Update

RIPTIDE meeting 10/01/2024

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Sorpresa poco gradita

Obiettivo macro Sony 50MM F2.8

Obiettivo macro 1:1 standard da 50 mm

Design leggero e compatto

Apertura circolare a 7 lamelle per splendidi effetti di sfocatura

Distanza di messa a fuoco minima di 0,16 m

DISTANZA MINIMA DI MESSA A FUOCO
0,16 m

RAPPORTO DI INGRANDIMENTO MASSIMO (X)
1

DIAMETRO FILTRO (MM)
55

PESO
236 g

Obiettivo Sony macro 30MM F3.5

DISTANZA MINIMA DI MESSA A FUOCO
0,095 m

RAPPORTO DI INGRANDIMENTO MASSIMO (X)
1,0x

DIAMETRO FILTRO (MM)
49 mm

PESO
138 g

Obiettivo Canon macro RF35 mm F1.8

Dimensioni immagine	Full frame
Numero di lamelle del diaframma	9
Apertura minima	22
Distanza minima di messa a fuoco (m)	0,17
Ingrandimento massimo (x)	0,5
Informazioni sulla distanza	Sì
Stabilizzatore d'immagine OIS[1]	5 stop
Attuatore AF	Motore

Uno degli adattatori acquistati (T2-EOS) non è quello giusto per accoppiare l’obiettivo CANON che non è di tipo EOS ma…

In sostanza possiamo per ora utilizzare solamente i due obiettivi macro SONY con entrambe le fotocamere

STATUS BLACK BOX

Lavorazione quasi ultimata, manca rivestimento nero interno (opzione neoprene da valutare, altrimenti carta adesiva)

Da definire: numero posizione delle piastre, numero e tipologia passanti.

Setup con specchio/specchi

Eur. Phys. J. C (2014) 74:3131

we used a setup as illustrated on Fig. 4. A cubic plastic scintillator (Bicron BC-408) with dimensions of 4 mm × 4 mm × 4 mm was imaged from two orthogonal directions. The scintillation photons have a wavelength of about 425 nm. We used two similar Thorlabs LB1761-A bi-convex lenses made of N-BK7 with a focal length of $f = 25.4$ mm and a diameter of $d = 25.4$ mm. Two mirrors (Thorlabs BB1-E01) with a diameter of 25.4 mm were employed to adjust the optical path. One side of the scintillator was imaged on the top half

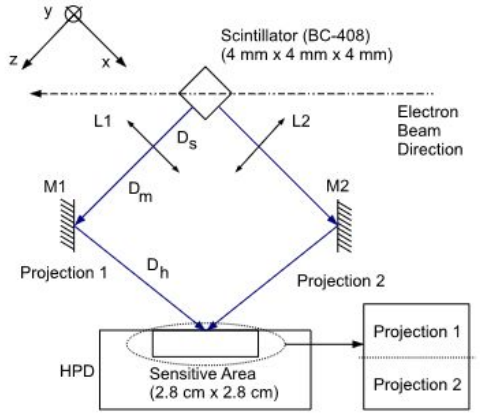


Fig. 4 Schematic view of the setup used for the measurements. It consists of a plastic scintillator, two lenses (L1, L2), two mirrors (M1, M2) and the HPD. One projection of the electron track in the scintillator is imaged on the top half of the HPD and the other on the bottom half. $D_s = 34$ mm, $D_m = 25$ mm, $D_h = 77$ mm

cal photons: the inner layer is a dark paper board from Thorlabs; the outer layer are walls made of 5 mm thick black plastic. A photograph of the setup is shown in Fig. 5. The dark rate of the HPD was 2,000 counts per second, which corresponds to the intrinsic dark rate of the detector.

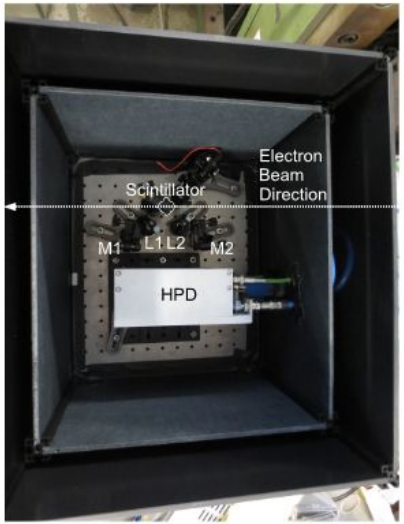
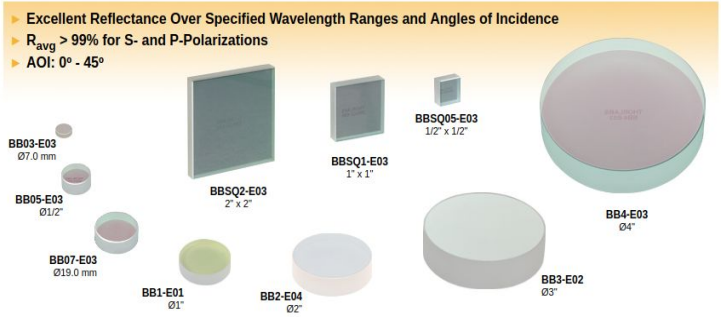
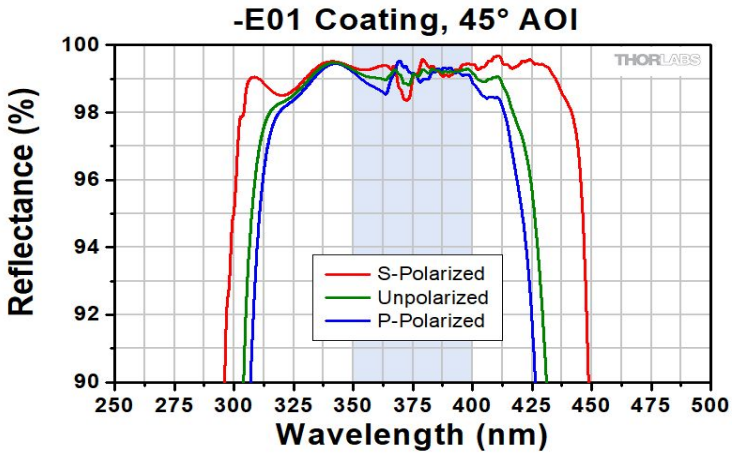
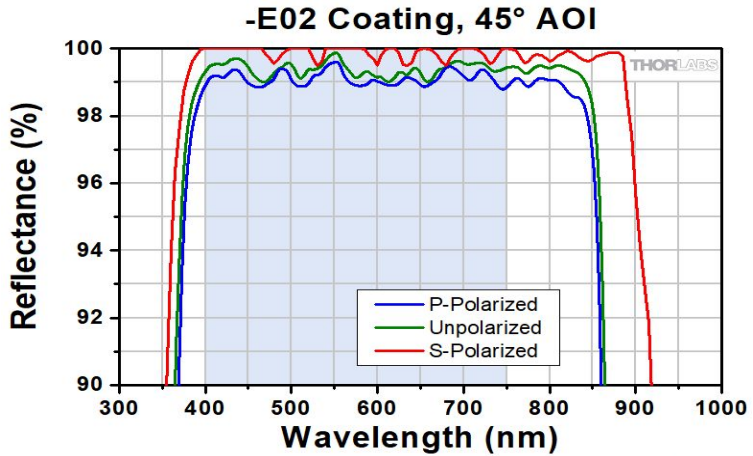


Fig. 5 A photograph of the setup used for the measurements. The detector and the optics were shielded by two layers (black plastic, dark paper board) from external optical photons. The beam direction is shown in the photograph

Fused Silica Broadband Dielectric Mirrors

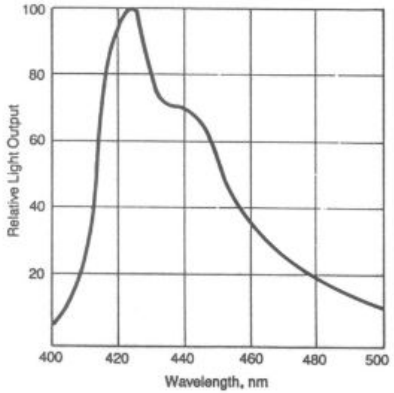




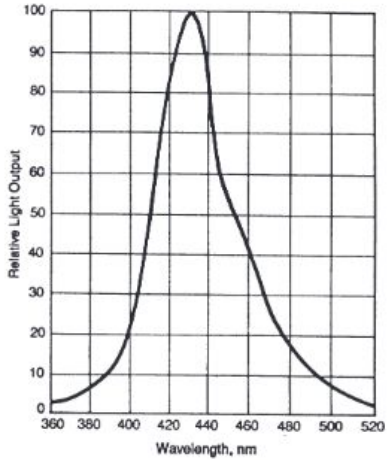


Emission spectra of BC-40X scintillators

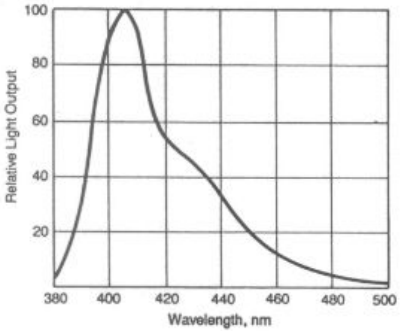
BC-400



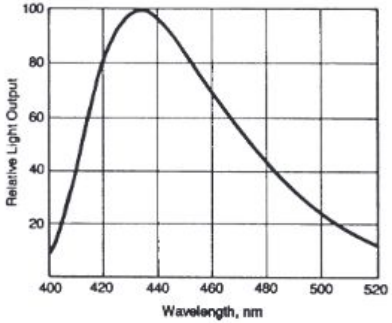
BC-408

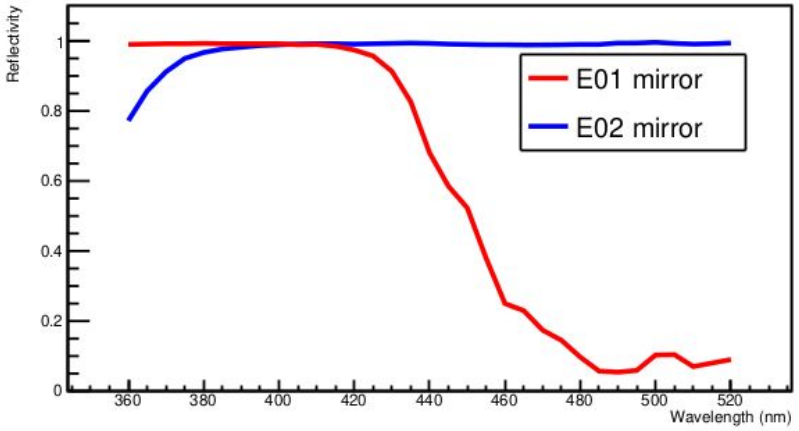


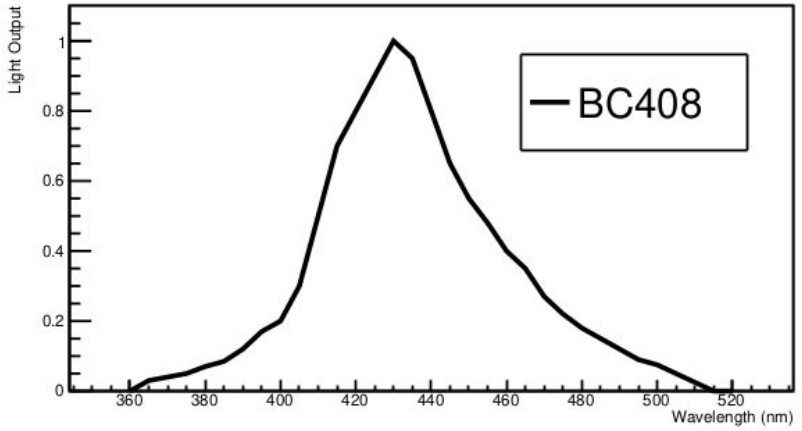
BC-404

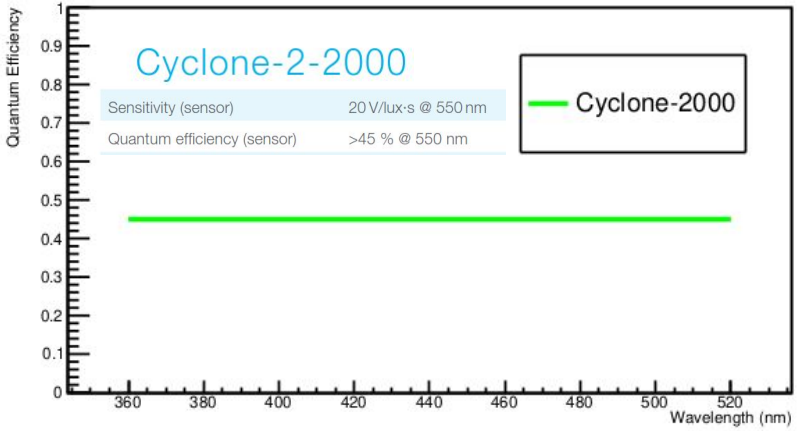


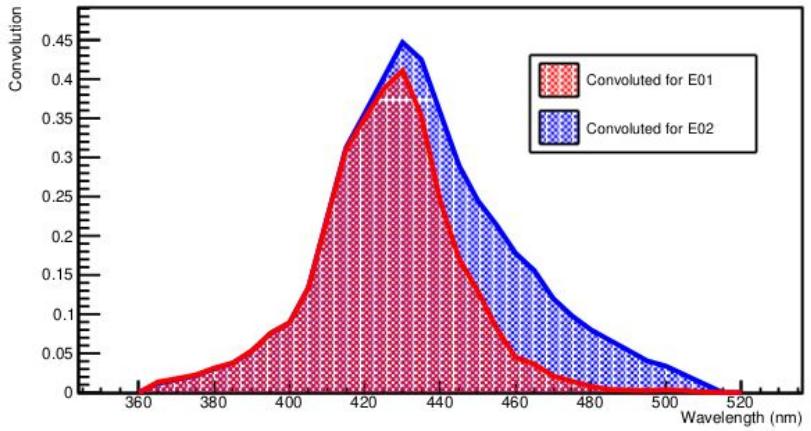
BC-412 & BC-416



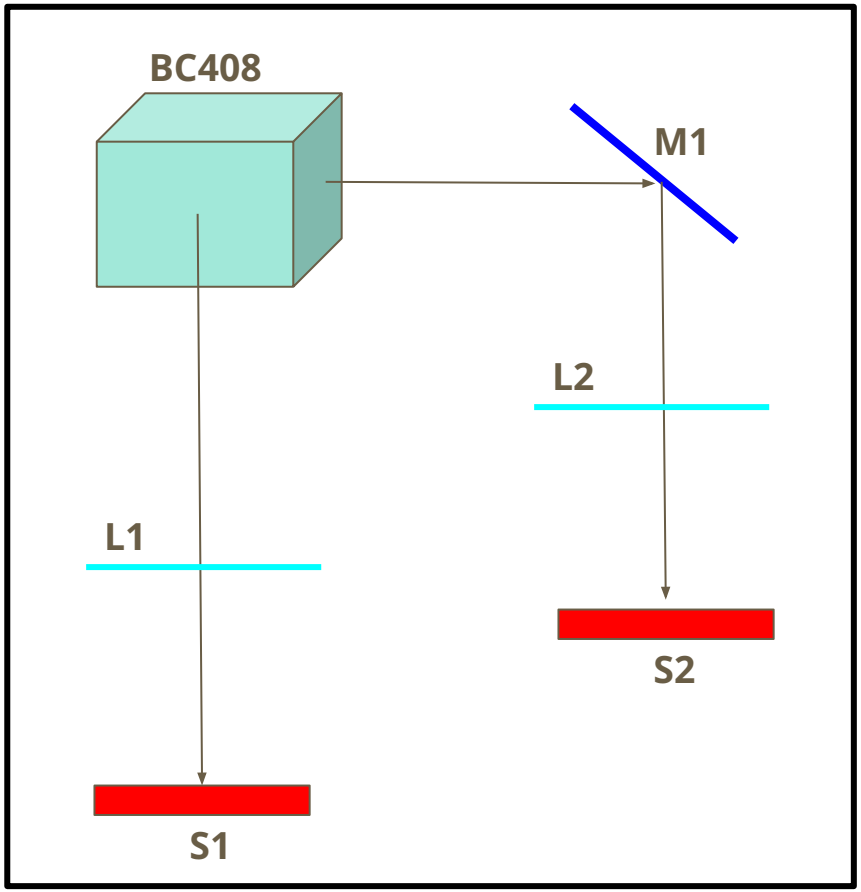

Reflectivity
E01 mirror
E02 mirror
Wavelength (nm)

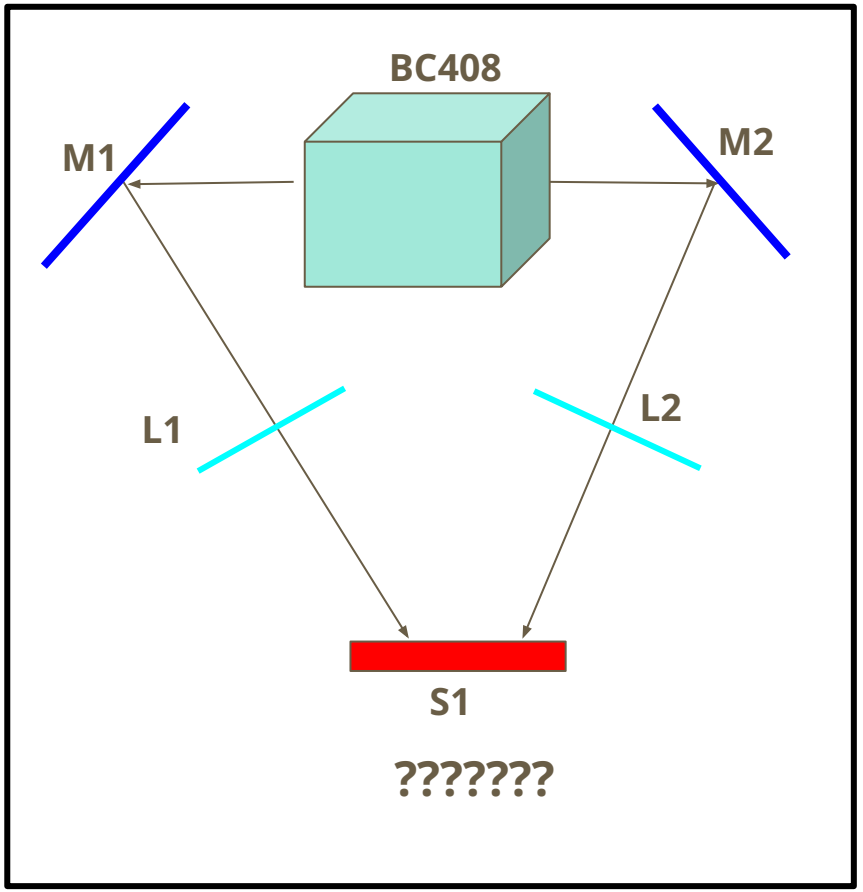

Light Output
BC408
Wavelength (nm)


Quantum Efficiency
Cyclone-2-2000
Sensitivity (sensor) 20 V/lux·s @ 550 nm
Quantum efficiency (sensor) >45 % @ 550 nm
Cyclone-2000
Wavelength (nm)


Convolution
Convoluted for E01
Convoluted for E02
Wavelength (nm)

Setup con specchio/specchi e sensore/i





Acquisti 2024

BUDGET RIPTIDE PER LABORATORIO + BLACK BOX: ~?K euro

- Specchi:

BB2-E01 - Ø2" Broadband Dielectric Mirror, 350 - 400 nm	**330,42 €**
BB2-E02 - Ø2" Broadband Dielectric Mirror, 400 - 750 nm	**149,41 €**
FMP2/M - Fixed Ø2" Mirror Mount, M4 Tap	**22,34 €**
BBSQ2-E02 - 2" x 2" Broadband Dielectric Mirror, 400 - 750 nm	**180,33 €**
KM200S - Kinematic Mount for 2" (50.8 mm) Tall Rectangular Optics, Right Handed	**146,86 €**

- Passanti/connettori LEMO, BCN, SMA, MCX... Da definire

- Adattatore corretto per Obiettivo CANON RF35 costo ~ **50-100 €**

Supporti specchi rettangolari

Kinematic Rectangular Optic Mounts

- Mount Rectangular Optics from 1/2" to 2" Tall
- Versions with Adjustable Optic Height Offered

Holds Optics up to
1.3" (33.0 mm) Tall

KM100CL
Adjustable Left-Handed Mount
(Lens Sold Separately)

KM05S
Right-Handed Mount for
1/2" (12.7 mm) Tall Optics

KM200S
Right-Handed Mount for
2" (50.8 mm) Tall Optics

KMSR
Compact Kinematic Mount
with 25 mm Tall Diffraction
Grating (Sold Seperately)

KM2536
Right-Handed Mount for
25 mm Tall Optics Shown with
1 mm Thick, 25 mm x 36 mm
Dichroic Filter (Sold Seperately)

Supporti specchi circolari

\+ molti altri....

backup

PERFORMANCE

Resolution (H x V)	Frames / second
1,920 x 1,080	2,166 fps
1,280 x 960	2,587 fps
640 x 480	5,143 fps
512 x 384	6,409 fps
256 x 8	177,955 fps

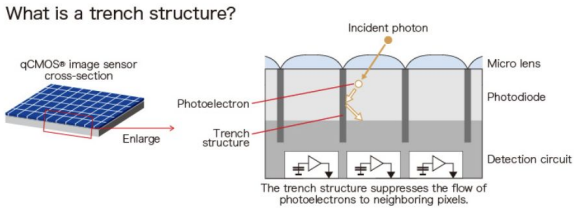
MODEL OPTIONS

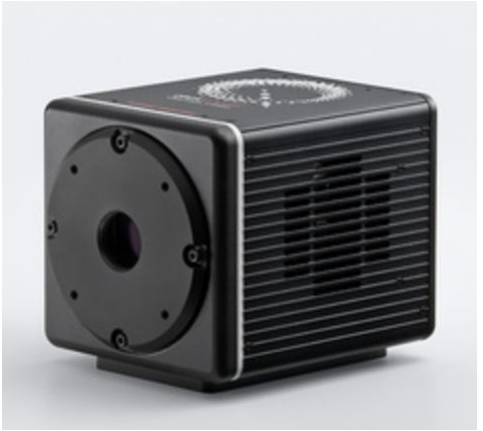
Article number	Description / second
Cyclone-2-2000-M	monochrome camera
Cyclone-2-2000-C	color camera

SPECIFICATIONS

Component / feature	Value
Sensor Type	LUX19HS, global shutter
Resolution	1,920 pixel x 1,080 pixel
Frame rate (full resolution)	20 .. 2,158 fps
Exposure time	4 µs .. 1 / frame rate
Active area	19.20 mm x 10.80 mm
Diagonal	22.03 mm
Pixel distance	10.0 µm x 10.0 µm
A/D conversion	8/10 bit
Sensitivity (Sensor)	20 V/lux·s @ 550 nm

Opzione 2024





Orca-Quest (in prestito da hamamatsu)

qCMOS sensor

0.27 electrons rms (@Ultra quiet scan)

Type number	C15550-20UP
Imaging device	qCMOS image sensor
Effective no. of pixels	4096 (H) × 2304 (V)
Cell size	4.6 µm (H) × 4.6 µm (V)
Effective area	18.841 mm (H) × 10.598 mm (V)
Full well capacity	7000 electrons (typ.)