

MULTIBAND IMAGING PHOTOMETER FOR SPITZER (MIPS) Pocket Guide

<http://ssc.spitzer.caltech.edu/mips/>

Basic MIPS Capabilities:

Imaging photometry at 24, 70, and 160 μm and low resolution ($R = 15 - 25$) spectroscopy between 52 and 97 μm . A fine pixel scale option at 70 μm (no change required for the other two bands), combined with precise subpixel sampling dither patterns, allow data processing to achieve "super resolution" imaging. A cryogenic scan mirror mechanism provides freeze frame scan mapping, efficient dithering, and other instrument capabilities.

MIPS Instantaneous Fields of View:

24 μm	5.4x5.4 arcminutes
70 μm	5.25x2.6 or 2.6x1.3 arcminutes
160 μm	0.53x5.33 arcminutes (effective)
SED Slit	2.0x0.33 arcminutes (full wavelength coverage)

Basic Sensitivities (low background):

5 sigma in 500 seconds on source

24 μm	110 μJy
70 μm default	7.2 mJy
70 μm fine	14.4 mJy
SED	82/201/447 mJy @ 60/75/90 μm
160 μm	29 (40 w/ confusion) mJy

The MIPS Astronomical Observation Templates:

Photometry & Super Resolution

- Telescope staring mode imaging photometry

Scan Mapping

- Freeze frame mapping in all three bands with constant telescope slewing

Spectral Energy Distribution (SED)

- Low resolution ($R = 15 - 25$) spectroscopy over 52 to 97 μm

Total Power Mode

- Zero level brightness of very extended emission

The MIPS Detector Arrays:

24 μm	Si:As (IBC) 128x128 pixels; 2.55" 4.7 μm bandwidth
70 μm	Ge:Ga 32x32 pixels; 5.3" or 9.96" 19 μm bandwidth SED $R = 15 - 25$ (9.8" pixels)
160 μm	Stressed Ge:Ga 2x20 pixels; 16.0"x18.0" 35 μm bandwidth

Saturation Limits:

Point source in 1 second (Jy); Extended source in 10 seconds (MJy/ster)

<u>Band</u>	<u>Point Source</u>	<u>Extended</u>
24 μm	4.1	260
70 μm (default)	23	101
70 μm (fine)	57	292
SED @ 60,75,90μm	250/290/1000	1087/1261/4350
160 μm	3	20



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