



# GIRAFFE Exposure Time Calculator

Optical Multi-Object Spectroscopy Mode [Version P116](#)

[Description](#)

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## 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(%)**

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

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](#)

