

CMS4 : MULTI-SPECTRAL CAMERA

CAMERA IDENTIFICATION

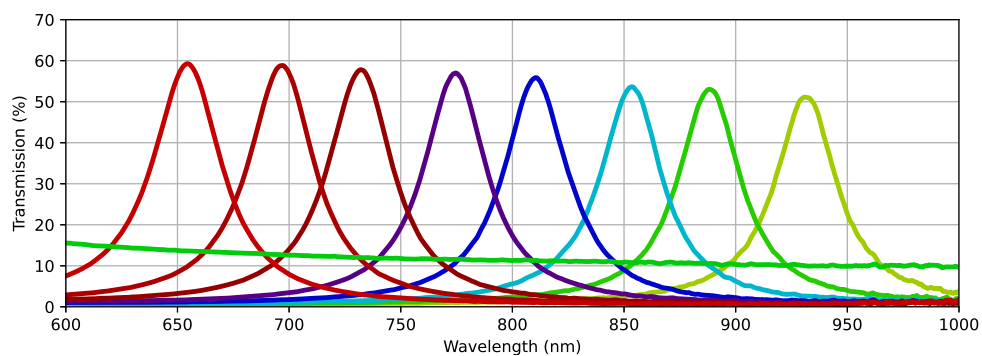
Reference	CMS-S1-C-CMO4M-USB3
Technology	COLOR-SHADES
S/N	CMS21050195

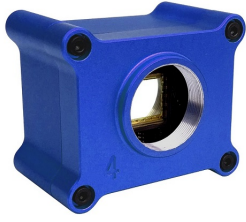
CMS SENSOR SPECIFICATIONS

Array type	CMOS (Si)
Spectral band	400 to 1000nm
Resolution	2048(H) x 2048(V)
Pixel pitch	5.5 μ m

FILTER SPECIFICATIONS

Macro-pixel size	3x3 bands		
Wavelength range	650 to 930 nm typical		
Type of pixel	8 colors (narrow bands) + 1 B&W		
Band 1	λ_c : 654nm	FWHM : 38nm	Tmax : 59%
Band 2	λ_c : 696nm	FWHM : 36nm	Tmax : 59%
Band 3	λ_c : 731nm	FWHM : 35nm	Tmax : 57%
Band 4	λ_c : 774nm	FWHM : 34nm	Tmax : 57%
Band 5	λ_c : 810nm	FWHM : 35nm	Tmax : 55%
Band 6	λ_c : 853nm	FWHM : 34nm	Tmax : 53%
Band 7	λ_c : 888nm	FWHM : 34nm	Tmax : 53%
Band 8	λ_c : 931nm	FWHM : 34nm	Tmax : 51%
Band 9	Neutral density : Tmean = 12 % over [500-1000]nm		



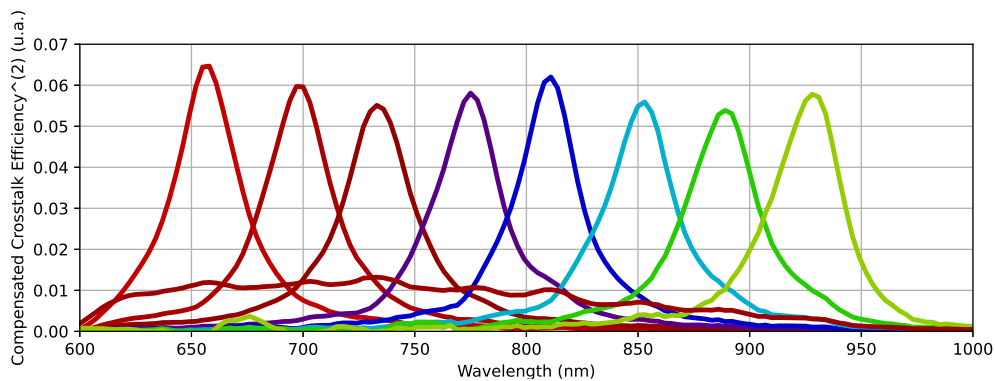
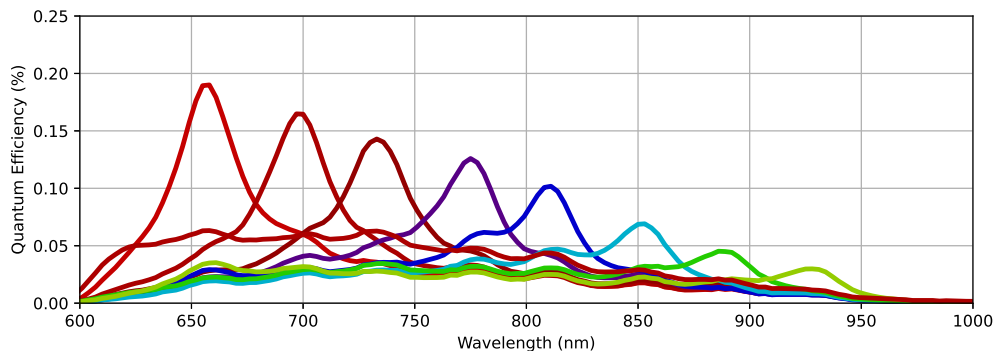


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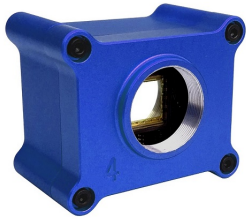
MULTISPECTRAL SENSOR SPECIFICATIONS

Macro-pixel size	3x3 bands		
Wavelength range	650 to 930 nm typical		
Type of pixel	8 colors (narrow bands) + 1 B&W		
Band 1	λ_c : 656nm	FWHM : 35nm	QE max : 19%
Band 2	λ_c : 698nm	FWHM : 35nm	QE max : 16%
Band 3	λ_c : 733nm	FWHM : 36nm	QE max : 14%
Band 4	λ_c : 774nm	FWHM : 34nm	QE max : 12%
Band 5	λ_c : 809nm	FWHM : 30nm	QE max : 10%
Band 6	λ_c : 851nm	FWHM : 35nm	QE max : 7%
Band 7	λ_c : 887nm	FWHM : 37nm	QE max : 5%
Band 8	λ_c : 927nm	FWHM : 37nm	QE max : 3%
Band 9	Neutral density : QE mean = 3% over [500-1000]nm		
Pixel operability ⁽¹⁾	≥99.94%		

(1) Deads pixels : the measurement is done by removing 30 pixels from each side.



(3) The CCE is extracted from the SILIOS post processing method for crosstalk correction (see Post-processing method for crosstalk reduction in multispectral data and images).



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CAMERA SPECIFICATIONS

Optical interface	CS-mount (C-mount compatible with additional C-ring)
Resolution (raw picture)	2048(H) x 2048(V)
Resolution (spectral pictures)	682(H) x 682(V)
Maximum frame rate	65 Hz (camera acquisition) / 20 Hz (COLOR SHADES Lab)
Exposure time range	100 μ s to 5s
ADC	10-bits
Camera control	USB 3.0
Digital output	12-bits USB 3.0
Power supply	USB 3.0
Dimension (W x H x L)	52 x 63 x 40 mm ³
Weight camera head	170 g