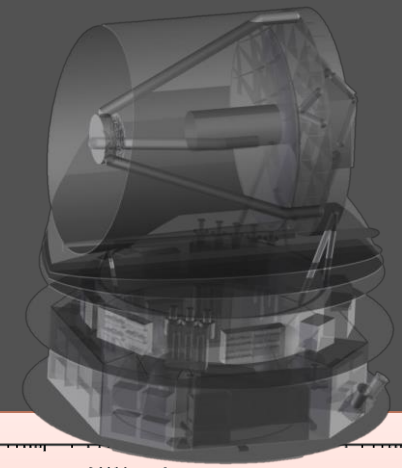




SPICA/SAFARI Fact Sheet



SAFARI Overview

- Four band *grating spectrometer*
- Continuous spectroscopic capability from 34-230 μm

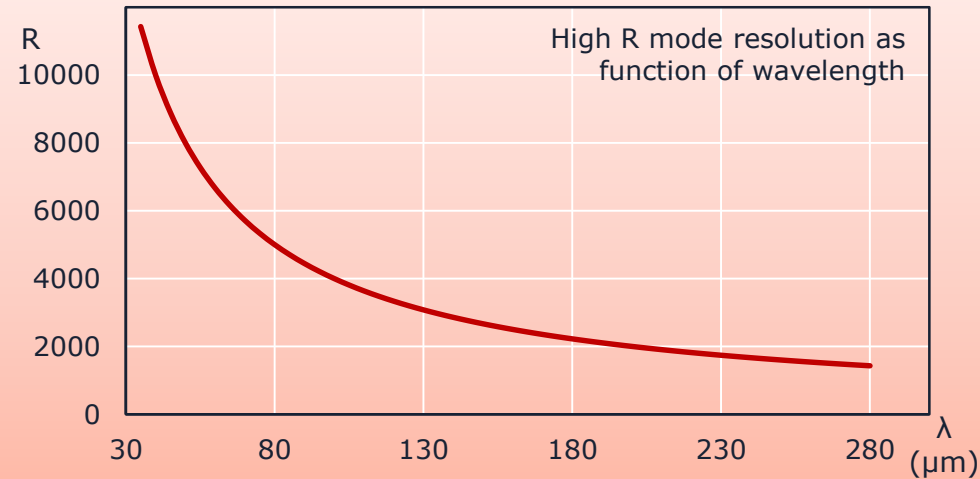
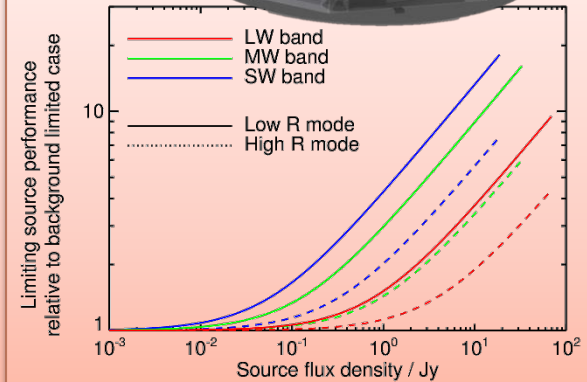
Parameter		Waveband			
		SW	MW	LW	LLW
Band centre / μm		45	72	115	185
Wavelength range / μm		34-56	54-89	87-143	140-230
Band centre beam FWHM		4.5"	7.2"	12"	19"
Point source spectroscopy (5σ -1hr)					
R \sim 300	Limiting flux / $\times 10^{-20} \text{ Wm}^{-2}$	7.2	6.6	6.6	8.2
	Limiting flux density / mJy	0.31	0.45	0.72	1.44
High R	Limiting flux / $\times 10^{-20} \text{ Wm}^{-2}$	13	13	13	15
	Limiting flux density / mJy	18	17	17	19
Mapping spectroscopy* (5σ -1hr)					
R \sim 300	Limiting flux / $\times 10^{-20} \text{ Wm}^{-2}$	84	49	30	23
	Limiting flux density / mJy	3.6	3.3	3.3	4.1
High R	Limiting flux / $\times 10^{-20} \text{ Wm}^{-2}$	189	113	73	51
	Limiting flux density / mJy	253	151	97	67
Photometric mapping* (5σ -1hr)					
Limiting flux density / μJy		209	192	194	239
Confusion limit (5σ)		15 μJy	200 μJy	2 mJy	10 mJy

SPICA Mission

- ESA/JAXA collaboration
- Telescope effective area 4.6 m^2
- Primary mirror temperature 8K
- Goal mission lifetime – 5 years

System performance v.s. target flux density, relative to the background limited case

- The sensitivity decrease is due to the increased photon noise from the target source
- Data given up to the instrument saturation limits for each band (31, 51 and 87 Jy for the SW, MW and LW bands respectively).



Sensitivities based on detector NEP $2 \times 10^{-20} \text{ W}/\sqrt{\text{Hz}}$
 * Mapping performance is for a reference area of 1 arcmin²

