

Wire Grid Polarizer Standard sample



WGP
Sample



Key Features

- Excellent heat resistance compared to organic polarizers.
- It is particularly advantageous for the applications requiring environmental durability.

Table 1 : Performance Specification

	MRLS 1 Visible WGP	MRLS 2 Beam splitter WGP	MRLS 3 Wide wave length range WGP
Wave length range	420nm to 700nm	420nm to 700nm	300nm to 2500nm
Transmittance (Tp)	83%(450nm) 85%(550nm) 85%(650nm)	83%(450nm) 85%(550nm) 85%(650nm)	83%(450nm) 85%(550nm) 85%(650nm) 90%(2500nm)
Extinction ratio (Tp/Ts)	200:1 (450nm) 300:1 (550nm) 500:1 (650nm)	200:1 (450nm) 300:1 (550nm) 500:1 (650nm)	200:1 (450nm) 300:1 (550nm) 500:1 (650nm) 1000:1 (2500nm)
Reflectance (Rs)	-	75%	-
Extinction ratio (Rs/Rp)	-	30	-
Angle of Incidence	0 ± 20°	45 ± 15°	0 ± 20°

Table 2. Substrate Characteristics

	MRLS 1 Visible WGP	MRLS 2 Beam splitter WGP	MRLS 3 Wide wave length range WGPCoefficient
Substrate size	25 x 25mm	25 x 25mm	25 x 25mm
Substrate	Alkaline Free glass	Alkaline Free glass	Fused Silica
Thickness	0.725mm	0.725mm	0.725mm
Index of Refraction	480nm 1.5160 643.8nm 1.5078	480nm 1.5160 643.8nm 1.5078	486.1nm 1.4633 656.3nm 1.4565
Coefficient of Thermal Expansion	31.7E-7 /°C (0-300°C)	31.7E-7 /°C (0-300°C)	5.5E-7/°C (0-300°C)

Table3 : Others

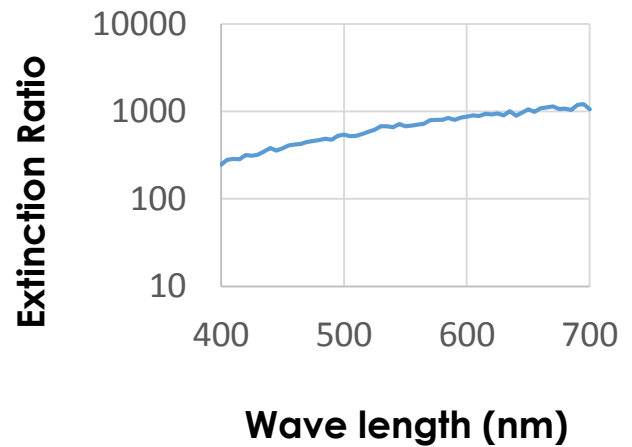
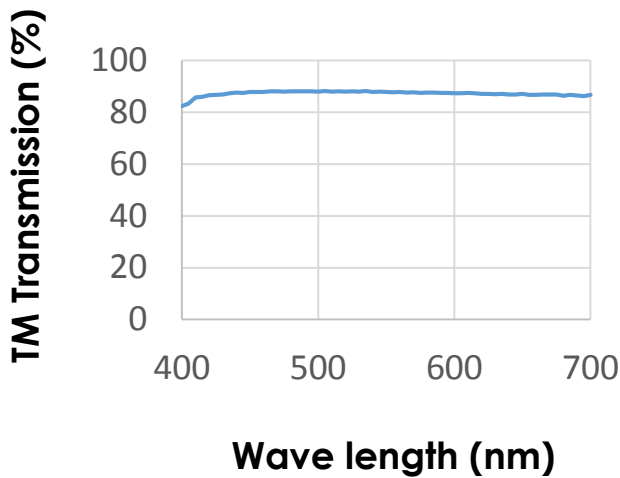
Edge Exclusion	2mm (25mm□)	2mm(25mm□)	2mm (25mm□)
TA Tolerance	± 1°	± 1°	± 1°
Coating	Back side AR	Back side AR	-

Table 4 : Reliability Item (reference only)

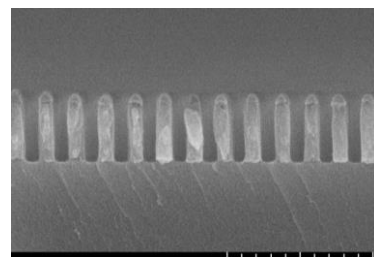
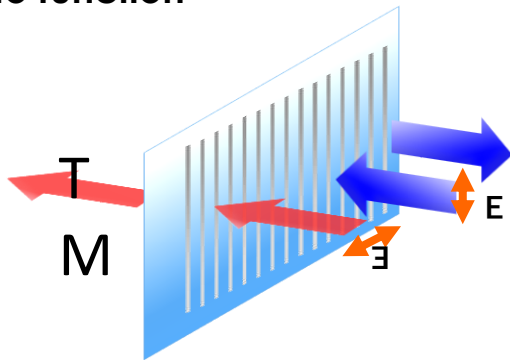
Reliability Item	Condition
HT (High Temp)	120degC/1,000hrs
HTHH (High Temp High Humidity)	60degC/95%RH/1,000hrs
LT (Low Temp)	-40degC/1,000hrs
TC (Thermal Cycle)	-40/110degC, 30min each /500cycles

Note) Δ Performance after Reliability test is typically less than 5%.

Typical Performance of MRLS1



How to function



Cross sectional SEM view of Aluminum wire grid

When the metal grid pitch is less than half of the wavelength, diffraction is suppressed and it functions as a polarizer.

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