

MQ180-A0.2-266.300

MQ180-A0.2-UV

MQ180-A0.25-VIS

AO MODULATOR/SHIFTER/PULSE PICKER

Product Overview

These modulators have been specially designed for applications for which TeO₂ cannot be used. They are made of fused silica UV grade with AR coating to be operated between 266 and 300nm, in the UV and the VIS range Applications are Amplitude modulation, Pulse Picking or fixed Frequency shifter 180MHz.



Features

- High laser power
- Linear polarization
- High diffraction efficiency

Access to your operating manual

Technical Specifications

Parameter	MQ180-A0.2-xx	MQ180-A0.25-VIS
Material-Acoustic mode-Velocity	Fused silica [L] - 5960 m/s	
Optical Wavelength range (AR coated)	266.300: 266-300 nm UV: 325-442 nm	VIS: 440-670 nm
Optical Transmission	> 95 %	
Input / Output Polarization	Linear vertical / Linear vertical	
Active Aperture	0.2 x 1 mm ²	0.25 x 1 mm ²
Carrier Frequency / Frequency shift	+/- 180 MHz	
Separation Angle (0-1)	> 8 mrd >10 mrd	>13 mrd
Static Extinction Ratio	> 30 dB	
Rise / Fall time	110 ns / mm, min 11 ns	
Diffraction Efficiency	> 80 % with beam diameter ≥ 0.1 mm, TEM00 laser beam	
Analog Amplitude modulation bandwidth (-3 dB)	Max 43	
Max optical power density	> 0.5 W/mm ² > 10 W/mm ²	> 100 W/mm ²
Input impedance	Nom 50 Ω	
V.S.W.R.	Nom < 1.2/1	
RF Power / Connector	≤ 2 W / SMA	≤ 4 W / SMA
Size / Weight	(LxIxh) 59.5 x 22.4 x 17.3/ 50 g IN PRO 154	(LxIxh) 62.60 x 36 x 17.3 / 65 g IN PRO 136
Operating Temperature	+10 to +40 Non condensing	
Storage Temperature	-40 to +50 Non condensing	

Options / On request

VARIABLE FREQUENCY SHIFT 180 +/- 15 MHz

Rise Time (Tr) is beam diameter (Φ) sensitive:

$$Tr = 0.66 \frac{\Phi}{V}$$

Amplitude modulation bandwidth (F_{-3dB}) is rise time (Tr) sensitive:

$$F_{-3dB} = \frac{0.48}{Tr}$$

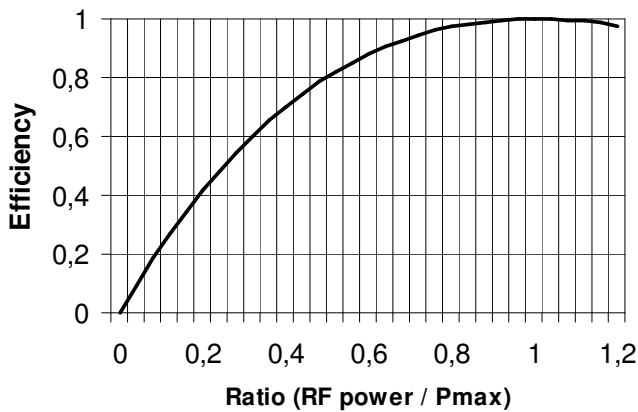
Separation angle ($\Delta\theta$) is wavelength (λ) sensitive:

$$\Delta\theta = \frac{\lambda F}{V}$$

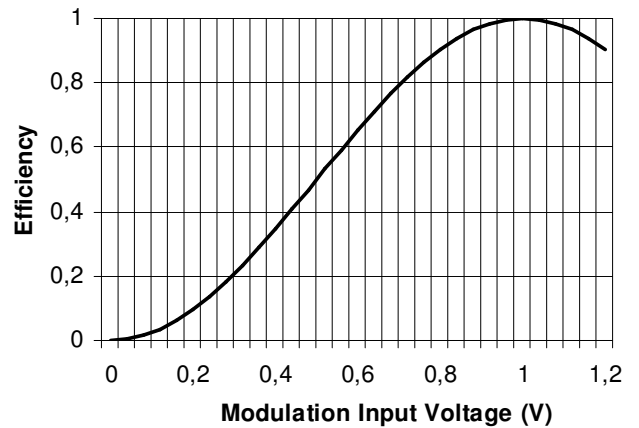
RF power (P) is wavelength (λ) sensitive:

$$\frac{P_1}{P_2} = \frac{\lambda_1^2}{\lambda_2^2}$$

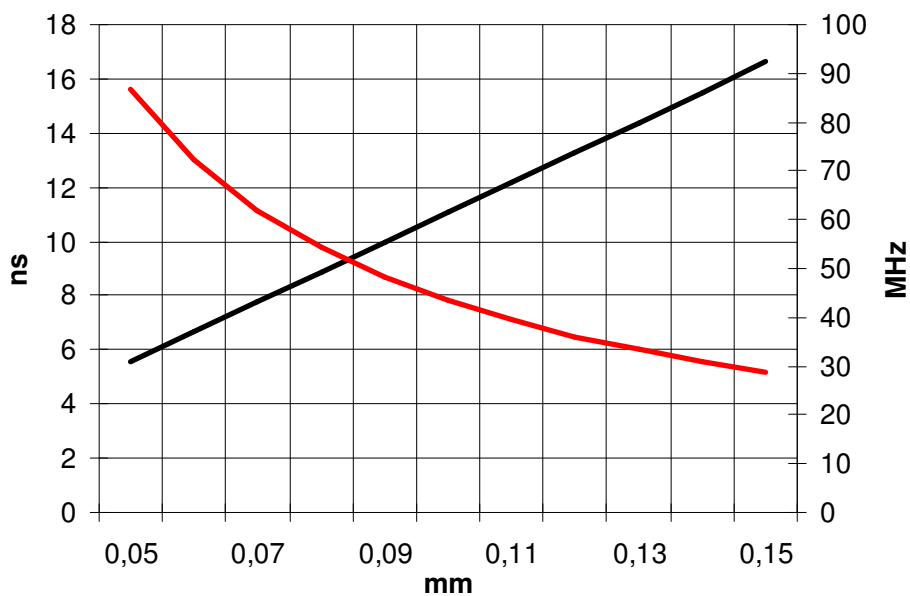
Relative Efficiency versus RF power



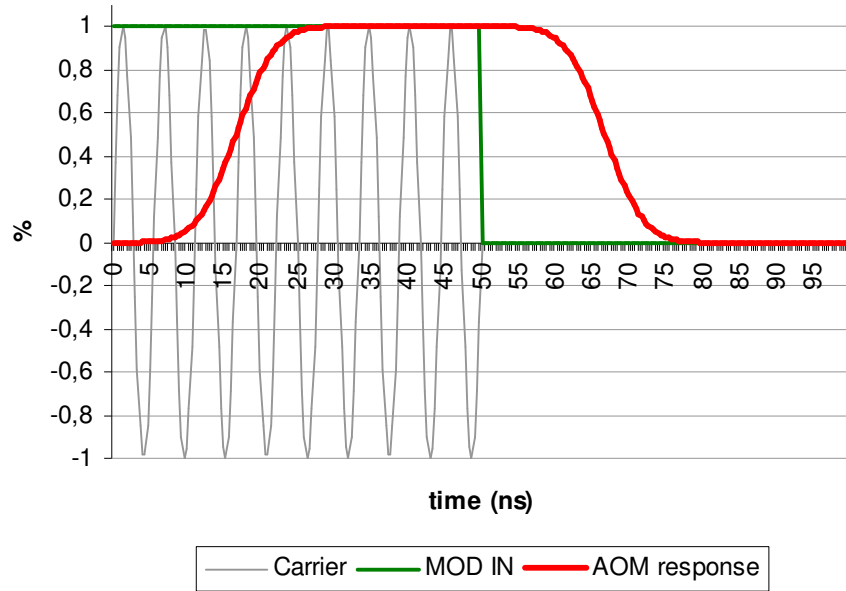
AO relative Efficiency vs driver MOD IN



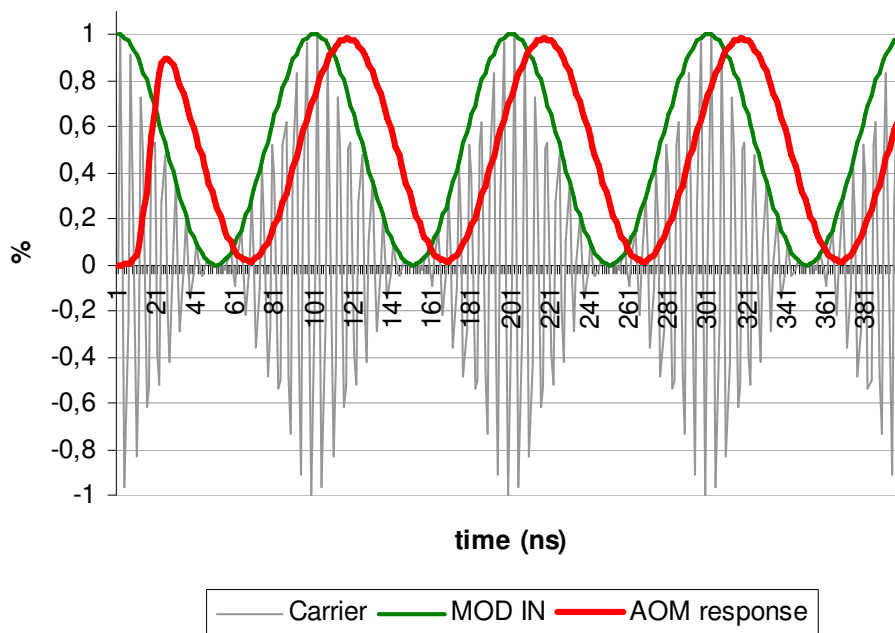
Rise Time (black) / Analog Modulation BW (-3dB) vs Beam diameter

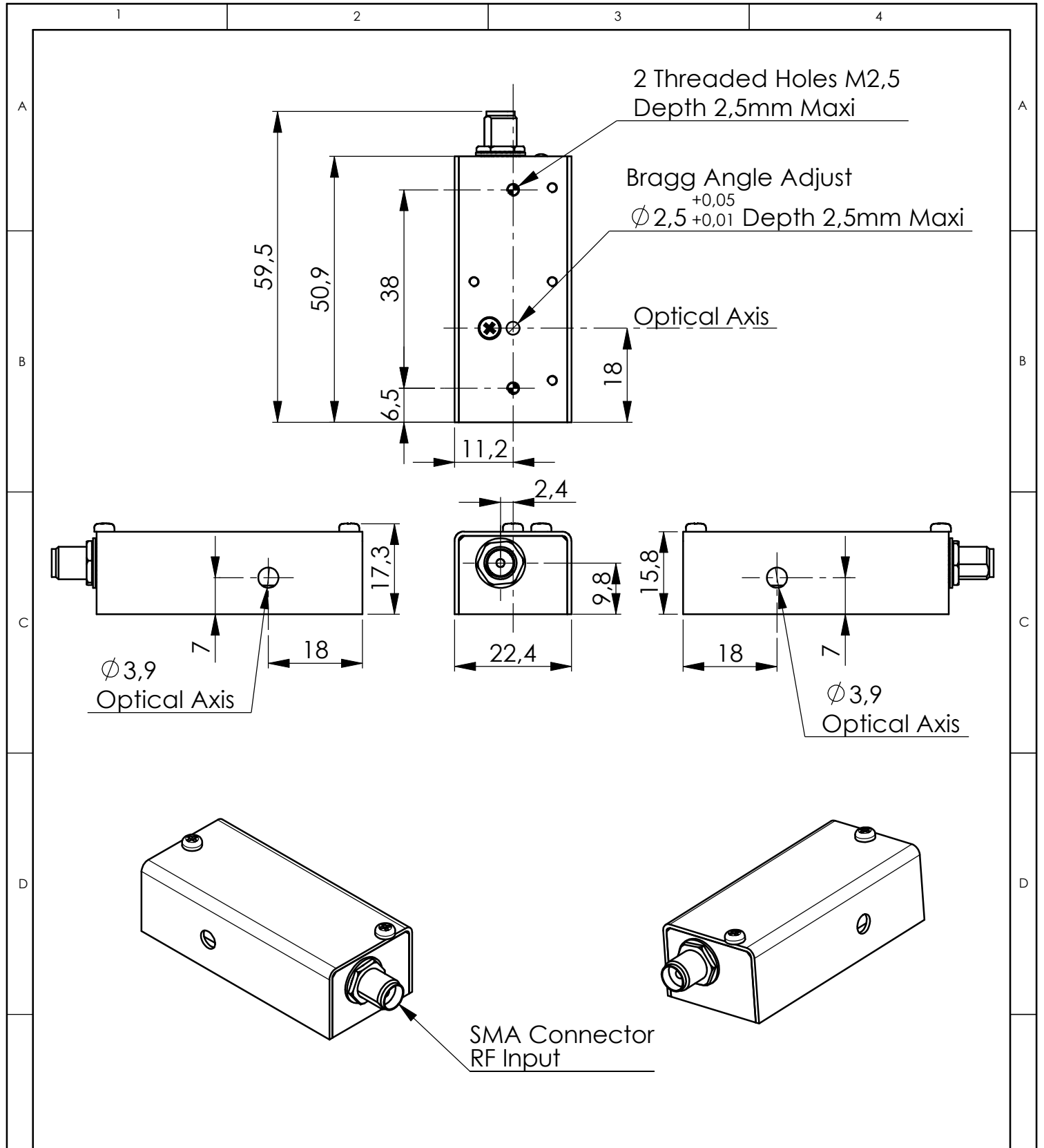



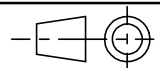
Relative Efficiency / AOM temporal response

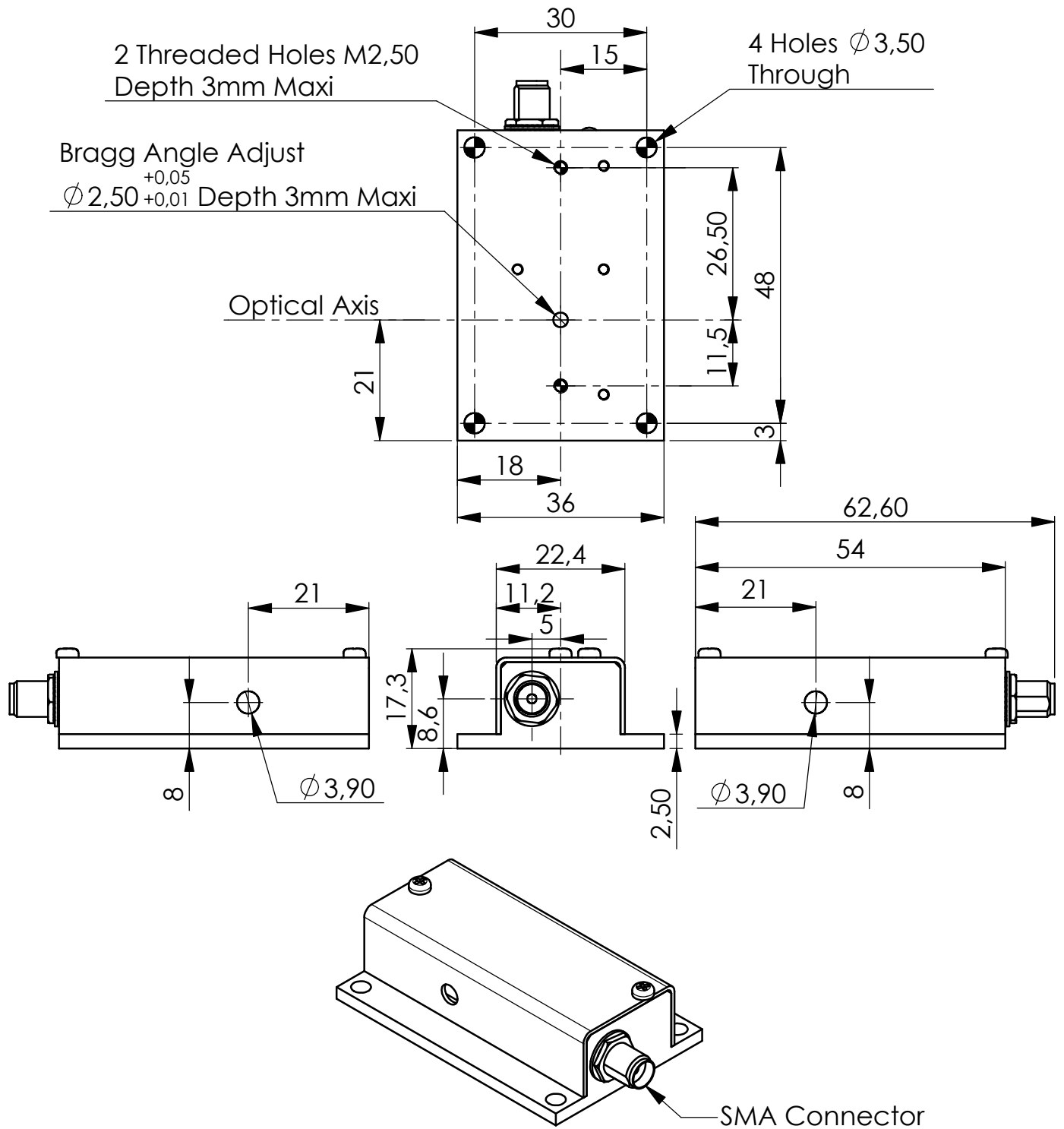


Relative Efficiency / AOM temporal response
(10MHz)





A	01/02/07	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-154		
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SMA Connector

A	18/12/06	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	
Echelle Scale	1:1		IN-PRO-136	
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