

Variable	Units	Description	
TIMEKEEPING			
TIMESTAMP	YYYYMMDDHHMM	ISO timestamp - short format	
TIMESTAMP_START	YYYYMMDDHHMM	ISO timestamp start of averaging period - short format	
TIMESTAMP_END	YYYYMMDDHHMM	ISO timestamp end of averaging period - short format	
MICROMETEOROLOGICAL			
TA_F		Air temperature, consolidated from TA_F_MDS and TA_ERA	
	HH	deg C	TA_F_MDS used if TA_F_MDS_QC is 0 or 1
	DD	deg C	average from half-hourly data
	WW-YY	deg C	average from daily data
TA_F_QC		Quality flag for TA_F	
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = downscaled from ERA
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
SW_IN_POT		Shortwave radiation, incoming, potential (top of atmosphere)	
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-MM	W m-2	average from daily data
	YY	W m-2	not defined
SW_IN_F		Shortwave radiation, incoming consolidated from SW_IN_F_MDS and SW_IN_ERA (negative values set to zero)	
	HH	W m-2	SW_IN_F_MDS used if SW_IN_F_MDS_QC is 0 or 1
	DD	W m-2	average from half-hourly data
	WW-YY	W m-2	average from daily data
SW_IN_F_QC		Quality flag for SW_IN_F	
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = downscaled from ERA

	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
LW_IN_F			Longwave radiation, incoming, consolidated from LW_IN_F_MDS and LW_IN_ERA
	HH	W m-2	LW_IN_F_MDS used if LW_IN_F_MDS_QC is 0 or 1
	DD	W m-2	average from half-hourly data
	WW-YY	W m-2	average from daily data
LW_IN_F_QC			Quality flag for LW_IN_F
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = downscaled from ERA
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
VPD_F			Vapor Pressure Deficit consolidated from VPD_F_MDS and VPD_ERA
	HH	hPa	VPD_F_MDS used if VPD_F_MDS_QC is 0 or 1
	DD	hPa	average from half-hourly data
	WW-YY	hPa	average from daily data
VPD_F_QC			Quality flag for VPD_F
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = downscaled from ERA
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
PA_F			Atmospheric pressure consolidated from PA and PA_ERA
	HH	kPa	PA used if measured
	DD	kPa	average from half-hourly data
	WW-YY	kPa	average from daily data
PA_F_QC			Quality flag for PA_F
	HH	adimensional	0 = measured; 2 = downscaled from ERA

	DD	adimensional	fraction between 0-1, indicating percentage of measured data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured data (average from daily data)
P_F			Precipitation consolidated from P and P_ERA
	HH	mm	P used if measured (mm per dataset resolution: either hour or half-hour)
	DD	mm d-1	sum from half-hourly data (mm per day)
	WW-MM	mm d-1	average from daily data (mm per day)
	YY	mm y-1	sum from daily data (mm per year)
P_F_QC			Quality flag for P_F
	HH	adimensional	0 = measured; 2 = downscaled from ERA
	DD	adimensional	fraction between 0-1, indicating percentage of measured data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured data (average from daily data)
WS_F			Wind speed, consolidated from WS and WS_ERA
	HH	m s-1	WS used if measured
	DD	m s-1	average from half-hourly data
	WW-YY	m s-1	average from daily data
WS_F_QC			Quality flag of WS_F
	HH	adimensional	0 = measured; 2 = downscaled from ERA
	DD	adimensional	fraction between 0-1, indicating percentage of measured data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured data (average from daily data)
WD			Wind direction
	HH	Decimal degrees	
	DD-YY	Decimal degrees	not defined
RH			Relative humidity, range 0-100
	HH	%	
	DD-YY	%	not defined
USTAR			Friction velocity
	HH	m s-1	
	DD	m s-1	average from half-hourly data (only days with more than 50% records available)

	WW-YY	m s-1	average from daily data (only periods with more than 50% records available)
USTAR_QC			Quality flag of USTAR
	HH	adimensional	not defined
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)
NETRAD			Net radiation
	HH	W m-2	
	DD	W m-2	average from half-hourly data (only days with more than 50% records available)
	WW-YY	W m-2	average from daily data (only periods with more than 50% records available)
NETRAD_QC			Quality flag of NETRAD
	HH	adimensional	not defined
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)
PPFD_IN			Photosynthetic photon flux density, incoming
	HH	W m-2	
	DD	W m-2	average from half-hourly data (only days with more than 50% records available)
	WW-YY	W m-2	average from daily data (only periods with more than 50% records available)
PPFD_IN_QC			Quality flag of PPFD_IN
	HH	adimensional	not defined
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)
PPFD_DIF			Photosynthetic photon flux density, diffuse incoming
	HH	W m-2	
	DD	W m-2	average from half-hourly data (only days with more than 50% records available)

	WW-YY	W m-2	average from daily data (only periods with more than 50% records available)
PPFD_DIF_QC			Quality flag of PPFD_DIF
	HH	adimensional	not defined
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)
PPFD_OUT			Photosynthetic photon flux density, outgoing
	HH	W m-2	
	DD	W m-2	average from half-hourly data (only days with more than 50% records available)
	WW-YY	W m-2	average from daily data (only periods with more than 50% records available)
PPFD_OUT_QC			Quality flag of PPFD_OUT
	HH	adimensional	not defined
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)
SW_DIF			Shortwave radiation, diffuse incoming
	HH	W m-2	
	DD	W m-2	average from half-hourly data (only days with more than 50% records available)
	WW-YY	W m-2	average from daily data (only periods with more than 50% records available)
SW_DIF_QC			Quality flag of SW_DIF
	HH	adimensional	not defined
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)
SW_OUT			Shortwave radiation, outgoing
	HH	W m-2	
	DD	W m-2	average from half-hourly data (only days with more than 50% records available)
	WW-YY	W m-2	average from daily data (only periods with more than 50% records available)

SW_OUT_QC			Quality flag of SW_OUT	
	HH	adimensional	not defined	
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)	
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)	
LW_OUT			Longwave radiation, outgoing	
	HH	W m-2		
	DD	W m-2	average from half-hourly data (only days with more than 50% records available)	
	WW-YY	W m-2	average from daily data (only periods with more than 50% records available)	
LW_OUT_QC			Quality flag of LW_OUT	
	HH	adimensional	not defined	
	DD	adimensional	fraction between 0-1, indicating percentage of data available (measured)	
	WW-YY	adimensional	fraction between 0-1, indicating percentage of data available (average from daily data)	
CO2_F_MDS			CO2 mole fraction, gapfilled with MDS	
	HH	umolCO2 mol-1		
	DD	umolCO2 mol-1	average from half-hourly data	
	WW-YY	umolCO2 mol-1	average from daily data	
CO2_F_MDS_QC			Quality flag for CO2_F_MDS	
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor	
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data	
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)	
TS_F_MDS_#			Soil temperature, gapfilled with MDS (numeric index "#" increases with the depth, 1 is shallowest)	
	HH	deg C		
	DD	deg C	average from half-hourly data	
	WW-YY	deg C	average from daily data	
TS_F_MDS_#_QC			Quality flag for TS_F_MDS_#	
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor	

	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
SWC_F_MDS_#			Soil water content, gapfilled with MDS (numeric index "#" increases with the depth, 1 is shallowest)
	HH	%	
	DD	%	average from half-hourly data
	WW-YY	%	average from daily data
SWC_F_MDS_#_QC			Quality flag for SWC_F_MDS_#
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
ENERGY PROCESSING			
G_F_MDS			Soil heat flux
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY	W m-2	average from daily data
G_F_MDS_QC			Quality flag of G_F_MDS
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
LE_F_MDS			Latent heat flux, gapfilled using MDS method
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY	W m-2	average from daily data

			Quality flag for LE_F_MDS, LE_CORR, LE_CORR25, and LE_CORR75. Note: this variable is incomplete, a complete version and explanation can be found in the known issues document: http://fluxnet.fluxdata.org/data/fluxnet2015-dataset/known-issues/
LE_F_MDS_QC	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
LE_CORR			Latent heat flux, corrected LE_F_MDS by energy balance closure correction factor
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY	W m-2	average from daily data
LE_CORR_25			Latent heat flux, corrected LE_F_MDS by energy balance closure correction factor, 25th percentile
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY		not produced
LE_CORR_75			Latent heat flux, corrected LE_F_MDS by energy balance closure correction factor, 75th percentile
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY		not produced
LE_RANDUNC			Random uncertainty of LE, from measured only data
	HH	W m-2	uses only data point where LE_F_MDS_QC is 0 and two hierarchical methods (see header and LE_RANDUNC_METHOD)
	DD-YY	W m-2	from random uncertainty of individual half-hours ($\text{rand}(i) = [\text{SQRT}(\text{SUM}(\text{rand}(i)^2)) / n]$, where n is the number of half-hours used)
H_F_MDS			Sensible heat flux, gapfilled using MDS method
	HH	W m-2	
	DD	W m-2	average from half-hourly data

	WW-YY	W m-2	average from daily data
H_F_MDS_QC			Quality flag for H_F_MDS, H_CORR, H_CORR25, and H_CORR75. Note: this variable is incomplete, a complete version and explanation can be found in the known issues document: http://fluxnet.fluxdata.org/data/fluxnet2015-dataset/known-issues/
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
H_CORR			Sensible heat flux, corrected H_F_MDS by energy balance closure correction factor
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY	W m-2	average from daily data
H_CORR_25			Sensible heat flux, corrected H_F_MDS by energy balance closure correction factor, 25th percentile
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY		not produced
H_CORR_75			Sensible heat flux, corrected H_F_MDS by energy balance closure correction factor, 75th percentile
	HH	W m-2	
	DD	W m-2	average from half-hourly data
	WW-YY		not produced
H RANDUNC			Random uncertainty of H, from measured only data
	HH	W m-2	uses only data point where H_F_MDS_QC is 0 and two hierarchical methods (see header and H_RANDUNC_METHOD)
	DD-YY	W m-2	from random uncertainty of individual half-hours ($\text{rand}(i) = [\text{SQRT}(\text{SUM}(\text{rand}(i)^2)) / n]$, where n is the number of half-hours used)
NET ECOSYSTEM EXCHANGE			

NIGHT			Flag indicating nighttime interval based on SW_IN_POT
	HH	adimensional	0 = daytime, 1 = nighttime
	DD-YY		not produced
NEE_VUT_REF			Net Ecosystem Exchange, using Variable Ustar Threshold (VUT) for each year, reference selected on the basis of the model efficiency (MEF). The MEF analysis is repeated for each time aggregation
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
NEE_VUT_REF_QC			Quality flag for NEE_VUT_REF
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
NEE_VUT_REF_RANDUNC			Random uncertainty for NEE_VUT_REF, from measured only data
	HH	umolCO2 m-2 s-1	uses only data points where NEE_VUT_REF_QC is 0 and two hierarchical methods - see header and NEE_VUT_REF_RANDUNC_METHOD
	DD-MM	gC m-2 d-1	from random uncertainty of individual half-hours ($\text{rand}(i) = [\text{SQRT}(\text{SUM}(\text{rand}(i)^2)) / n]$, where n is the number of half-hours used)
	YY	gC m-2 y-1	from random uncertainty of individual half-hours ($\text{rand}(i) = [\text{SQRT}(\text{SUM}(\text{rand}(i)^2)) / n]$, where n is the number of half-hours used)
NEE_VUT_XX			NEE VUT percentiles (approx. percentile indicated by XX, see doc.) calculated from the 40 estimates aggregated at the different time resolutions -- XX = 05, 16, 25, 50, 75, 84, 95
	HH	umolCO2 m-2 s-1	XXth percentile from 40 half-hourly NEE_VUT_XX
	DD	gC m-2 d-1	XXth percentile from 40 daily NEE_VUT_XX
	WW	gC m-2 d-1	XXth percentile from 40 weekly NEE_VUT_XX
	MM	gC m-2 d-1	XXth percentile from 40 monthly NEE_VUT_XX

	YY	gC m-2 y-1	XXth percentile from 40 yearly NEE_VUT_XX
NEE_VUT_XX_QC			Quality flag for NEE_VUT_XX -- XX = 05, 16, 25, 50, 75, 84, 95
	HH	adimensional	0 = measured; 1 = good quality gapfill; 2 = medium; 3 = poor
	DD	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data
	WW-YY	adimensional	fraction between 0-1, indicating percentage of measured and good quality gapfill data (average from daily data)
PARTITIONING			
NIGHTTIME			
RECO_NT_VUT_REF			Ecosystem Respiration, from Nighttime partitioning method, reference selected from RECO versions using model efficiency (MEF). The MEF analysis is repeated for each time aggregation
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
RECO_NT_VUT_XX			Ecosystem Respiration, from Nighttime partitioning method (with XX = 05, 16, 25, 50, 75, 84, 95)
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
GPP_NT_VUT_REF			Gross Primary Production, from Nighttime partitioning method, reference selected from GPP versions using model efficiency (MEF). The MEF analysis is repeated for each time aggregation
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
GPP_NT_VUT_XX			Gross Primary Production, from Nighttime partitioning method (with XX = 05, 16, 25, 50, 75, 84, 95)

	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
DAYTIME			
RECO_DT_VUT_REF			Ecosystem Respiration, from Daytime partitioning method, reference selected from RECO versions using model efficiency (MEF). The MEF analysis is repeated for each time aggregation
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
RECO_DT_VUT_XX			Ecosystem Respiration, from Daytime partitioning method (with XX = 05, 16, 25, 50, 75, 84, 95)
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
GPP_DT_VUT_REF			Gross Primary Production, from Daytime partitioning method, reference selected from GPP versions using model efficiency (MEF). The MEF analysis is repeated for each time aggregation
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
GPP_DT_VUT_XX			Gross Primary Production, from Daytime partitioning method (with XX = 05, 16, 25, 50, 75, 84, 95)
	HH	umolCO2 m-2 s-1	
	DD	gC m-2 d-1	calculated from half-hourly data
	WW-MM	gC m-2 d-1	average from daily data
	YY	gC m-2 y-1	sum from daily data
SUNDOWN			

RECO_SR		Ecosystem Respiration, from Sundown Respiration partitioning method
	HH	umolCO2 m-2 s-1
	DD	gC m-2 d-1
	WW-MM	gC m-2 d-1
	YY	gC m-2 y-1
		Fraction between 0-1, indicating the percentage of data available in the averaging period to parametrize the respiration model
RECO_SR_N	HH	not produced
	DD-YY	adimensional
		percentage of data available