Gemini Integration Time Calculator
NIRI version 4.2

Click here for help with the results page,
software aperture diameter = 1.12 arcsec
enclosed pixels = 74.31

derived image size (FWHM) for a point source = 0.70 arcsec.

Contributions to total noise (e-) in aperture (per exposure):
Source noise = 311.26
Background noise = 812.44
Dark current noise = 47.21
Readout noise = 103.44

Total noise per exposure = 877.42
Total signal per exposure = 96883.19

Intermediate S/N for one exposure = 110.41

S/N for the whole observation = 360.70 (including sky subtraction)

Requested total integration time = 2400.00 secs, of which 2400.00 secs is on source.

Observation is background noise limited.

The peak pixel signal + background is 10215. This is 5% of the full well depth of 200000.

Input Parameters:
Instrument: NIRI

Source spatial profile, brightness, and spectral distribution:
The extended source is an emission line, at a wavelength of 2.2000 microns, and with a width of
100.00 km/s.
It's total flux is 5.0E-19 watts_flux on a flat continuum of flux density 1.0E-16 watts_fd_wavelength.

Instrument configuration:
Optical Components:
- Filter: H210S1
- Fixed Optics
- Camera: f6
- Detector - 1024x1024-pixel ALADDIN InSb array
- Read Mode: lowNoise
- Detector Bias: lowWell

Pixel Size: 0.116

Telescope configuration:
- silver mirror coating.
- side looking port.
- wavefront sensor: pwfs

Observing Conditions:
- Image Quality: 70.00%
- Sky Transparency (cloud cover): 50.00%
- Sky transparency (water vapour): 80.00%
- Sky background: 80.00%
- Airmass: 1.50
Frequency of occurrence of these conditions: 22.40%

Calculation and analysis methods:
- mode: imaging
- Calculation of S/N ratio with 20 exposures of 120.00 secs, and 100.00 % of them were on source.
- Analysis performed for aperture that gives 'optimum' S/N and a sky aperture that is 1.00 times the target aperture.