

Instrument Characteristics

Parameter		MISC Transit Spectrometer
Operating modes		MIR Ultra Stable Spectroscopy
Sensitivity; SNR/sqrt(hr)		SNR/sqrt(hr) = 12952 @3.3μm SNR/sqrt(hr) = 13339 @4.2μm SNR/sqrt(hr) = 9726 @5μm SNR/sqrt(hr) = 9873 @6.3μm SNR/sqrt(hr) = 8552 @7.6μm SNR/sqrt(hr) = 8373 @8μm SNR/sqrt(hr) = 7084 @9.6μm SNR/sqrt(hr) = 6948 @10μm SNR/sqrt(hr) = 4570 @14μm SNR/sqrt(hr) = 3064 @20μm assuming a R=50 with a 10.8 K-mag star
Resolving power		R=50-100 in 2.8-5.5 μm (TRA-S) R=50-100 in 5.5-11 μm (TRA-M) R=165-295 k 10.5-20μm (TRA-L)
Angular resolution		the radius of the field stop 2."5 (2.8-10.5μm) 1."7 (10.5-20μm)
Spectral range		2.8 - 20 μm
Field of View (instantaneous)		the radius of the field stop 2."5 (2.8-10.5μm) 1."7 (10.5-20μm)
Saturation limit		29.8Jy at 3.3μm 27.5Jy at 6.3μm 4.4Jy at 14μm calculated for the shortest readout time (assuming partial readout, 10μsec per pixel per read, two reads per pixel to sample up the ramp)
Scanning speed (survey mode)		N/A
Detectors		two 2kx2k HgCdTe detector arrays - one for TRA-S - one for TRA-M one 2kx2k Si:As arrays with a calibration source for TRA-L one 256x256 HgCdTe detector array for wavefront sensor
Detector NEP		N/A
Detector cold readout		MUX (TBD)
Photometric stability		2.78ppm at 3μm (R=50) 3.24ppm at 5μm (R=50) 3.70ppm at 8μm (R=50) 4.65ppm at 10μm (R=50) 13.39ppm at 14μm (R=200; Glasse model) 7.14ppm at 14μm (R=50; Glasse model) 16.42ppm at 14μm (R=200; Wright model, l=0deg) 7.73ppm at 14μm (R=50; Wright model, l=0deg) 23.69ppm at 20μm (R=300; Glasse model) 11.51ppm at 20μm (R=50; Glasse model) 34.74ppm at 20μm (R=300; Wright model, l=0deg) 14.40ppm at 20μm (R=50; Wright model, l=0deg) on timescales of hours to days assuming 85 transits for K~8mag M-type star