ProFlux Nanowire® Technology

Visible Light Polarizers

PPL, PFU & RCV Series Datasheet

PPL, PFU & RCV Polarizers
(mounting optional)

Applications

- Projection Display
- Spectroscopy
- Microscopy
- Medical & Dental Imaging
- Machine Vision
- Automotive
- Head Up Display (HUD)
- Head Mounted Display (HMD)
- Polarizing Cameras

Standard Product Options

Product Name	Description
PPL04C	High Contrast
PFU04C	Ultra High Contrast
PPL05C	High Transmission
RCV8N2EC	Balanced Transmission/Contrast
RCV8LCET	High Contrast with protective Overcoat™
RCV6N2EC	Ultra High Transmission
RCV6LCET	High Transmission with protective Overcoat™

See OPT-DATA-1011 for size and mounting options

ProFlux® polarizers are designed using Moxtek® Nanowire® Technology to control light and image polarization even in high energy and high temperature applications. Made from highly durable materials, ProFlux provides pure polarization that gives high contrast and a bright image for the life of the projector or instrument.

The ProFlux degree of polarization depends little on wavelength and angle of incidence, making these polarizers the ideal choice for various analytical tool applications. ProFlux polarizers have excellent polarization uniformity over large apertures, and provide bright, high contrast, and long-lasting performance.

Moxtek's advanced manufacturing technology is able to manufacture precision polarizers in high volume quantities for projection display, analytical, automotive, medical, research, and other applications.

Features	Benefits
Nanowire® Technology	Brightness and contrast uniformity
	±20˚ AOI without depolarization
	Wavelength and AOI independent
	Broadband
Inorganic	High heat resistance

General Specifications

Wavelength Range: 420 - 700nm
Substrate Type: Display Grade Glass
Thickness: 0.7 ± 0.07mm
Index of Refraction: 435.8nm: 1.5198
643.8nm: 1.5078
Thermal Expansion: 31.7 x 10^{-7}/°C (0-300°C)
AOI (Angle of Incidence): 0° ± 20°
AR Coating: Standard on backside only
Maximum Temperature: 200°C > 5,000 hours
Transmission Axis (TA): Referenced to long side of part
TA Tolerance: ± 1°
Dimensional Tolerance: ± 0.2mm
Edge Exclusion: 2mm
RoHS: Compliant

MOXTEK®

Performance Specifications at Normal Incidence

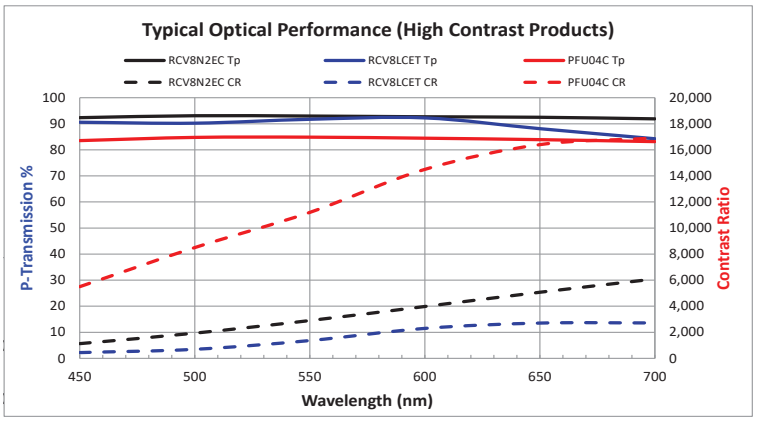
Product	450nm			550nm			650nm		
	Tp% (min)	Ts% (max)	CR (min)	Tp% (min)	Ts% (max)	CR (min)	Tp% (min)	Ts% (max)	CR (min)
PPL04C (High Contrast)	82.0	0.12	683	82.0	0.1	820	82.0	0.08	1,025
***PFU04C** (Ultra High Contrast)	72.0	0.03	2,400	82.0	0.018	4,556	82.0	0.015	5,467
PPL05C (High Transmission)	88.6	0.89	100	90.0	0.43	209	88.5	0.26	340
RCV8N2EC (Balanced HT/HC)	90.0	0.12	750	91.0	0.09	1011	90.0	0.06	1500
****RCV8LCET** (High Contrast)	87.0	0.25	348	88.5	0.10	885	86.0	0.07	1229
RCV6N2EC (Ultra High Transmission)	93.0	0.89	104	93.0	0.43	215	92.5	0.26	356
****RCV6LCET** (Ultra High Transmission)	90.5	0.89	102	91.5	0.43	213	89.0	0.26	342

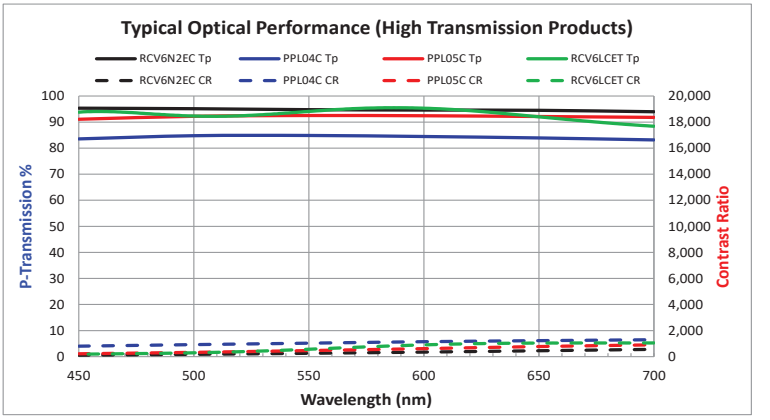
Tp- Transmitted "p" polarization, **Ts**- Transmitted "s" polarization, **CR**- Contrast ratio = Tp/Ts

* Products only available in limited quantities

**RCV8LCET, RCV6LCET have a protective Overcoat™ hard coating to protect the polarizer ribs. See Tech note OPT-TECH-1013 for details.

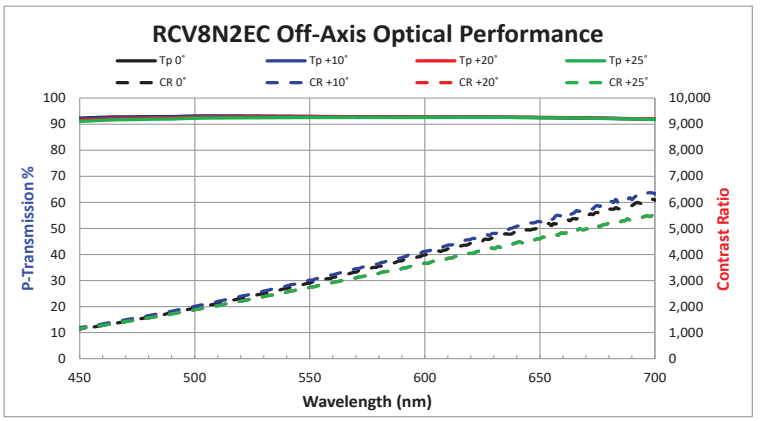
Typical Optical Performance (Tested at 0°)



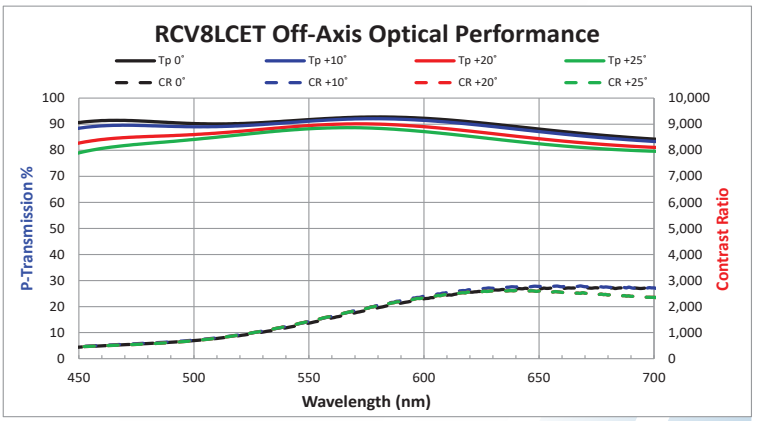


Off-Axis Performance

The light entering a polarizer is typically a cone. The size of the cone depends upon the f/number of the system. Most systems use a cone half angle of less than 20°. The ProFlux® wire-grid inorganic polarizer performance changes very little with angle of incidence, resulting in uniform system performance over the aperture. This advantage is illustrated in the typical off-axis half angle performance graphs as shown below.



RCV8N2EC (No Overcoat)



**RCV8LCET (With Overcoat)
See Tech Note: OPT-Tech-1013

For warranty and ordering information, please visit www.moxtek.com.

MOXTEK®
452 West 1260 North / Orem, UT 84057
Phone 801.225.0930 / Fax 801.221.1121
www.moxtek.com
info@Moxtek.com