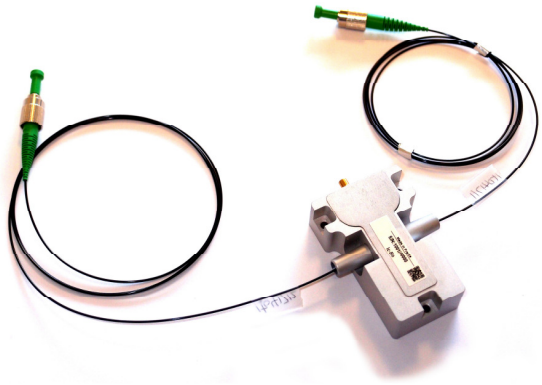
MT200-IR10-Fio-PM-Ic
MT250-IR6-Fio-PM-Ic

FIBRE PIGTAILED MODULATOR/SHIFTER 1000-1100 nm

TECHNICAL DATA SHEET 2015

Product Overview

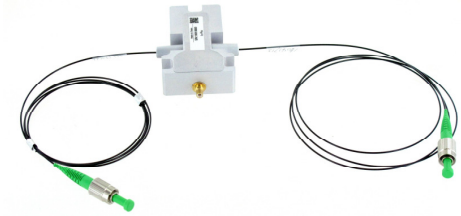
These Compact fibre pigtailed devices are optimized for a single wavelength in [1000-1100] nm. They can operate for intensity modulation, fixed or variable frequency shifting around 200 and 250 MHz, and pulse picking applications. They have been developed for industrial applications in order to offer the best performances and stability.



Features

- Polarization Maintaining Fibres
- FC/APC connectors
- Positive frequency shift
- High extinction ratio
- Industrial Compact design

Access to your operating manual



Technical Specifications

Parameters	MT200-IR10-Fio-PM-Ic	MT250-IR6-Fio-PM-Ic
Material-Acoustic mode-Velocity	TeO2 - [L] - 4200 m/s	
Optical Wavelength range	In [1000-1100nm]	
IL, Insertion Losses	nom < 3 dB*	nom < 3.5 dB**
Input / Output Polarization	Linear / PM fibres	
PER, Polarization Extinction Ratio	>18dB, nom >20dB	
PDL, Polarization Dependence Losses	< 0.6 dB	< 0.8 dB
Carrier frequency / Frequency shift	+ 200 MHz (positive frequency shift)	+ 250 MHz (positive frequency shift)
Static Extinction Ratio	> 45 dB, nom 50 dB	
Rise / Fall time	10 ns	6 ns
Analog Amplitude modulation bandwidth	Max 48 MHz (-3dB)	Max 80 MHz (-3 dB)
Jacket type	900 µm HYTREL TUBING	
Fibre connectors	FC/APC	
Pigtail length	1 meter (IN/OUT)	
Max Input laser power (CW)	≤ 1 W	≤ 0.5 W
Input impedance	Nom 50 Ω	
V.S.W.R.	Nom < 1.2/1	
RF Power / Connector	< 2.2 W / SMC	< 1.8 W / SMC
Size / Weight	(Lxlxh) 60 x 40 x 16 mm^3 / 60 g IN PRO 333	
Operating Temperature	+10 to +40 Non condensing	
Storage Temperature	-40 to +50 Non condensing	

***MT200-IR10-Fio-PM-Ic Losses<5dB in CW operation - **MT250-IR6-Fio-PM-Ic Losses<6dB in CW operation**

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

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

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

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

Insertion Loss (IL) is the amount of launched light lost within the Acousto-Optic Modulator (AOM). It is defined as the ratio of the input optical power over the output optical power.
The value of IL indicated in datasheet includes optical transmission through the crystal, diffraction efficiency and coupling losses. Losses at FC connectors are not included.

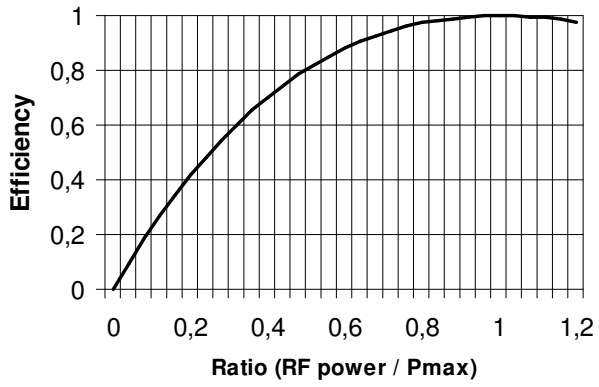
RF power (P) is wavelength (λ) sensitive:

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

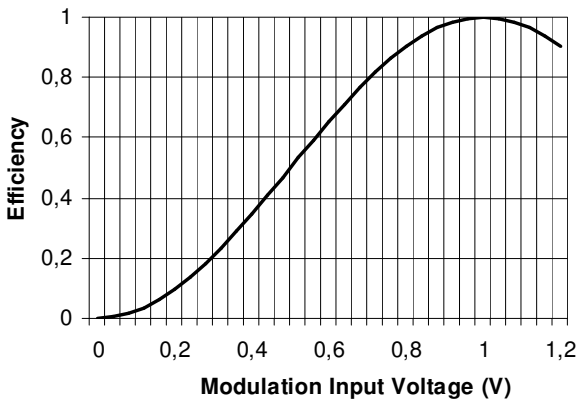
Polarization dependence loss (PDL) is when the insertion loss of a signal differs between the two different states of polarization. Polarization Dependent Loss is a measure of the peak-to-peak difference in Transmission of the AOM with respect to all possible states of polarizations.
It is defined as the ratio between the maximum and minimum transmission power with respect to all possible axes of polarization.
The PDL of the acousto-optic devices is mainly due to the polarization dependency of the diffraction efficiency.

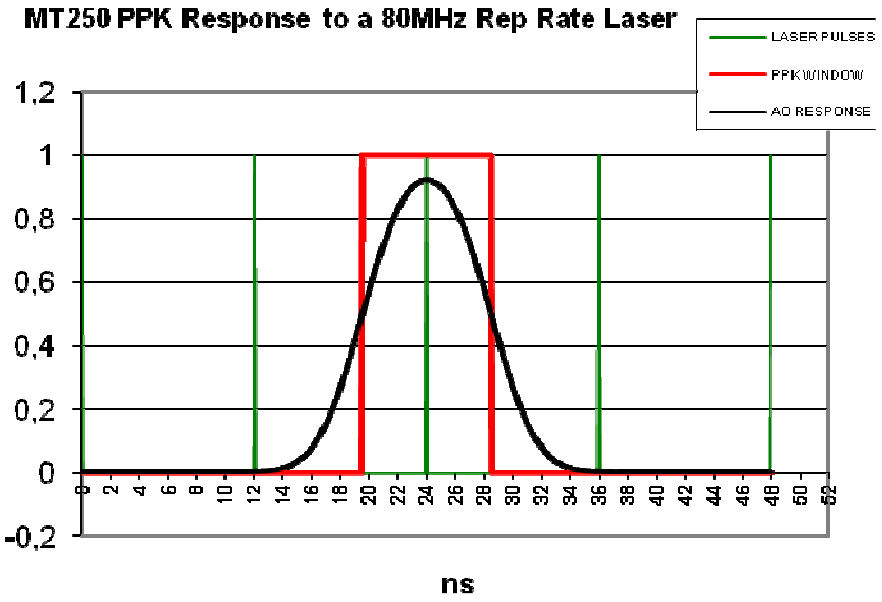
PMD (Polarization Mode Dispersion) is the differential arrival time of the different polarization components of an input light pulse, transmitted by the AOM. This light pulse can always be decomposed into pairs of orthogonal polarization modes. These polarization modes propagate at different speeds according to a slow and fast axis induced by the birefringence of the AOM.
Second Order PMD: The second order PMD describes how polarization induced delay, varies with wavelength. It provides the indication of the wavelength dependency of the PMD.

Relative Efficiency versus RF power



AO relative Efficiency vs driver MOD IN





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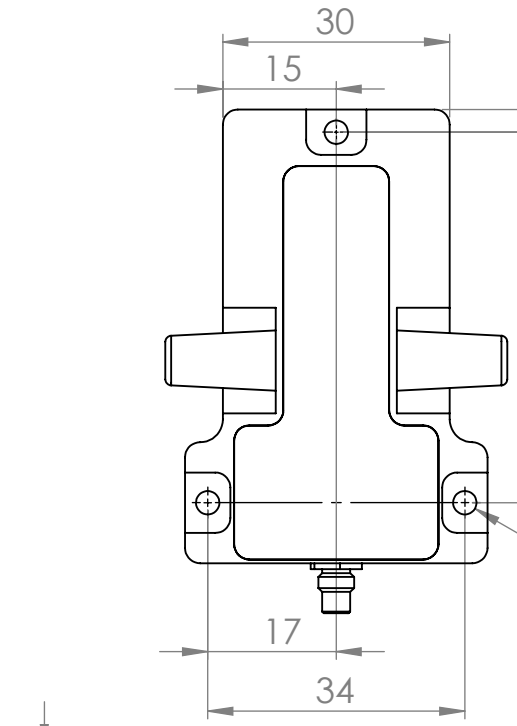
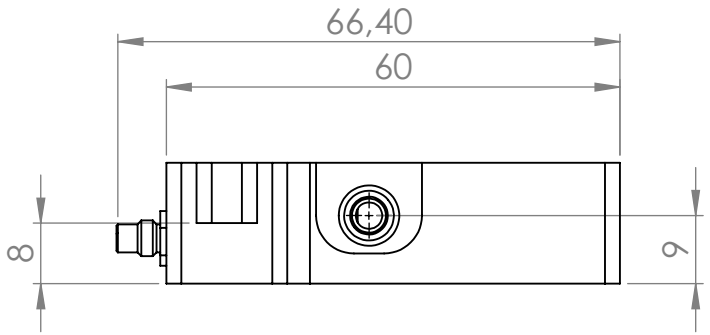
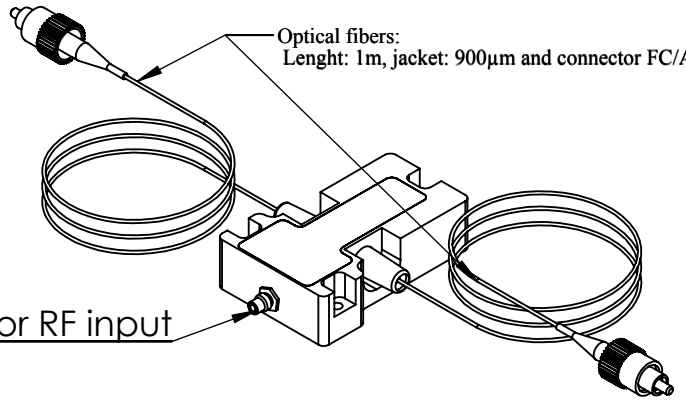


3x FIXING HOLES FOR SCREWS M2.5





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Indice Index	Date	Auteur Author	Modifications
B	03/07/15	G.M	Modification forme capot.
A	17/10/14	G.M	Plan initial / Initial plan

Conception Design	GM
Vérification Checking	PS
Tolérance Tolerance	ISO 2768mK
Echelle Scale	1:1
Format	A4

Désignation / Designation

PLAN D'INTERFACE

Référence / Reference

IN-PRO-333

Matière / Material	Traitement / Treatment	Finition / Finish

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