

Polytec GmbH

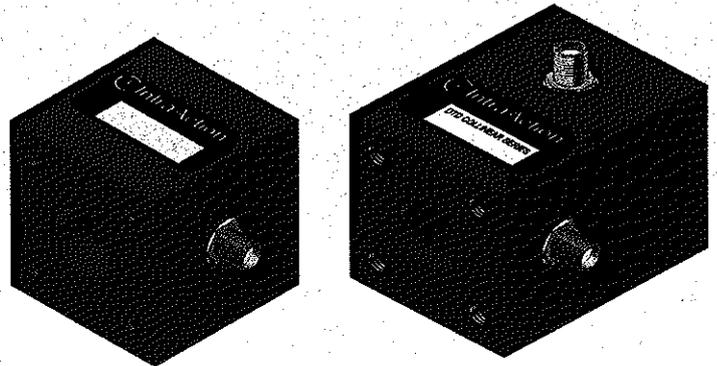
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**MODEL ATD / DTD COLLINEAR¹ SERIES
1-AXIS / 2-AXIS ACOUSTO-OPTIC DEFLECTOR**

- LASER BEAM DEFLECTION
- COLLINEAR DESIGN¹
- OPTICAL TWEEZERS
- LINEAR SCANNING
- LOW RF DRIVE POWER
- RELIABLE OPERATION



SPECIFICATIONS

Acousto-optic Material	Tellurium Dioxide (TeO ₂)
Operating Mode	Slow shear / off axis
Optical Insertion Loss	< 5 percent
First Order Diffraction Efficiency	>75 percent (per axis)
Optical Intensity Variation	<1 dB
Optical Input and Output Polarization ²	Linear
Active Aperture Height ³	4 mm
RF Drive Power ^{4, 5}	< 1 watt
Input Impedance	50 ohms (nominal)
RF Connectors	SMA
Size (less connectors), DTD(ATD)	1.50(1.50)D x 1.50(1.50)H x 2.0(1.50)W inches 38.1(38.1)D x 38.1(38.1)H x 50.8(38.1)W mm

MODEL (ATD, 1-Axis; DTD, 2-Axis)	<u>DTD-274HD6</u>	<u>DTD-604RC25</u>	<u>DTD-804RC17</u>
Optical Wavelength (λ)	1064 nm	780-785 nm	630-660 nm
Center RF Frequency (CF)	27 MHz	60 MHz	80 MHz
Deflection Bandwidth (BW at -1 dB)	18 MHz	36 MHz	50 MHz
Time-Bandwidth Product (4 mm)	110	215	300
Access time (per mm beam diameter)	1.6 μsec	1.5 μsec	1.5 μsec
Beam Separation ^{6, 7} (at CF)	45 mrad	71 mrad	76.6 mrad
Deflection Range ^{6, 7} (λ, BW)	30 mrad	42.4 mrad	47.5 mrad

¹ The nominal center of deflection area is collinear with the input optical beam. (Eliminates typical AO off-axis alignment)

² Input polarization is linear. 1-Axis output polarization is linear, rotated 90°; 2-Axis output polarization is linear, same as input.

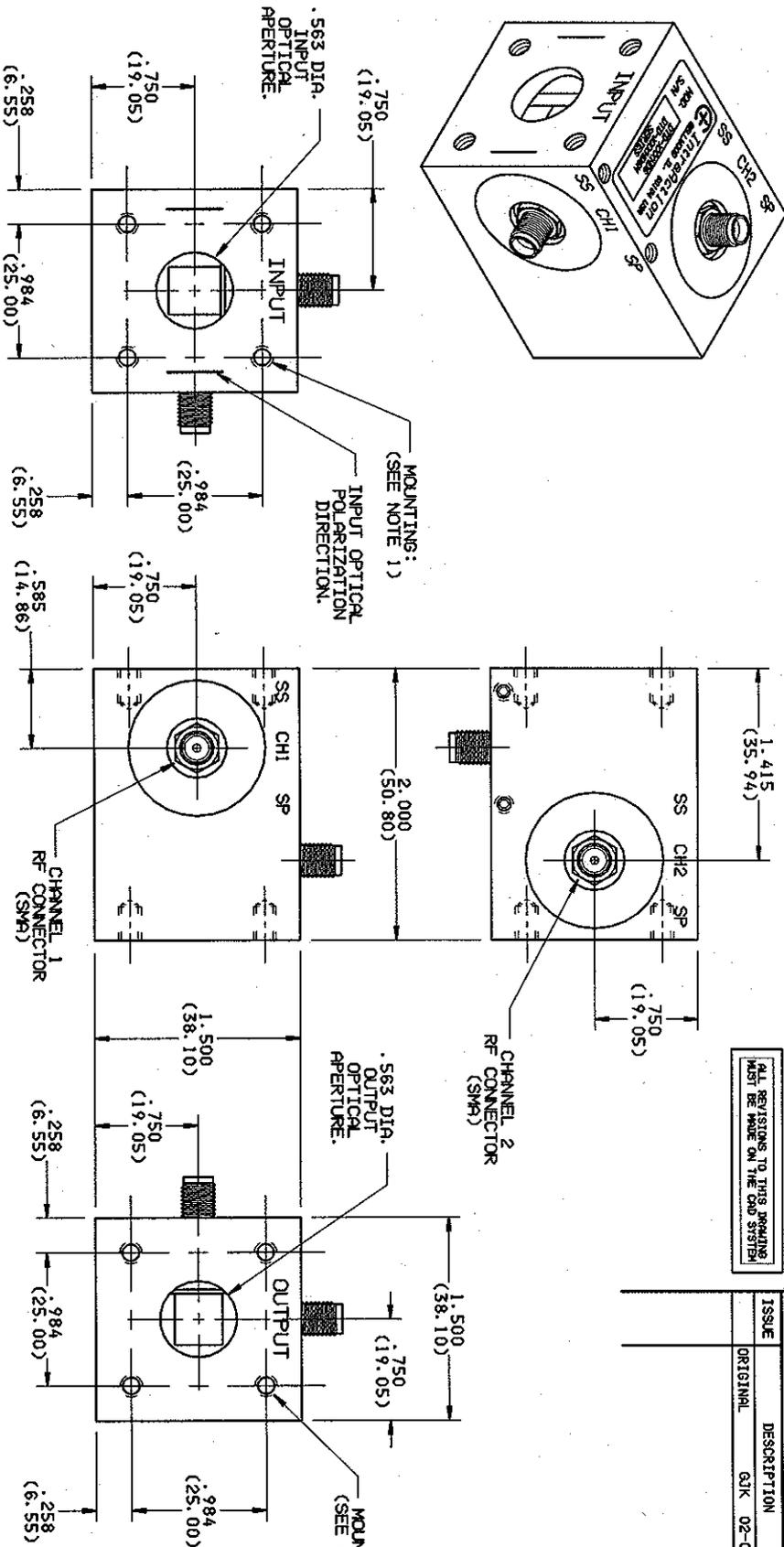
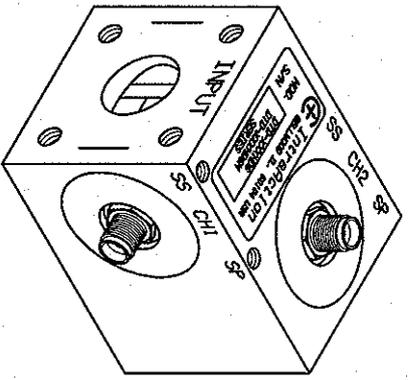
³ 5 or 6 mm Active Aperture Height is also available.

⁴ For Optical Tweezers applications: Model DVE-120 synthesized, RF frequency, PCI computer card and DPA series power amplifier.

⁵ For Linear Scanning applications: DE series Voltage Controlled Oscillator drivers.

⁶ For 2-Axis: since both deflection angles can not originate at the same point, the origins are as close together as physically possible.

⁷ For 2-axis operation, 2 relay lenses between 2 ATD can make the deflection origins of each axis the same.



NOTES:
 1. MOUNTING SCREW HOLES: (8X) DTD-XXXXHD6: H8-32 X .275 MAX. DEEP. DTD-XXXXHD6M: M4 X .7 X 6.5 MAX. DEEP.

ENR2108
 ALL REVISIONS TO THIS DRAWING MUST BE MADE ON THIS DRAWING SYSTEM

REVISIONS		
ISSUE	DESCRIPTION	APP'D/DATE
ORIGINAL	GJK 02-04-09	

UNLESS OTHERWISE SPECIFIED TOLERANCES AND DIMENSIONS ARE IN INCHES		APPROVED DATE	
LINEAR : XX.X.005 (XX.X) = mm.		DATE	
ANGULAR ± / DIMETERS ± .005		DRAWN DATE	
LIMITS APPLY BEFORE FINISHING DO NOT SCALE THIS PRINT		GJK 02-04-09	
MATERIAL		FINISH	
		BLUE ANODIZE (ROHS)	
MFG. INSTR.		FSCM NO.	
D.C. INSTR.		B DTD-HD6/HD6M	
		SIZE	
		UNIT WEIGHT	
		SHEET 1 OF 1	


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DTD-XXXXHD6
DTD-XXXXHD6M
OUTLINE