

Astronomical source definition

Spatial profile and brightness: ([more info](#))

Choose one of point, extended or user-defined source profile and the brightness in any filter/wavelength

- ☒ **Point source** ([nominal PSF](#)) with spatially integrated brightness (e.g. 19.3 mag or $2e-17$ W/m²/μm)

Extended source having ... (When this option is selected the image quality selection in section 3 of the ITC is disabled.)

- ☐ Gaussian profile with full width half maximum (including seeing) of arcsec and spatially integrated brightness of (e.g. 19.3 mag or $2e-17$ W/m²/μm)
- ☐ Uniform surface brightness (e.g. 21.6 mag/arcsec²)

with the above **brightness normalisation** applied in filter band

[Calculate](#)

Spectral distribution: ([more info](#))

Choose one SED, the redshift and extinction

- ☐ Library spectrum of a non-stellar object
- ☐ Library spectrum of a star (300 nm - 6 μm)
- ☐ Single emission line at wavelength μm with line flux and line width km/s on a flat (in wavelength) continuum of flux density
- ☐ Model black body spectrum with temperature K
- ☒ Model power-law spectrum ($S_{\lambda} = \lambda^{-1.0}$)
- ☐ User-defined spectrum read from file (size < 1MB) no file selected

with the **spectrum mapped** to a redshift ☒ $z =$ or a radial velocity ☐ $v =$ km/s

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Instrument (GMOS North) and telescope configuration

Instrument optical properties: ([more info](#))

Grating:

Spectrum central wavelength: nm

Filter:

Focal plane unit:

Detector properties: ([more info](#))

CCD type: ☒ Hamamatsu array ☐ EEV DD legacy array

Detector binning:

- Spatial: ☐ 1 (no binning) ☒ 2 pixels ☐ 4 pixels

(For imaging this applies to both the x- and y-directions. For spectroscopy this corresponds to the y-direction.)

- Spectral: ☐ 1 (no binning) ☒ 2 pixels ☐ 4 pixels

(This corresponds to the x-direction for spectroscopy. It is unused for imaging.)

Regions of Interest: ☒ Full Frame Readout ☐ Central Spectrum: spectroscopy of central 80" FOV

Amp gain: Amp read mode:

Telescope configuration: ([more info](#))

Mirror coating: ☒ silver

Instrument port: ☒ side-looking (3 reflections)

Wavefront sensor for tip-tilt compensation: ☐ PWFS ☒ OIWFS

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Observing condition constraints

Please read the [explanatory notes](#) for the meaning of the percentiles and to ensure that your selected conditions are appropriate for the observing wavelength. Further details are available on the [observing condition constraints](#) pages.

Image Quality:	<input type="radio"/> 20%/Best	<input checked="" type="radio"/> 70%/Good	<input type="radio"/> 85%/Poor	<input type="radio"/> Any
Cloud Cover:	<input checked="" type="radio"/> 50%/Clear	<input type="radio"/> 70%/Cirrus	<input type="radio"/> 80%/Cloudy	<input type="radio"/> Any
Water Vapor:	<input type="radio"/> 20%/Low	<input type="radio"/> 50%/Median	<input type="radio"/> 80%/High	<input checked="" type="radio"/> Any
Sky Background:	<input type="radio"/> 20%/Darkest	<input type="radio"/> 50%/Dark	<input checked="" type="radio"/> 80%/Grey	<input type="radio"/> Any/Bright
Airmass:	<input type="radio"/> <1.2	<input checked="" type="radio"/> 1.5	<input type="radio"/> 2.0	

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Details of observation

Calculation method: ([more info](#))

Select calculation method (note: second method is not available for spectroscopy)

- ☒ Total S/N ratio resulting from exposures each having an exposure time of secs and with a fraction of exposures that observe the source
- ☐ Total integration time to achieve a S/N ratio of using an exposure time for each exposure of secs and with a fraction of exposures that observe the source

Telescope offset: ([more info](#))Dither offset size: arcsec**Analysis method (non IFU):** ([more info](#))

- ☒ Software aperture that gives 'optimum' S/N ratio and with a sky aperture times the target aperture
- ☐ Software aperture of diameter (or slit length) arcsec and with a sky aperture times the target aperture

Analysis Method for Integral Field Unit (IFU) spectroscopy:*Note: A single IFU element is a 0.2 arcsec diameter hexagon* ([more info](#))Number of IFU fibres for sky: (250 for IFU red/blue, 500 for IFU-2)

- ☐ Select an individual IFU element offset by arcsec from the center
- ☐ Select multiple IFU elements along a radius with offsets of to arcsec
- ☐ Sum all IFU elements within arcsec of the center

Output:

For spectroscopy, ☒ autoscale or ☐ specify limits for plotted spectra (lower wavelength μm and upper wavelength μm)

[Calculate](#)[Calculate](#)[Reset to defaults](#)