

	<b>xScape100</b>	<b>TriScape100</b>	<b>MultiScape100</b>	<b>HyperScape100</b>
<b>Description</b>	<b>Optical Front-End</b>	<b>Optical Front-End with RGB Focal Plane Electronics</b>	<b>Optical Front-End with Multispectral Focal Plane Electronics</b>	<b>Optical Front-End with Hyperspectral Focal Plane Electronics</b>
CubeSat Category	3U to 6U	3U to 6U	3U to 6U	3U to 6U
Size	Fits in a 2U structure 100 x 100 x 200mm	Fits in a 2U structure 100 x 100 x 200mm	Fits in a 2U structure 100 x 100 x 200mm	Fits in a 2U structure 100 x 100 x 200mm
<b>Optical Performance</b>				
F#	F6.2	F6.2	F6.2	F6.2
Focal length	580mm	580mm	580mm	580mm
Effective Front Aperture	94mm	94mm	94mm	94mm
Spectral Range	450-900nm	450-900nm	450-900nm	450-900nm
Optical Full Field of View	2.4 degrees	2.4 degrees	2.4 degrees	2.4 degrees
Focal Plane Diameter	24.8mm	24.8mm	24.8mm	24.8mm
Mass	<1.2 kg	<1.2 kg	<1.2 kg	<1.2 kg
Volume	1.5U Integrated	1.5U Integrated	1.5U Integrated	1.5U Integrated
<b>Focal Plane Electronics</b>				
		<b>Tri-Band</b>	<b>Multispectral</b>	<b>Hyperspectral</b>
Pixel Pitch	N/A	5.5um	5.4um	5.5um
TDI Enabled	N/A	No	CCD-in-CMOS TDI	Digital TDI
Detector Format	N/A	4096 x 3072	4096 x 256 Stages	4096 x 3072
Spectral Bands	N/A	RGB Bayer	7 Bands VNIR	154 Bands VNIR - 12 lines band
Storage	N/A	4TB	4TB	4TB
Image Processing	N/A	JPEG 200, Binning, Thumbnails, SNR Enhancement	JPEG 200, Binning, Thumbnails, SNR Enhancement	JPEG 200, Binning, Thumbnails, SNR Enhancement
Power Supply	N/A	5V	5V	5V
Power Consumption	N/A	1.4-4.5W	1.4-4.5W	1.4-4.5W
Mass	N/A	200g	200g	200g
Volume	N/A	97 x 96 x 60mm	97 x 96 x 60mm	97 x 96 x 60mm
Control	N/A	SPI	SPI	SPI
Output	N/A	LVDS	LVDS	LVDS

<b>ADCS (Supplied by Cube Space) xSpace100i</b>	
Cubesat Category	ADCS optimized for 3U configuration
CubeComputer	ADCS computer (Can be used as flight computer)
CubeControl	2x Ferrite core torquers 1x Air core coil 3x MEMS Gyro rate sensors 10x Coarse sun sensors 3-Axis Magnetometer Backup 3-Axis Magnetometer
CubeSense	2x Fine sun sensor
CubeWheels	3 x Small Reaction Wheels
Typical Use	Detumbling and target tracking
Control Modes	Detumble (B-Dot), High rate Detumble (B-Dot) , Very High rate Detumble (B-Dot), Y-Thomson, XYZ-Wheel control, RWheel sun tracking, RWheel target tracking
Estimate Modes	MEMS rate filter, Magnetic Rate Kalman Filter, TRIAD, Full-state EKF, MEMS Gyro EKF
Control Loop Rate	1 Hz
Attitude Measurement Accuracy	Eclipse < 3° (3σ) Sunlit < 0.15° (3σ)
Attitude Control Accuracy	Eclipse < 1.2° (3σ) pointing; < 6 milldeg/s rate stability Sunlit < 0.4° (3σ) pointing; < 4 milldeg/s rate stability
Power Supply	3V3, 5V, VBat (6.5-16V)
Power Consumption	850mW (Typical)
Mass	< 524g
Volume	<0.55U (Integrated)