

CMS4 : MULTI-SPECTRAL CAMERA

CAMERA IDENTIFICATION

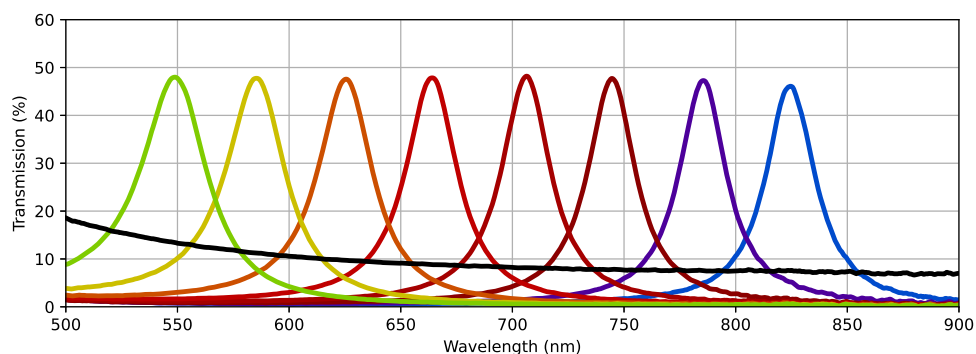
Reference	CMS-V1-C-CMO4M-USB3
Technology	COLOR-SHADES
S/N	CMS21060197

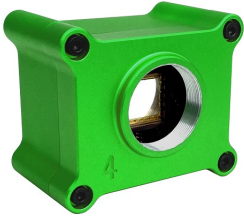
CMS SENSOR SPECIFICATIONS

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	550 to 830 nm typical		
Type of pixel	8 colors (narrow bands) + 1 B&W		
Band 1	λ_c : 548nm	FWHM : 37nm	Tmax : 48%
Band 2	λ_c : 585nm	FWHM : 33nm	Tmax : 48%
Band 3	λ_c : 625nm	FWHM : 30nm	Tmax : 47%
Band 4	λ_c : 663nm	FWHM : 28nm	Tmax : 48%
Band 5	λ_c : 706nm	FWHM : 27nm	Tmax : 48%
Band 6	λ_c : 744nm	FWHM : 26nm	Tmax : 47%
Band 7	λ_c : 785nm	FWHM : 26nm	Tmax : 47%
Band 8	λ_c : 824nm	FWHM : 27nm	Tmax : 46%
Band 9	Neutral density : Tmean = 9 % over [500-900]nm		



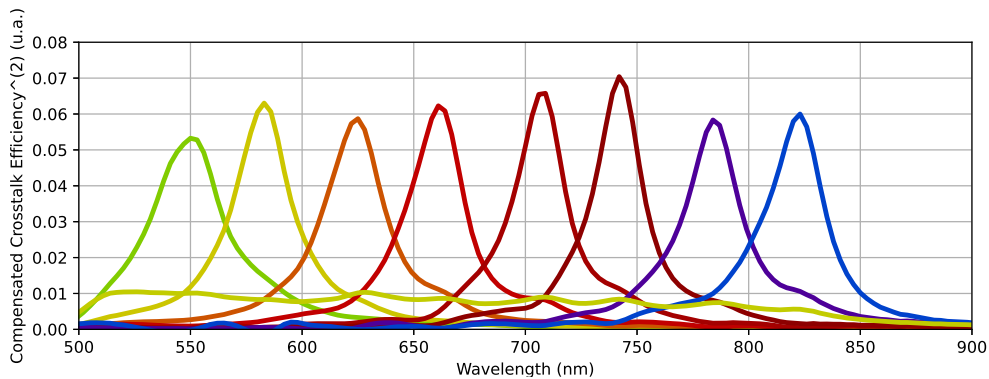
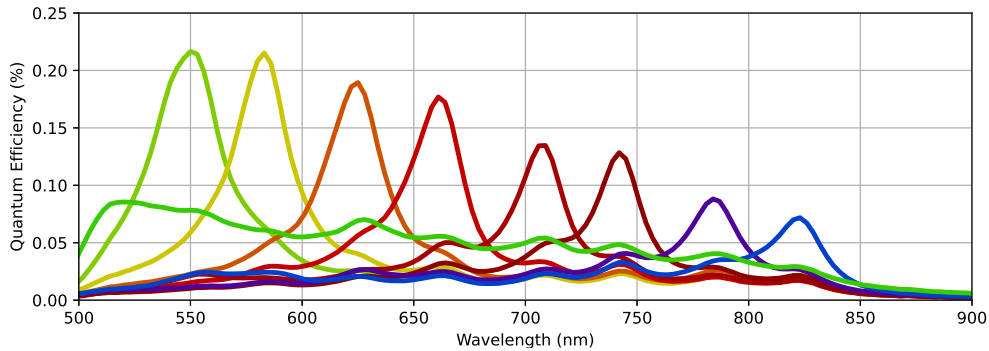


CMS4 : MULTI-SPECTRAL CAMERA

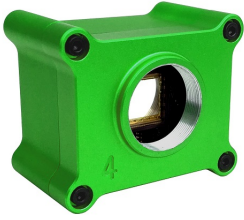
MULTISPECTRAL SENSOR SPECIFICATIONS

Macro-pixel size	3x3 bands		
Wavelength range	550 to 830 nm typical		
Type of pixel	8 colors (narrow bands) + 1 B&W		
Band 1	λ_c : 549nm	FWHM : 37nm	QE max : 22%
Band 2	λ_c : 582nm	FWHM : 30nm	QE max : 21%
Band 3	λ_c : 623nm	FWHM : 30nm	QE max : 19%
Band 4	λ_c : 660nm	FWHM : 27nm	QE max : 18%
Band 5	λ_c : 707nm	FWHM : 29nm	QE max : 14%
Band 6	λ_c : 742nm	FWHM : 28nm	QE max : 13%
Band 7	λ_c : 784nm	FWHM : 28nm	QE max : 9%
Band 8	λ_c : 821nm	FWHM : 30nm	QE max : 7%
Band 9	Neutral density : QE mean = 5% over [500-900]nm		
Pixel operability ⁽¹⁾	$\geq 99.97\%$		

(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).



CMS4 : MULTI-SPECTRAL CAMERA

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