

3.3.4.4.1 Pyroelectric Array Cameras

Pyrocam™ IIIHR & Pyrocam™ Series

Features

- Spectral ranges available from 13 to 355nm and 1.06 to >3000µm
- Image CO2 lasers, telecom NIR lasers, THz sources and other infrared sources out to Far IR
- Solid state array camera with 1000:1 linear dynamic range for accurate profiling
- Integrated chopper for CW beams and thermal imaging
- Interchangeable windows available for a variety of applications
- Includes BeamGage® Laser Beam Analysis Software for quantitative analysis and image display



Model	Pyrocam IIIHR		Pyrocam IV					
Application	UV and IR	MIR ⁽¹⁾	UV and IR	MIR ⁽¹⁾				
Wavelengths	13 - 355nm	3 - 5µm	13 - 355nm	3 - 5µm				
	1.06 - 3000µm		1.06 - 3000µm					
Interchangeable windows	See selection in Ordering section		See selection in Ordering section					
Detector array details								
Active area	12.8mm x 12.8mm		25.6mm x 25.6mm					
Beam sizes ⁽²⁾	1600µm - 12.7mm		1600µm - 25.4mm					
Pixel spacing	80µm x 80µm		80µm x 80µm					
Number of effective pixels	160 x 160		320 x 320					
Pixel size	75µm x 75µm		75µm x 75µm					
Chopped CW operation								
Chopping frequencies	25Hz, 50Hz		25Hz, 50Hz					
Lowest measurable signal	64nW/pixel or 1.0 mW/cm ² (25Hz) 96nW/pixel or 1.5 mW/cm ² (50Hz)		64nW/pixel (25Hz) or 1.0mW/cm ² (25Hz) 96nW/pixel (50Hz) or 1.5mW/cm ² (50Hz)					
Noise equivalent power (NEP)	13nW/Hz ^{1/2} /pixel (1Hz)		13nW/Hz ^{1/2} /pixel (1Hz)					
Saturation intensity (25Hz, 50Hz)	3.0W/cm ² , 4.5W/cm ²		3.0W/cm ² , 4.5W/cm ²					
Damage threshold power								
Over entire array	2W		2W					
Peak Power Density	8W/cm ² (Chopped mode) 4W/cm ² (CW in pulsed mode)		8W/cm ² (Chopped mode) 4W/cm ² (CW in pulsed mode)					
Pulsed operation								
Laser pulse rate	Single-shot to 1000Hz		Single-shot to 1000Hz					
Pulse width	1fs - 12.8ms		1fs - 12.8ms					
Lowest measurable signal	0.5nJ/pixel		0.5nJ/pixel					
	8µJ/cm ²		8µJ/cm ²					
Saturation energy	15mJ/cm ²		15mJ/cm ²					
Damage threshold	20mJ/cm ² (1ns pulse) 600mJ/cm ² (1µs pulse)		20mJ/cm ² (1ns pulse) 600mJ/cm ² (1µs pulse)					
Trigger input								
High logic level	3.5 - 6.0V DC		3.5 - 6.0V DC					
Low logic level	0 - 0.8V DC		0 - 0.8V DC					
Pulse width	4µs min		4µs min					
Trigger	Supports both trigger and strobe out		Supports both trigger and strobe out					
Photodiode trigger (Optional) ⁽³⁾	InGaAs response: SP90409		InGaAs response: SP90409					
Operating & conditions								
Power	12VDC		12VDC					
Line frequency	60/50Hz External Supply		60/50Hz External Supply					
Power consumption	12W		12W					
Operating temperature	5°C to 50°C		5°C to 50°C					
Physical								
Dimensions	140mm H X 130mm W X 60mm D		147.3mm H X 147.1mm W X 55.2mm D					
Detector Position	Centered in width 35.6mm from bottom 15.15 ± .75mm behind front cover (without included C-mount attached) Tilt <2°		53.8mm from bottom left 36.8mm from bottom 19.7 ± .75mm behind front cover Tilt <2°					
Weight	0.85Kg (1.83lbs)		1.2kg (2.65lbs)					
PC interface	Gigabit Ethernet (IEEE 802.3ab), GigE Vision compliant		Gigabit Ethernet (IEEE 802.3ab), GigE Vision compliant					
OS supported	Windows 7 (64) and Windows 10		Windows 7 (64) and Windows 10					
Compliance	CE, UKCA, China RoHS		CE, UKCA, China RoHS					
Array quality	<75 bad pixels, all correctable No uncorrectable clusters		<300 bad pixels, all correctable No uncorrectable clusters					
Ordering information								
Supported software	Item	P/N	Item	P/N	Item	P/N	Item	P/N
BeamGage Professional	PY-III-HR-C-A-PRO	SP90405 ⁽⁴⁾	PY-III-HR-C-MIR-PRO	SP90415 ⁽⁴⁾	PY-IV-C-A-PRO	SP90404 ⁽⁵⁾	PY-IV-C-MIR-PRO	SP90414 ⁽⁵⁾

Notes: (1) The MIR (Mid-IR) versions on the Pyrocam IIIHR and IV are designed specifically for Mid-IR lasers in the spectral range 3 to 5µm.
 (2) The MIR versions feature specifically designed sensors that maximize the optical signal for high fidelity spatial profile measurements of laser beam in the 3 to 5µm spectral range.
 (3) The maximal beam size refers to "Flat-top" laser beams. For Gaussian beams, reduce maximum beam size by 1/3.
 (4) For more information please see "Optical Camera Trigger" catalog page.
 (5) Comes with USB 3.0 cable to Gigabit Ethernet Adaptor, CAT6 Ethernet Cable, Trigger cable SMA to BNC, power supply with locking connector, and adapter Kit for C-Mount Lens.

* For drawings and accessories ordering information please see page 245

