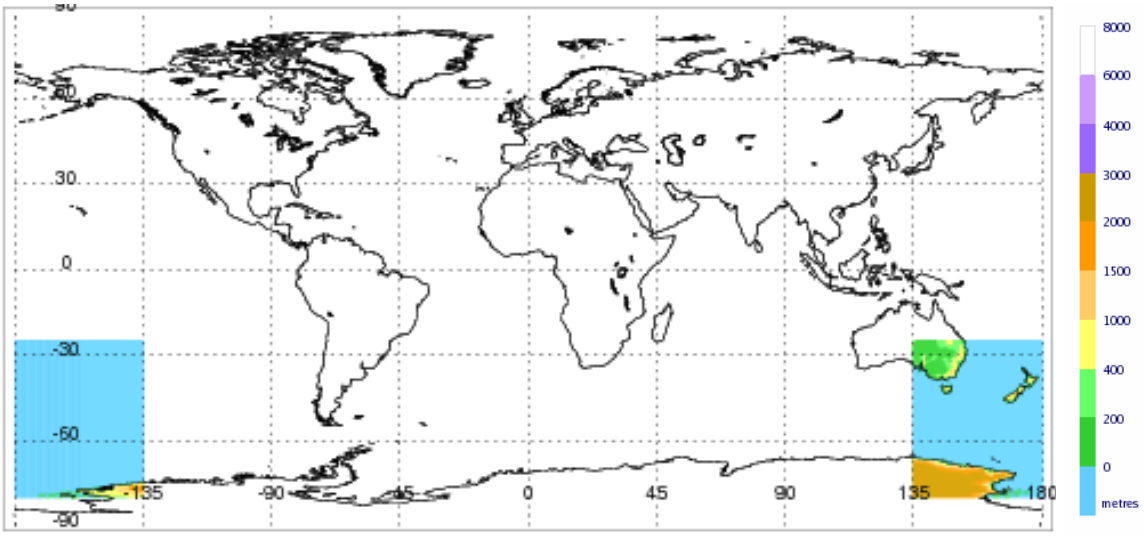
UMG_Mk9_L59PT10pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT10pp** **UMG_Mk8_L59PT10pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT10.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



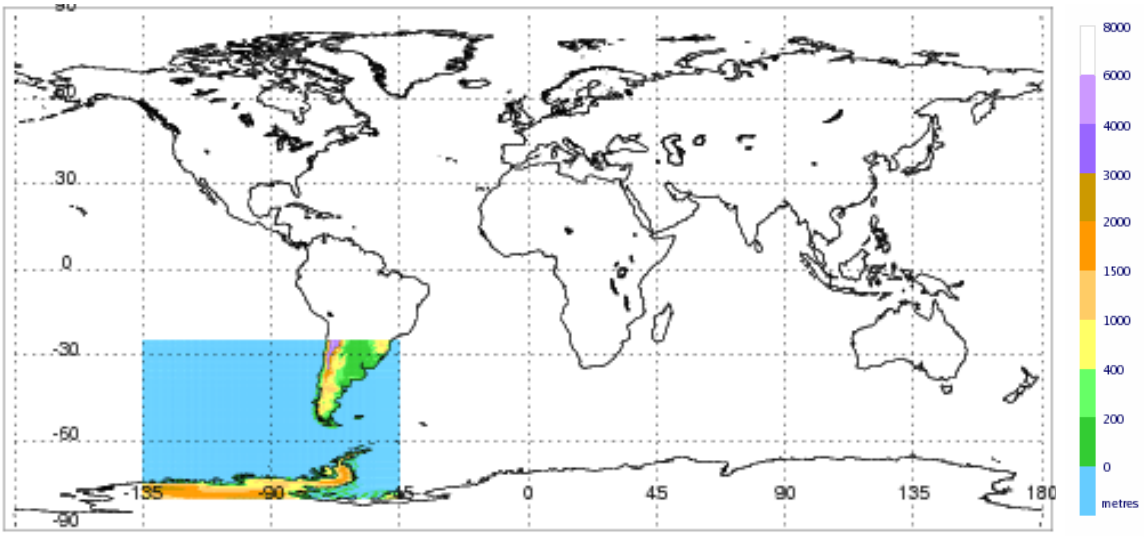
UMG_Mk9_L59PT11pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT11pp** **UMG_Mk8_L59PT11pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT11.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



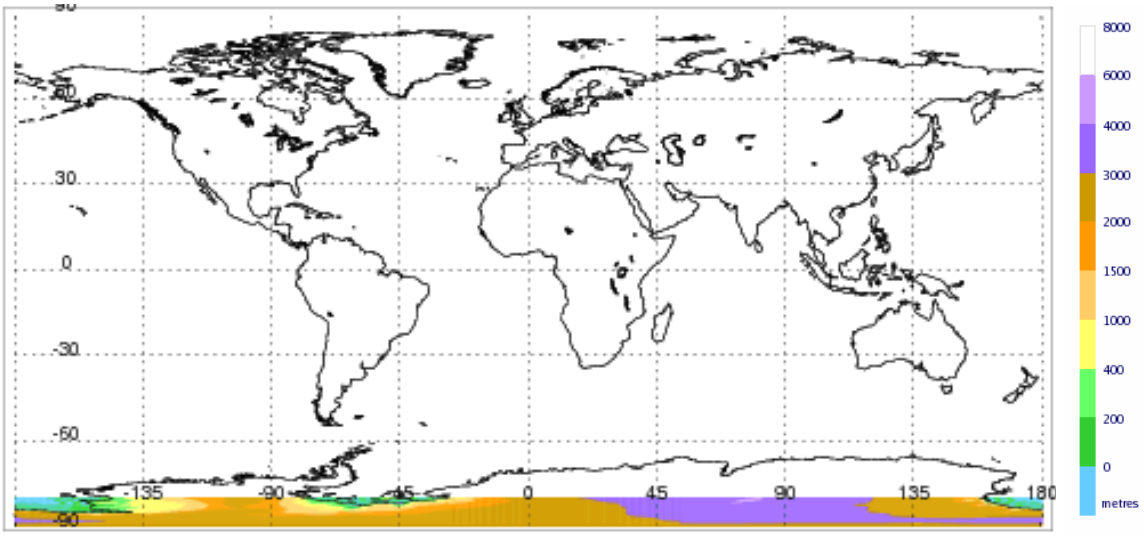
UMG_Mk9_L59PT12pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT12pp** **UMG_Mk8_L59PT12pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT12.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



UMG_Mk9_L59PT13pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT13pp** **UMG_Mk8_L59PT13pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT13.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**68 (262)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **386**	Pole Main Grid nY	**(90.0, 0.0)** **354**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**

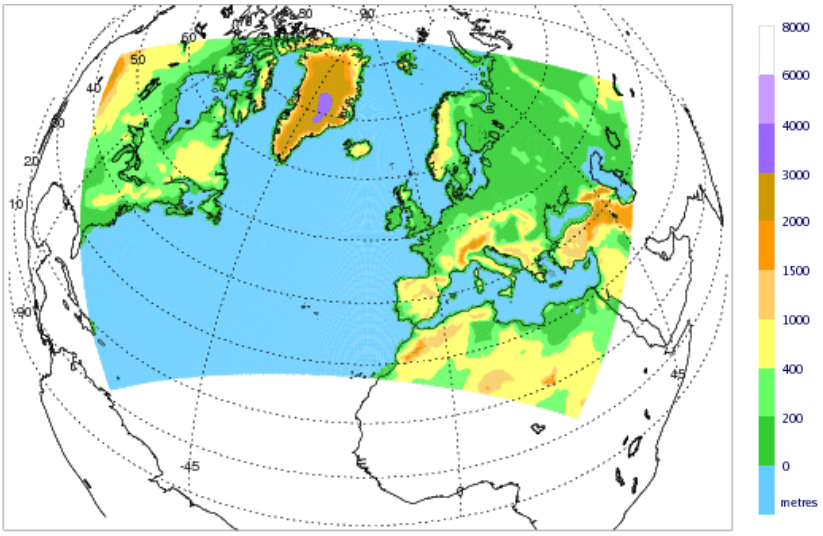


UMG_Mk9_L59PT14pp			
Start Time	**25/08/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMG_Mk9_L59PTpp.txt** **UMG_Mk9_L59PT14pp** **UMG_Mk8_L59PT14pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMG_Mk9_[IM]_L59PT14.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**30 (192)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **1536**	Pole Main Grid nY	**(90.0, 0.0)** **65**
Approx Resolution km	**17**	Actual Resolution °	**0.234375 × 0.15625**
Z-Coord	**Z_eta**	nLevels / Max Height	**59 / 29 km**



A.2 Met Office Limited Area Models over the UK region

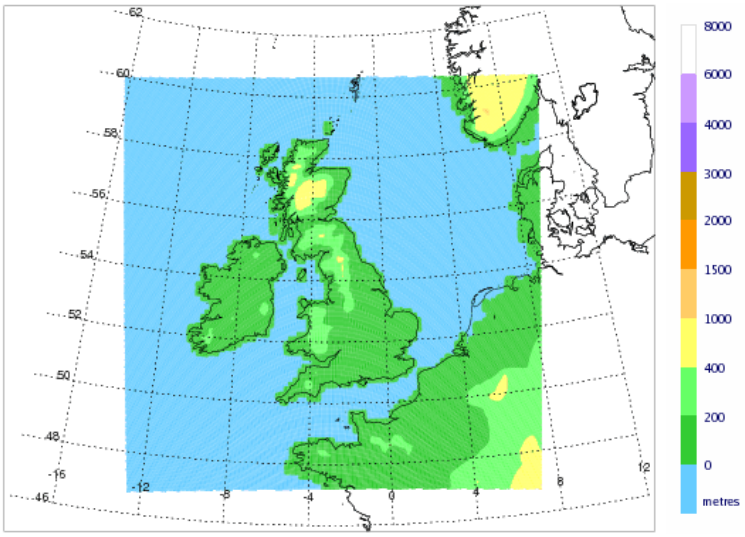
UMV3R			
Start Time	**01/01/1995**	End Time	**01/01/1999**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMV3R.txt** **UMV3R** **UMV3R Whole**		
Met File Name	**HP***DDMMYY*.**REGV3**		
Met File Type	**NameII**	Approx Filesize MB	**32* (90)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**Rot LL** **229**	Pole Main Grid nY	**(30.0, 160.0)** **132**
Approx Resolution km	**50**	Actual Resolution °	**0.4425 × 0.4425**
Z-Coord	**P_eta**	nLevels / Max Height	**10 / ? km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMV3R' regional met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

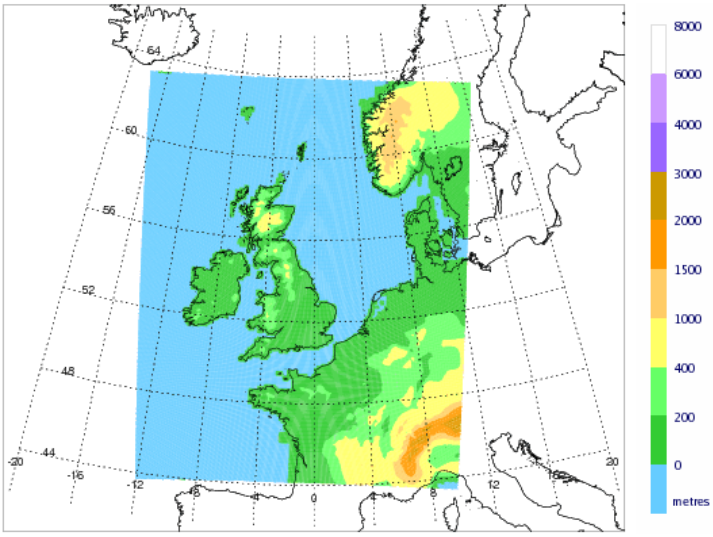
UMV3M			
Start Time	**01/01/1996**	End Time	**31/12/1997**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMV3M.txt** **UMV3M** **UMV3M Whole**		
Met File Name	**HP***DDMMYY*.**MESV3**		
Met File Type	**NameII**	Approx Filesize MB	**50* (150)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **92**	Pole Main Grid nY	**(37.5, 177.5)** **92**
Approx Resolution km	**18**	Actual Resolution °	**0.15 × 0.15**
Z-Coord	**P_eta**	nLevels / Max Height	**24 / ? km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMV3M' mesoscale met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

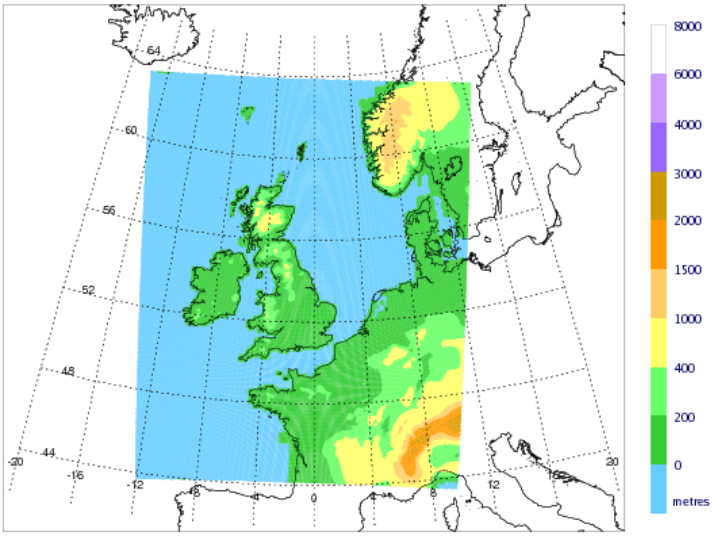
UMHM			
Start Time	**01/01/1999**	End Time	**09/02/2001**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMHM.txt** **UMHM** **UMHH2001M Whole**		
Met File Name	**HP***DDMMYY*.**MESH**		
Met File Type	**NameII**	Approx Filesize MB	**70* (220)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**Rot LL** **146**	Pole Main Grid nY	**(37.5, 177.5)** **182**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**P_eta**	nLevels / Max Height	**34 / ? km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMHM' mesoscale met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

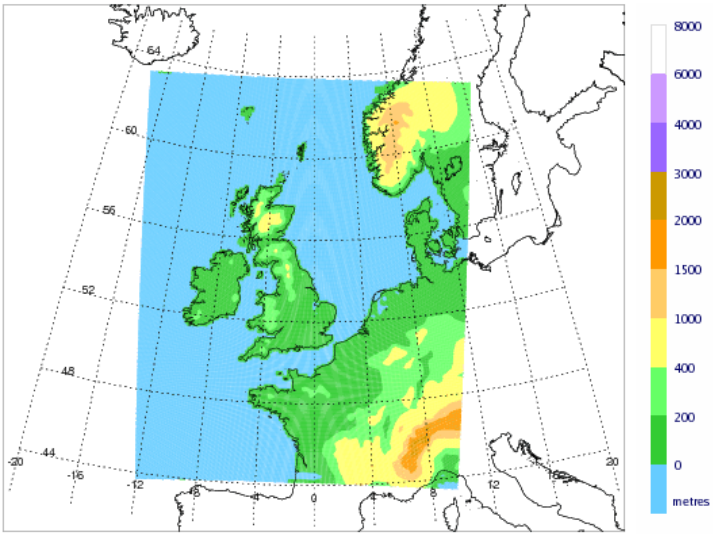
UMH2001M			
Start Time	**01/01/2001**	End Time	**07/08/2002**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMH2001M.txt** **UMH2001M** **UMHH2001M Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**MESH2001**		
Met File Type	**NameII**	Approx Filesize MB	**8 (28)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **146**	Pole Main Grid nY	**(37.5, 177.5)** **182**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**P_eta**	nLevels / Max Height	**34 / ? km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UMH2001M' mesoscale met data. It uses the 'old' UM dynamical scheme with a pressure-based, terrain-following eta vertical coordinate system. Additional information will be added here later ...

(See older documentation for further details).

UM5M			
Start Time	**07/08/2002**	End Time	**04/03/2009**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM5MDt1.txt** **UM5M** **UM5M Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**MESUM5**		
Met File Type	**NameII**	Approx Filesize MB	**7 (28)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **146**	Pole Main Grid nY	**(37.5, 177.5)** **182**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



Additional notes:
This is the NWP met definition suitable for use with archived 'UM5M' mesoscale met data. These files consist of output from a 12 km UK mesoscale model during the first part of the period followed by a UK cut-out from the 12 km North Atlantic and European model at later times (the cut-out was designed to emulate the previous data set).

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- roughness length
- boundary layer depth

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). Remaining fields are defined on single levels or are level-independent.

Vertical levels:
38-level mesoscale/NAE version of UM with a model top at $\sim$ 39 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

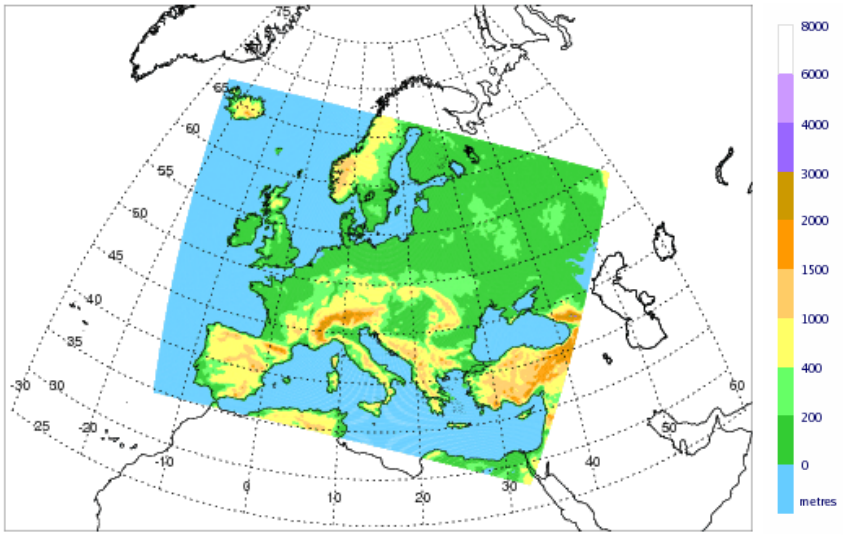
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.4
12	2650.0	28	15137.7
13	3130.0	29	16285.0
14	3650.0	30	17507.0
15	4210.0	31	18820.8

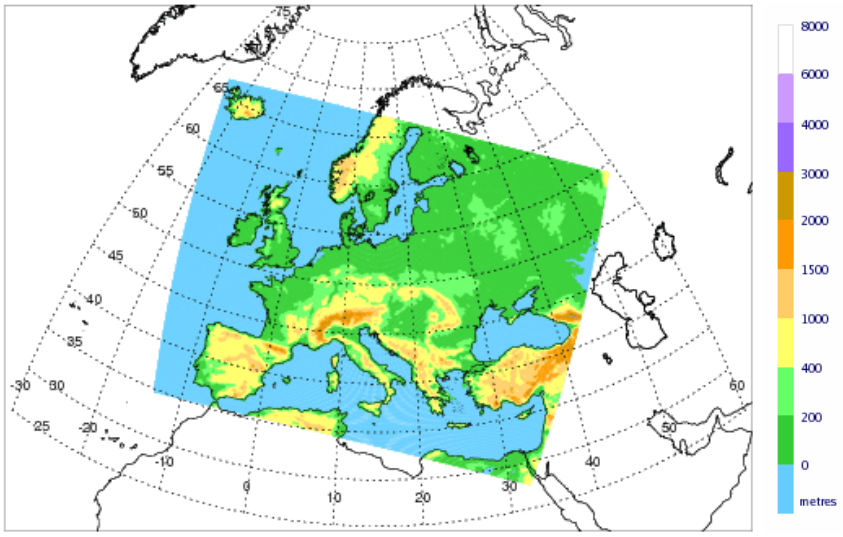
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.8
12	2880.0	28	15694.6
13	3380.0	29	16875.3
14	3920.0	30	18138.6
15	4500.0	31	19503.0

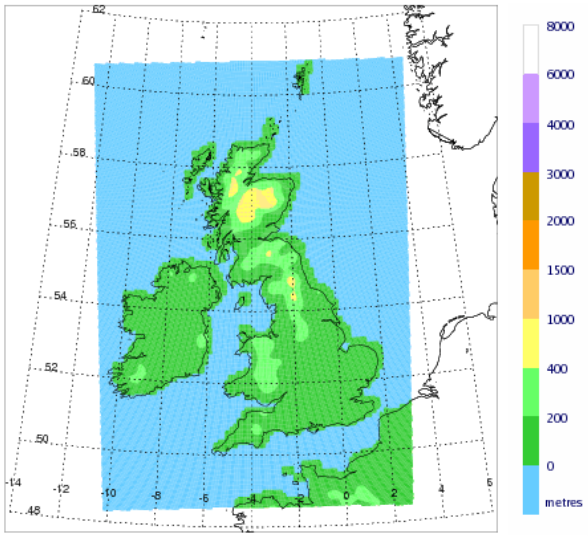
UM6REGNAEDt3			
Start Time	**12/12/2005**	End Time	**13/06/2006**
Met Definition File Name	**MetDefnUM6REGNAEDt3pp.txt**		
Met Definition Name	**UM6REGNAEDt3**		
Flow Domain	**UM6REGNAE Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**REGNAEUM6.pp**		
Met File Type	**PP**	Approx Filesize MB	**25 (84)**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord	**Rot LL**	Pole	**(37.5, 177.5)**
Main Grid nX	**380**	Main Grid nY	**300**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**Z_eta**	nLevels / Max Height	**21 / 8.5 km**



UM6REGNAE			
Start Time	**07/09/2006**	End Time	**09/03/2010**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM6REGNAEpp.txt** **UM6REGNAE** **UM6REGNAE Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**REGNAEUM6.pp**		
Met File Type	**PP**	Approx Filesize MB	**28 (84)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **380**	Pole Main Grid nY	**(37.5, 177.5)** **300**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**Z_eta**	nLevels / Max Height	**21 / 8.5 km**



UMNAE_Mk2_L4UKpp			
Start Time	**01/01/2007**	End Time	**09/03/2010**
Met Definition File Name	**MetDefnUMNAE_Mk2_L4UKpp.txt**		
Met Definition Name	**UMNAE_Mk2_L4UKpp**		
Flow Domain	**UMNAE_Mk2_L4UKpp Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**UK12KM.pp**		
Met File Type	**PP**	Approx Filesize MB	**0.5 (2)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **80**	Pole Main Grid nY	**(37.5, 177.5)** **115**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**Z_eta**	nLevels / Max Height	**4 / 250 m**



Additional notes:
This is the NWP met definition suitable for use with the 'UK 12 km' cut-out from 'Mk 2' NAE met data files. This covers the UK area and extends only to the lowest few model levels. It is intended to be used only in fast met-extraction runs of NAME.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
38-level NAE version of UM with a model top at $\sim$ 39 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 38-level global model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

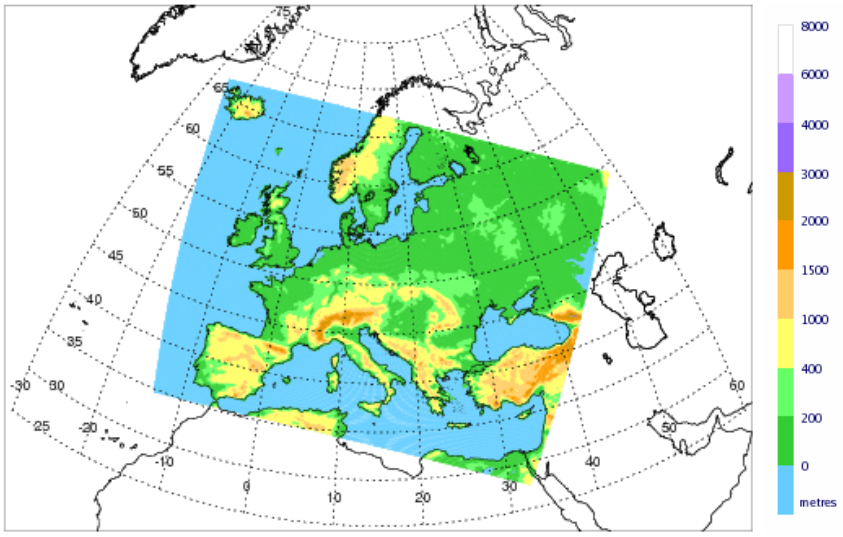
UV levels

Level index	*Height at sea points*
1	10.0
2	50.0
3	130.0
4	250.0

W levels

Level index	*Height at sea points*
0	0.0
1	20.0
2	80.0
3	180.0
4	320.0

UMNAE_Mk3_L42Rpp			
Start Time	**09/03/2010**	End Time	**10/01/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMNAE_Mk3_L42Rpp.txt** **UMNAE_Mk3_L42Rpp** **UMNAE_Mk3_L42Rpp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMNAE_Mk3_L42R.pp**		
Met File Type	**PP**	Approx Filesize MB	**50 (170)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **380**	Pole Main Grid nY	**(37.5, 177.5)** **300**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**Z_eta**	nLevels / Max Height	**42 / 12 km**



Additional notes:
This is the NWP met definition suitable for use with the 'regional' cut-out from 'Mk 3' NAE met data files. This covers the eastern part of the NAE domain extending over the eastern North Atlantic and the European region. It is also limited in the vertical to a maximum height of approximately 12 km.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height, canopy water and stomatal conductance are available for five tiles. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level NAE version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 70-level global model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

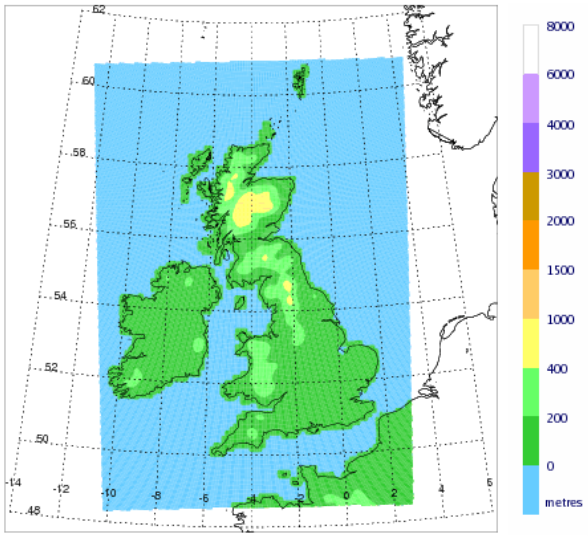
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	6196.6
1	10.0	31	6610.0
2	36.6	32	7036.6
3	76.6	33	7476.6
4	130.0	34	7930.0
5	196.6	35	8396.9
6	276.6	36	8877.3
7	370.0	37	9371.4
8	476.6	38	9879.5
9	596.6	39	10402.2
10	730.0	40	10939.9
11	876.6	41	11493.7
12	1036.6	42	12064.6
13	1210.0		
14	1396.6		
15	1596.6		
16	1810.0		
17	2036.6		
18	2276.6		
19	2530.0		
20	2796.6		
21	3076.6		
22	3370.0		
23	3676.6		
24	3996.6		
25	4330.0		
26	4676.6		
27	5036.6		
28	5410.0		
29	5796.6		

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	6400.0
1	20.0	31	6820.0
2	53.3	32	7253.3
3	100.0	33	7700.0
4	160.0	34	8160.1
5	233.3	35	8633.7
6	320.0	36	9120.9
7	420.0	37	9621.9
8	533.3	38	10137.2
9	660.0	39	10667.2
10	800.0	40	11212.7
11	953.3	41	11774.7
12	1120.0	42	12354.5
13	1300.0		
14	1493.3		
15	1700.0		
16	1920.0		
17	2153.3		
18	2400.0		
19	2660.0		
20	2933.3		
21	3220.0		
22	3520.0		
23	3833.3		
24	4160.0		
25	4500.0		
26	4853.3		
27	5220.0		
28	5600.0		
29	5993.3		

UMNAE_Mk3_L6UKpp			
Start Time	**09/03/2010**	End Time	**10/01/2014**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUMNAE_Mk3_L6UKpp.txt** **UMNAE_Mk3_L6UKpp** **UMNAE_Mk3_L6UKpp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UMNAE_Mk3_L6UK.pp**		
Met File Type	**PP**	Approx Filesize MB	**1 (3)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **80**	Pole Main Grid nY	**(37.5, 177.5)** **115**
Approx Resolution km	**12**	Actual Resolution °	**0.11 × 0.11**
Z-Coord	**Z_eta**	nLevels / Max Height	**6 / 250 m**



Additional notes:
This is the NWP met definition suitable for use with the 'UK 12 km' cut-out from 'Mk 3' NAE met data files. This covers the UK area and extends only to the lowest few model levels. It is intended to be used only in fast met-extraction runs of NAME.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height, canopy water and stomatal conductance are available for five tiles. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level NAE version of UM with a model top at 80 km and first constant-height rho level at level 50 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 70-level global model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

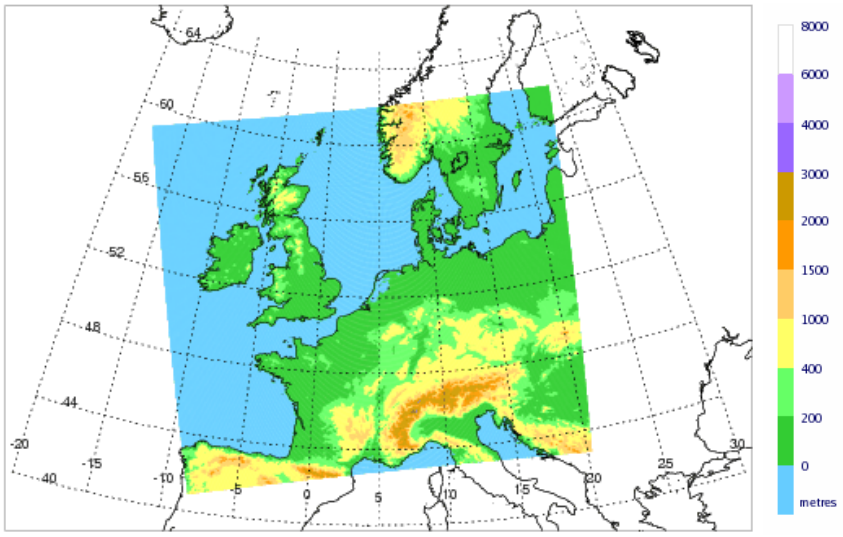
UV levels

Level index	*Height at sea points*
1	10.0
2	36.6
3	76.6
4	130.0
5	196.6
6	276.6

W levels

Level index	*Height at sea points*
0	0.0
1	20.0
2	53.3
3	100.0
4	160.0
5	233.3
6	320.0

UME4_Mk1_L57NWpp			
Start Time	**01/01/2014**	End Time	**03/02/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUME4_Mk1_L57NWpp.txt** **UME4_Mk1_L57NWpp** **UME4_Mk1_L57NWpp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UME4_Mk1_L57NW.pp**		
Met File Type	**PP**	Approx Filesize MB	**150 (480)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **535**	Pole Main Grid nY	**(41.0, 193.0)** **480**
Approx Resolution km	**4**	Actual Resolution °	**0.04 × 0.04**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



Additional notes:
This is the NWP met definition suitable for use with the 'NW Europe' cut-out met files associated with the 'Mk 1' Euro4 configuration of the Unified Model. It covers a region over the UK and north-west Europe. It is also limited in the vertical to a maximum height of approximately 12 km.

The Euro4 is a downscaling LAM over the European region with an approximate horizontal resolution of 4 km.

Data volumes for the full extent of the Euro4 domain are too large for practical NAME runs and so for reasons of efficiency two 'cut-out' data sets are supplied for NAME, for a) NW Europe and b) the immediate vicinity around Iceland.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height, canopy water and stomatal conductance are available for five tiles. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level Euro4 version of UM with a model top at 40 km and first constant-height rho level at level 62 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 70-level UK4/UKV model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

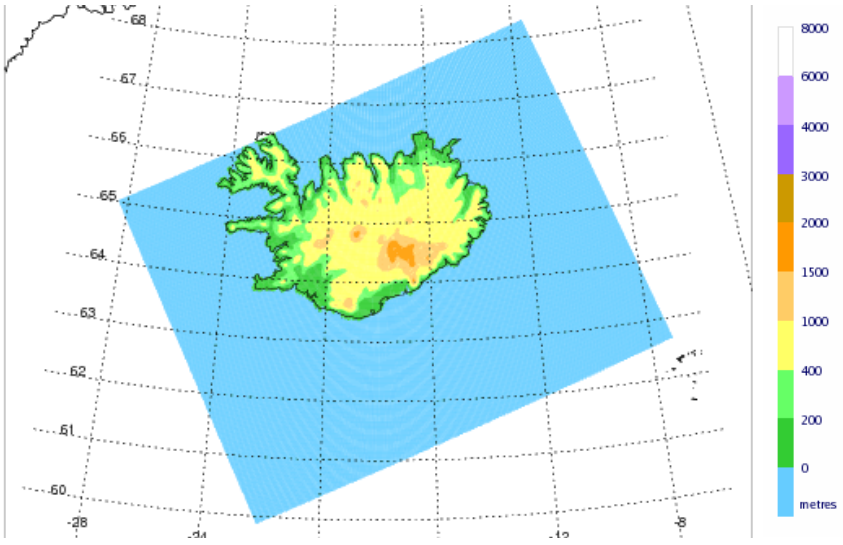
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	3093.3
1	2.5	31	3300.0
2	13.3	32	3513.3
3	33.3	33	3733.3
4	60.0	34	3960.0
5	93.3	35	4193.3
6	133.3	36	4433.3
7	180.0	37	4680.0
8	233.3	38	4933.3
9	293.3	39	5193.3
10	360.0	40	5460.0
11	433.3	41	5733.3
12	513.3	42	6013.3
13	600.0	43	6300.1
14	693.3	44	6593.8
15	793.3	45	6895.2
16	900.0	46	7205.1
17	1013.3	47	7525.1
18	1133.3	48	7857.4
19	1260.0	49	8204.8
20	1393.3	50	8570.7
21	1533.3	51	8959.9
22	1680.0	52	9377.9
23	1833.3	53	9831.2
24	1993.3	54	10328.0
25	2160.0	55	10877.6
26	2333.3	56	11490.8
27	2513.3	57	12180.4
28	2700.0		
29	2893.3		

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	3195.0
1	5.0	31	3405.0
2	21.7	32	3621.7
3	45.0	33	3845.0
4	75.0	34	4075.0
5	111.7	35	4311.7
6	155.0	36	4555.0
7	205.0	37	4805.0
8	261.7	38	5061.7
9	325.0	39	5325.0
10	395.0	40	5595.0
11	471.7	41	5871.7
12	555.0	42	6155.0
13	645.0	43	6445.1
14	741.7	44	6742.5
15	845.0	45	7047.8
16	955.0	46	7362.4
17	1071.7	47	7687.9
18	1195.0	48	8026.9
19	1325.0	49	8382.6
20	1461.7	50	8758.9
21	1605.0	51	9160.9
22	1755.0	52	9594.8
23	1911.7	53	10067.7
24	2075.0	54	10588.3
25	2245.0	55	11166.8
26	2421.7	56	11814.9
27	2605.0	57	12546.0
28	2795.0		
29	2991.7		

UME4_Mk1_L57ICEpp			
Start Time	**01/01/2014**	End Time	**03/02/2015**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUME4_Mk1_L57ICEpp.txt** **UME4_Mk1_L57ICEpp** **UME4_Mk1_L57ICEpp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UME4_Mk1_L57ICE.pp**		
Met File Type	**PP**	Approx Filesize MB	**15 (56)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **200**	Pole Main Grid nY	**(41.0, 193.0)** **150**
Approx Resolution km	**4**	Actual Resolution °	**0.04 × 0.04**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



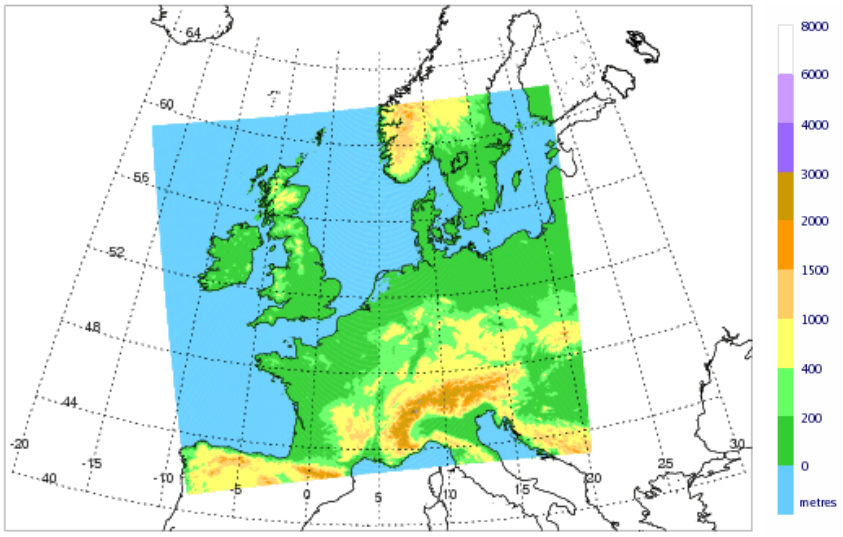
Additional notes:
This is the NWP met definition suitable for use with the 'Iceland' cut-out met files associated with the 'Mk 1' Euro4 configuration of the Unified Model. It covers a region in the immediate vicinity around Iceland. It is also limited in the vertical to a maximum height of approximately 12 km.

The Euro4 is a downscaling LAM over the European region with an approximate horizontal resolution of 4 km.

Data volumes for the full extent of the Euro4 domain are too large for practical NAME runs and so for reasons of efficiency two 'cut-out' data sets are supplied for NAME, for a) NW Europe and b) Iceland.

See notes for the 'NW Europe' cut-out met files for further details.

UME4_Mk2_L57NWpp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUME4_Mk2_L57NWpp.txt** **UME4_Mk2_L57NWpp** **UME4_Mk2_L57NWpp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UME4_Mk2_L57NW.pp**		
Met File Type	**PP**	Approx Filesize MB	**150 (480)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **535**	Pole Main Grid nY	**(41.0, 193.0)** **480**
Approx Resolution km	**4**	Actual Resolution °	**0.04 × 0.04**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



Additional notes:
This is the NWP met definition suitable for use with the 'NW Europe' cut-out met files associated with the 'Mk 2' Euro4 configuration of the Unified Model (which is the first Euro4 configuration to use the ENDGame dynamical core in the UM). It covers a region over the UK and north-west Europe. It is also limited in the vertical to a maximum height of approximately 12 km.

The Euro4 is a downscaling LAM over the European region with an approximate horizontal resolution of 4 km.

Data volumes for the full extent of the Euro4 domain are too large for practical NAME runs and so for reasons of efficiency two 'cut-out' data sets are supplied for NAME, for a) NW Europe and b) the immediate vicinity around Iceland.

30/06/2015 – operational change implemented to correct a reconfiguration issue with the Euro4 model that produced excess moisture in parts of the atmosphere. This is believed to have been a large contributory factor in excessive cloudiness reported since PS35. The change was implemented from the 06 UTC run of the Euro4 model on June 30. Users should expect to see some small changes in model behaviour (probably most noticeable during cloudy high pressure situations) but in many situations will notice no change.
List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate (kg/(m^2 s))
- convective rain rate (kg/(m^2 s))
- dynamic snow rate (kg/(m^2 s))
- convective snow rate (kg/(m^2 s))
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height, canopy water and stomatal conductance are available for five tiles. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level Euro4 version of UM with a model top at 40 km and first constant-height rho level at level 62 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 70-level UK4/UKV model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

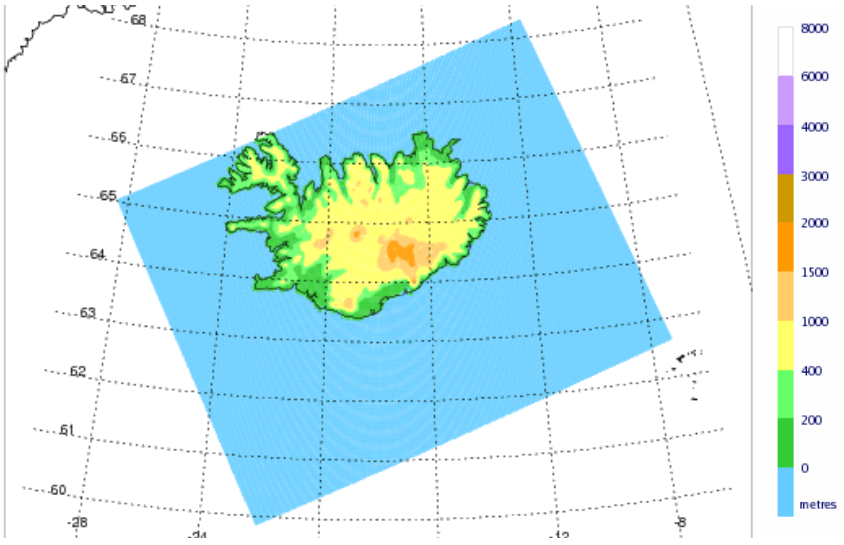
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	3093.3
1	2.5	31	3300.0
2	13.3	32	3513.3
3	33.3	33	3733.3
4	60.0	34	3960.0
5	93.3	35	4193.3
6	133.3	36	4433.3
7	180.0	37	4680.0
8	233.3	38	4933.3
9	293.3	39	5193.3
10	360.0	40	5460.0
11	433.3	41	5733.3
12	513.3	42	6013.3
13	600.0	43	6300.1
14	693.3	44	6593.8
15	793.3	45	6895.2
16	900.0	46	7205.1
17	1013.3	47	7525.1
18	1133.3	48	7857.4
19	1260.0	49	8204.8
20	1393.3	50	8570.7
21	1533.3	51	8959.9
22	1680.0	52	9377.9
23	1833.3	53	9831.2
24	1993.3	54	10328.0
25	2160.0	55	10877.6
26	2333.3	56	11490.8
27	2513.3	57	12180.4
28	2700.0		
29	2893.3		

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	3195.0
1	5.0	31	3405.0
2	21.7	32	3621.7
3	45.0	33	3845.0
4	75.0	34	4075.0
5	111.7	35	4311.7
6	155.0	36	4555.0
7	205.0	37	4805.0
8	261.7	38	5061.7
9	325.0	39	5325.0
10	395.0	40	5595.0
11	471.7	41	5871.7
12	555.0	42	6155.0
13	645.0	43	6445.1
14	741.7	44	6742.5
15	845.0	45	7047.8
16	955.0	46	7362.4
17	1071.7	47	7687.9
18	1195.0	48	8026.9
19	1325.0	49	8382.6
20	1461.7	50	8758.9
21	1605.0	51	9160.9
22	1755.0	52	9594.8
23	1911.7	53	10067.7
24	2075.0	54	10588.3
25	2245.0	55	11166.8
26	2421.7	56	11814.9
27	2605.0	57	12546.0
28	2795.0		
29	2991.7		

UME4_Mk2_L57ICEpp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUME4_Mk2_L57ICEpp.txt** **UME4_Mk2_L57ICEpp** **UME4_Mk2_L57ICEpp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UME4_Mk2_L57ICE.pp**		
Met File Type	**PP**	Approx Filesize MB	**15 (56)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **200**	Pole Main Grid nY	**(41.0, 193.0)** **150**
Approx Resolution km	**4**	Actual Resolution °	**0.04 × 0.04**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



Additional notes:
This is the NWP met definition suitable for use with the 'Iceland' cut-out met files associated with the 'Mk 2' Euro4 configuration of the Unified Model (which is the first Euro4 configuration to use the ENDGame dynamical core in the UM). It covers a region in the immediate vicinity around Iceland. It is also limited in the vertical to a maximum height of approximately 12 km.

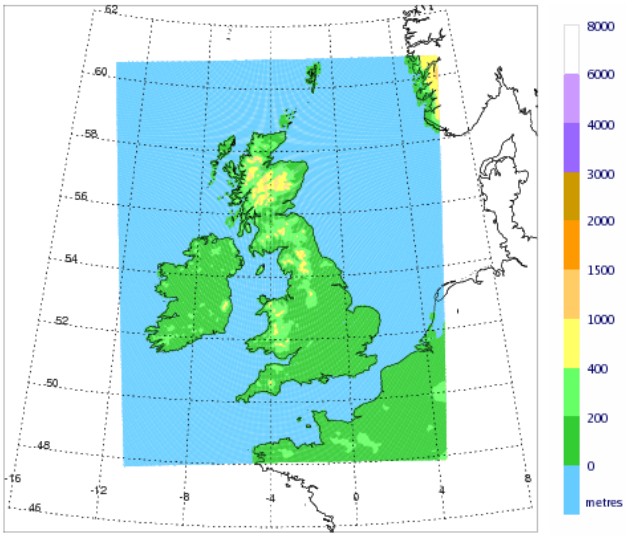
The Euro4 is a downscaling LAM over the European region with an approximate horizontal resolution of 4 km.

Data volumes for the full extent of the Euro4 domain are too large for practical NAME runs and so for reasons of efficiency two 'cut-out' data sets are supplied for NAME, for a) NW Europe and b) Iceland.

30/06/2015 – operational change implemented to correct a reconfiguration issue with the Euro4 model that produced excess moisture in parts of the atmosphere. This is believed to have been a large contributory factor in excessive cloudiness reported since PS35. The change was implemented from the 06 UTC run of the Euro4 model on June 30. Users should expect to see some small changes in model behaviour (probably most noticeable during cloudy high pressure situations) but in many situations will notice no change.

See notes for the 'NW Europe' cut-out met files for further details.

UM4kmMk2			
Start Time	**31/12/2006**	End Time	**27/11/2007**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM4kmMk2pp.txt** **UM4kmMk2** **UM4kmMk2 Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**4KM2_UM6.pp**		
Met File Type	**PP**	Approx Filesize MB	**25 (110)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **288**	Pole Main Grid nY	**(37.5, 177.5)** **360**
Approx Resolution km	**4**	Actual Resolution °	**0.036 × 0.036**
Z-Coord	**Z_eta**	nLevels / Max Height	**31 / 19 km**



List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- roughness length
- boundary layer depth

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). Remaining fields are defined on single levels or are level-independent.

Vertical levels:
38-level UK4 version of UM with a model top at $\sim$ 39 km and first constant-height rho level at level 30 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

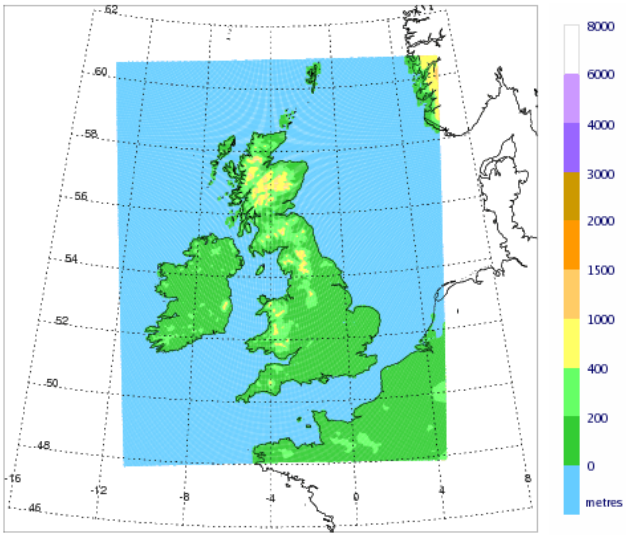
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		16	4810.0
1	10.0	17	5450.0
2	50.0	18	6130.0
3	130.0	19	6850.0
4	250.0	20	7610.0
5	410.0	21	8410.0
6	610.0	22	9250.0
7	850.0	23	10130.0
8	1130.0	24	11050.0
9	1450.0	25	12010.0
10	1810.0	26	13010.0
11	2210.0	27	14050.4
12	2650.0	28	15137.7
13	3130.0	29	16285.0
14	3650.0	30	17507.0
15	4210.0	31	18820.8

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	16	5120.0
1	20.0	17	5780.0
2	80.0	18	6480.0
3	180.0	19	7220.0
4	320.0	20	8000.0
5	500.0	21	8820.0
6	720.0	22	9680.0
7	980.0	23	10580.0
8	1280.0	24	11520.0
9	1620.0	25	12500.0
10	2000.0	26	13520.0
11	2420.0	27	14580.8
12	2880.0	28	15694.6
13	3380.0	29	16875.3
14	3920.0	30	18138.6
15	4500.0	31	19503.0

UM4kmMk3_L50			
Start Time	**26/11/2007**	End Time	**18/02/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM4kmMk3_L50pp.txt** **UM4kmMk3_L50** **UM4kmMk3_L50 Whole**		
Met File Name	**HP** *YYYYMMDDhhmm*.**4KM50L_UM6.pp**		
Met File Type	**PP**	Approx Filesize MB	**48 (173)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **288**	Pole Main Grid nY	**(37.5, 177.5)** **360**
Approx Resolution km	**4**	Actual Resolution °	**0.036 × 0.036**
Z-Coord	**Z_eta**	nLevels / Max Height	**50 / 8.5 km**



List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- convective cloud amount (0-1)
- convective cloud base
- convective cloud top
- dynamic rain rate ($kg/(m^2\ s)$)
- convective rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- convective snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Remaining fields are defined on single levels or are level-independent.

Vertical levels:
70-level UK4 version of UM with a model top at 40 km and first constant-height rho level at level 62 ($\sim$ 17.5 km). The following table gives approximate heights (in metres) of the NWP model levels above sea points.

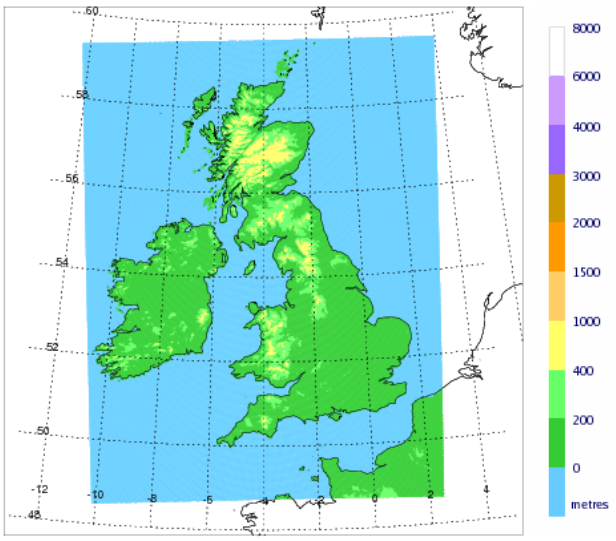
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		26	2333.3
1	2.5	27	2513.3
2	13.3	28	2700.0
3	33.3	29	2893.3
4	60.0	30	3093.3
5	93.3	31	3300.0
6	133.3	32	3513.3
7	180.0	33	3733.3
8	233.3	34	3960.0
9	293.3	35	4193.3
10	360.0	36	4433.3
11	433.3	37	4680.0
12	513.3	38	4933.3
13	600.0	39	5193.3
14	693.3	40	5460.0
15	793.3	41	5733.3
16	900.0	42	6013.3
17	1013.3	43	6300.1
18	1133.3	44	6593.8
19	1260.0	45	6895.2
20	1393.3	46	7205.1
21	1533.3	47	7525.1
22	1680.0	48	7857.4
23	1833.3	49	8204.8
24	1993.3	50	8570.7
25	2160.0		

W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	26	2421.7
1	5.0	27	2605.0
2	21.7	28	2795.0
3	45.0	29	2991.7
4	75.0	30	3195.0
5	111.7	31	3405.0
6	155.0	32	3621.7
7	205.0	33	3845.0
8	261.7	34	4075.0
9	325.0	35	4311.7
10	395.0	36	4555.0
11	471.7	37	4805.0
12	555.0	38	5061.7
13	645.0	39	5325.0
14	741.7	40	5595.0
15	845.0	41	5871.7
16	955.0	42	6155.0
17	1071.7	43	6445.1
18	1195.0	44	6742.5
19	1325.0	45	7047.8
20	1461.7	46	7362.4
21	1605.0	47	7687.9
22	1755.0	48	8026.9
23	1911.7	49	8382.6
24	2075.0	50	8758.9
25	2245.0		

UM1p5km_Mk1_L57pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM1p5km_Mk1_L57pp.txt** **UM1p5km_Mk1_L57pp** **UM1p5km_Mk1_L57pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57.pp**		
Met File Type	**PP**	Approx Filesize MB	**250 (940)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **621**	Pole Main Grid nY	**(37.5, 177.5)** **810**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



Additional notes:
This is the NWP met definition suitable for use with full-domain 1.5 km met files associated with the 'Mk1' version of the UKV configuration of the Unified Model. The UKV has variable horizontal resolution with its central core at 1.5 km (only this core is output for NAME use).

The 1.5 km met files are very large (almost 1 GB unzipped per time step), and are not ordinarily used for NAME runs for reasons of efficiency. Instead, domain-decomposed met data are provided in a sequence of met definitions **UM1p5km_Mk1_L57PT[1-16]pp** that collectively cover the full extent of the UK 1.5 km met data area. Their (approximate) geographical areas are given in the following table (also see subsequent pages). The domain-decomposed 1.5 km met data can be loaded 'on demand' as and when they are required in NAME (by setting the `"Update On Demand?"` variable to `Yes` in the relevant NWP met/flow module instances).

PT1	Sea Area Hebrides	**PT9**	Eastern Ireland
PT2	Northern Scotland	**PT10**	North Wales and Central England
PT3	Sea Area Forties	**PT11**	Eastern England
PT4	Sea Area Malin	**PT12**	Sea Area Fastnet
PT5	South West Scotland and Northern Ireland	**PT13**	South Wales and South West England
PT6	South Scotland and Northern England	**PT14**	Southern England
PT7	Sea Area Dogger	**PT15**	Sea Area Plymouth
PT8	Western Ireland	**PT16**	English Channel and Northern France

The characteristics described below for UM1p5km_Mk1_L57pp also apply to each of the domain-decomposed met files for UM1p5km_Mk1_L57PT[1-16]pp.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- dynamic rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height, canopy water and stomatal conductance are available for five tiles. Remaining fields are defined on single levels or are level-independent.

Note that there are no convective cloud/rain fields.

Vertical levels:
70-level UKV version of UM with a model top at 40 km and first constant-height rho level at level 62 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 70-level UK4 model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

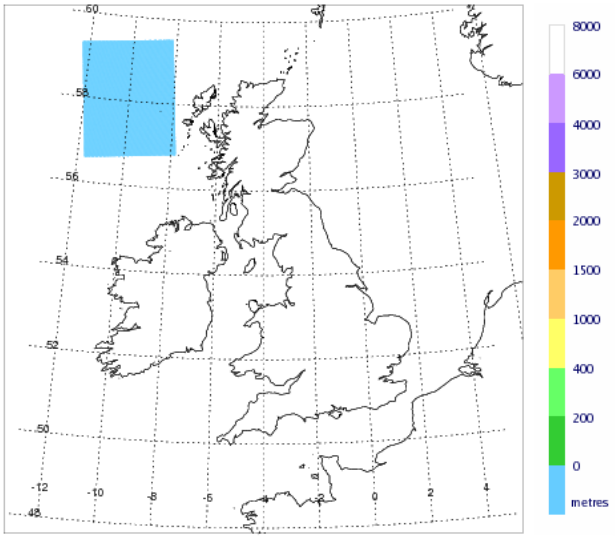
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	3093.3
1	2.5	31	3300.0
2	13.3	32	3513.3
3	33.3	33	3733.3
4	60.0	34	3960.0
5	93.3	35	4193.3
6	133.3	36	4433.3
7	180.0	37	4680.0
8	233.3	38	4933.3
9	293.3	39	5193.3
10	360.0	40	5460.0
11	433.3	41	5733.3
12	513.3	42	6013.3
13	600.0	43	6300.1
14	693.3	44	6593.8
15	793.3	45	6895.2
16	900.0	46	7205.1
17	1013.3	47	7525.1
18	1133.3	48	7857.4
19	1260.0	49	8204.8
20	1393.3	50	8570.7
21	1533.3	51	8959.9
22	1680.0	52	9377.9
23	1833.3	53	9831.2
24	1993.3	54	10328.0
25	2160.0	55	10877.6
26	2333.3	56	11490.8
27	2513.3	57	12180.4
28	2700.0		
29	2893.3		

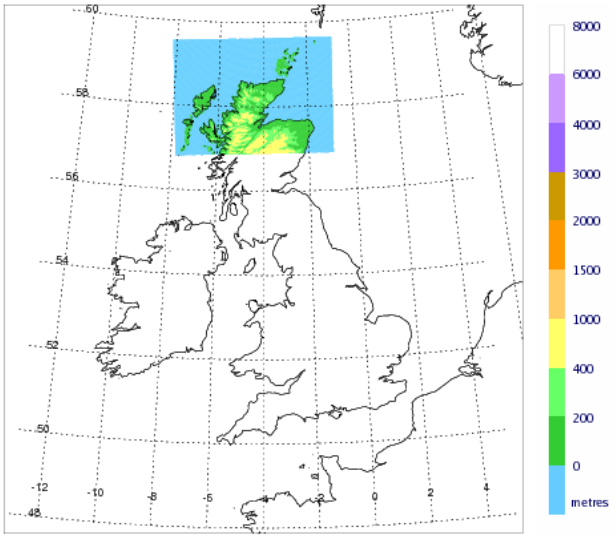
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	3195.0
1	5.0	31	3405.0
2	21.7	32	3621.7
3	45.0	33	3845.0
4	75.0	34	4075.0
5	111.7	35	4311.7
6	155.0	36	4555.0
7	205.0	37	4805.0
8	261.7	38	5061.7
9	325.0	39	5325.0
10	395.0	40	5595.0
11	471.7	41	5871.7
12	555.0	42	6155.0
13	645.0	43	6445.1
14	741.7	44	6742.5
15	845.0	45	7047.8
16	955.0	46	7362.4
17	1071.7	47	7687.9
18	1195.0	48	8026.9
19	1325.0	49	8382.6
20	1461.7	50	8758.9
21	1605.0	51	9160.9
22	1755.0	52	9594.8
23	1911.7	53	10067.7
24	2075.0	54	10588.3
25	2245.0	55	11166.8
26	2421.7	56	11814.9
27	2605.0	57	12546.0
28	2795.0		
29	2991.7		

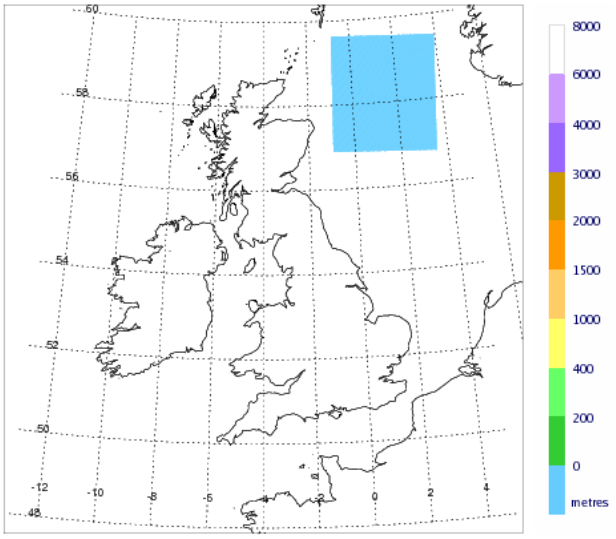
UM1p5km_Mk1_L57PT1pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM1p5km_Mk1_L57PTpp.txt** **UM1p5km_Mk1_L57PT1pp** **UM1p5km_Mk1_L57PT1pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT1.pp**		
Met File Type	**PP**	Approx Filesize MB	**10 (62)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **162**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



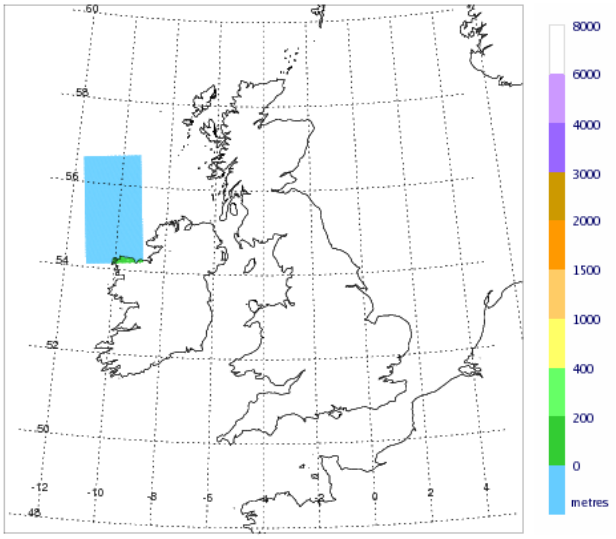
UM1p5km_Mk1_L57PT2pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM1p5km_Mk1_L57PTpp.txt** **UM1p5km_Mk1_L57PT2pp** **UM1p5km_Mk1_L57PT2pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT2.pp**		
Met File Type	**PP**	Approx Filesize MB	**25 (107)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **280**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



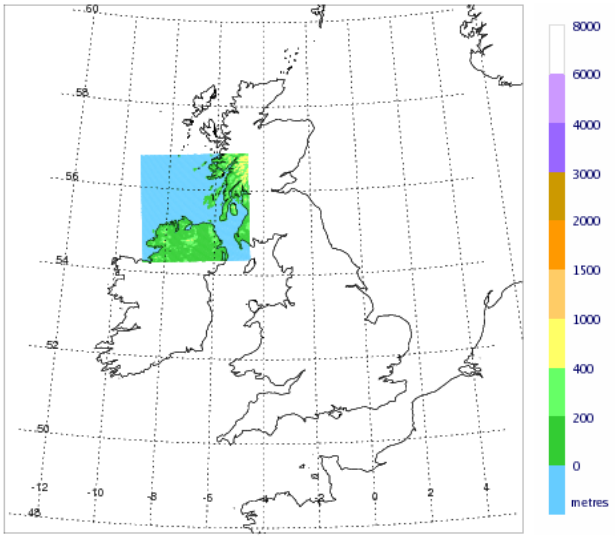
UM1p5km_Mk1_L57PT3pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT3pp**		
Flow Domain	**UM1p5km_Mk1_L57PT3pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT3.pp**		
Met File Type	**PP**	Approx Filesize MB	**15 (70)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **183**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



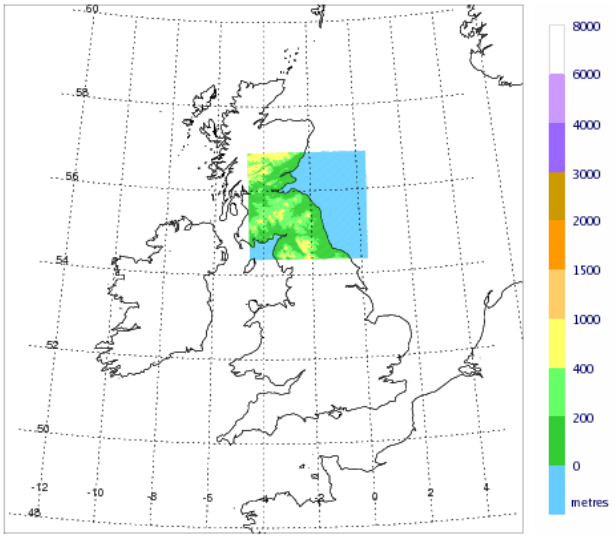
UM1p5km_Mk1_L57PT4pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT4pp**		
Flow Domain	**UM1p5km_Mk1_L57PT4pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT4.pp**		
Met File Type	**PP**	Approx Filesize MB	**8 (36)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **101**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



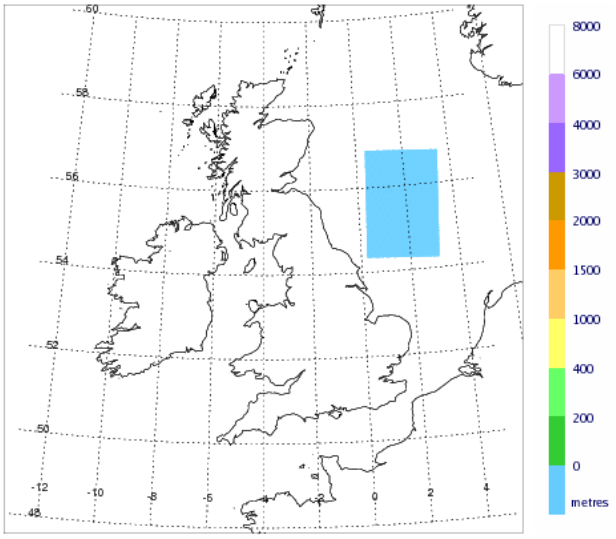
UM1p5km_Mk1_L57PT5pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT5pp**		
Flow Domain	**UM1p5km_Mk1_L57PT5pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT5.pp**		
Met File Type	**PP**	Approx Filesize MB	**20 (68)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **190**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



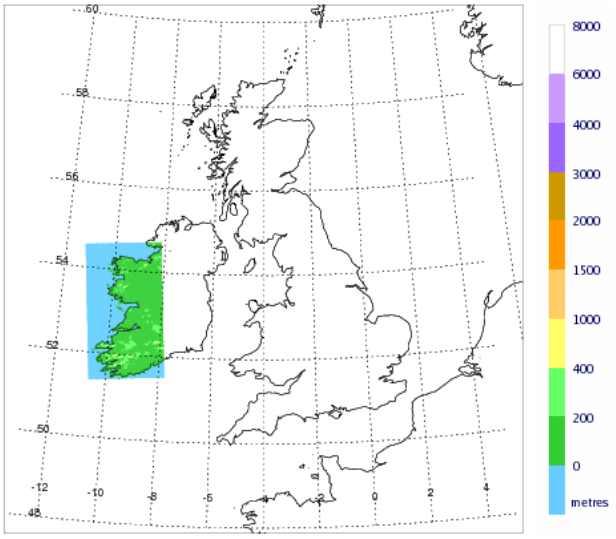
UM1p5km_Mk1_L57PT6pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT6pp**		
Flow Domain	**UM1p5km_Mk1_L57PT6pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT6.pp**		
Met File Type	**PP**	Approx Filesize MB	**20 (74)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



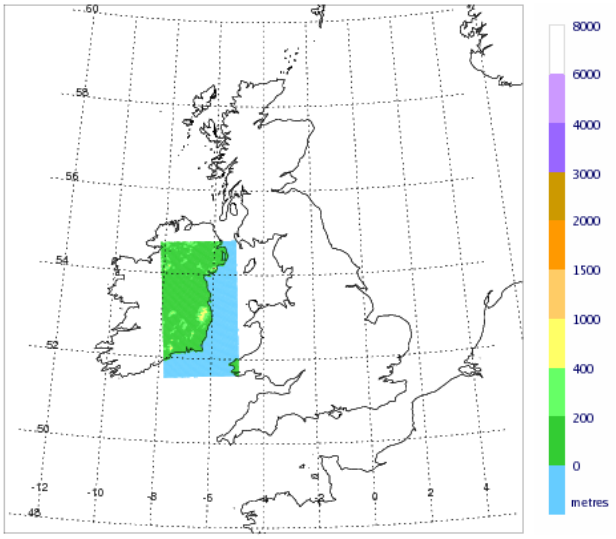
UM1p5km_Mk1_L57PT7pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM1p5km_Mk1_L57PTpp.txt** **UM1p5km_Mk1_L57PT7pp** **UM1p5km_Mk1_L57PT7pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT7.pp**		
Met File Type	**PP**	Approx Filesize MB	**8 (46)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **128**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



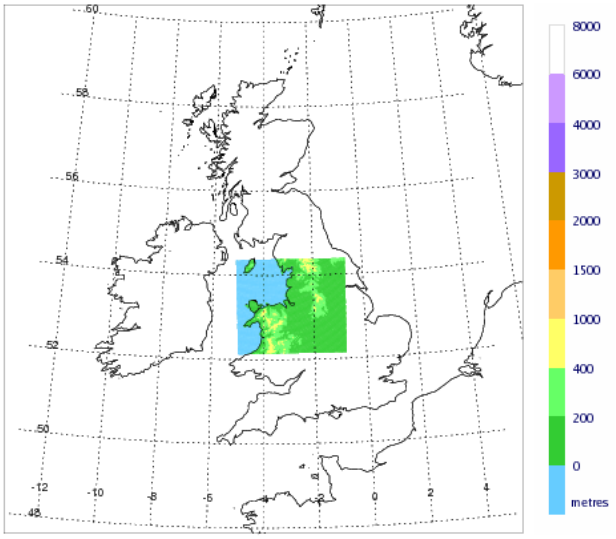
UM1p5km_Mk1_L57PT8pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT8pp**		
Flow Domain	**UM1p5km_Mk1_L57PT8pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT8.pp**		
Met File Type	**PP**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **134**	Pole Main Grid nY	**(37.5, 177.5)** **240**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



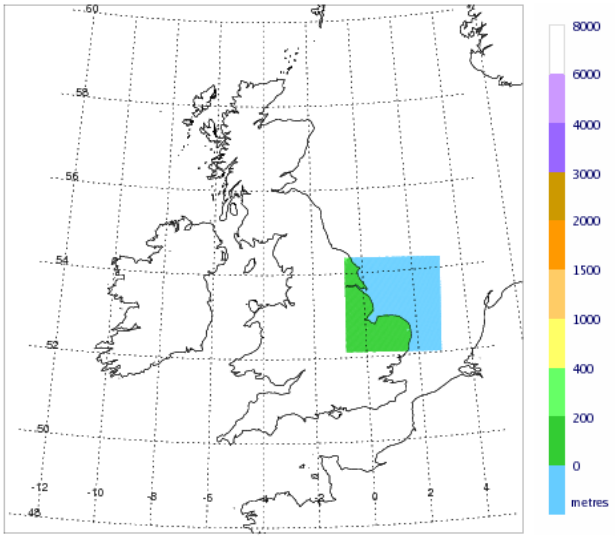
UM1p5km_Mk1_L57PT9pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT9pp**		
Flow Domain	**UM1p5km_Mk1_L57PT9pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT9.pp**		
Met File Type	**PP**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **133**	Pole Main Grid nY	**(37.5, 177.5)** **240**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



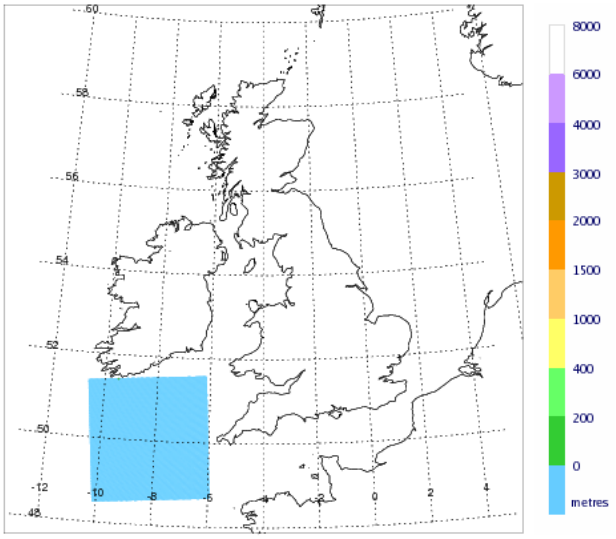
UM1p5km_Mk1_L57PT10pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM1p5km_Mk1_L57PTpp.txt** **UM1p5km_Mk1_L57PT10pp** **UM1p5km_Mk1_L57PT10pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT10.pp**		
Met File Type	**PP**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **192**	Pole Main Grid nY	**(37.5, 177.5)** **168**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



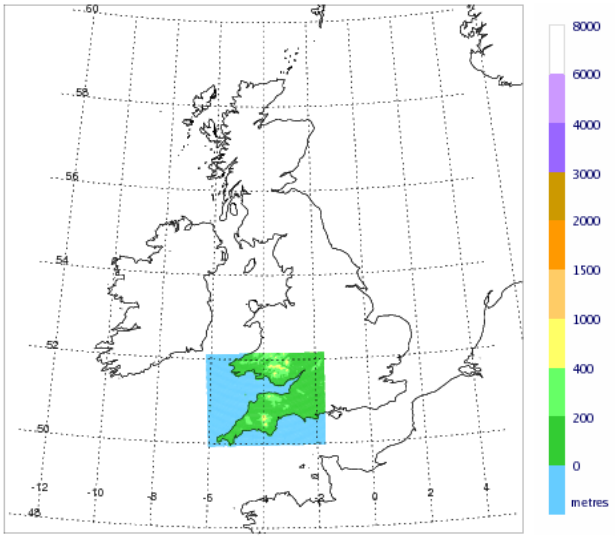
UM1p5km_Mk1_L57PT11pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT11pp**		
Flow Domain	**UM1p5km_Mk1_L57PT11pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT11.pp**		
Met File Type	**PP**	Approx Filesize MB	**12 (53)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **168**	Pole Main Grid nY	**(37.5, 177.5)** **168**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



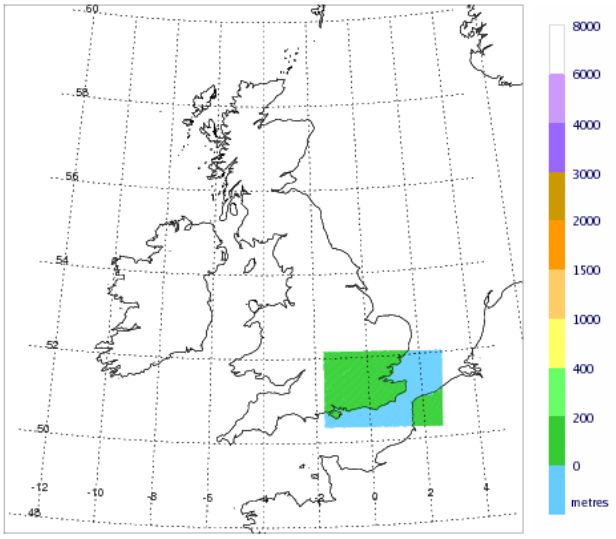
UM1p5km_Mk1_L57PT12pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT12pp**		
Flow Domain	**UM1p5km_Mk1_L57PT12pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT12.pp**		
Met File Type	**PP**	Approx Filesize MB	**20 (85)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **209**	Pole Main Grid nY	**(37.5, 177.5)** **218**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



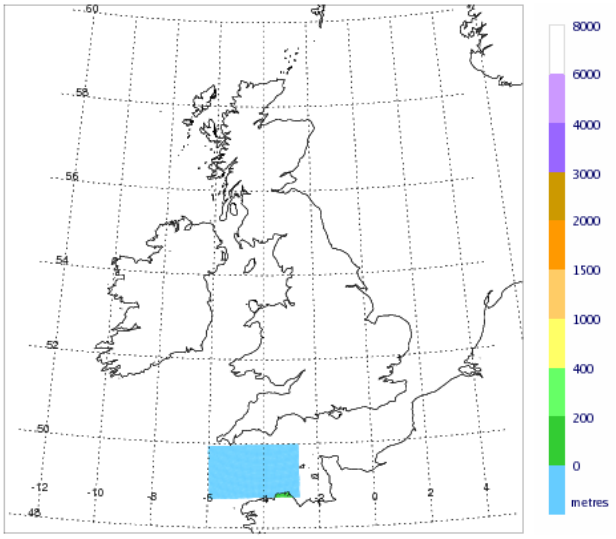
UM1p5km_Mk1_L57PT13pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM1p5km_Mk1_L57PTpp.txt** **UM1p5km_Mk1_L57PT13pp** **UM1p5km_Mk1_L57PT13pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT13.pp**		
Met File Type	**PP**	Approx Filesize MB	**16 (64)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **164**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



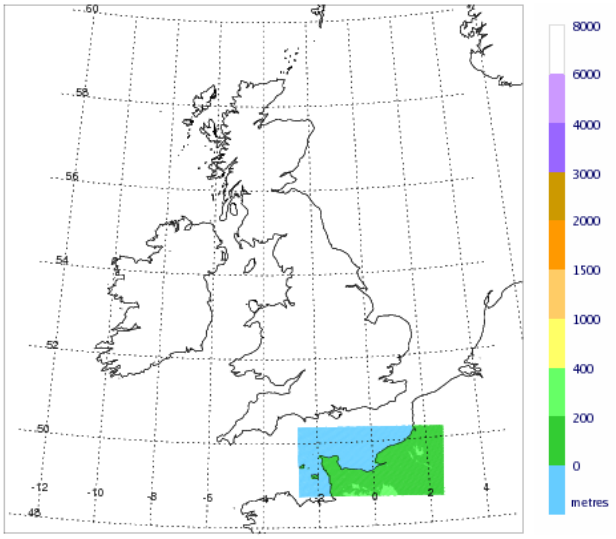
UM1p5km_Mk1_L57PT14pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnUM1p5km_Mk1_L57PTpp.txt** **UM1p5km_Mk1_L57PT14pp** **UM1p5km_Mk1_L57PT14pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT14.pp**		
Met File Type	**PP**	Approx Filesize MB	**12 (53)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **135**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



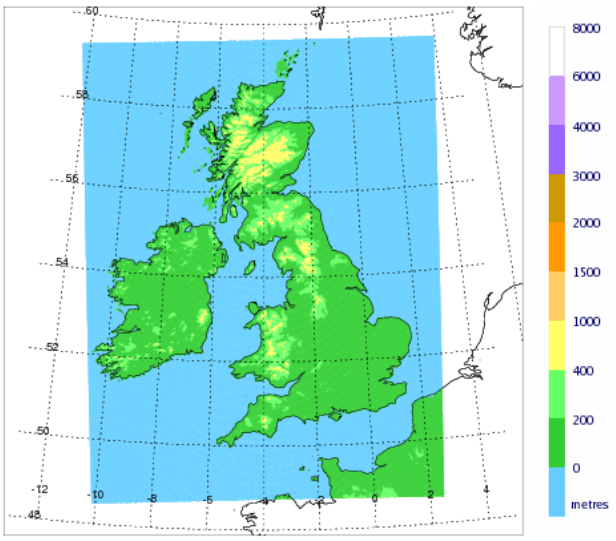
UM1p5km_Mk1_L57PT15pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT15pp**		
Flow Domain	**UM1p5km_Mk1_L57PT15pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT15.pp**		
Met File Type	**PP**	Approx Filesize MB	**6 (29)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **160**	Pole Main Grid nY	**(37.5, 177.5)** **95**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



UM1p5km_Mk1_L57PT16pp			
Start Time	**14/07/2010**	End Time	**30/07/2013**
Met Definition File Name	**MetDefnUM1p5km_Mk1_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk1_L57PT16pp**		
Flow Domain	**UM1p5km_Mk1_L57PT16pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk1_L57PT16.pp**		
Met File Type	**PP**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **256**	Pole Main Grid nY	**(37.5, 177.5)** **124**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



UM1p5km_Mk2_L57pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57pp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57pp**		
Flow Domain	**UM1p5km_Mk1_L57pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**250 (940)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **621**	Pole Main Grid nY	**(37.5, 177.5)** **810**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



Additional notes:
This is the NWP met definition suitable for use with full-domain 1.5 km met files associated with the 'Mk2' version of the UKV configuration of the Unified Model. The UKV has variable horizontal resolution with its central core at 1.5 km (only this core is output for NAME use).

The 1.5 km met files are very large (almost 1 GB unzipped per time step), and are not ordinarily used for NAME runs for reasons of efficiency. Instead, domain-decomposed met data are provided in a sequence of met definitions **UM1p5km_Mk2_L57PT[1-16]pp** that collectively cover the full extent of the UK 1.5 km met data area. Their (approximate) geographical areas are given in the following table (also see subsequent pages). The domain-decomposed 1.5 km met data can be loaded 'on demand' as and when they are required in NAME (by setting the `"Update On Demand?"` variable to `Yes` in the relevant NWP met/flow module instances).

PT1	Sea Area Hebrides	**PT9**	Eastern Ireland
PT2	Northern Scotland	**PT10**	North Wales and Central England
PT3	Sea Area Forties	**PT11**	Eastern England
PT4	Sea Area Malin	**PT12**	Sea Area Fastnet
PT5	South West Scotland and Northern Ireland	**PT13**	South Wales and South West England
PT6	South Scotland and Northern England	**PT14**	Southern England
PT7	Sea Area Dogger	**PT15**	Sea Area Plymouth
PT8	Western Ireland	**PT16**	English Channel and Northern France

The characteristics described below for UM1p5km_Mk2_L57pp also apply to each of the domain-decomposed met files for UM1p5km_Mk2_L57PT[1-16]pp.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- dynamic rain rate (kg/(m^2 s))
- dynamic snow rate (kg/(m^2 s))
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

Fields are separated across two sets of input files: instantaneous, or 'spot', fields and hourly-mean fields. The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height, canopy water and stomatal conductance are available for five tiles. Remaining fields are defined on single levels or are level-independent.

Note that there are no convective cloud/rain fields.

Vertical levels:
70-level UKV version of UM with a model top at 40 km and first constant-height rho level at level 62 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 70-level UK4 model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

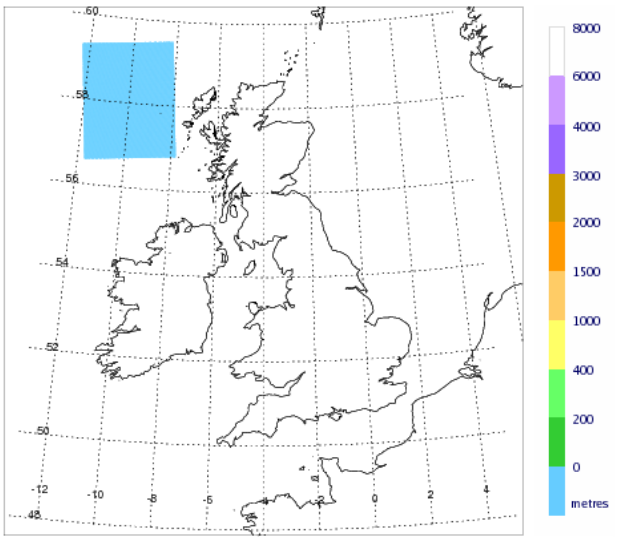
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	3093.3
1	2.5	31	3300.0
2	13.3	32	3513.3
3	33.3	33	3733.3
4	60.0	34	3960.0
5	93.3	35	4193.3
6	133.3	36	4433.3
7	180.0	37	4680.0
8	233.3	38	4933.3
9	293.3	39	5193.3
10	360.0	40	5460.0
11	433.3	41	5733.3
12	513.3	42	6013.3
13	600.0	43	6300.1
14	693.3	44	6593.8
15	793.3	45	6895.2
16	900.0	46	7205.1
17	1013.3	47	7525.1
18	1133.3	48	7857.4
19	1260.0	49	8204.8
20	1393.3	50	8570.7
21	1533.3	51	8959.9
22	1680.0	52	9377.9
23	1833.3	53	9831.2
24	1993.3	54	10328.0
25	2160.0	55	10877.6
26	2333.3	56	11490.8
27	2513.3	57	12180.4
28	2700.0		
29	2893.3		

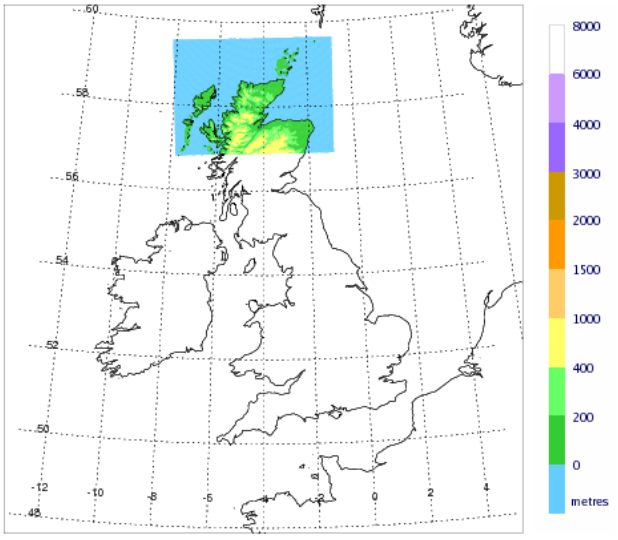
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	3195.0
1	5.0	31	3405.0
2	21.7	32	3621.7
3	45.0	33	3845.0
4	75.0	34	4075.0
5	111.7	35	4311.7
6	155.0	36	4555.0
7	205.0	37	4805.0
8	261.7	38	5061.7
9	325.0	39	5325.0
10	395.0	40	5595.0
11	471.7	41	5871.7
12	555.0	42	6155.0
13	645.0	43	6445.1
14	741.7	44	6742.5
15	845.0	45	7047.8
16	955.0	46	7362.4
17	1071.7	47	7687.9
18	1195.0	48	8026.9
19	1325.0	49	8382.6
20	1461.7	50	8758.9
21	1605.0	51	9160.9
22	1755.0	52	9594.8
23	1911.7	53	10067.7
24	2075.0	54	10588.3
25	2245.0	55	11166.8
26	2421.7	56	11814.9
27	2605.0	57	12546.0
28	2795.0		
29	2991.7		

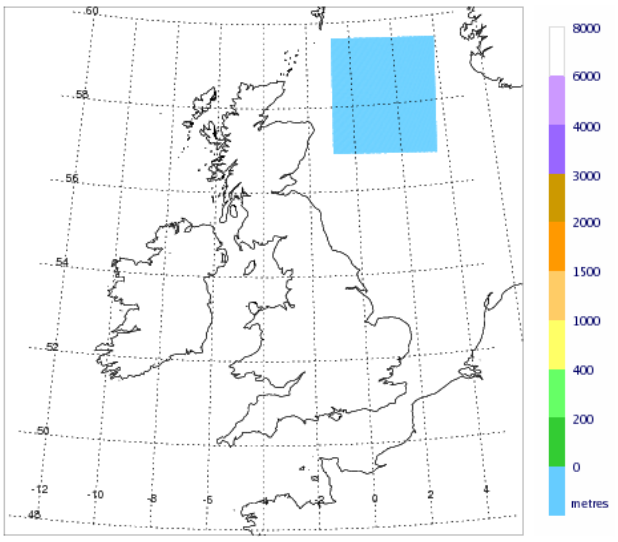
UM1p5km_Mk2_L57PT1pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT1pp**		
Flow Domain	**UM1p5km_Mk1_L57PT1pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT1.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**10 (62)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **162**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



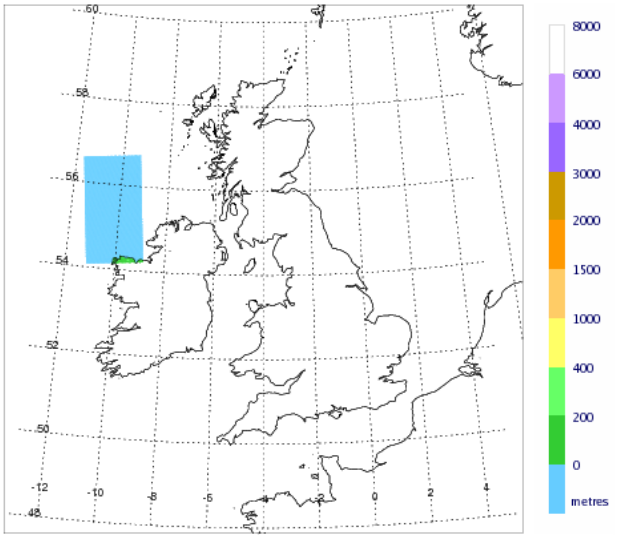
UM1p5km_Mk2_L57PT2pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT2pp**		
Flow Domain	**UM1p5km_Mk1_L57PT2pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT2.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**25 (107)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **280**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



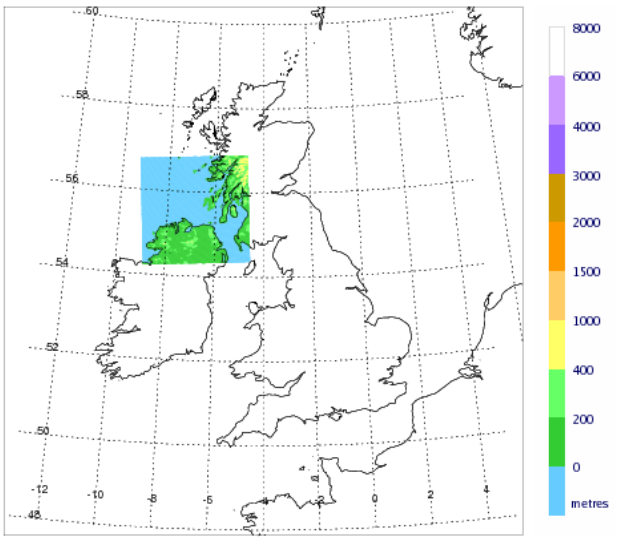
UM1p5km_Mk2_L57PT3pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT3pp**		
Flow Domain	**UM1p5km_Mk1_L57PT3pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT3.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**15 (70)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **183**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



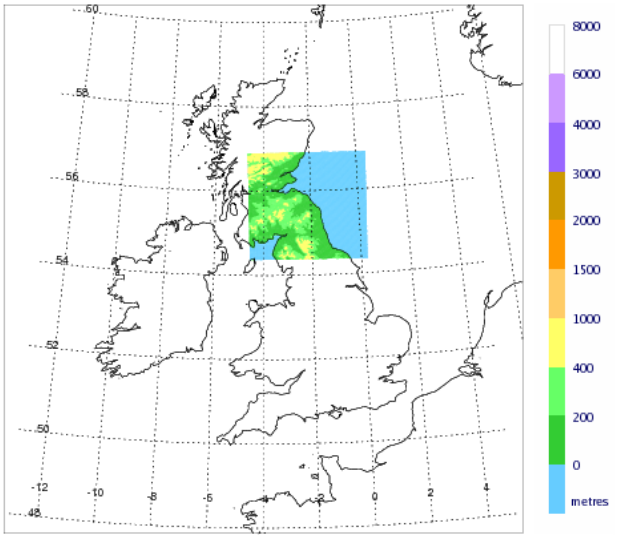
UM1p5km_Mk2_L57PT4pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT4pp**		
Flow Domain	**UM1p5km_Mk1_L57PT4pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT4.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**8 (36)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **101**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



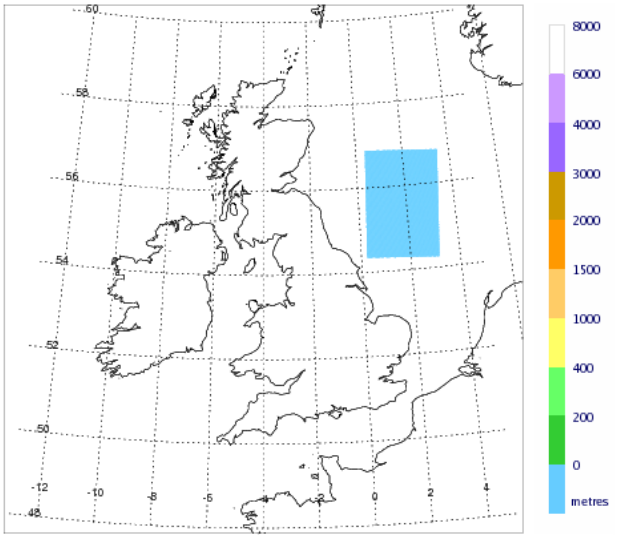
UM1p5km_Mk2_L57PT5pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT5pp**		
Flow Domain	**UM1p5km_Mk1_L57PT5pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT5.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**20 (68)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **190**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



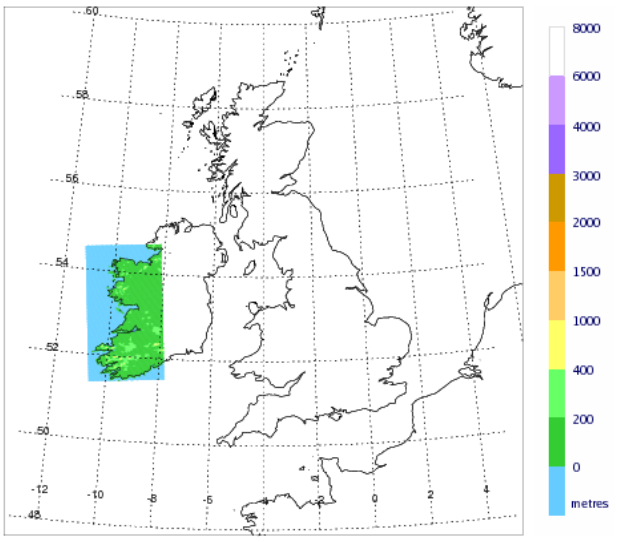
UM1p5km_Mk2_L57PT6pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT6pp**		
Flow Domain	**UM1p5km_Mk1_L57PT6pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT6.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**20 (74)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



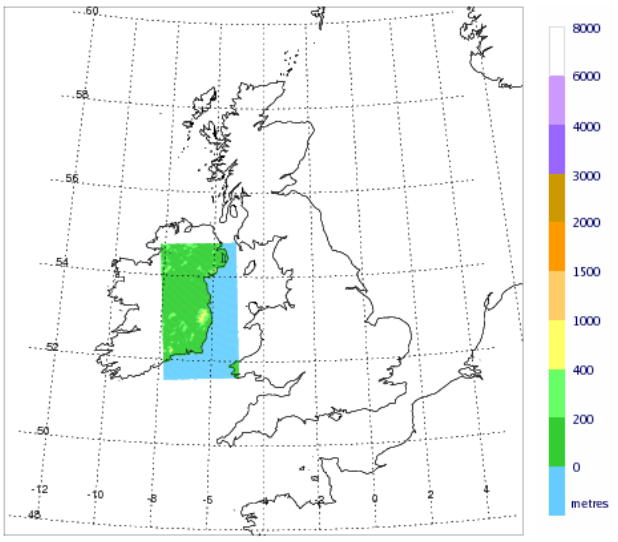
UM1p5km_Mk2_L57PT7pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT7pp**		
Flow Domain	**UM1p5km_Mk1_L57PT7pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT7.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**8 (46)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **128**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



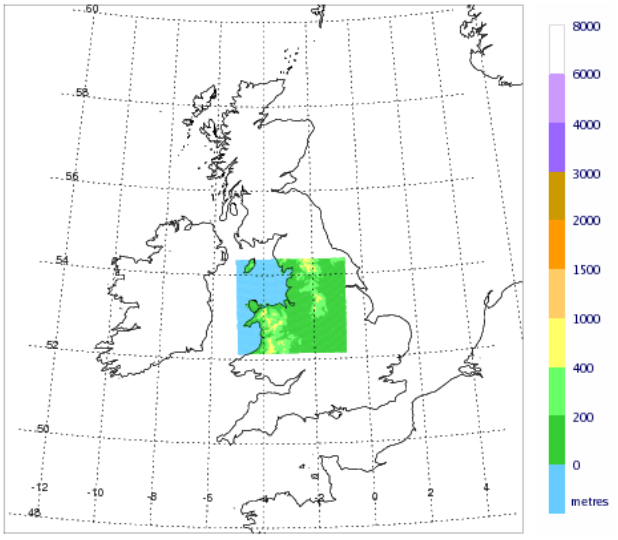
UM1p5km_Mk2_L57PT8pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT8pp**		
Flow Domain	**UM1p5km_Mk1_L57PT8pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT8.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **134**	Pole Main Grid nY	**(37.5, 177.5)** **240**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



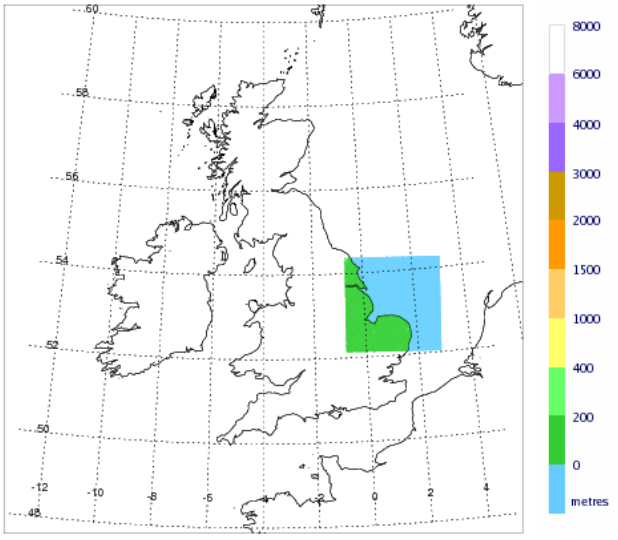
UM1p5km_Mk2_L57PT9pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT9pp**		
Flow Domain	**UM1p5km_Mk1_L57PT9pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT9.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **133**	Pole Main Grid nY	**(37.5, 177.5)** **240**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



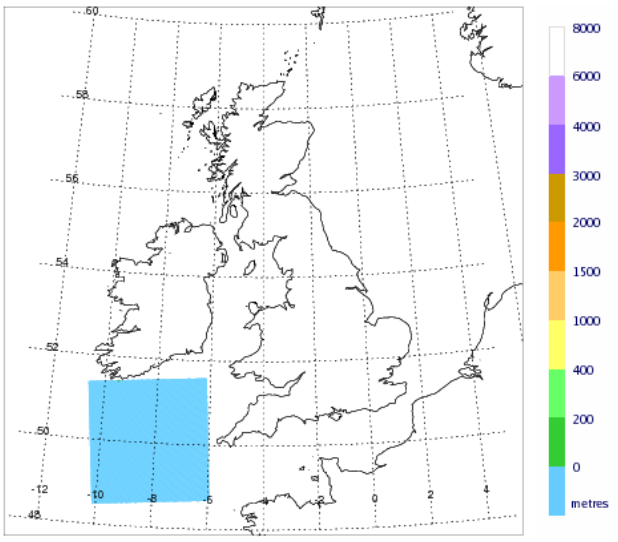
UM1p5km_Mk2_L57PT10pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT10pp**		
Flow Domain	**UM1p5km_Mk1_L57PT10pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT10.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **192**	Pole Main Grid nY	**(37.5, 177.5)** **168**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



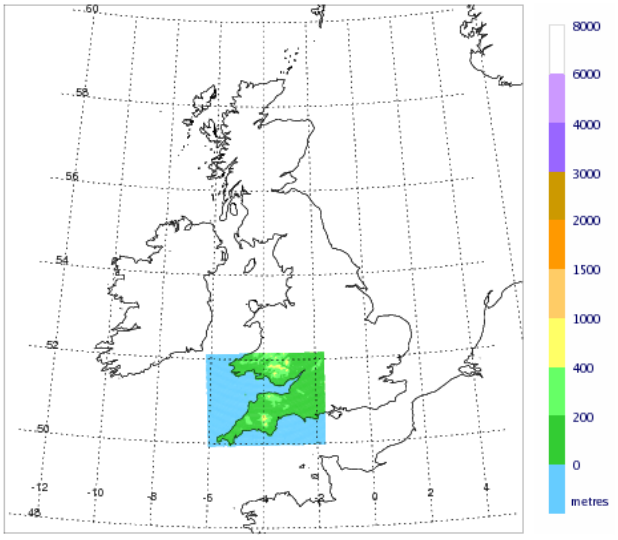
UM1p5km_Mk2_L57PT11pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT11pp**		
Flow Domain	**UM1p5km_Mk1_L57PT11pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT11.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**12 (53)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **168**	Pole Main Grid nY	**(37.5, 177.5)** **168**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



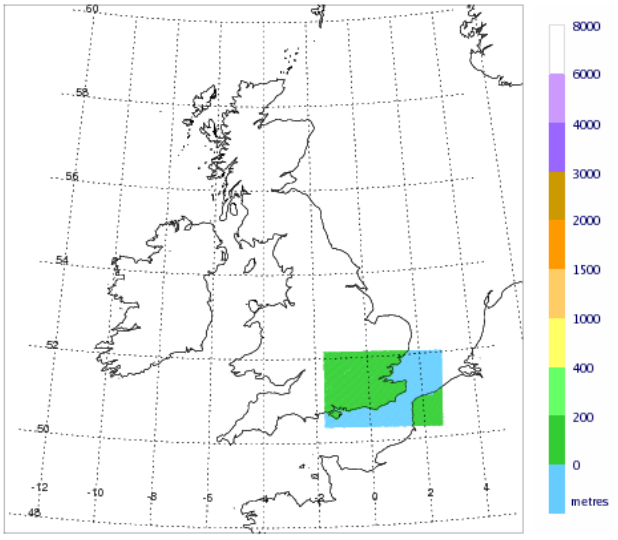
UM1p5km_Mk2_L57PT12pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT12pp**		
Flow Domain	**UM1p5km_Mk1_L57PT12pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT12.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**20 (85)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **209**	Pole Main Grid nY	**(37.5, 177.5)** **218**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



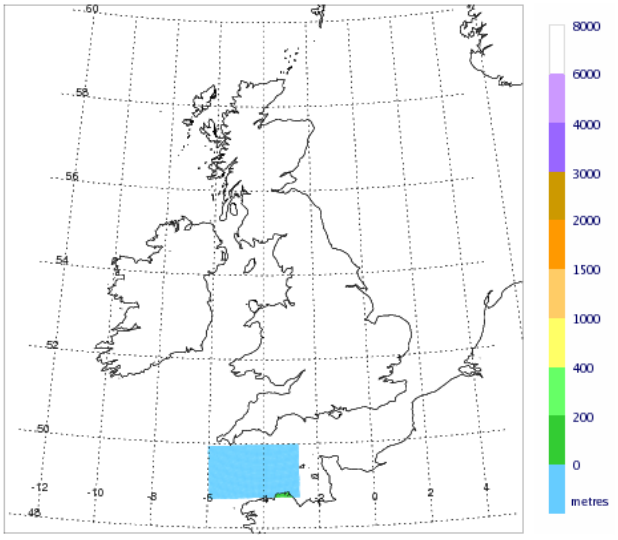
UM1p5km_Mk2_L57PT13pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT13pp**		
Flow Domain	**UM1p5km_Mk1_L57PT13pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT13.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (64)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **164**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



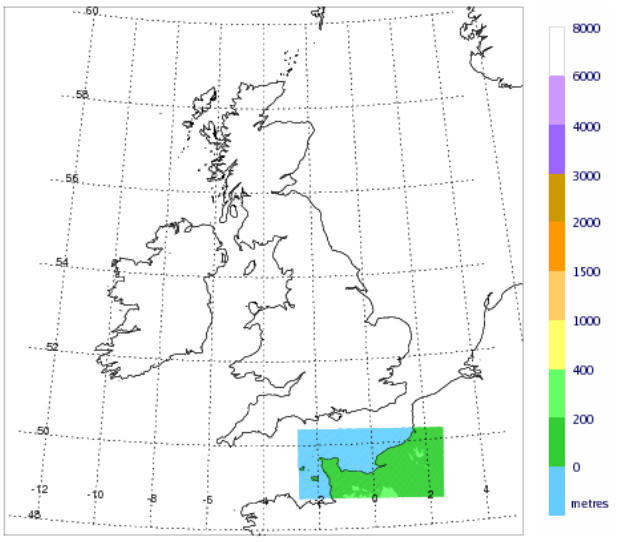
UM1p5km_Mk2_L57PT14pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT14pp**		
Flow Domain	**UM1p5km_Mk1_L57PT14pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT14.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**12 (53)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **135**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



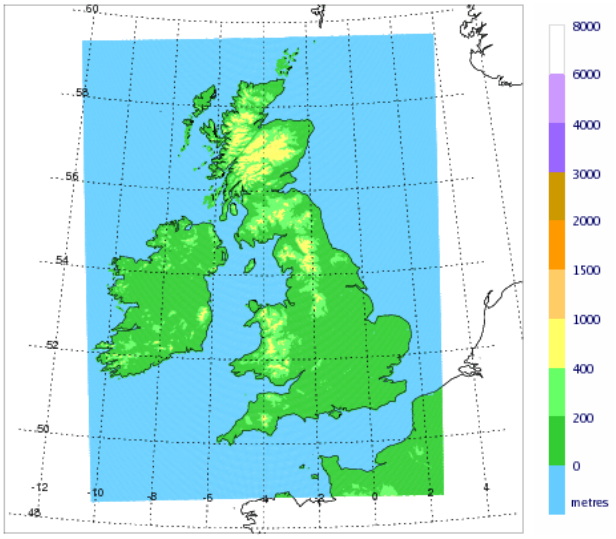
UM1p5km_Mk2_L57PT15pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT15pp**		
Flow Domain	**UM1p5km_Mk1_L57PT15pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT15.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**6 (29)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **160**	Pole Main Grid nY	**(37.5, 177.5)** **95**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



UM1p5km_Mk2_L57PT16pp			
Start Time	**30/07/2013**	End Time	**03/02/2015**
Met Definition File Name	**MetDefnUM1p5km_Mk2_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk2_L57PT16pp**		
Flow Domain	**UM1p5km_Mk1_L57PT16pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk2_[IM]_L57PT16.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **256**	Pole Main Grid nY	**(37.5, 177.5)** **124**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



UM1p5km_Mk3_L57pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57pp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57pp**		
Flow Domain	**UM1p5km_Mk3_L57pp Whole**		
Met File Name	**MO***YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**250 (940)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **621**	Pole Main Grid nY	**(37.5, 177.5)** **810**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



Additional notes:
This is the NWP met definition suitable for use with full-domain 1.5 km met files associated with the 'Mk3' version of the UKV configuration of the Unified Model (which is the first UKV configuration to use the ENDGame dynamical core in the UM). The UKV has variable horizontal resolution with its central core at 1.5 km (only this core is output for NAME use).

The 1.5 km met files are very large (almost 1 GB unzipped per time step), and are not ordinarily used for NAME runs for reasons of efficiency. Instead, domain-decomposed met data are provided in a sequence of met definitions **UM1p5km_Mk3_L57PT[1-16]pp** that collectively cover the full extent of the UK 1.5 km met data area. Their (approximate) geographical areas are given in the following table (also see subsequent pages). The domain-decomposed 1.5 km met data can be loaded 'on demand' as and when they are required in NAME (by setting the `"Update On Demand?"` variable to `Yes` in the relevant NWP met/flow module instances).

PT1	Sea Area Hebrides	**PT9**	Eastern Ireland
PT2	Northern Scotland	**PT10**	North Wales and Central England
PT3	Sea Area Forties	**PT11**	Eastern England
PT4	Sea Area Malin	**PT12**	Sea Area Fastnet
PT5	South West Scotland and Northern Ireland	**PT13**	South Wales and South West England
PT6	South Scotland and Northern England	**PT14**	Southern England
PT7	Sea Area Dogger	**PT15**	Sea Area Plymouth
PT8	Western Ireland	**PT16**	English Channel and Northern France

The characteristics described below for UM1p5km_Mk3_L57pp also apply to each of the domain-decomposed met files for UM1p5km_Mk3_L57PT[1-16]pp.

List of available NWP parameters:

- **wind (u-cpt)**
- **wind (v-cpt)**
- **wind (w-cpt)**
- **temperature (K)**
- **specific humidity**
- **cloud liquid water (kg/kg)**
- **cloud ice (kg/kg)**
- **pressure (Pa)**
- surface stress (u-cpt) (N/m^2)
- surface stress (v-cpt) (N/m^2)
- surface sensible heat flux
- mean sea level pressure (Pa)
- surface pressure (Pa)
- screen temperature (K)
- dynamic rain rate ($kg/(m^2\ s)$)
- dynamic snow rate ($kg/(m^2\ s)$)
- high cloud amount (0-1)
- medium cloud amount (0-1)
- low cloud amount (0-1)
- boundary layer depth
- roughness length
- soil moisture in layer (kg/m^2)
- canopy height (m)
- canopy water (kg/m^2)
- stomatal conductance (m/s)

Fields are separated across two sets of input files: instantaneous, or 'spot', fields and hourly-mean fields. The **fields highlighted in bold** are defined on multiple vertical levels (model levels). The soil moisture parameter is available for four sub-layer depths, although only the uppermost layer is used by NAME. Canopy height, canopy water and stomatal conductance are available for five tiles. Remaining fields are defined on single levels or are level-independent.

Note that there are no convective cloud/rain fields.

Vertical levels:
70-level UKV version of UM with a model top at 40 km and first constant-height rho level at level 62 ($\sim$ 17.5 km). Note that this is the same vertical grid as the 70-level UK4 model. The following table gives approximate heights (in metres) of the NWP model levels above sea points.

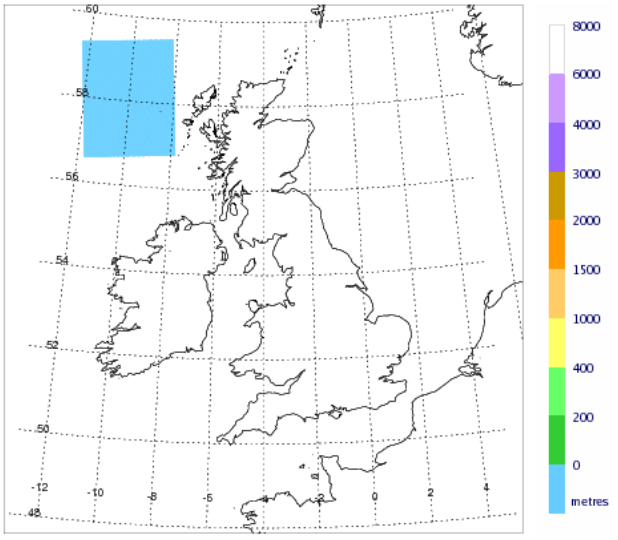
UV levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
		30	3093.3
1	2.5	31	3300.0
2	13.3	32	3513.3
3	33.3	33	3733.3
4	60.0	34	3960.0
5	93.3	35	4193.3
6	133.3	36	4433.3
7	180.0	37	4680.0
8	233.3	38	4933.3
9	293.3	39	5193.3
10	360.0	40	5460.0
11	433.3	41	5733.3
12	513.3	42	6013.3
13	600.0	43	6300.1
14	693.3	44	6593.8
15	793.3	45	6895.2
16	900.0	46	7205.1
17	1013.3	47	7525.1
18	1133.3	48	7857.4
19	1260.0	49	8204.8
20	1393.3	50	8570.7
21	1533.3	51	8959.9
22	1680.0	52	9377.9
23	1833.3	53	9831.2
24	1993.3	54	10328.0
25	2160.0	55	10877.6
26	2333.3	56	11490.8
27	2513.3	57	12180.4
28	2700.0		
29	2893.3		

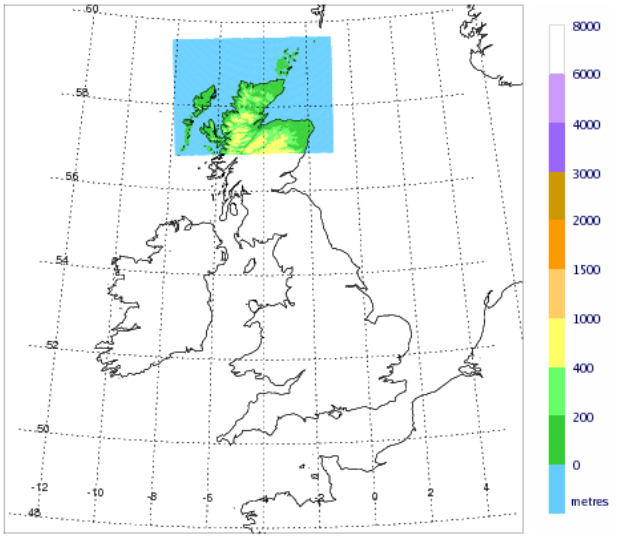
W levels

Level index	*Height at sea points*	*Level index*	*Height at sea points*
0	0.0	30	3195.0
1	5.0	31	3405.0
2	21.7	32	3621.7
3	45.0	33	3845.0
4	75.0	34	4075.0
5	111.7	35	4311.7
6	155.0	36	4555.0
7	205.0	37	4805.0
8	261.7	38	5061.7
9	325.0	39	5325.0
10	395.0	40	5595.0
11	471.7	41	5871.7
12	555.0	42	6155.0
13	645.0	43	6445.1
14	741.7	44	6742.5
15	845.0	45	7047.8
16	955.0	46	7362.4
17	1071.7	47	7687.9
18	1195.0	48	8026.9
19	1325.0	49	8382.6
20	1461.7	50	8758.9
21	1605.0	51	9160.9
22	1755.0	52	9594.8
23	1911.7	53	10067.7
24	2075.0	54	10588.3
25	2245.0	55	11166.8
26	2421.7	56	11814.9
27	2605.0	57	12546.0
28	2795.0		
29	2991.7		

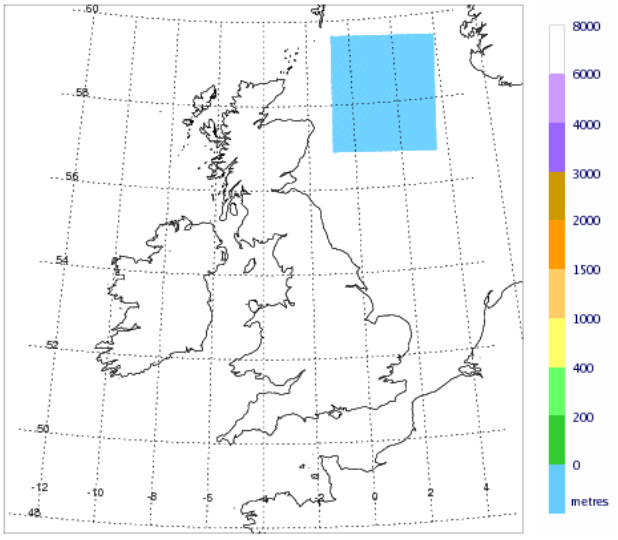
UM1p5km_Mk3_L57PT1pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT1pp**		
Flow Domain	**UM1p5km_Mk3_L57PT1pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT1.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**10 (62)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **162**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



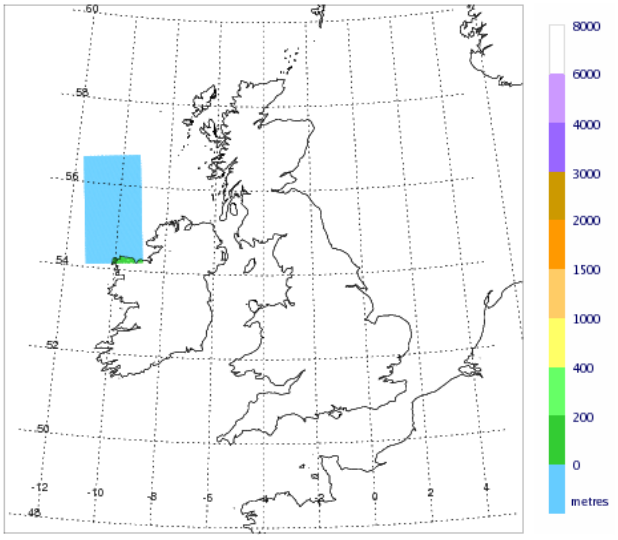
UM1p5km_Mk3_L57PT2pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT2pp**		
Flow Domain	**UM1p5km_Mk3_L57PT2pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT2.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**25 (107)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **280**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



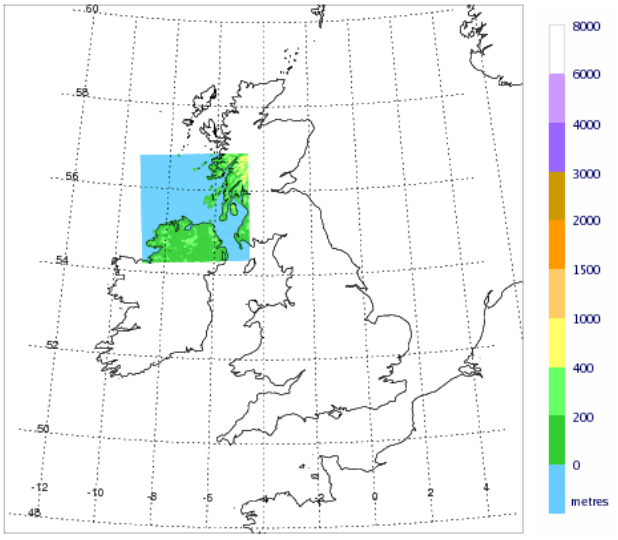
UM1p5km_Mk3_L57PT3pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT3pp**		
Flow Domain	**UM1p5km_Mk3_L57PT3pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT3.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**15 (70)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **183**	Pole Main Grid nY	**(37.5, 177.5)** **205**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



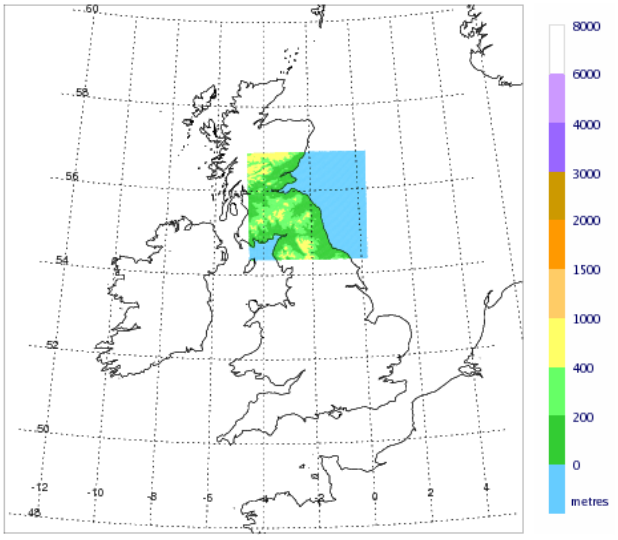
UM1p5km_Mk3_L57PT4pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT4pp**		
Flow Domain	**UM1p5km_Mk3_L57PT4pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT4.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**8 (36)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **101**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



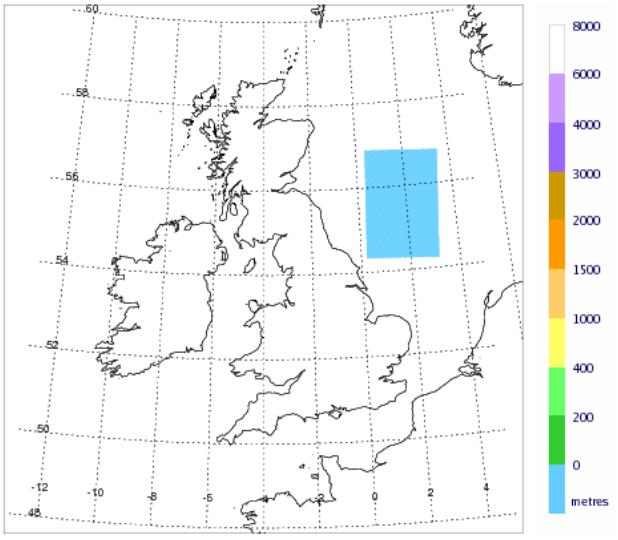
UM1p5km_Mk3_L57PT5pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT5pp**		
Flow Domain	**UM1p5km_Mk3_L57PT5pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT5.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**20 (68)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **190**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



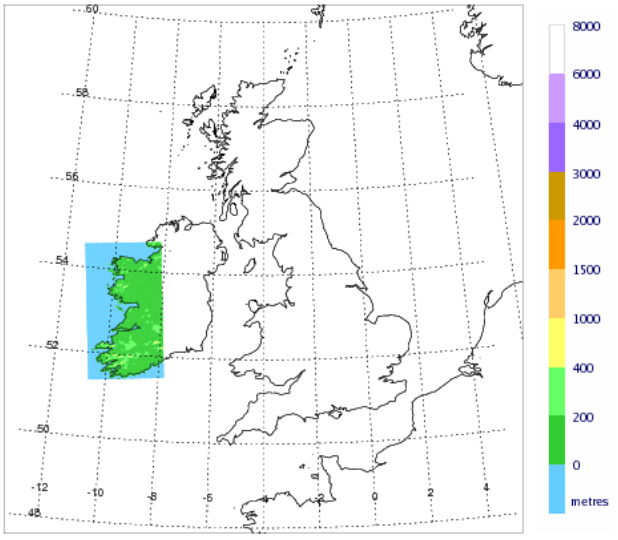
UM1p5km_Mk3_L57PT6pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT6pp**		
Flow Domain	**UM1p5km_Mk3_L57PT6pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT6.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**20 (74)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



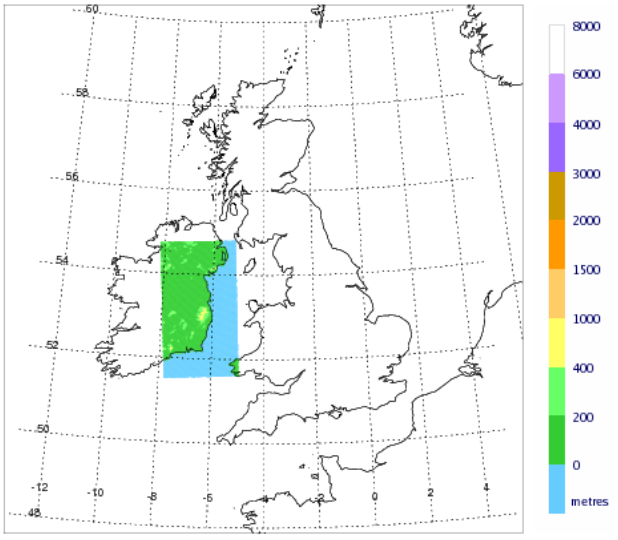
UM1p5km_Mk3_L57PT7pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT7pp**		
Flow Domain	**UM1p5km_Mk3_L57PT7pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT7.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**8 (46)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **128**	Pole Main Grid nY	**(37.5, 177.5)** **190**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



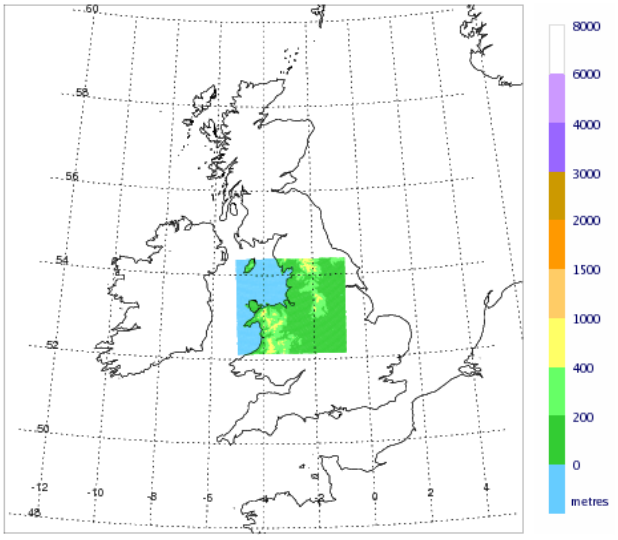
UM1p5km_Mk3_L57PT8pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT8pp**		
Flow Domain	**UM1p5km_Mk3_L57PT8pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT8.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **134**	Pole Main Grid nY	**(37.5, 177.5)** **240**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



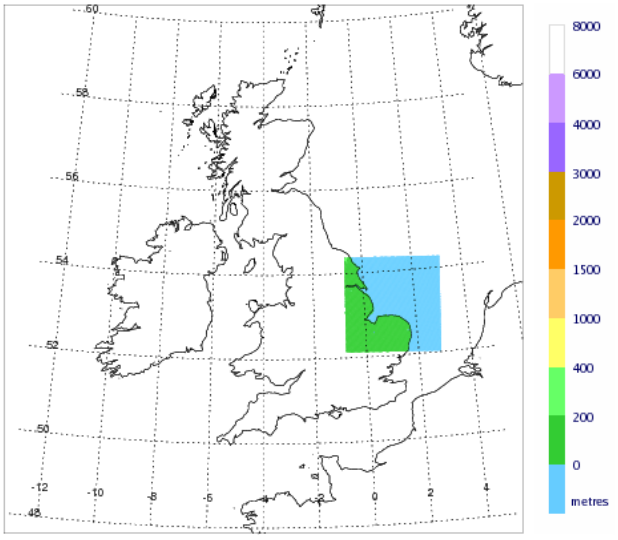
UM1p5km_Mk3_L57PT9pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT9pp**		
Flow Domain	**UM1p5km_Mk3_L57PT9pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT9.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **133**	Pole Main Grid nY	**(37.5, 177.5)** **240**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



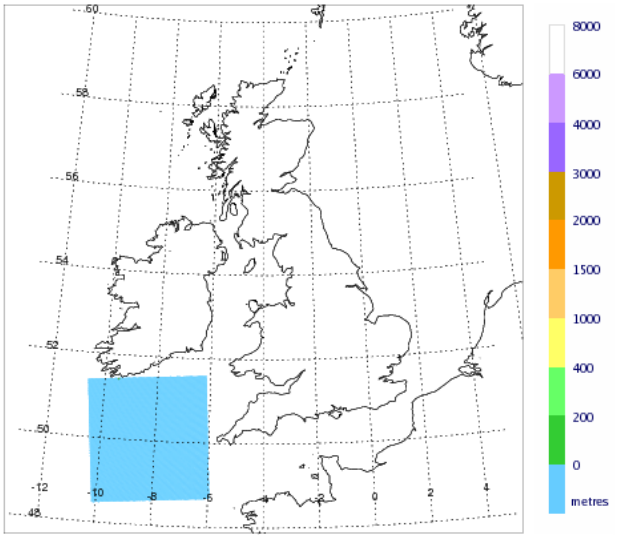
UM1p5km_Mk3_L57PT10pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT10pp**		
Flow Domain	**UM1p5km_Mk3_L57PT10pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT10.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **192**	Pole Main Grid nY	**(37.5, 177.5)** **168**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



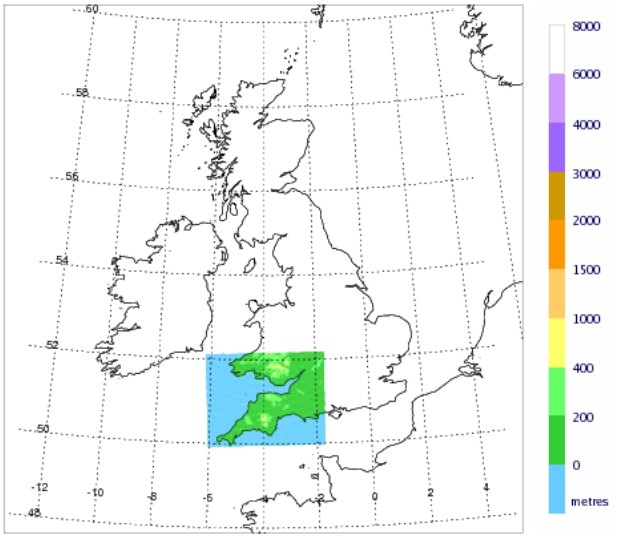
UM1p5km_Mk3_L57PT11pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT11pp**		
Flow Domain	**UM1p5km_Mk3_L57PT11pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT11.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**12 (53)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **168**	Pole Main Grid nY	**(37.5, 177.5)** **168**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



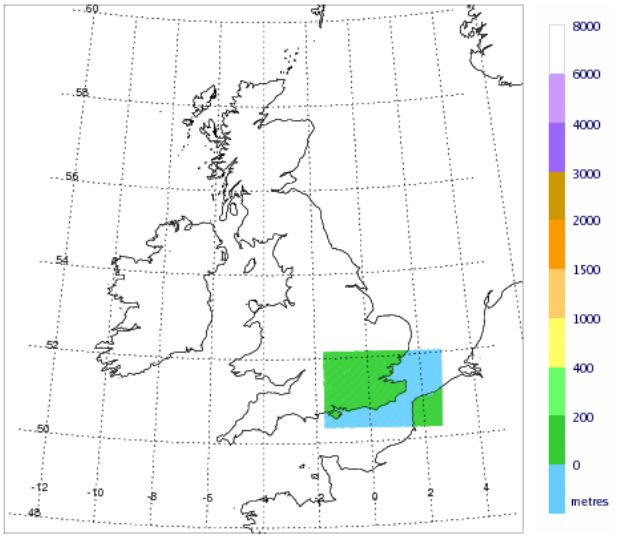
UM1p5km_Mk3_L57PT12pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT12pp**		
Flow Domain	**UM1p5km_Mk3_L57PT12pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT12.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**20 (85)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **209**	Pole Main Grid nY	**(37.5, 177.5)** **218**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



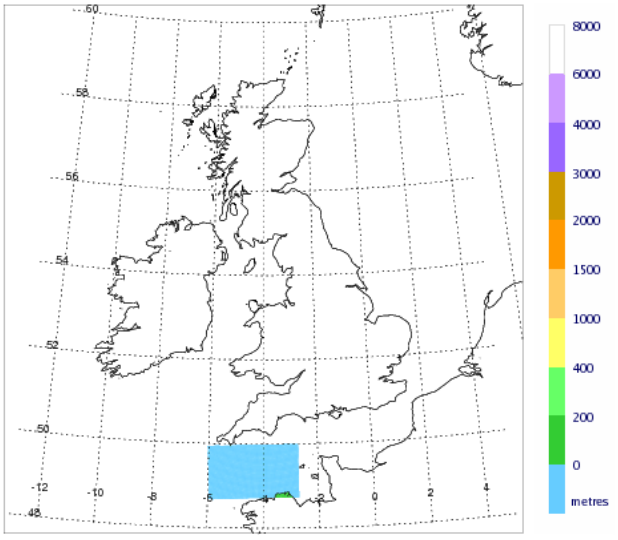
UM1p5km_Mk3_L57PT13pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT13pp**		
Flow Domain	**UM1p5km_Mk3_L57PT13pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT13.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (64)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **164**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



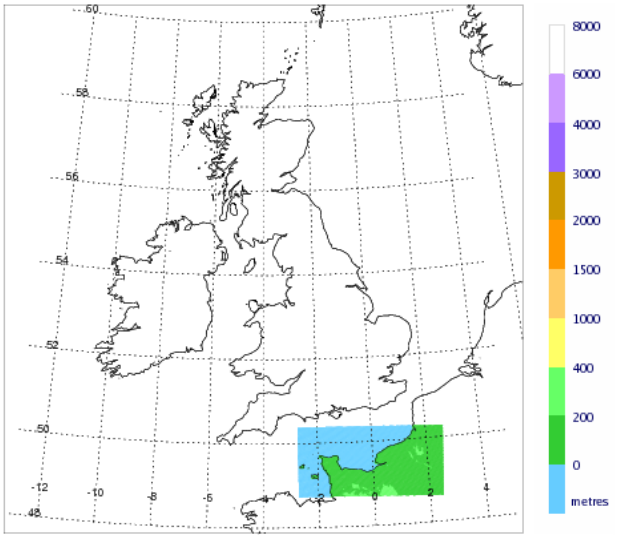
UM1p5km_Mk3_L57PT14pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT14pp**		
Flow Domain	**UM1p5km_Mk3_L57PT14pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT14.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**12 (53)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **208**	Pole Main Grid nY	**(37.5, 177.5)** **135**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



UM1p5km_Mk3_L57PT15pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT15pp**		
Flow Domain	**UM1p5km_Mk3_L57PT15pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT15.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**6 (29)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **160**	Pole Main Grid nY	**(37.5, 177.5)** **95**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



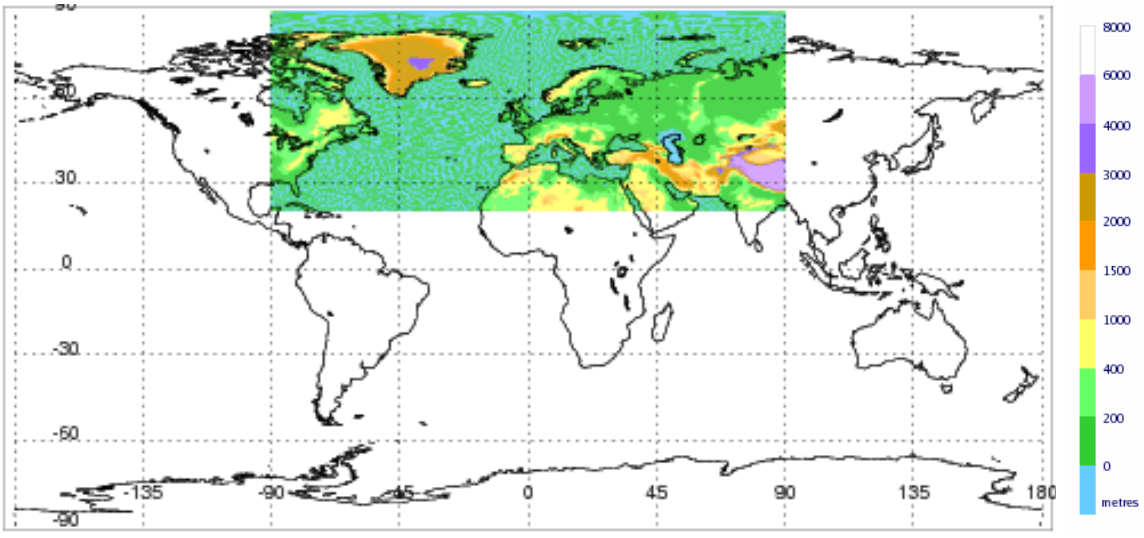
UM1p5km_Mk3_L57PT16pp			
Start Time	**03/02/2015**	End Time	**present**
Met Definition File Name	**MetDefnUM1p5km_Mk3_L57PTpp.txt**		
Met Definition Name	**UM1p5km_Mk3_L57PT16pp**		
Flow Domain	**UM1p5km_Mk3_L57PT16pp Whole**		
Met File Name	**MO** *YYYYMMDDhhmm*.**UM1p5km_Mk3_[IM]_L57PT16.pp**		
Met File Type	**PP (× 2)**	Approx Filesize MB	**16 (60)**
Global Data ?	**No**	Time Frequency hr	**1**
H-Coord Main Grid nX	**Rot LL** **256**	Pole Main Grid nY	**(37.5, 177.5)** **124**
Approx Resolution km	**1.5**	Actual Resolution °	**0.0135 × 0.0135**
Z-Coord	**Z_eta**	nLevels / Max Height	**57 / 12 km**



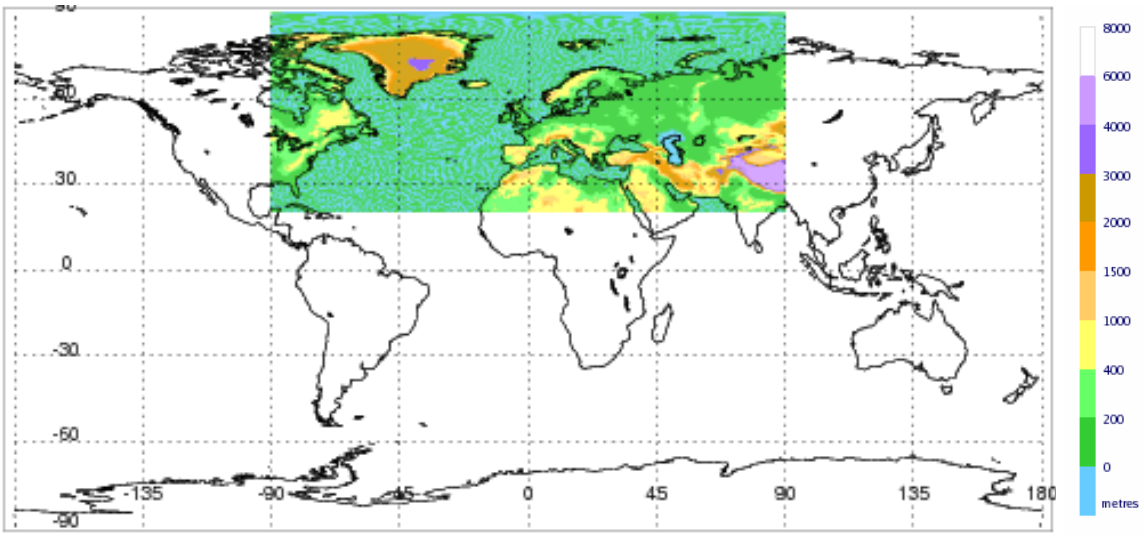
B NWP met definitions for datasets from other centres

B.1 NWP datasets from ECMWF

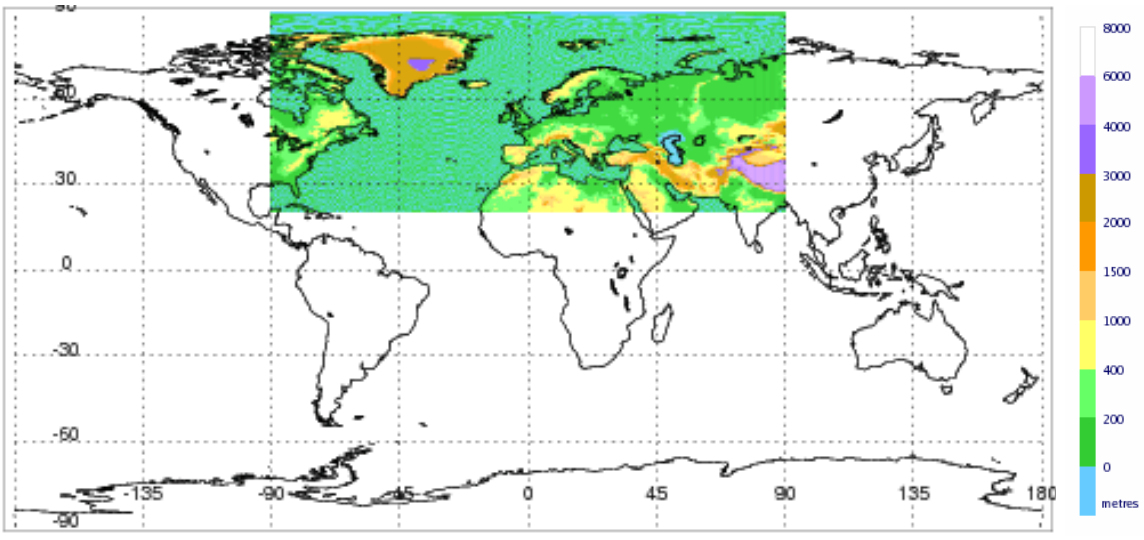
ECMWF OPER Mk1 L55R			
Start Time	**26/01/2010**	End Time	**18/05/2011**
Met Definition File Name	**MetDefnECMWF_OPER_Mk1_L55R.txt**		
Met Definition Name	**ECMWF OPER Mk1 L55R**		
Flow Domain	**ECMWF OPER Mk1 L55R**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**OPER_Mk1_L55R090W20N090E90N.grb**		
Met File Type	**GRIB**	Approx Filesize MB	**40**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **361**	Pole Main Grid nY	**(90.0, 0.0)** **141**
Approx Resolution km	**50**	Actual Resolution °	**0.50 × 0.50**
Z-Coord	**P_eta**	nLevels / Max Height	**55 / 90 hPa**



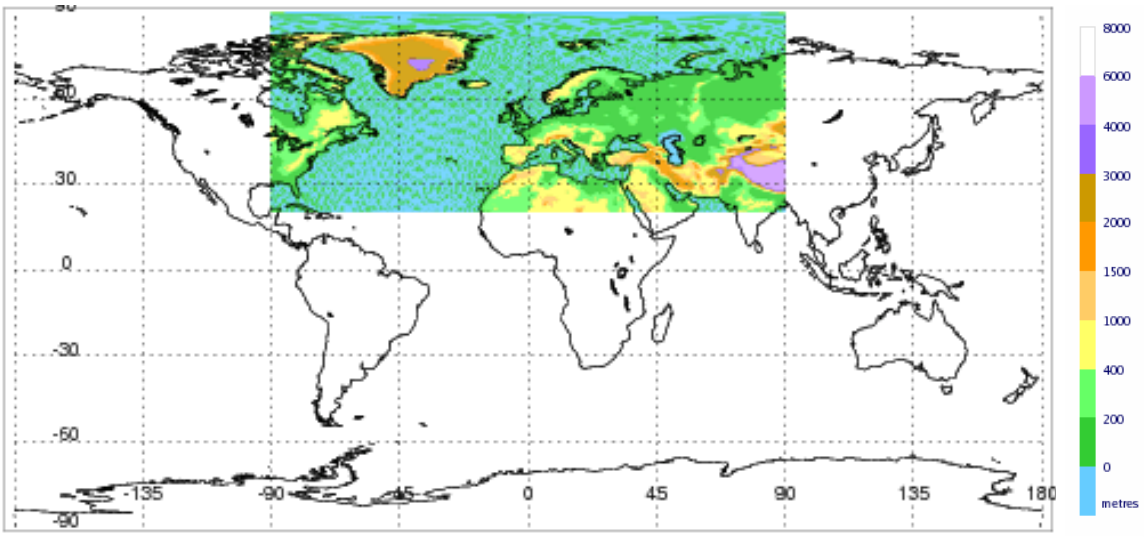
ECMWF OPER Mk2 L55R			
Start Time	**18/05/2011**	End Time	**25/06/2013**
Met Definition File Name	**MetDefnECMWF_OPER_Mk2_L55R.txt**		
Met Definition Name	**ECMWF OPER Mk2 L55R**		
Flow Domain	**ECMWF OPER Mk2 L55R**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**OPER_Mk2_L55R090W20N090E90N.grb**		
Met File Type	**GRIB**	Approx Filesize MB	**40**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **361**	Pole Main Grid nY	**(90.0, 0.0)** **141**
Approx Resolution km	**50**	Actual Resolution °	**0.50 × 0.50**
Z-Coord	**P_eta**	nLevels / Max Height	**55 / 90 hPa**



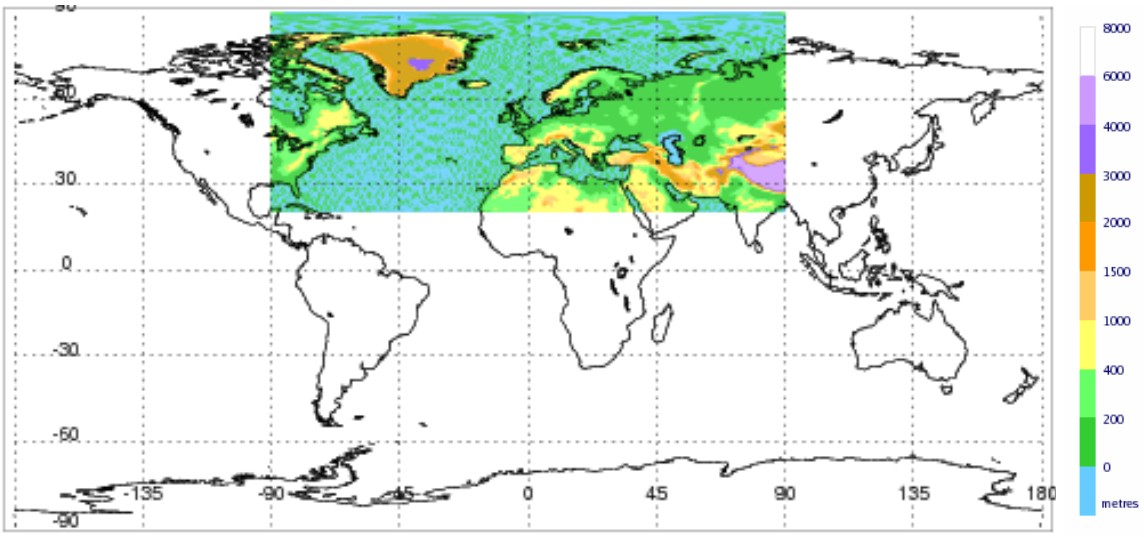
ECMWF OPER Mk3 L72R			
Start Time	**25/06/2013**	End Time	**present**
Met Definition File Name	**MetDefnECMWF_OPER_Mk3_L72R.txt**		
Met Definition Name	**ECMWF OPER Mk3 L72R**		
Flow Domain	**ECMWF OPER Mk3 L72R**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**OPER_Mk3_L72R090W20N090E90N.grb**		
Met File Type	**GRIB**	Approx Filesize MB	**190**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **721**	Pole Main Grid nY	**(90.0, 0.0)** **281**
Approx Resolution km	**25**	Actual Resolution °	**0.25 × 0.25**
Z-Coord	**P_eta**	nLevels / Max Height	**72 / 10 hPa**



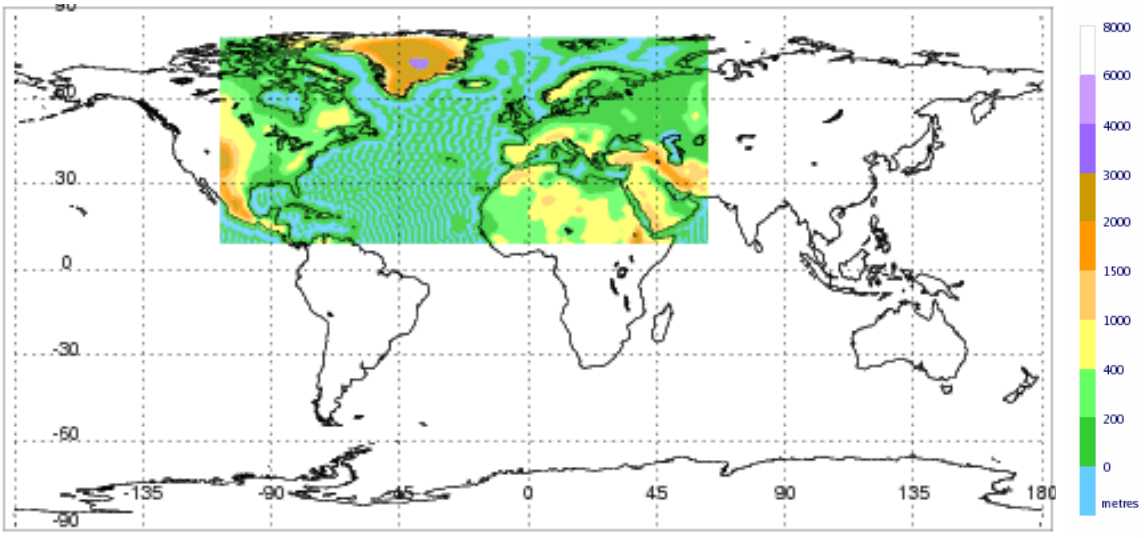
ECMWF EPS Mk1 L26R			
Start Time	**10/05/2010**	End Time	**31/12/2010**
Met Definition File Name	**MetDefnECMWF_EPS_Mk1_L26R.txt**		
Met Definition Name	**ECMWF EPS Mk1 L26R**		
Flow Domain	**ECMWF EPS Mk1 L26R**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**EPS_Mk1_L26R090W20N090E90N.grb**		
Met File Type	**GRIB**	Approx Filesize MB	**20 (x 21)**
Global Data ?	**No**	Time Frequency hr	**6**
H-Coord Main Grid nX	**LL** **361**	Pole Main Grid nY	**(90.0, 0.0)** **141**
Approx Resolution km	**50**	Actual Resolution °	**0.50 × 0.50**
Z-Coord	**P_eta**	nLevels / Max Height	**26 / 90 hPa**



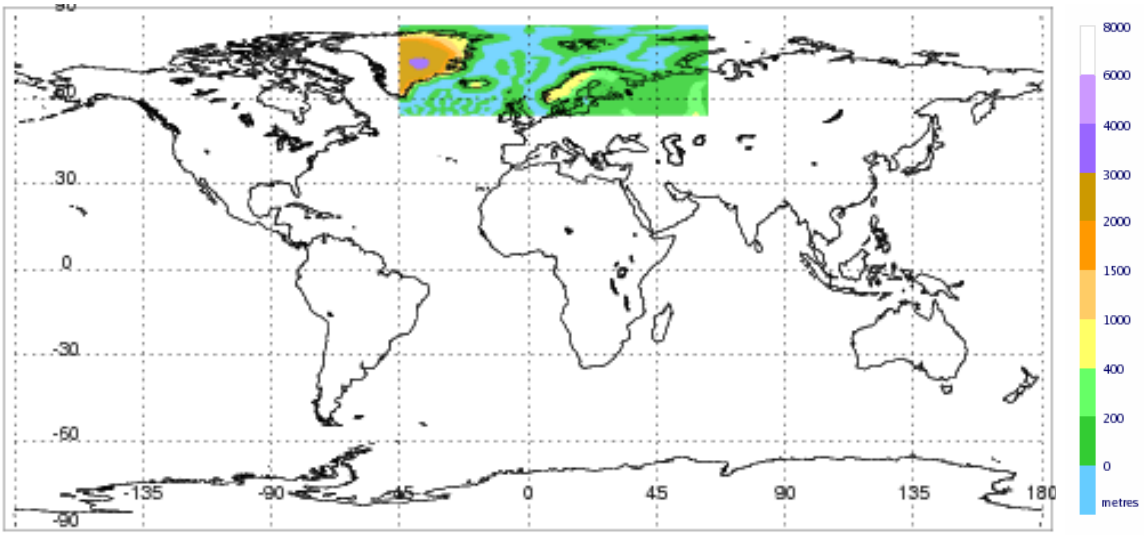
ECMWF EPS Mk2 L26R			
Start Time	**21/05/2011**	End Time	**present**
Met Definition File Name	**MetDefnECMWF_EPS_Mk2_L26R.txt**		
Met Definition Name	**ECMWF EPS Mk2 L26R**		
Flow Domain	**ECMWF EPS Mk2 L26R**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**EPS_Mk2_L26R090W20N090E90N.grb**		
Met File Type	**GRIB**	Approx Filesize MB	**20 (x 21)**
Global Data ?	**No**	Time Frequency hr	**6**
H-Coord Main Grid nX	**LL** **361**	Pole Main Grid nY	**(90.0, 0.0)** **141**
Approx Resolution km	**50**	Actual Resolution °	**0.50 × 0.50**
Z-Coord	**P_eta**	nLevels / Max Height	**26 / 90 hPa**



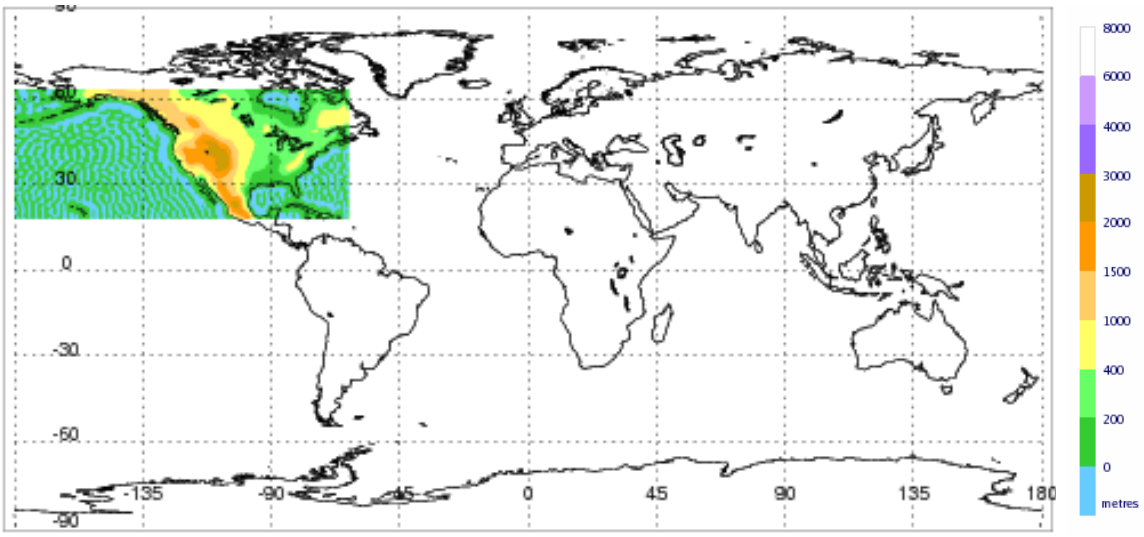
ECMWF ERA40 Regional			
Start Time	**01/01/1986**	End Time	**01/01/1987**
Met Definition File Name	**MetDefnECMWF_ERA40_Regional.txt**		
Met Definition Name	**ECMWF ERA40 Regional**		
Flow Domain	**ECMWF ERA40 Regional**		
Met File Name	**ECMWF** *YYYYMMDDhhmm*.**ERA40_108W09N063E81N**		
Met File Type	**GRIB**	Approx Filesize MB	**7**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **153**	Pole Main Grid nY	**(90.0, 0.0)** **65**
Approx Resolution km	**120**	Actual Resolution °	**1.125 × 1.125**
Z-Coord	**P_eta**	nLevels / Max Height	**37 / 80 hPa**



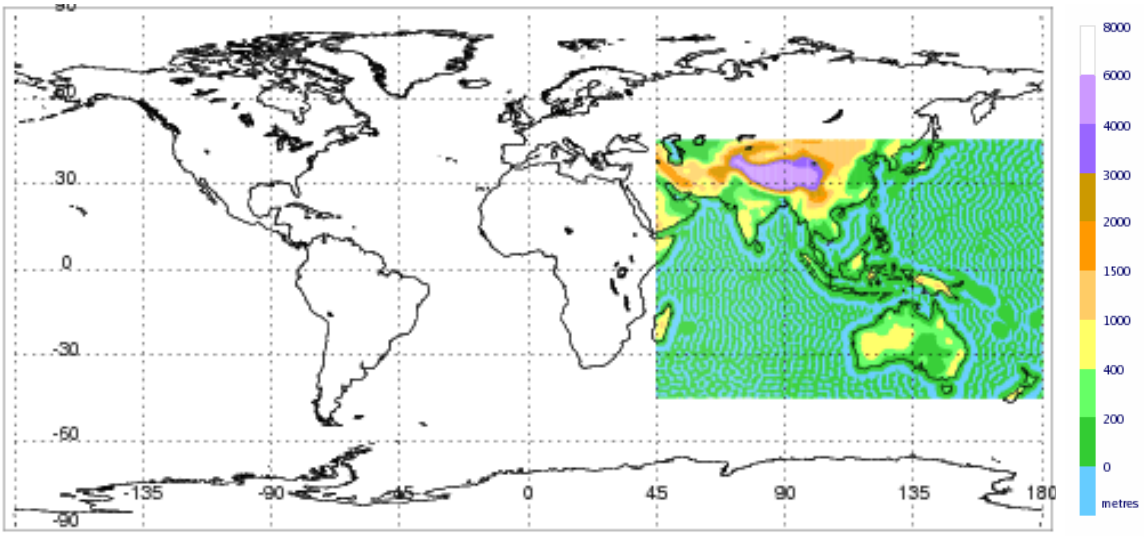
ECMWF ERA40 NEurope			
Start Time	**25/02/2000**	End Time	**01/03/2000**
Met Definition File Name	**MetDefnECMWF_ERA40_NEurope.txt**		
Met Definition Name	**ECMWF ERA40 NEurope**		
Flow Domain	**ECMWF ERA40 NEurope**		
Met File Name	**ECMWF** *YYYYMMDDhhmm*.**ERA40_045W54N063E85N**		
Met File Type	**GRIB**	Approx Filesize MB	**2**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **97**	Pole Main Grid nY	**(90.0, 0.0)** **29**
Approx Resolution km	**120**	Actual Resolution °	**1.125 × 1.125**
Z-Coord	**P_eta**	nLevels / Max Height	**41 / 35 hPa**



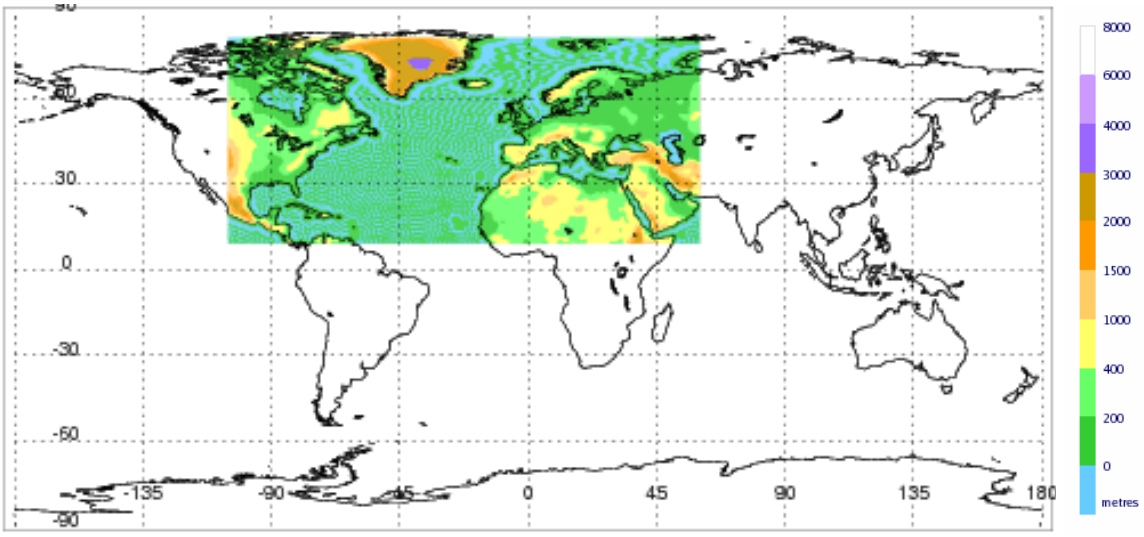
ECMWF ERA40 NAmerica			
Start Time	**01/05/1980**	End Time	**01/06/1980**
Met Definition File Name	**MetDefnECMWF_ERA40_NAmerica.txt**		
Met Definition Name	**ECMWF ERA40 NAmerica**		
Flow Domain	**ECMWF ERA40 NAmerica**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**ERA40_180W18N063W63N**		
Met File Type	**GRIB**	Approx Filesize MB	**3**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **105**	Pole Main Grid nY	**(90.0, 0.0)** **41**
Approx Resolution km	**120**	Actual Resolution °	**1.125 × 1.125**
Z-Coord	**P_eta**	nLevels / Max Height	**41 / 35 hPa**



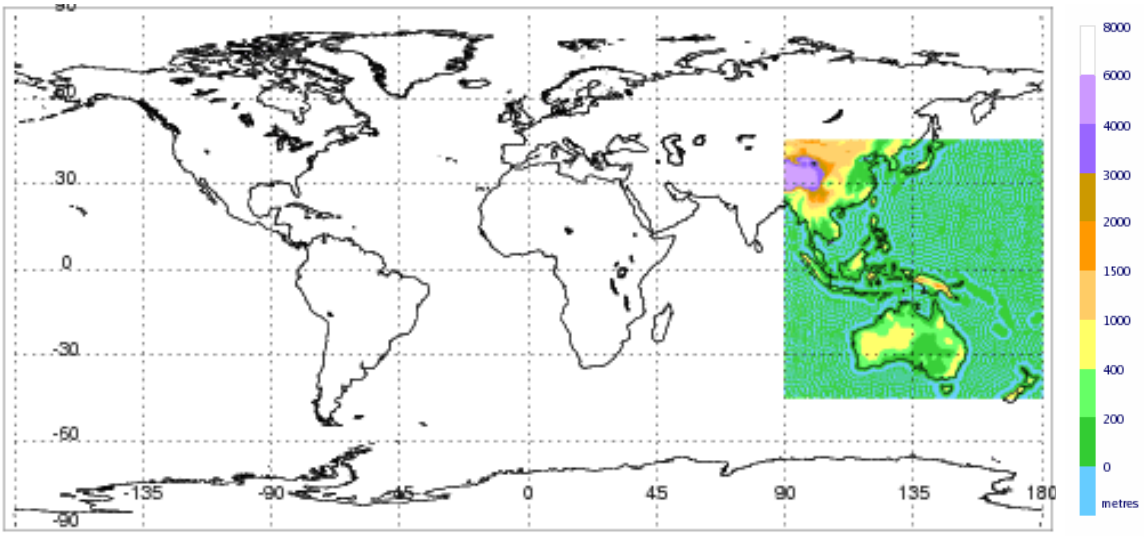
ECMWF ERA40 WPacific			
Start Time	**01/06/1982**	End Time	**01/07/1982**
Met Definition File Name	**MetDefnECMWF_ERA40_WPacific.txt**		
Met Definition Name	**ECMWF ERA40 WPacific**		
Flow Domain	**ECMWF ERA40 WPacific**		
Met File Name	**ECMWF** *YYYYMMDDhhmm*.**ERA40_045E45S180E45N**		
Met File Type	**GRIB**	Approx Filesize MB	**7**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **121**	Pole Main Grid nY	**(90.0, 0.0)** **81**
Approx Resolution km	**120**	Actual Resolution °	**1.125 × 1.125**
Z-Coord	**P_eta**	nLevels / Max Height	**41 / 35 hPa**



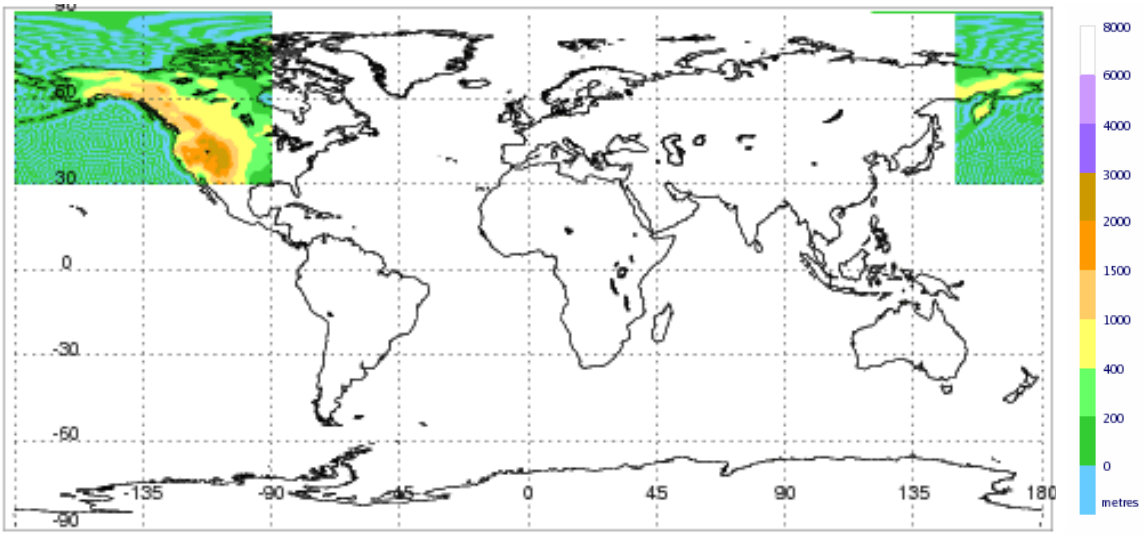
ECMWF ERAInt Regional			
Start Time	**01/01/1989**	End Time	**01/01/2011**
Met Definition File Name	**MetDefnECMWF_ERAInt_Regional.txt**		
Met Definition Name	**ECMWF ERAInt Regional**		
Flow Domain	**ECMWF ERAInt Regional**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**ERAInt_105W09N060E81N**		
Met File Type	**GRIB**	Approx Filesize MB	**15**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **221**	Pole Main Grid nY	**(90.0, 0.0)** **97**
Approx Resolution km	**80**	Actual Resolution °	**0.75 × 0.75**
Z-Coord	**P_eta**	nLevels / Max Height	**37 / 80 hPa**



ECMWF ERAInt WPacific			
Start Time	**01/06/1991**	End Time	**01/07/1991**
Met Definition File Name Met Definition Name Flow Domain	**MetDefnECMWF_ERAInt_WPacific.txt** **ECMWF ERAInt WPacific** **ECMWF ERAInt WPacific**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**ERAInt_090E45S180E45N**		
Met File Type	**GRIB**	Approx Filesize MB	**16**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **121**	Pole Main Grid nY	**(90.0, 0.0)** **121**
Approx Resolution km	**80**	Actual Resolution °	**0.75 × 0.75**
Z-Coord	**P_eta**	nLevels / Max Height	**60 / 0.1 hPa**



ECMWF ERAInt Alaska			
Start Time	**01/08/2008**	End Time	**01/09/2008**
Met Definition File Name	**MetDefnECMWF_ERAInt_Alaska.txt**		
Met Definition Name	**ECMWF ERAInt Alaska**		
Flow Domain	**ECMWF ERAInt Alaska**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**ERAInt_150E30N090W90N**		
Met File Type	**GRIB**	Approx Filesize MB	**10**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **161**	Pole Main Grid nY	**(90.0, 0.0)** **81**
Approx Resolution km	**80**	Actual Resolution °	**0.75 × 0.75**
Z-Coord	**P_eta**	nLevels / Max Height	**41 / 35 hPa**



ECMWF ERAInt Australia			
Start Time	**01/01/2000**	End Time	**01/01/2001**
Met Definition File Name	**MetDefnECMWF_ERAInt_Australia.txt**		
Met Definition Name	**ECMWF ERAInt Australia**		
Flow Domain	**ECMWF ERAInt Australia**		
Met File Name	**ECMWF***YYYYMMDDhhmm*.**ERAInt_045E75S120W30N**		
Met File Type	**GRIB**	Approx Filesize MB	**26**
Global Data ?	**No**	Time Frequency hr	**3**
H-Coord Main Grid nX	**LL** **261**	Pole Main Grid nY	**(90.0, 0.0)** **141**
Approx Resolution km	**80**	Actual Resolution °	**0.75 × 0.75**
Z-Coord	**P_eta**	nLevels / Max Height	**39 / 55 hPa**