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**MODEL 10P-BR
BREWSTER E-O PHASE
MODULATORS
DATA SHEET 746**

BREWSTER E-O PHASE MODULATORS

The **Model 10P Series** is a family of *Brewster* E-O Phase modulators, constructed of Lithium Tantalate crystal material. The *Brewster* faces assure the lowest possible loss over the widest optical spectrum from 600-3500 nm. The configuration of this modulator is like a resonant electro-optic modulator (REM) type (data sheet 731), as a wide band device with DC-100 MHz or as a traveling wave type phase modulator (TWAP) with a bandwidth exceeding 500MHz (data sheet 720).

The phase sensitivity as well as the half-wave voltage depends upon the wavelength. This sensitivity increases or the voltage decreases as the wavelength is lowered. The resonant REM type modulator can be easily driven to suppress optical carrier with RF powers of 1 Watt. The drive powers are reduced by the Q of the resonant REM (please see data sheet 731) modulator over that needed for the capacitive WB or TWAP modulator. Custom Modifications such as sealed *Brewster* windows, other apertures, materials or higher sensitivity can be made.

SPECIFICATIONS:

Material	LiTaO ₃
Bandwidth (resonant)	Q > 100:1 (typical) from 10 KHz to 150MHz
(wide band)	DC - 100 MHz
(TWAP)	DC - 500 MHz
Phase sensitivity	15 mrad/Volt
Half wave voltage	200 V at 1064 nm
Aperture	1.3 mm
AR coatings	none
Brewster design	design compensates for Brewster jog
Brewster jog offset	< 0.1 mm
Brewster jog angle	< 1 mrad
Connectors and Model designation:	
Model 10P-REM-3-70-BR	SMA 1 for REM
Model 10P-WB-3-70-BR	SMA 1 Wide Band type (DC-100MHz)
Model 10P-TWAP-3-70--BR	SMA 2 for TWAP type
Compatible drivers	Model 3500P (1 to 500 MHz bandwidth) Model 3520P (4-520 MHz bandwidth) or Model 3101P (1 to 1000 MHz bandwidth) up to 50W-50 ohm or Model 3030 type systems (DC-10 MHz or 30 MHz) Models 31-XXX 1 watt RF drivers. For REM Types: 1-150MHz