DSR900 Camera Characteristics Measurement System, EMVA 1288, 200–2500 nm

Model DSR900 · waveqvanta.com/products/dsr900-camera-characteristics-measurement-system

Automated system for evaluating CCD and CMOS cameras and image sensors according to EMVA 1288.



The DSR900 is a multifunctional test system for characterizing CCD and CMOS cameras and imaging sensors in the visible and infrared, following the EMVA 1288 standard. A tunable monochromatic source with integrating sphere, a large uniform broadband source and a light-tight dark chamber with motorized stage are run from software that performs the test sequence with one click and outputs standardized test reports.

Key features

- Full camera parameter testing to EMVA 1288 for visible and infrared cameras
- One-click automated test sequence with standardized report output
- Tunable source: 150 W xenon lamp, 320 mm F/4.2 spectrograph and 200 mm integrating sphere, 200–2500 nm
- Uniform broadband source: 1100 mm integrating sphere with 100 mm output port and 2 to 6 halogen lamps
- Light-tight dark chamber, 2000 × 1500 × 1450 mm, > 80 dB stray light suppression, 3D motorized stage
- Measures QE, dynamic range, read noise, gain, SNR, dark current, MTF, full well, linearity and defective pixels

Specifications

Standard	EMVA 1288
Test Parameters	QE, dynamic range, read noise, gain, SNR, responsivity, detection rate, dark current
Further Test Parameters	Linearity, MTF, full well, absolute sensitivity, dark/response non-uniformity, bad pixels
Xenon Arc Lamp	150 W, 200–2500 nm, instability < 0.5%, 7.5 A, 3000 h lifetime
Spectrograph	320 mm focal length, F/4.2, 0.08 nm resolution (1200 g/mm), 200–2500 nm
Bandwidth	Adjustable 0.5–12 nm
Stray Light	1×10^{-5}
Integrating Sphere (Tunable Source)	Φ200 mm, PTFE (F4), coating reflectivity > 95%, 250–2500 nm
Broadband Integrating Sphere	Φ1100 mm, 100 mm output port
Broadband Lamps	2 to 6 halogen lamps, 50 W, DC 12 V
Broadband Spectral Range	340–2500 nm
Dark Chamber Size	2000 × 1500 × 1450 mm
Stray Light Suppression	> 80 dB @ 300–1700 nm
Stage Travel	100 mm along optical axis, 100 mm vertical
Software Tests	Noise, response and detection rate, dynamic range and linearity, NUC, bad pixel location
Software Image Tools	Test area selection, image storage, rotation, magnification, autorange, result saving

Typical applications

- CCD and CMOS camera performance evaluation
- Image sensor quantum efficiency measurement
- Visible and infrared camera testing
- Camera manufacturer quality evaluation
- Machine vision camera characterization to EMVA 1288