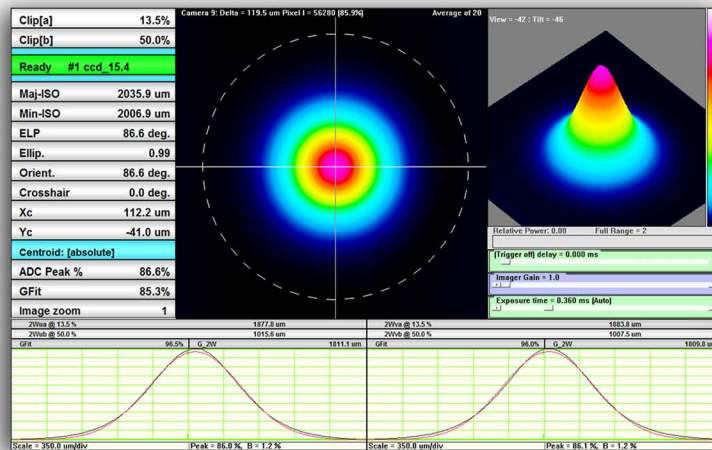


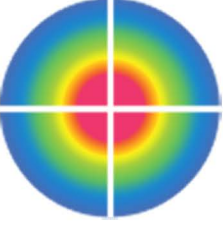
DataRay Inc.

Advancing the Technology of Laser Beam Analysis



Beam Profiler Selection Guide

WinCamD™ & BladeCam™ Camera Series

	WinCamD™ UCD 12 14-bit	WinCamD™ UCD 15 16-bit High Resolution	WinCamD™ UCD 23 14-bit	WinCamD™ & BladeCam™ UHR 10-bit CW	WinCamD™ & BladeCam™ XHR 10-bit CW	WinCamD™ FIR2-16 10-bit
Sensor	1.4 MPixel 4.65 x 4.65 μm 1360 x 1024	1.9 MPixel 4.4 x 4.4 μm 1600 x 1200	1.4 MPixel 6.45 x 6.45 μm 1360 x 1024	1.3 MPixel 5.2 x 5.2 μm 1280 x 1024	3.1 MPixel 3.2 x 3.2 μm 2048 x 1536	307 kPixel 17 x 17 μm 640 x 480
Sensor Technology	½" CCD 6.3 x 4.8 mm	1/1.8" CCD 7.1 x 5.4 mm	2/3" CCD 8.8 x 6.6 mm	½" CMOS 6.6 x 5.3 mm	½" CMOS 6.5 x 4.9 mm	Si Microbolometer 13.44 x 10.8 mm
Image Area	TaperCamD: 14 x 10 mm active area [Based on -UCD12] TaperCamD20-15-UCD23: 20 x 15mm active area [Based on -UCD23]					N/A
Interface	USB 2.0 Port Powered ... No External Power Brick					
CW or Pulsed ?	CW or Any Pulsed Laser; Auto Trigger			CW	CW	CW
Shutter	Synchronous	Synchronous	Synchronous	Rolling	Rolling	Sampled Array
Single Pulse Capture	To 25 kHz	To 25 kHz	To 25 kHz	N/A	N/A	N/A
1 - 350 nm	With UV Converter					N/A
355 - 1150 nm	Standard					N/A
355 - 1360 nm	Extended Range - 1310 Version					N/A
1475 - 1600 nm	With CamIR Adapter					N/A
2 - 16 μm	N/A	N/A	N/A	N/A	N/A	Yes
X - Y Profiles	Yes To All					
Best Resolution	1 μm					3 μm
Smallest Beam Diam.*	47 μm	44 μm	65 μm	52 μm	32 μm	170 μm
Max. Gaussian 1/e² **	~3.2 mm	~3.6 mm	~4.4 mm	~3.6 mm	~3.6 mm	~6.8 mm
Power Handling	See detailed data sheets or Selection Request Form. With accessories, you can handle almost any power.					
Update Rate	~5 Hz	~5 Hz	~5 Hz	~5 Hz	~5 Hz	~5 Hz
M² Measurement	Yes - With M2DU Stage					N/A
Locate Focus	Move source or camera. Use M2DU Stage					
Pointing/Divergence /Collimation	Use DualCamD or M2DU Stage					
Dynamic Range	CW: 43.5 dB, Exposure 40 μs to 1 s; Pulsed: ≥ 7.5 dB					Call
Signal to RMS Noise	≥ 1000:1					≥ 100:1

* ~10 pixel size

** ~(Vertical sensor dimension) x 2/3



WinCamD FIR2-16



WinCamD



BladeCam



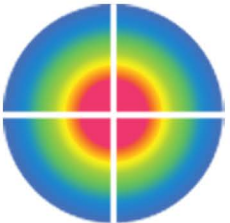



TaperCam



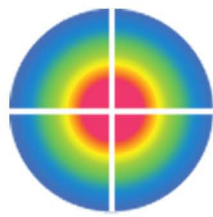
M2DU-WC Stage

Beam Profiler Selection Guide

Scanning Slit Systems

	<p>BeamScope™-P8 Scanning slits or pinhole; Probe head for narrow spaces; Rotating head mount option</p> 	<p>Beam'R2™ Scanning X-Y slits Slit & Knife-edge modes Dual Detectors</p> 	<p>BeamMap2™ Real-time X-Y-Z plus Θ-Φ profiling Dual Detectors</p> 
<p>Profiling or Imaging</p>	<p>Precise, 0.1 μm resolution, 12-bit PROFILING</p>		
<p>Interface</p>	<p>USB 2.0 Port Powered ... No External Power Brick</p>		
<p>CW or Pulsed ?</p>	<p>CW. Pulsed >5 kHz, high duty cycle</p>	<p>CW. Pulsed >100 kHz, high duty cycle</p>	
<p>190 - 1150 nm</p>	<p>Si detector</p>		
<p>800 - 1800 nm</p>	<p>GE detector</p>	<p>(650 - 1800 nm) InGaAs detector</p>	
<p>1000 - 2400 nm</p>	<p>N/A</p>	<p>Extended Range InGaAs detector, 3 mm diameter</p>	
<p>1.5 - 4 μm</p>	<p>InAs detector - 2 mm diameter</p>	<p>N/A</p>	
<p>190 -2400 nm</p>	<p>N/A</p>	<p>Dual Detector Si/InGaAs</p>	
<p>0.19 - 100 μm</p>	<p>N/A</p>	<p>Pyroelectric (<i>Coming Soon</i>)</p>	
<p>Profiles</p>			
<p>Line profile</p>	<p>Yes</p>	<p>Yes</p>	
<p>X profile</p>	<p>Yes</p>	<p>Yes</p>	
<p>X-Y profile</p>	<p>N/A</p>	<p>Yes, unique patented capability</p>	
<p>X-Y-Z profiles, plus $\Phi$$\Theta$</p>	<p>N/A</p>	<p>Yes, unique patented capability</p>	
<p>Area image</p>	<p>Yes: with 2DU-SS</p>	<p>N/A</p>	
<p>Best Resolution</p>	<p>0.5 μm (2.5 μm with 2-D stage)</p>	<p>0.1 μm</p>	
<p>Smallest Beam</p>	<p>100 μm</p>	<p>0.5 μm</p>	
<p>Largest Beam</p>	<p>See imaged areas in Appendix A</p>		
<p>Power Handling</p>	<p>See detailed data sheets or Selection Request Form. With accessories, you can handle almost any power.</p>		
<p>Update Rate</p>	<p>1 to 2 Hz (2D-SS stage, 0.01 Hz)</p>	<p>5 Hz (Real Time)</p>	
<p>M² Measurement</p>	<p>Yes - With M2DU-P8 Accessory</p>	<p>Yes - With M2DU-P8 Accessory</p>	<p>Yes - Real Time</p>
<p>Locate Focus</p>			<p>Yes, automatic for focused beams</p>
<p>Pointing/Divergence</p>	<p>Yes - With M2DU-P8 Accessory</p>	<p>Yes - With M2DU-P8 Accessory</p>	<p>Collimate™ head</p>
<p>Collimation</p>			<p>Collimate™ head</p>
<p>Switched Gain Range</p>	<p>42.5 dB</p>	<p>30 dB</p>	
<p>Dynamic Range</p>	<p>45 dB (75 dB with Filter)</p>	<p>43 dB</p>	





DataRay Inc.

www.dataray.com

+ 1 866 WinCamD (946-2263)

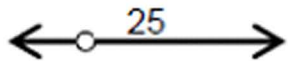
+1 203 210 5065



Appendix A

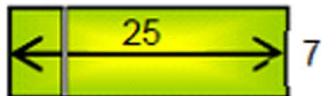
Scanned and Imaged Areas shown actual size.

Dimensions in mm



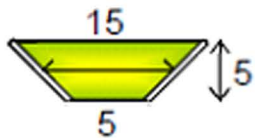
Line Profile BeamScope-P8

5 to 100 μm Pinholes



X Profile BeamScope-P8

2.5 to 100 μm Single Slits



X-Y Profile BeamScope-P8

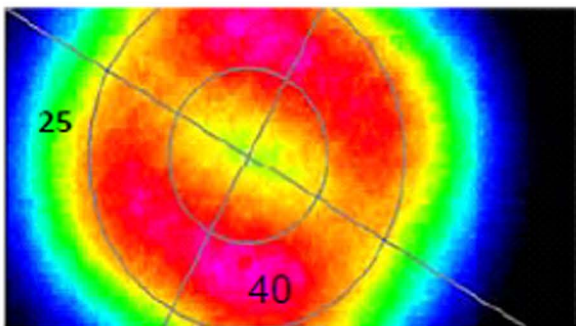
2.5 to 100 μm Dual Slits @ 90°



X-Y Profile BeamMap2/Beam'R2

2.5 to 100 μm Multiple Slits

(Si active area shown, 3.5 mm \varnothing for InGaAs)



BeamScope-P8 with M2DU2D adapter

Up to 1,000 x 1,000 pixels