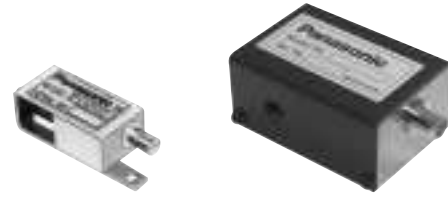


Acousto-Optic Light Deflectors

Type: **EFLD**



Acousto-Optic Light Deflector diffracts and deflects laser beam by using acoustic shear waves travelling in a single crystal of tellurium dioxide (TeO_2), whereby flat frequency response and light deflection characteristics of high diffraction efficiency are obtained with low driving power. Panasonic's unique system is employed for this deflector, thus eliminating the need for an optic phase plate even for two dimensional deflection, and simplifying the optical system.

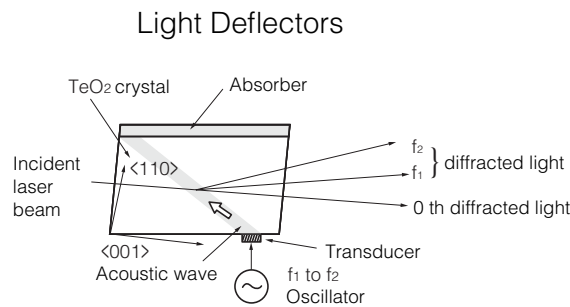
■ Features

- Low driving power (0.5 to 1 W)
- High density of resolvable spots (160 to 750 spots)
- High diffraction efficiency (80 %)
- Wide deflection angle (2.7°)

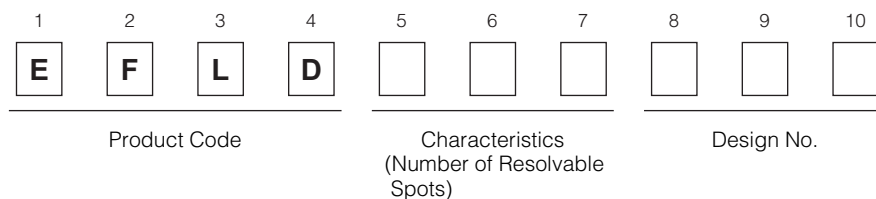
■ Recommended Applications

- Laser scanner
- Laser microscope
- Electrical spectrum analyzer

■ Principle



■ Explanation of Part Numbers



■ Ratings and Characteristics

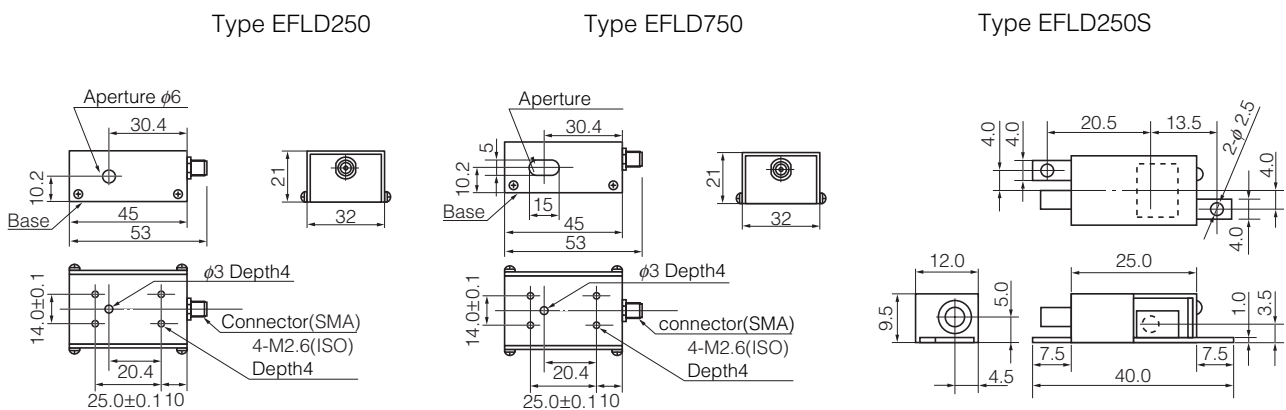
Item \ Part No.	EFLD250	EFLD250A	EFLD250C	EFLD250R
AO Medium	TeO ₂			
Optical Wavelength: λ (nm)	633	488–515	442–458	760–840
Number of Resolvable Spots (Spots)	250 min.	250 min.	250 min.	160 min.
Access Time (μ s)	5.3	5.4	5.4	4.5
Maximum Beam Dimensions: H×W (mm)	3.5×3.5	3.5×3.5	3.5×3.5	3×3
Acoustic Velocity: v (m/s)	660	650	650	660
Center Frequency: f (MHz)	75	90 ($\lambda=515$ nm) 100 ($\lambda=488$ nm)	103 ($\lambda=458$ nm) 108 ($\lambda=442$ nm)	55
Deflection Bandwidth (–3 dB): Δf (MHz)	50 min.	50 min.	50 min.	36 min.
Maximum Diffraction Efficiency (%)	80 min.	80 min.	70 min.	75 min.
Maximum Driving Power (W)	0.6	0.5	0.5	1.0
Deflection Angles: $\Delta \theta$ (deg.)	2.7 min.	2.2 min.	2.0 min.	2.5 min.
Optical Transmittance (%)	94 min.	92 min.	90 min.	90 min.
Input Impedance (Ohms)	50 (nominal)			
Laser Polarization	Linear (Horizontal to the base: E Vector)			

Item \ Part No.	EFLD750	EFLD750A	EFLD750C	EFLD750R
AO Medium	TeO ₂			
Optical Wavelength: λ (nm)	633	488–515	442–458	760–840
Number of Resolvable Spots (Spots)	750 min.	750 min.	750 min.	540 min.
Access Time (μ s)	15.2	15.4	15.4	15.2
Maximum Beam Dimensions: H×W (mm)	3×10			
Acoustic Velocity: v (m/s)	660	650	650	660
Center Frequency: f (MHz)	75	90 ($\lambda=515$ nm) 100 ($\lambda=488$ nm)	103 ($\lambda=458$ nm) 108 ($\lambda=442$ nm)	55
Deflection Bandwidth (–3 dB): Δf (MHz)	50 min.	50 min.	50 min.	36 min.
Maximum Diffraction Efficiency (%)	80 min.	80 min.	70 min.	75 min.
Maximum Driving Power (W)	0.6	0.5	0.5	1.0
Deflection Angles: $\Delta \theta$ (deg.)	2.7 min.	2.2 min.	2.0 min.	2.5 min.
Optical Transmittance (%)	94 min.	92 min.	90 min.	90 min.
Input Impedance (Ohms)	50 (nominal)			
Laser Polarization	Linear (Horizontal to the base: E Vector)			

■ Ratings and Characteristics (Miniature Type)

Item	Part No.	EFLD250S	EFLD250SA	EFLD250SC	EFLD250SR
AO Medium		TeO ₂			
Optical Wavelength: λ (nm)		633	488–515	442–458	760–840
Number of Resolvable Spots (Spots)		250 min.	250 min.	250 min.	160 min.
Access Time (μ s)		5.3	5.4	5.4	4.5
Maximum Beam Dimensions: H×W (mm)		3.5×3.5	3.5×3.5	3.5×3.5	3×3
Acoustic Velocity: v (m/s)		660	650	650	660
Center Frequency: f (MHz)		75	90 ($\lambda=515$ nm) 100 ($\lambda=488$ nm)	103 ($\lambda=458$ nm) 108 ($\lambda=442$ nm)	55
Deflection Bandwidth (–3 dB): Δf (MHz)		50 min.	50 min.	50 min.	36 min.
Maximum Diffraction Efficiency (%)		80 min.	80 min.	70 min.	75 min.
Maximum Driving Power (W)		0.6	0.5	0.5	1.0
Deflection Angles: $\Delta\theta$ (deg.)		2.7 min.	2.2 min.	2.0 min.	2.5 min.
Optical Transmittance (%)		94 min.	92 min.	90 min.	90 min.
Input Impedance (Ohms)		50 (nominal)			
Laser Polarization		Linear (Horizontal to the base: E Vector)			

■ Dimensions in mm (not to scale)



■ Please contact the factory for packaging methods.

■ Typical Characteristics

Diffraction Efficiency
Type EFLD750

