



## GIRAFFE Exposure Time Calculator

Optical Multi-Object Spectroscopy Mode **Version P116**

[Description](#)

[FAQ](#)

# GIRAFFE Spectroscopy Model

**Source Geometry:** Seeing limited

**Source Flux Distribution**

Type: Blackbody  
T=6500 K

**Source Brightness:**

Magnitude : V = 17  
Magnitude System : Vega

**Sky Conditions**

Airmass : 1.50  
Moon illumination FLI: 0.50  
Moon-target separation: 45.00 degrees  
PWV : 30.00 mm  
PWV Probability : > 95 % of realising the PWV  $\leq$  30.00 mm  
Seeing : 0.80 arcsec @500nm, zenith  
Turbulence category : 50%

show sky model configuration details

**Image Quality**

Image Quality FWHM : 0.82 arcsec (*to be used for OB constraint set*)

show details of the IQ calculations

**Instrument Setup**

Grism: HR15n  
Object-fiber displacement : 0.3 arcsec  
Detector Carreras in standard read mode with binning 1

**Results requested**

Signal to Noise of 30  
Range 50(%)

Setup name	:	HR15n
Reference Wavelength	:	665.000 nm
Wavelength Range	:	647.242 - 678.992
Fiber / Sky Sampling Mode	:	MEDUSA
Dispersion	:	0.010 nm/pixel
Plate scale	:	0.300 "/pixel
FWHM of the fiber spatial profile	:	4.001 pixels
Efficiency at reference wavelength (no extinction)	:	9.691 %
Efficiency at reference wavelength (with extinction)	:	8.723 %

Fiber injection loss <a href="#">note</a>	:	33.934 %
Loss due to object-fiber displacement <a href="#">note</a>	:	14.775
Total object signal at reference wavelength	:	1054.534 e-
Sky background signal at reference wavelength	:	85.068 e-
Max. intensity <a href="#">note</a> at reference wavelength (obj+sky)	:	263.805 e-/pixel
Detector saturation	:	152043 e-
Detector read-out noise level	:	4.000 e-/pixel
Detector dark current	:	0.503 e-/pixel/hour
Number of Fibers covering the source <a href="#">note</a>	:	1
Fiber diameter <a href="#">note</a>	:	6 pixels

Exposure Time (1 exposure)	:	2443.739 seconds
Signal to Noise at reference wavelength <a href="#">note</a>	:	30.000
Mean Signal to Noise	:	29.625
RMS Signal to Noise	:	29.806
Signal to Noise near maximum transmission <a href="#">note</a>	:	30.075

**Warning:** Please be aware that without a waiver there is a one-hour execution time limit for Service Mode OBs, and that the times returned here **do not** include instrument overheads, times for sky measurements, etc. Thus, care must be taken to allow for these additional times when constructing compliant OBs.

## Signal to Noise Spectrum (per spectral pixel)

Over 1 pixel along the dispersion and 2\*FWHM(image quality) along the slit.

[ASCII](#)    [Interactive](#)    [PDF](#)

[log\(y\) plot](#)

[log\(y\) PDF](#)

