ProFlux Nanowire® Technology

Visible Light Polarizers

PPL & PFU Series Datasheet

Mounted ProFlux Polarizers

Applications

- Projection Display
- Pico-Projectors
- Spectroscopy
- Microscopy
- Medical
- Machine Vision
- Automotive
- Head Up Display
- Head Mounted Display

ProFlux® Products

PPL04C- PFU04C
High Contrast Polarizers
- Prepolarizer
- Clean-up polarizer

PPL05C- PFU05C
High Transmission Polarizers
Designed to maximize light transmission:
- Polarization recovery in light sources
- Illumination stage prepolarizer

PFU01C Ultra-High Transmission
- Pico Projectors and applications with extreme brightness requirements

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˚ half angle without performance loss
	Wavelength and AOI independent
Inorganic	High reliability
	High heat resistance

Substrate Specifications

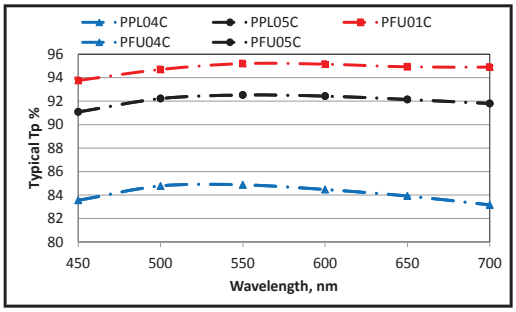
Type: Display Grade Glass
Thickness: 0.7mm ± 0.07
Index of Refraction: 435.8nm: 1.5198
643.8nm: 1.5078
Thermal Expansion: 31.7 x 10^{-7}/˚C (0-300˚C)

General Specifications

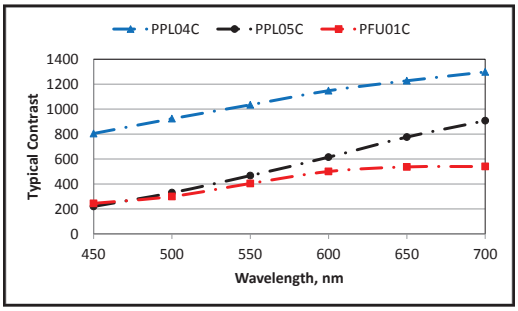
Wavelength Range: 420nm - 700nm
AR Coating: Standard on backside only
Dimensional Tolerance: ± 0.2mm
Edge Exclusion: 2mm
Transmission Axis (TA): Referenced to long side of part
TA Tolerance: ± 1˚
Angle of Incidence: 0˚ ± 20˚
Maximum Temperature: 200˚C > 5,000 hours
RoHS: Compliant

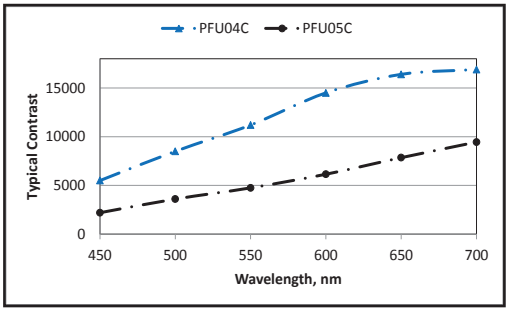
MOXTEK®

Typical Transmission Comparison



Typical Contrast Comparison





Performance Specifications at Normal Incidence

The following chart contains the performance specifications for all ProFlux® Visible Light Polarizers (PPL and PFU) with standard AR coating.

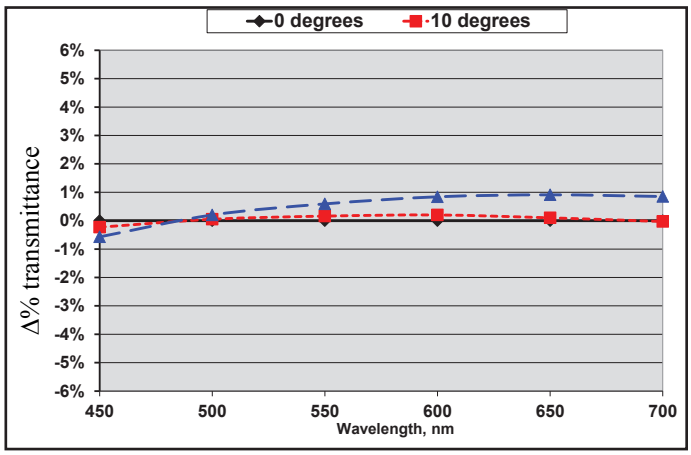
ProFlux® PPL and PFU Polarizers Performance Specifications at 0° AOI	450nm			550nm			650nm		
	MIN Tp (%)	MAX Ts (%)	CR (Tp/ Ts)	MIN Tp (%)	MAX Ts (%)	CR (Tp/ Ts)	MIN Tp (%)	MAX Ts (%)	CR (Tp/ Ts)
PPL04C High Contrast	82.0	0.12	683	82.0	0.1	820	82.0	0.08	1025
PFU04C Ultra Contrast	82.0	0.020	4100	82.0	0.018	4556	82.0	0.015	5467
PPL05C High Transmission	88.6	0.89	100	90.0	0.43	209	88.5	0.26	340
PFU05C Ultra Transmission	89.6	0.12	747	91.0	0.10	910	89.5	0.08	1119
PFU01C Ultra High Transmission	91.5	0.89	102	93	0.43	215	93	0.26	350

Tp- Transmitted “p” polarization, Ts- Transmitted “s” polarization, CR- Contrast ratio, Tp/Ts

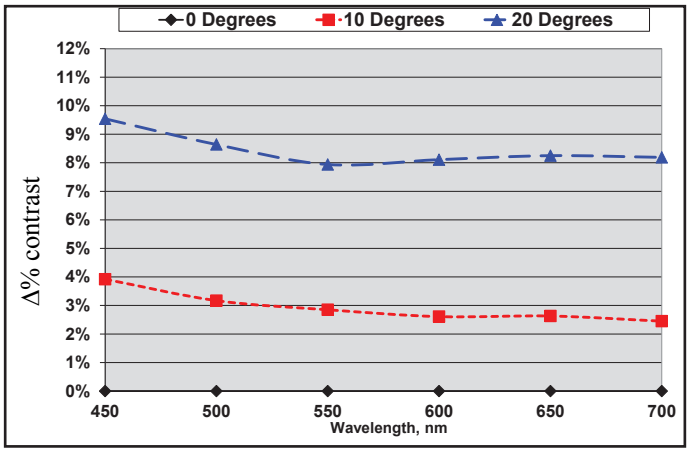
Off-Axis Performance

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® polarizer performance changes very little with angle of incidence, resulting in

Off-Axis Transmittance



Off-Axis Contrast (typical)



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