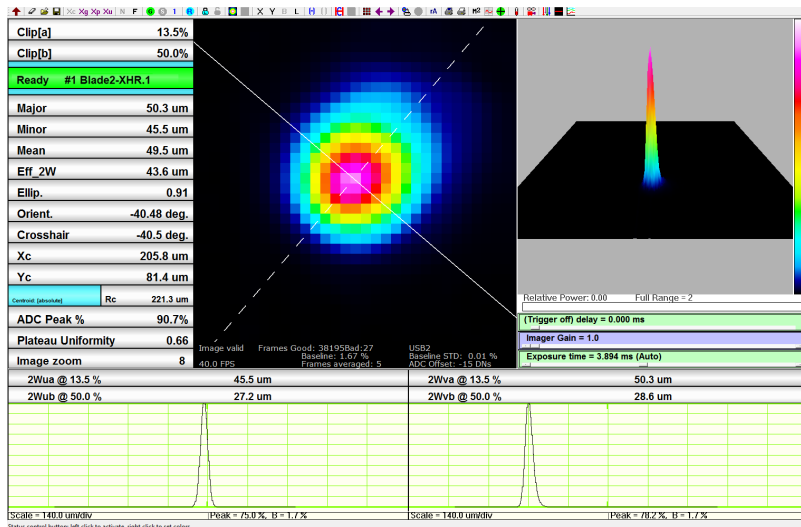# BladeCam2

½" CMOS Beam Profiling Camera, Ultra Compact, USB 3.0

The BladeCam2™ offers an enhanced BladeCam™ beam profiling experience with USB 3.0 connectivity and other improvements. With pixels as small as 3.2 µm, the high resolution and highly compact BladeCam2™ beam profilers have a thickness of only 0.50" (12.84 mm) for insertion into tight optical trains and OEM applications.

The BladeCam2™ is paired with DataRay's full-featured, highly customizable, user-centric software which has unlimited installations, free software updates, and no license fees. It is perfect for applications including CW laser profiling, field servicing of laser systems, optical assembly, instrument alignment, beam wander and logging, R&D, OEM integration, quality control, and M^2 measurement with available M2DU stage.

System Features

- 355 - 1150 nm, CMOS detector
  - TEL sensor options for 1480 - 1610 nm
  - UV and 1310 nm options available
- Two sensor pixel size/resolution options
  - BladeCam2-XHR: 3.2 µm pixels, 3.1 MPixel, 2048 x 1536
  - BladeCam2-HR: 5.2 µm pixels, 1.3 MPixel, 1280 x 1024
- 6 fps @ 2048 x 1526, 16 fps @ 1024 x 1024, 35 fps @ 512 x 512
- Port-powered USB 3.0
- HyperCal™ – Dynamic Noise and Baseline Correction
- C-mount filters included
- 1,000:1 Signal to RMS Noise
- CW/Quasi-CW
- Electronic auto-shutter, 40 µs - 1 s (XHR) or 40 µs - 500 ms (HR)
- 10-bit ADC
- Parallel capture on multiple cameras
- Relative power level display
- Window-free sensors standard for no fringing
- ISO 11146 M² option – beam propagation analysis, divergence, focus

BladeCam2
1.8 x 1.8 x 0.5 in
46.0 x 46.0 x 12.8 mm

Applications

- CW/Quasi-CW
- Field servicing of lasers and laser-based systems
- Optical assembly & instrument alignment
- Beam wander & logging
- M² measurements
- Small form factor for tight optical trains

- XY profiles and centroids
- Linear and logarithmic displays
- Gaussian and Top Hat least squares fits
- Ellipse Angle, Major, Minor, Mean Diameters
- ISO 11146 compliant

- Background capture and subtraction
- Image & Intensity Zoom
- Linear and area filters
- Image Averaging, 1 to continuous
- Proprietary HyperCal™ Dynamic Noise and Baseline Correction

WinCamD-BladeCam2™ Series Model Specifications:

BladeCam2™	BC2-XHR	BC2-HR	BC2-HR-TEL
Pixel Count &	3.2M Pixel	1.3 M Pixel	
H x V:	2048 x 1536	1280 x1024	
Sensor image area (mm):	6.5 x 4.9	6.6 x 5.3	
Pixel dimension (µm):	3.2 x 3.2	5.2 x 5.2	25 (due to phosphor)
Min. beam (10 pixels):	32 µm	52 µm	250 µm
Wavelength Range:	355-1100 nm		1480-1680 nm
Shutter type:	Rolling		
Max Frame rate: Frame rate @ 2048 x 1536	> 6 Hz	N/A	
Frame rate @ 1024 x 1024:	> 16 Hz		
Frame rate @ 512 x 512:	> 35 Hz		
Max. 'every pulse' PRR:	Not suitable for pulse capture		
Single pulse capture PRR:	Not suitable for pulse capture		
Signal to RMS Noise (Optical/Electrical):	1,000:1 (30/60 dB)		
Electronic Shutter Dynamic Range:	40 µs to 1s 44dB	40 µs to 500ms 41dB	
ADC:	10-bit		
Interface:	USB 3.0/2.0		

Outline & Mounting