

Product Overview

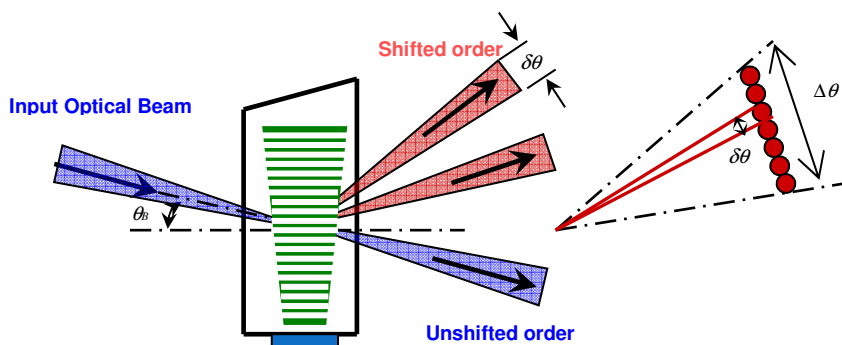
These high-resolution deflectors operate with TeO2 shear mode and hence offers a large scan angle, resolution up to 400 dots and, large aperture up to 7.5 mm. Associated to the appropriate RF driver, this device will provide high precision and accuracy which is required for most application such as optical tweezers, biomedical diagnostics and many others. They are available as 1-axis or 2-axis deflectors.



Features

- Large active aperture
- Large scan angle
- High resolution
- High diffraction efficiency

		DTSX (1-axis)	DTSXY (2-axis)
Material-Acoustic mode-Velocity		TeO2 [S] – 650 m/s	
Optical Wavelength range (AR coated) (λ)		Designed for a single wavelength, on request in 405-1550 nm	
Optical Transmission		>95 % per axis	
Input / Output Polarization		Linear / Polarization flip 90 ° per axis	
Active aperture	250 series	4.5 x 4.5 mm ²	
	400 series	7.5 x 7.5 mm ²	
Frequency range (ΔF)		50 MHz @ 532 nm	
Scan angle		49 mrd @ 1064 nm	49 mrd ² @ 1064 nm
Static Extinction Ratio		>33 dB	
Rise time (Tr)		1 μ s/mm	
Access time (Ta)		1.5 μ s/mm	
Diffraction Efficiency (η)		>70%	>50%
Resolution (N)	250 series	300 @ 633 nm	300x300 @ 633 nm
	400 series	500 @ 633 nm	500x500 @633 nm
Max Optical power density	532 nm	5 W/mm ²	
	1064 nm	10W/mm ²	
Input impedance		50 Ω	
V.S.W.R.		<.2:1	
RF Power (P)	532 nm	1 W	
	1064 nm	2 W	
Weight		approx 60 g	
Packaging		IN PRO 163	IN PRO 161 (Standard) IN PRO 180 (Compact)
Operating Temperature (non condensing)		+ 10 °C to + 40 °C non-condensing	
Storage Temperature (non condensing)		-20 °C to +50 °C non-condensing	
RoHS Compliance		Yes	



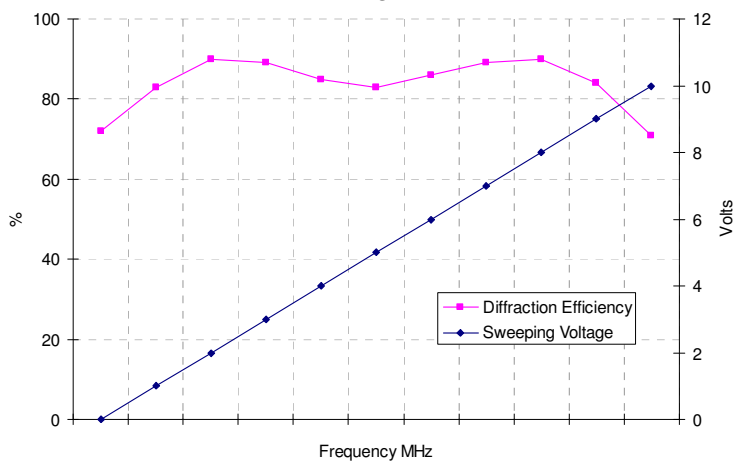
$$N = T_a \times \Delta f$$

$$N = \frac{\Delta\theta}{\delta\theta}$$

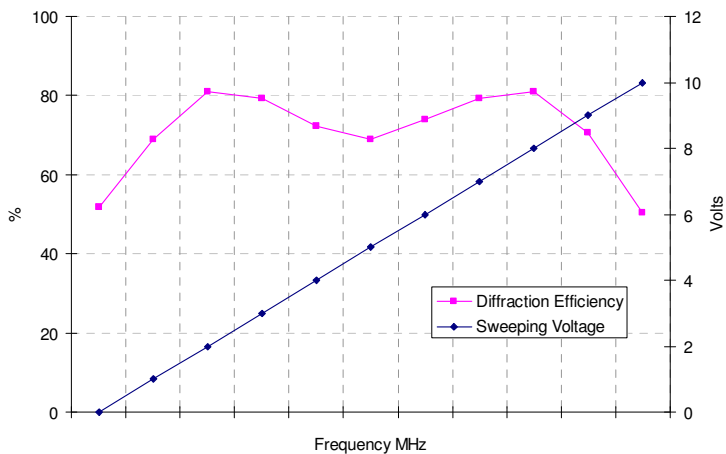
$$T_a = \frac{\phi}{V}$$

- Δf : RF frequency range
- λ : Wavelength of laser beam
- $\Delta\theta$: Scan Angle
- V : Acoustic velocity
- N : number of resolvable points

Diffraction Efficiency vs Drive Frequency
DTSX400 @532nm



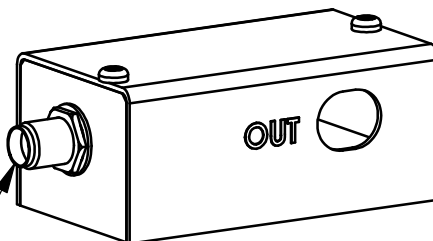
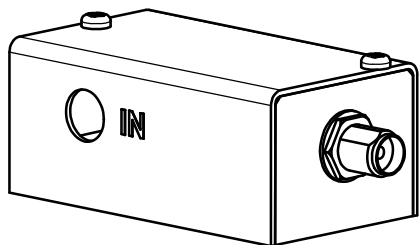
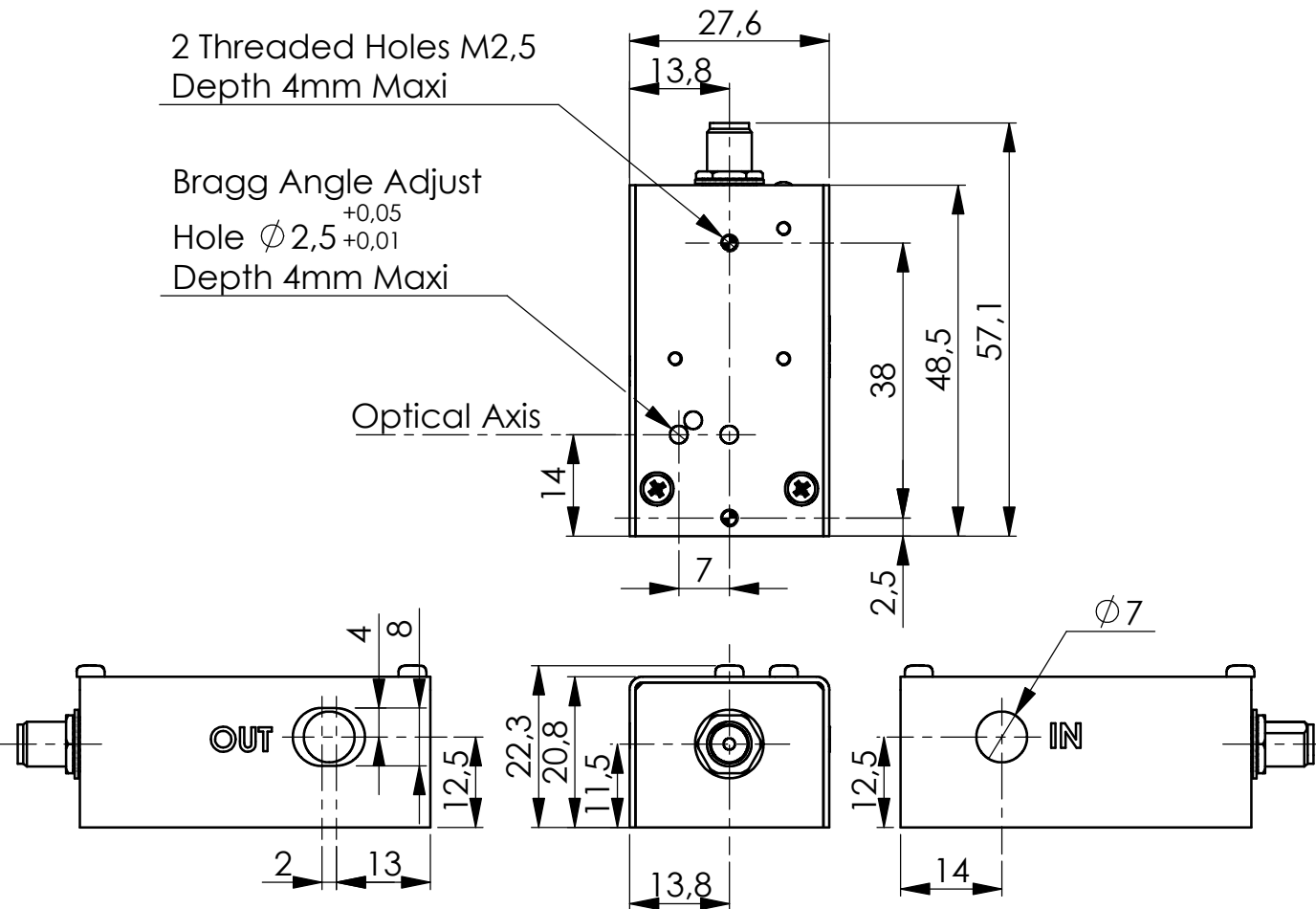
Diffraction Efficiency vs Drive Frequency
DTSXY400 @532nm




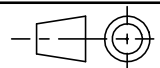
2 Threaded Holes M2,5
Depth 4mm Maxi

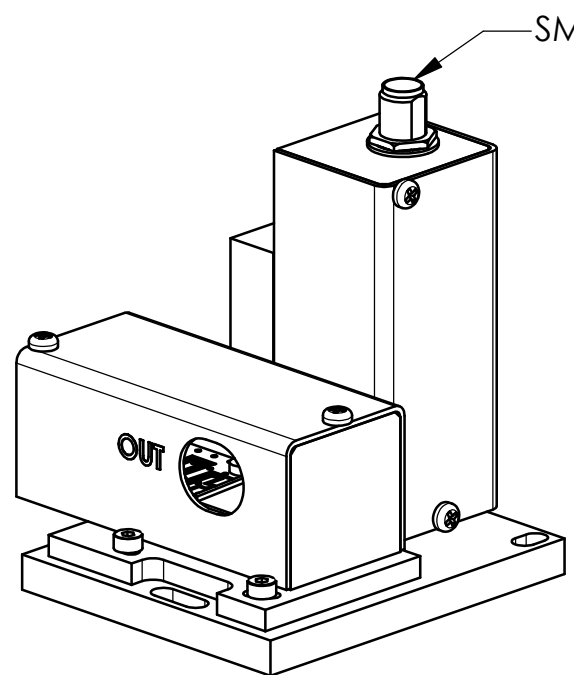
Bragg Angle Adjust
Hole $\phi 2,5^{+0,05}$
Depth 4mm Maxi

Optical Axis

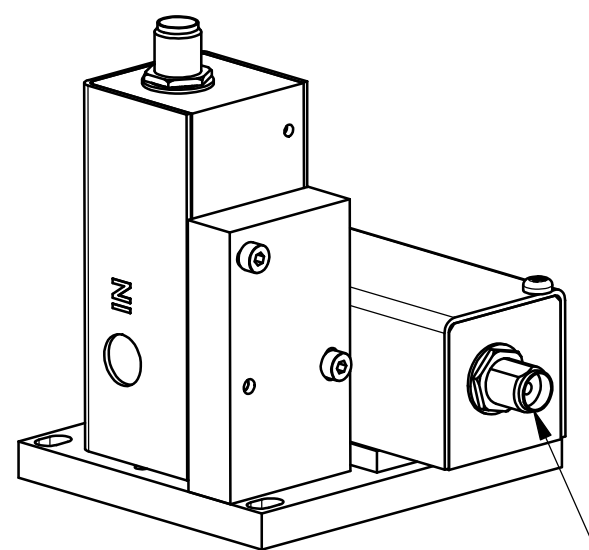
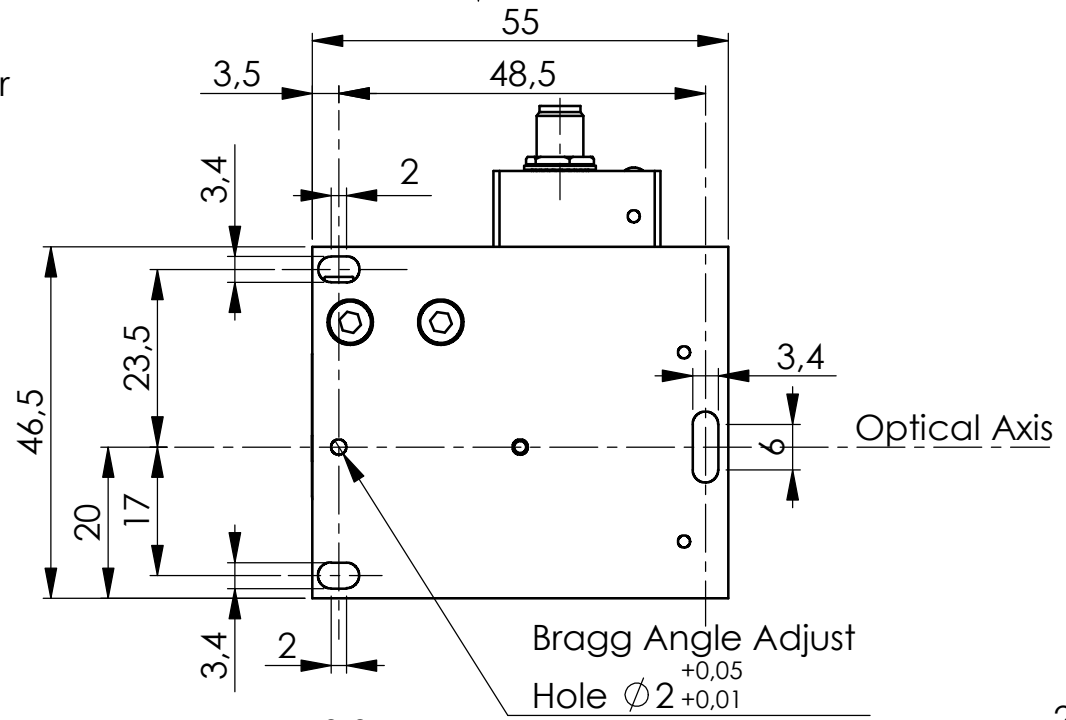


SMA Connector

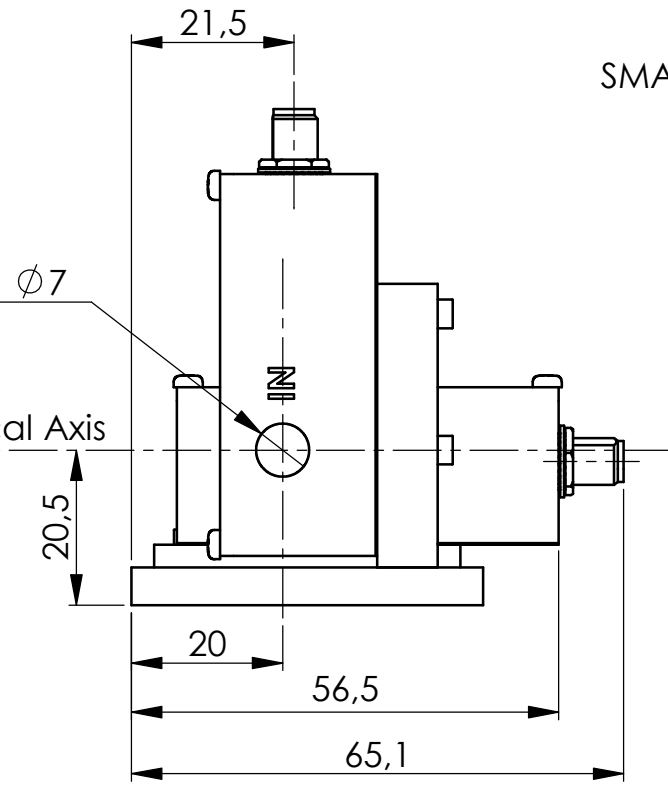
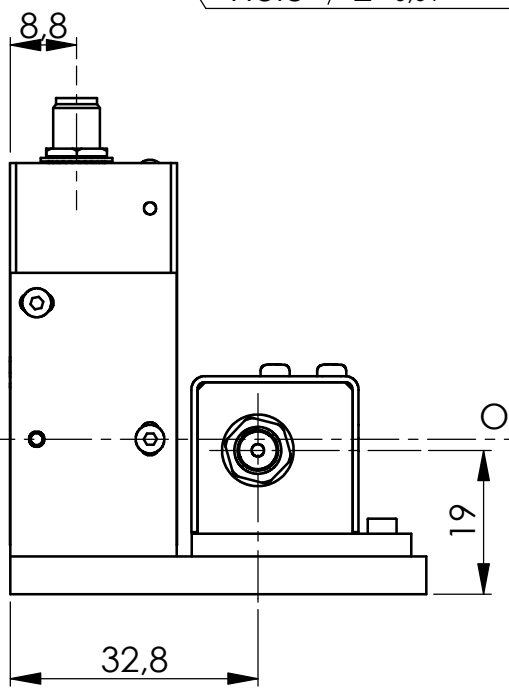
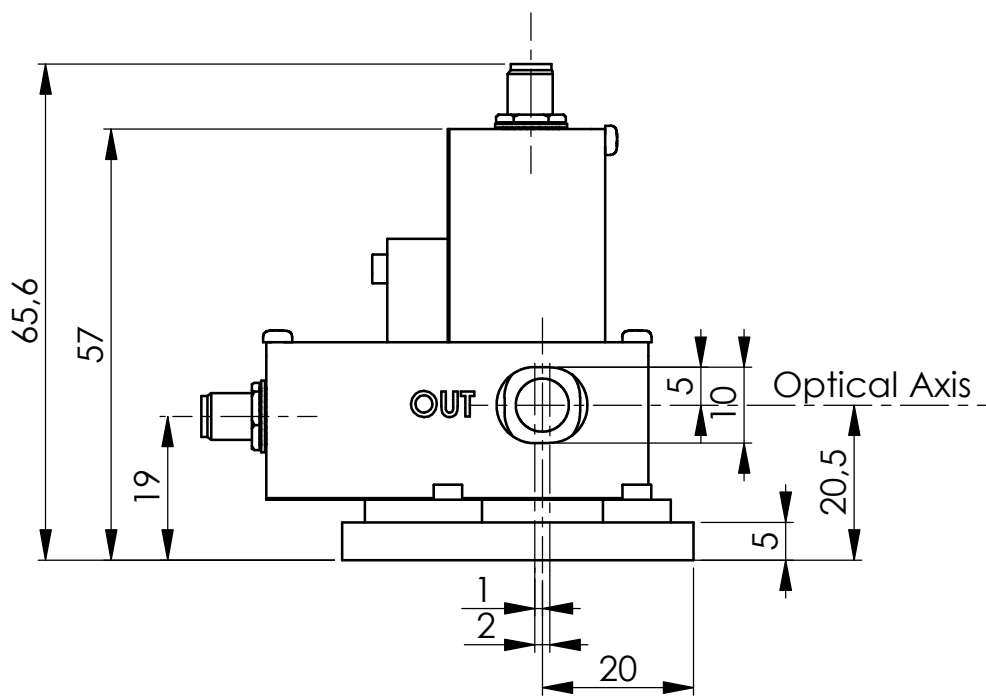
A	28/02/07	E.D	Plan initial / Initial Drawing	
Indice Index	Date	Auteur Author	Modifications	
Conception Design	E.D	PLAN D'INTERFACE / OUTLINE DRAWING		 <p>OPTO-ELECTRONIC A.A. SA OPTO-ELECTRONIQUE DIVISION 18, rue Nicolas Appert F-91898 ORSAY tel : 08 11 09 76 76 fax : 01 76 91 50 31</p>
Vérification Checking	L.F			
Tolérance Tolerance	ISO 2768mK	Référence / Reference		
Echelle Scale	1:1	IN-PRO-163		
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			Folio / Sheet 1/1	Indice / Index A


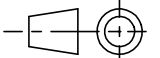


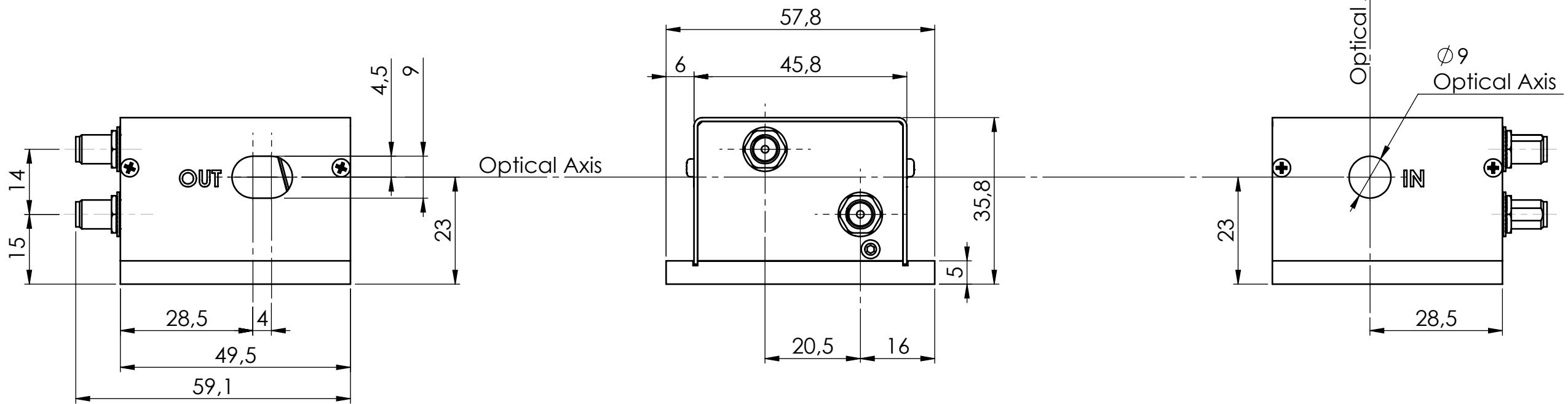
SMA Connector



SMA Connector



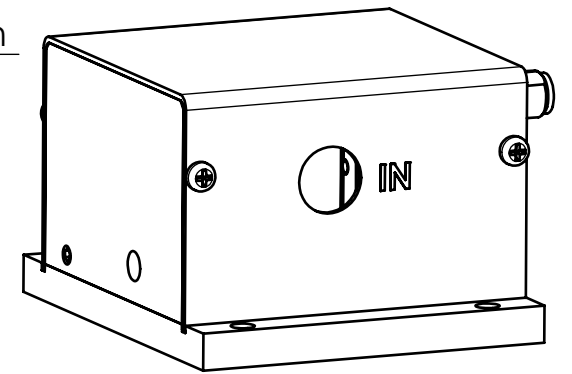
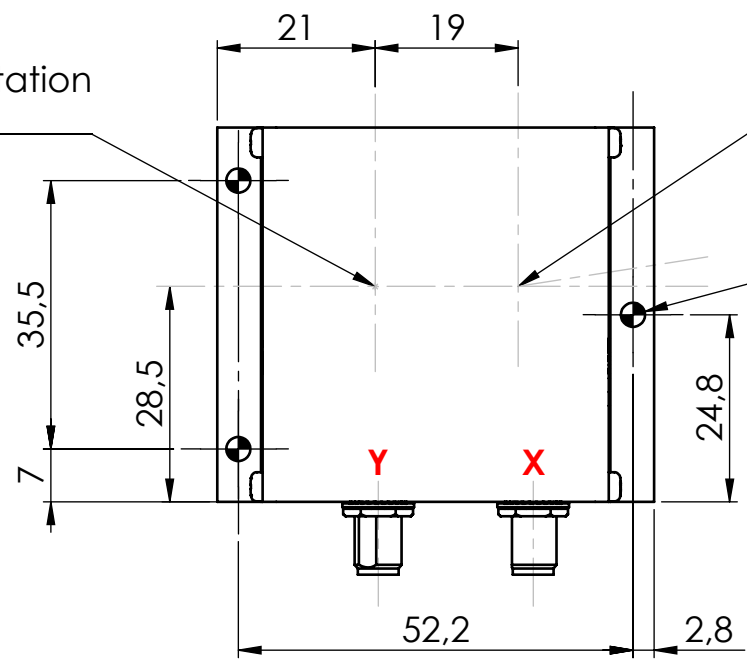
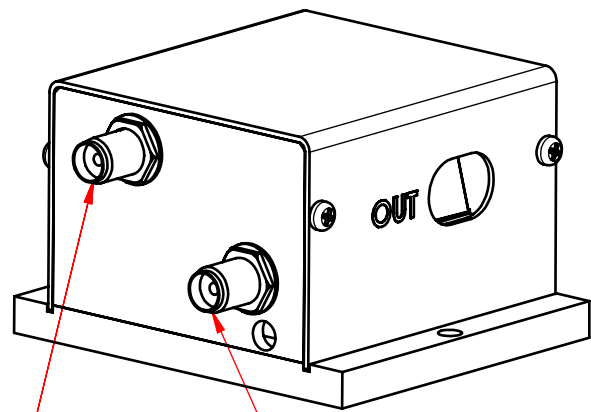
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Conception Design	E.D	PLAN D'INTERFACE / OUTLINE DRAWING		 A.A. SA OPTO-ELECTRONIC DIVISION 18, rue Nicolas Appert F-91898 ORSAY tel : 08 11 09 76 76 fax : 01 76 91 50 31
Vérification Checking	L.F			
Tolérance Tolerance	ISO 2768mK	Référence / Reference		
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Laser beam Rotation
Y Axis

Laser beam Rotation
X Axis

3 Holes $\varnothing 3,2$ Through



SMA Connectors
RF Input Y

SMA Connectors
RF Input X

C	07/01/11	G.M	Gravure X/Y
B	29/10/07	E.D	Modification traitement / Modification of treatment (Surtec 650 -> Black Anodisation)
A	03/10/07	E.D	Plan initial / Initial Drawing
Indice Index	Date	Auteur Author	Modifications
Conception Design	E.D	PLAN D'INTERFACE / OUTLINE DRAWING	
Vérification Checking	L.F		
Tolérance Tolerance	ISO 2768mK	Référence / Reference	
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