

MPS-LO Performance Requirements

Parameter	PORD Requirement	Heritage	Requirement	MPS-LO Concept Design
Particle Energy Range	551,562	30 eV to 30 keV	30 eV to 30 keV	30 eV to 30 keV
Electron Flux Range (cm ² -s-ster-keV) ⁻¹	115	1x10 ⁴ E ^{-1.3} to 0.75x10 ⁹ E ^{-1.3}	9x10 ⁴ E ^{-1.3} to 8x10 ⁸ E ^{-0.8}	0.1 x (9x10 ⁴ E ^{-1.3}) to 1 x (8x10 ⁸ E ^{-0.8})
Ion Flux Range (cm ² -s-ster-keV) ⁻¹	116	60 x (40 E ^{-0.8}) to >1.1x10 ⁷ E ^{-0.8}	4.0 x10 ³ E ^{-0.8} to 1.1x10 ⁷ E ^{-0.8}	1 x (4x10 ³ E ^{-0.8}) to 25 x (1.1x10 ⁷ E ^{-0.8})
Energy Bands	559	19	15	15
Flux Accuracy	104	20%	25%	25%
YZ Viewing Angles	565	0° to 90°	0° to 170°	0° to 180°
YZ Angular Channels	564	6	5	12 (+2 Overlap)
XZ FOV (FWHM)	564, UIID51	4° Symmetric	< 30°	5° Symmetric
Data Refresh Rate	110	1 Sec	30 Sec	1 Sec
Data Latency	111	N/A	< 5 Sec	< 5 Sec
Energy Band Width	84	4% of band's central energy	<10%	7%
Energy Band Stability	586	<±3%	<±3%	<±3%

MPS-LO Performance Requirements (2/2)

Parameter	Reference	Requirement	MPS-LO Design Concept
Size	UIID47		12,384 cm ³ MPS-LO CBE
Maximum Dimension	UIID48	<=40 cm	31 cm (chassis) 31.6 cm (envelope w/ MLI-CBE)
Power	UIID36		5.5 W MPS-LO CBE
Mass	UIID44		7.7 kg MPS-LO CBE
Data rate	UIID27		11 kbps MPS-LO CBE
MPS-LO Modes	PORD52 PORD59 PORD61 PORD90	Safe Mode Normal Mode Diagnostic Mode In Flight Calibration	Safe Mode Normal Mode Diagnostic Mode In Flight Calibration Standby Mode