

## CMS : MUTLI-SPECTRAL CAMERA

### CAMERA IDENTIFICATION

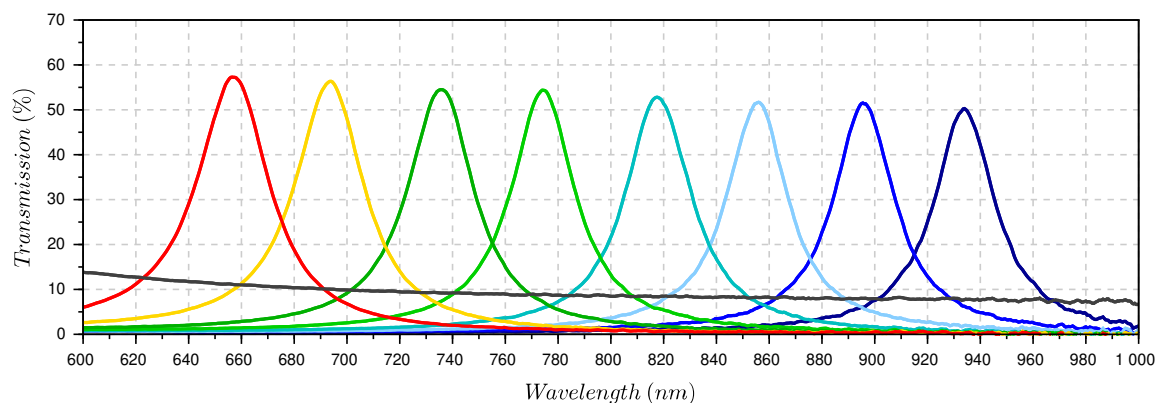
Designation	CMS-S1-C-EVR1M-USB3
Technology	COLOR-SHADES
S/N	CMS19060101

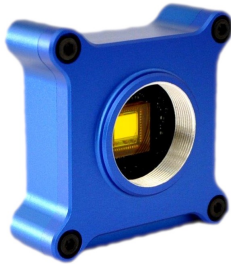
### CMS SENSOR SPECIFICATIONS

Array type	CMOS (Si)
Spectral band	400 to 1000nm
Resolution	1250(H) x 1024(V)
Pixel pitch	5.3 $\mu$ 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	$\lambda_c$ : 934nm	FWHM : 28nm	Tmax : 50%
Band 2	$\lambda_c$ : 896nm	FWHM : 28nm	Tmax : 51%
Band 3	$\lambda_c$ : 855nm	FWHM : 28nm	Tmax : 51%
Band 4	$\lambda_c$ : 818nm	FWHM : 30nm	Tmax : 53%
Band 5	$\lambda_c$ : 774nm	FWHM : 29nm	Tmax : 54%
Band 6	$\lambda_c$ : 736nm	FWHM : 31nm	Tmax : 55%
Band 7	$\lambda_c$ : 693nm	FWHM : 32nm	Tmax : 56%
Band 8	$\lambda_c$ : 657nm	FWHM : 33nm	Tmax : 57%
Band 9	Neutral density : Tmean = 9% over [600-1000]nm		



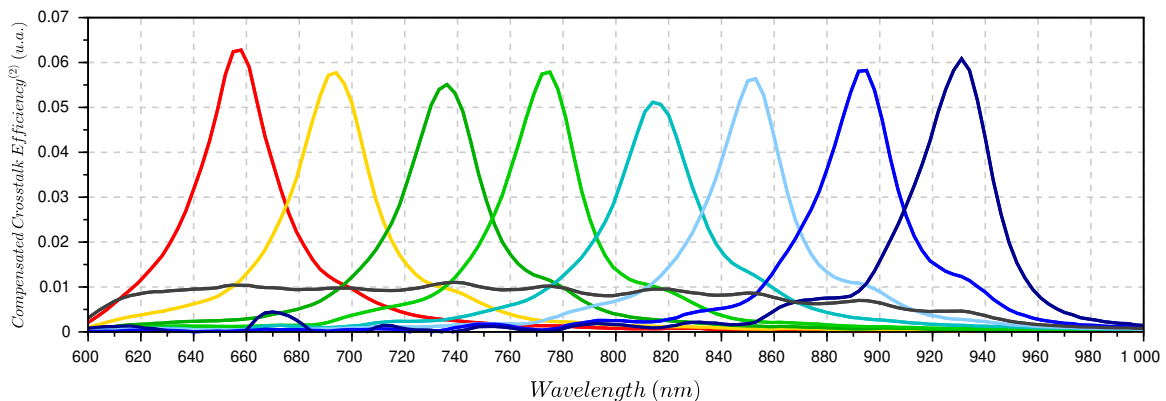
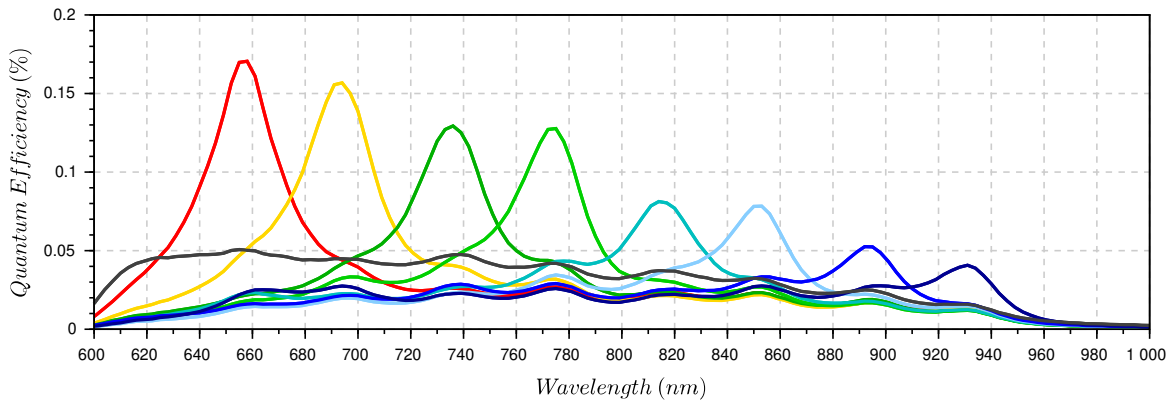


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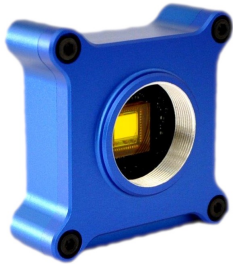
### MULTISPECTRAL SENSOR SPECIFICATIONS

Macro-pixel size	3x3 bands		
Wavelength range	650 to 930 nm typical		
Type of pixel	8 colors (narrow bands) + 1 B&W		
Band 1	$\lambda_c$ : 657nm	FWHM :34nm	QE max : 17%
Band 2	$\lambda_c$ : 693nm	FWHM :37nm	QE max : 16%
Band 3	$\lambda_c$ : 735nm	FWHM :38nm	QE max : 13%
Band 4	$\lambda_c$ : 773nm	FWHM :36nm	QE max : 13%
Band 5	$\lambda_c$ : 815nm	FWHM :40nm	QE max : 8%
Band 6	$\lambda_c$ : 851nm	FWHM :38nm	QE max : 8%
Band 7	$\lambda_c$ : 893nm	FWHM :38nm	QE max : 5%
Band 8	$\lambda_c$ : 930nm	FWHM :37nm	QE max : 4%
Band 9	Neutral density : QE mean = 3% over [600-1000]nm		
Pixel operability <sup>(1)</sup>	≥99.85%		

(1) Deads pixels : among which 0.10% used for alignment purpose in the 4 corners of the picture.



(2) 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 additionnal C-ring)
Resolution (raw picture)	1280 (H) x 1024 (V)
Resolution (spectral pictures)	426 (H) x 339 (V)
Maximum frame rate	60 Hz
Exposure time range	10 $\mu$ s to 2 s
ADC	10-bits
Camera control	USB 3.0
Digital output	10-bits USB 3.0
Power supply	USB 3.0
Dimension (W x H x L)	56 x 56 x 22 mm <sup>3</sup>
Weight camera head	75 g