

## General properties of colorPol<sup>®</sup> polarizers

	Unlaminated	Laminated <sup>1)</sup>
<b>Optical Parameter</b>		
Transmitted wavefront distortion (TWD) at 633 nm over an inspection area of Ø10mm	< 3 λ	< λ/4
Beam deviation	< 20 arc min.	< 1 arc min.
Accuracy of polarization axis to edge <sup>2)</sup>	< 0.5°	
Acceptance angle <sup>3), 4)</sup>	± 20°	
Refractive index at 633 nm (RI) <sup>5)</sup>	1.525 ± 0.005	
<b>Cosmetic Parameter</b>		
Surface imperfections <sup>6)</sup>	In dependence on MIL-O-13830A: S/D 40/20	
<b>Mechanical Parameter</b>		
Clear aperture (CA) <sup>7)</sup>	80% for parts < 2 x 2 mm <sup>2</sup> 90% for parts < 20 x 20 mm <sup>2</sup> 95% for parts ≥ 20 x 20 mm <sup>2</sup>	
Edge chips <sup>8)</sup>	0.05 mm to 0.2 mm, dependent upon part size < 0.05 mm on request	
Specific weight	2.5 ± 0.1 g/cm <sup>3</sup>	
Coefficient of elasticity E	70 ± 5 kN/mm <sup>2</sup>	
<b>Physical Parameter</b>		
Coefficient of thermal expansion (CTE)	8.1 ± 0.3 x 10 <sup>-6</sup> K <sup>-1</sup> (0-100°C)	
Specific heat	1.0 ± 0.1 J/gK	
Thermal conductivity	0.94 ± 0.05 W/mK	
<b>Operation Limits</b>		
Laser damage threshold (LDT) a) Continuous wave (CW)	10 W/cm <sup>2</sup> continuous block 25 W/cm <sup>2</sup> continuous pass	1 W/cm <sup>2</sup> continuous block 5 W/cm <sup>2</sup> continuous pass
b) Pulsed	12 MW/cm <sup>2</sup> pulse peak power (equivalent of about 1 μJ/cm <sup>2</sup> pulse power density)	1 MW/cm <sup>2</sup> pulse peak power (equivalent of about 100 nJ/cm <sup>2</sup> pulse power density)
Operating temperature range	up to +400°C	-20°C to +120°C
<b>Durability</b>		
Thermal cycle	-40°C to +80°C, 200 cycles (DIN EN 60068-2-14 method Na)	
Humid storage	85°C, 85% rel. humidity, 1,000 h according to Telcordia GR-1221-CORE	
UV-stability	20 mW/cm <sup>2</sup> at 60 h irradiation without any degradation	
Chemical resistance	colorPol <sup>®</sup> polarizers are insensitive to most organic and cleaning solvents, acids and bases <sup>9)</sup> and distilled water.	

colorPol<sup>®</sup> polarizers follow completely the international RoHS, REACH and POPs regulations.

<sup>1)</sup> laminated, ground and polished

<sup>2)</sup> less tolerance available upon request

<sup>3)</sup> exceeding this angle may lower contrast and transmittance

<sup>4)</sup> AR-coating may limit this angle

<sup>5)</sup> RI for other wavelengths on request

<sup>6)</sup> other quality grades available on request

<sup>7)</sup> AR-coated parts can have a circumferential coating edge up to 1mm wide

<sup>8)</sup> other specifications available on request

<sup>9)</sup> AR-coating may limit the resistivity

