

# KOOLS-IFU Exposure Time Calculator

This ETC was updated on 2020/Oct./2. Please recalculate the results obtained before.

Note: This page does not work well on Internet Explorer. Please use another browser, such as Google Chrome and Mozilla Firefox.

## Input

Wavelength		
grism	<input type="text" value="VPH-red"/>	<input type="text" value="VPH-blue"/> <input type="text" value="VPH-red"/> <input type="text" value="VPH495"/> <input type="text" value="VPH683"/>
observing wavelength	<input type="text" value="9068"/>	[Å]
integral range (e.g., spectral resolution)	<input type="text" value="11"/>	[Å]
Object Flux		
object magnitude (point source)	<input type="text"/>	[AB mag]
object flux in the wavelength range	<input type="text" value="1E-15"/>	[erg cm <sup>-2</sup> s <sup>-1</sup> ]
Sky Condition		
seeing (or PSF size)	<input type="text" value="3.0"/>	<input type="text" value="1.0"/> <input type="text" value="1.5"/> <input type="text" value="2.0"/> <input type="text" value="3.0"/> <input type="text" value="4"/> <input type="text" value="5"/>
sky background brightness	<input type="text"/>	[AB mag]
	<input type="text" value="1E-16"/>	[erg cm <sup>-2</sup> s <sup>-1</sup> arcsec <sup>-2</sup> Å <sup>-1</sup> ]
Observation Settings		
exposure time of a frame	<input type="text" value="600"/>	[sec]
number of frames	<input type="text" value="1"/>	<input type="text" value="+"/> <input type="text" value="-"/>
For Experts		
field of view per fiber	<input type="text" value="0.5682"/>	[arcsec <sup>2</sup> ]
optics throughput	<input type="text" value="1.89"/>	[%]
number of combining fibers	<input type="text" value="12.44"/>	
object flux fraction in aperture (please change to 100% for extended source)	<input type="text" value="50"/>	[%]
number of extract pixels for fiber direction	<input type="text" value="5"/>	[pixel]
readout noise	<input type="text" value="5"/>	[e <sup>-</sup> / pixel]
wavelength-pixel scale	<input type="text" value="2.73"/>	[Å]
M1 radius	<input type="text" value="189"/>	[cm]
M1 shaded radius by M2	<input type="text" value="55"/>	[cm]

## Result

total exp time [sec]	S/N	total signal [e <sup>-</sup> ]	total noise [e <sup>-</sup> ]	object photon noise [e <sup>-</sup> ]	sky photon noise [e <sup>-</sup> ]	readout noise [e <sup>-</sup> ]
<input type="text" value="600"/>	<input type="text" value="2.57"/>	<input type="text" value="265.87"/>	<input type="text" value="103.28"/>	<input type="text" value="16.31"/>	<input type="text" value="64.30"/>	<input type="text" value="79.16"/>

[back](#) [move up](#) [back to home](#)

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This site uses javascript.

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