

AC915 ACRYLIC SHORT-WAVE A/R COATED INFRARED LONGPASS FILTER

MidOpt Acrylic Longpass Filters

Acrylic Longpass Filters are a durable, lightweight and economical solution for inspection windows. They can protect a lens in environments where broken glass might pose a problem.

Acrylic Longpass Filter Information

- High transmission ranging from 90 to 98%
- Available with an anti-reflection coating for maximum transmission
- Optical-grade acrylic
- Impact-resistant
- Half the weight of glass

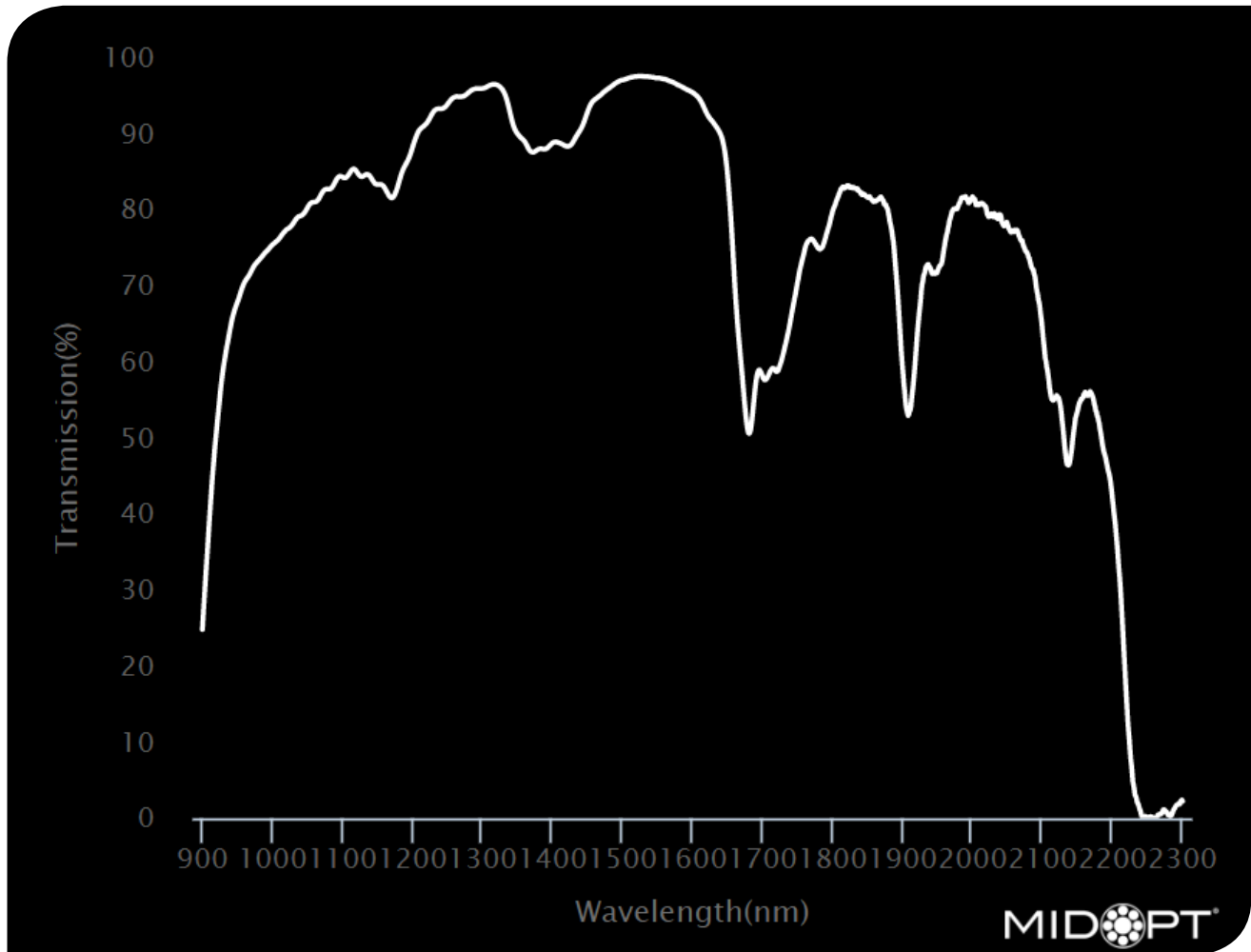
Acrylic Longpass Filters Applications

Acrylic Longpass Filters are frequently used for lens protection and economical enclosure windows, as well as over light sources to control the wavelength emission of broad spectrum light sources. Because of their durability, they're commonly used in Food & Drug Administration (FDA) and European Food Safety Authority (EFSA) regulated applications where glass over the inspection area is not permitted. AC370 and AC380 offer anti-abrasion, anti-reflection coating, which can also withstand harsh solvents such as alcohol, acetone or MEK.



AC915

Acrylic Filters



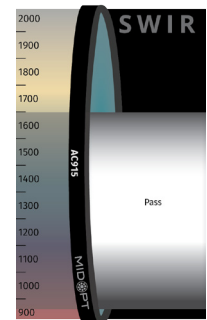
Useful Range:	960-1650nm; 1750-1890nm; 1925-2090nm
Tolerance:	+/- 10nm
Peak Transmission:	≥90%
Surface Quality:	80/50
STABLEEDGE:	Yes

AC915 is an IR pass/visible blocking acrylic sheet material that comes in 1mm and 3mm thicknesses. It is ideal for LIDAR and other SWIR time-of-flight applications.

Both surfaces of this material are coated with:

1. High efficiency anti-reflection coatings optimized for 1550nm transmission
2. Rugged scratch and solvent-resistant hard coatings
3. Durable oleophobic (anti-smudge) coatings that greatly improve cleanability and brightness

Peelable protective overlays are also provided for both surfaces. In house, quick turn-around custom laser cutting is also available.



AC915 TRANSMISSION DATA (TYPICAL)

Wavelength (nm)	Transmission (%)
2300	2.22
2290	1.55
2280	0.53
2270	0.63
2260	-0.05
2250	0.15
2240	0.93
2230	4.37
2220	15.68
2210	31.84
2200	41.91
2190	47.44
2180	52.22
2170	55.83
2160	55.77
2150	53.56
2140	47.43
2130	50.52
2120	55.59
2110	56.62
2100	64.09
2090	70.66
2080	73.79
2070	75.91
2060	77.33
2050	78.10
2040	79.35
2030	79.23
2020	79.98
2010	80.84
2000	81.73

Wavelength (nm)	Transmission (%)
1990	81.77
1980	80.61
1970	79.48
1960	75.22
1950	71.93
1940	72.29
1930	71.29
1920	62.22
1910	53.56
1900	59.28
1890	72.65
1880	79.47
1870	81.58
1860	81.21
1850	81.65
1840	82.27
1830	82.97
1820	83.05
1810	82.22
1800	79.78
1790	76.29
1780	74.95
1770	76.20
1760	74.59
1750	70.46
1740	65.46
1730	61.19
1720	58.73
1710	58.53
1700	58.14
1690	56.89

Wavelength (nm)	Transmission (%)
1680	50.66
1670	59.26
1660	70.93
1650	84.73
1640	89.98
1630	91.46
1620	92.77
1610	94.59
1600	95.45
1590	95.93
1580	96.40
1570	96.87
1560	97.22
1550	97.33
1540	97.47
1530	97.55
1520	97.55
1510	97.38
1500	97.08
1490	96.65
1480	95.95
1470	95.20
1460	94.48
1450	92.84
1440	90.53
1430	89.00
1420	88.36
1410	88.80
1400	88.79

AC915 TRANSMISSION DATA (TYPICAL)

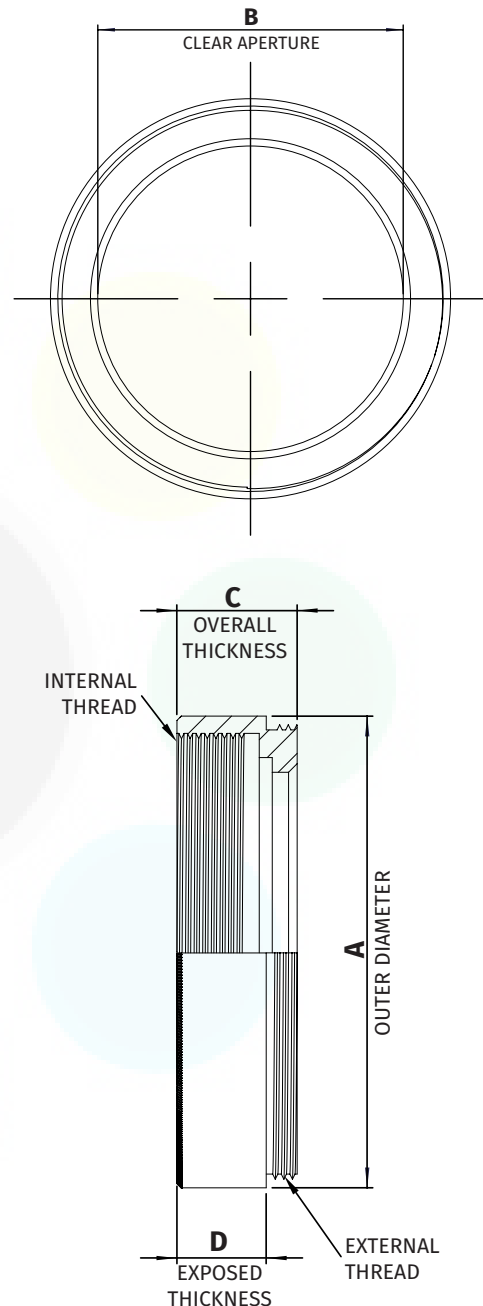
Wavelength (nm)	Transmission (%)	Wavelength (nm)	Transmission (%)
1390	88.01	1080	82.72
1380	87.97	1070	82.09
1370	87.62	1060	81.03
1360	89.04	1050	80.26
1350	90.03	1040	79.21
1340	92.59	1030	78.26
1330	95.61	1020	77.39
1320	96.46	1010	76.25
1310	96.36	1000	75.40
1300	95.97	990	74.39
1290	95.93	980	73.32
1280	95.41	970	71.95
1270	94.88	960	70.42
1260	94.83	950	67.84
1250	93.87	940	64.49
1240	93.30	930	59.20
1230	92.89	920	50.76
1220	91.36	910	39.10
1210	90.50	900	24.80
1200	88.16		
1190	85.90		
1180	83.37		
1170	81.59		
1160	82.95		
1150	83.34		
1140	84.34		
1130	84.45		
1120	85.10		
1110	84.77		
1100	84.33		
1090	83.71		

STANDARD THREADED MOUNT DIMENSIONS

NOTES:

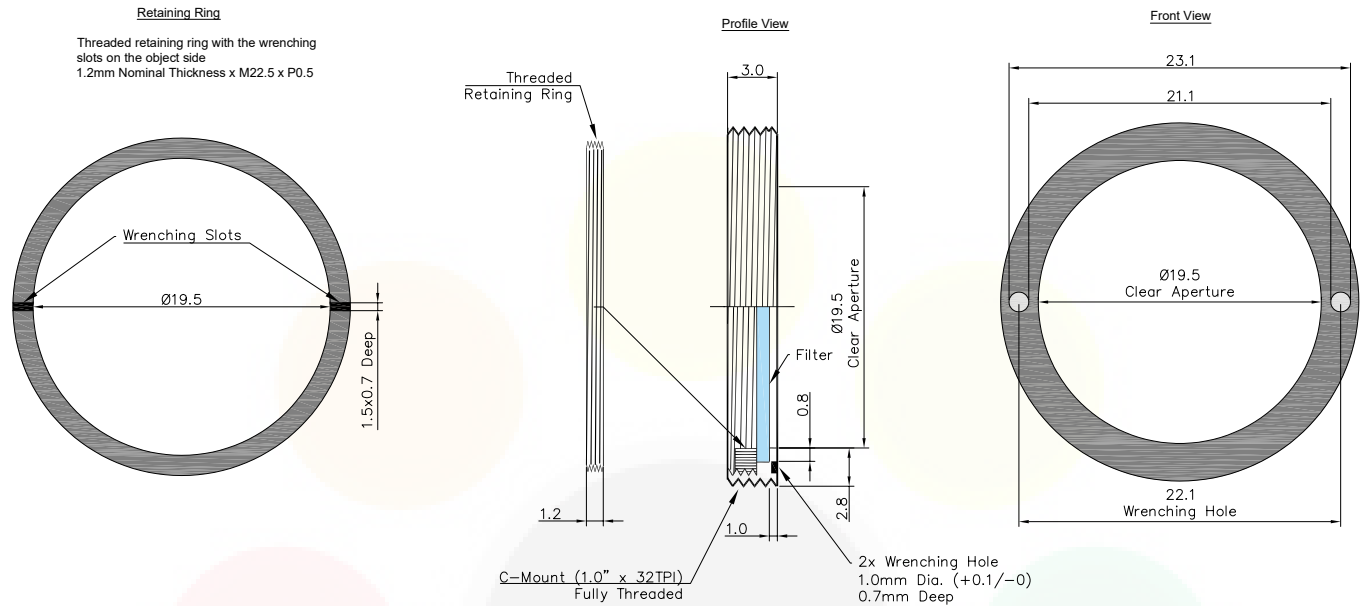
1. Inner and outer threads are of the same size and pitch.
2. Filter mount and retaining ring are black anodized aluminum.
3. All dimensions indicated in mm.
4. Tolerance: +/-0.3mm.

Mount Size	A	B	C	D
M13.25 x P0.5	14.3	10.6	7.5	5.7
M22.5 x P0.5	24	18.5	7	5.2
M25.5 x P0.5	27.5	21	7	5.2
M27 x P0.5	29	22.5	7	5.2
M30.5 x P0.5	32.5	25.5	7	5.2
M34 x P0.5	36	29	7	5.2
M35.5 x P0.5	37.5	30.5	7	5.2
M37 x P0.75	39	31.9	6.5	4.5
M37.5 x P0.5	39.5	32.5	7.2	5.2
M39 x P0.5	41	34	7	5.2
M40.5 x P0.5	42.5	35.5	7	5.2
M43 x P0.75	45	38	7	5.2
M46 x P0.75	48	41	7	5.2
M48 x P0.75	50	43	7	5.1
M49 x P0.75	51	44	7	5.2
M52 x P0.75	54	47	7	5.2
M55 x P0.75	57	50	7	5.2
M58 x P0.75	60	52.9	6.5	4.5
M62 x P0.75	64	57.1	7	5.2
M67 x P0.75	70	61.8	6.5	4.5
M72 x P0.75	75	66.9	6.5	4.5
M77 x P0.75	80	71.9	6.5	4.5
M82 x P0.75	85	76.8	6.5	4.5
M86 x P1.0	89	80.8	6.5	4.5
M95 x P1.0	98.2	89.9	10	7.1
M105 x P1.0	109.8	100	11	8



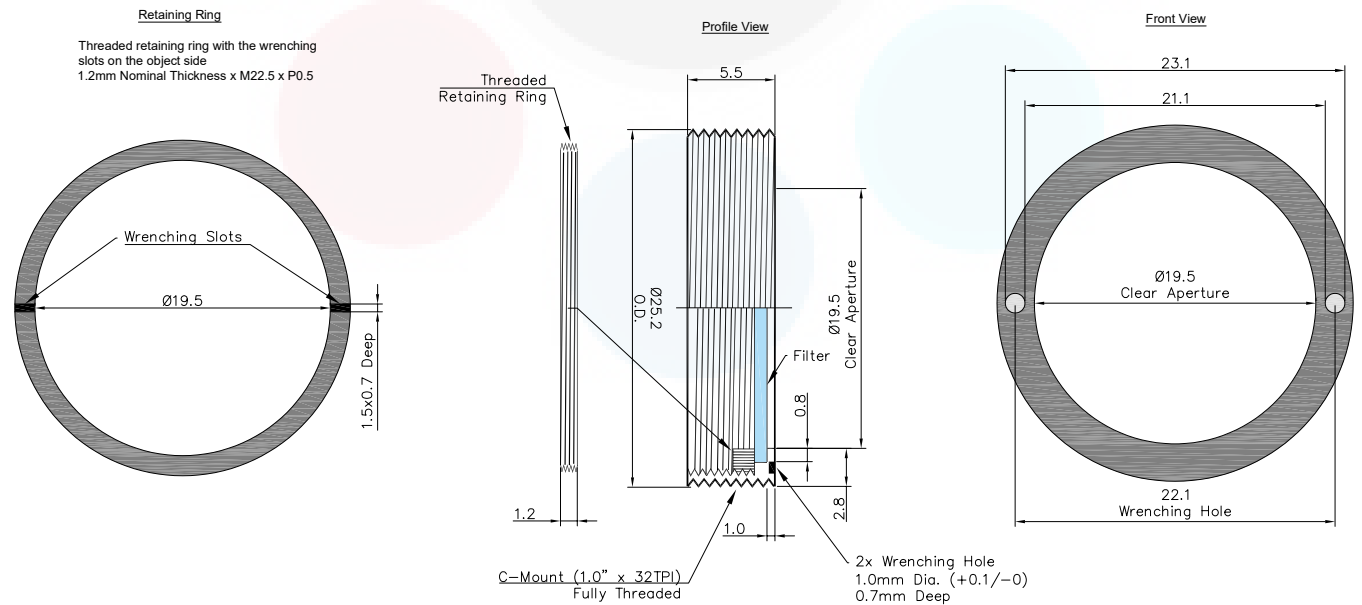
C-MOUNT DIMENSIONS (-25.4)

C-Mount is available on filters with a substrate thickness of 1mm or less



C-MOUNT SIS DIMENSIONS (-25.4-SIS)

C-Mount SIS is available on filters with a substrate thickness greater than 1mm and less than or equal to 3.5mm



MOUNTS FOR ANY SYSTEM



Midwest Optical Systems is the world's leading resource in machine vision filters and optical solutions. MidOpt's innovative filter designs ensure flawless control, dependable results and unmatched image quality. Mounting solutions are available for any system for lenses with and without filter threads, the exclusively designed 25.4™ C-Mount, and custom fabrication of unmounted shapes and sizes.

Mount Sizes

› **THREADED**

Mount Size	Pitch
M13.25	0.5
M22.5	0.5
M25.5	0.5
M27	0.5
M30.5	0.5
M34	0.5
M35.5	0.5
M37	0.75
M37.5	0.5
M39	0.5
M40.5	0.5
M43	0.75
M46	0.75
M48	0.75
M49	0.75
M52	0.75
M55	0.75
M58	0.75
M62	0.75
M67	0.75
M72	0.75
M77	0.75
M82	0.75
M86	1.0
M95	1.0
M105	1.0

› **C-MOUNT**

M25.4™

› **SLIP MOUNT**

Outside Diameter Range	Threaded Mount
15.1-19.0	M22.5
19.1-26.5	M30.5
26.6-31.9	M40.5
32.0-40.9	M46
41.0-50.9	M55
51.0-57.9	M62
58.0-68.0	M72
68.1-79.0	M82
79.1-101.0	M105

› **UNMOUNTED**

Custom Shapes & Sizes Available

› **M12 MOUNT**

Outside Diameter Range	Part #
13.2-14.2	S14A
14.3-15.0	S15A



› **THREADED MOUNT** *Designed for Lenses with Filter Threads*

- MidOpt offers the largest variety of filters in-stock and ready to ship
- Sizes available: M13.25-M105
- Black anodized aluminum
- Custom thread sizes are available upon request



CREATE PART #: Select a filter and add a mount size (e.g. M27) Example: BP470-27

› **25.4™ C-MOUNT** *Threads into all C-Mount Cameras*

- 25.4™ C-Mount Camera Filter exclusively designed by MidOpt to thread directly into any C-Mount Camera between the lens and sensor
- Recommended for use with wide angle lenses to prevent vignetting and angle shift
- Helpful in applications with space constraints and lenses without filter threads
- Custom installation wrench included



CREATE PART #: Select a filter and add "-25.4" Example: BP470-25.4

› **SLIP MOUNT** *Designed for Wide Angle Lenses Without Filter Threads*

- Accommodates standard threaded mounts
- Low profile and oversize diameter design prevents wide angle lens vignetting
- Includes black Delrin® Slip Mount adapter plus Threaded Mount Filter



CREATE PART #: Select a filter, use "S" for slip and add the outside diameter of lens in mm (e.g. 43mm) Example: BP470-S43

› **UNMOUNTED**

- Any MidOpt filter type can be provided as an Unmounted Filter
- Custom shapes and sizes are typically available within a two week lead time with many shipped same day



CREATE PART #

CIRCLE: Use "D" and add diameter in mm (e.g. 19mm) Example: BP470-D19

SQUARE: Use "R" and add side measurement in mm (e.g. 15mm) Example: BP470-R15

RECTANGLE: Use "R" and add length in mm (e.g. 30mm) x width in mm (e.g. 15mm) Example: BP470-R30x15

› **CUSTOM SOLUTIONS FOR M12 MOUNT LENSES**

- Offered in aluminum slip mount over the lens
- Can be optically cemented behind the lens



HOW TO ORDER

To order a filter with a threaded mount, first select a filter (e.g. BP470) and add the mount size (e.g. M27) to build your part number (e.g. BP470-27).

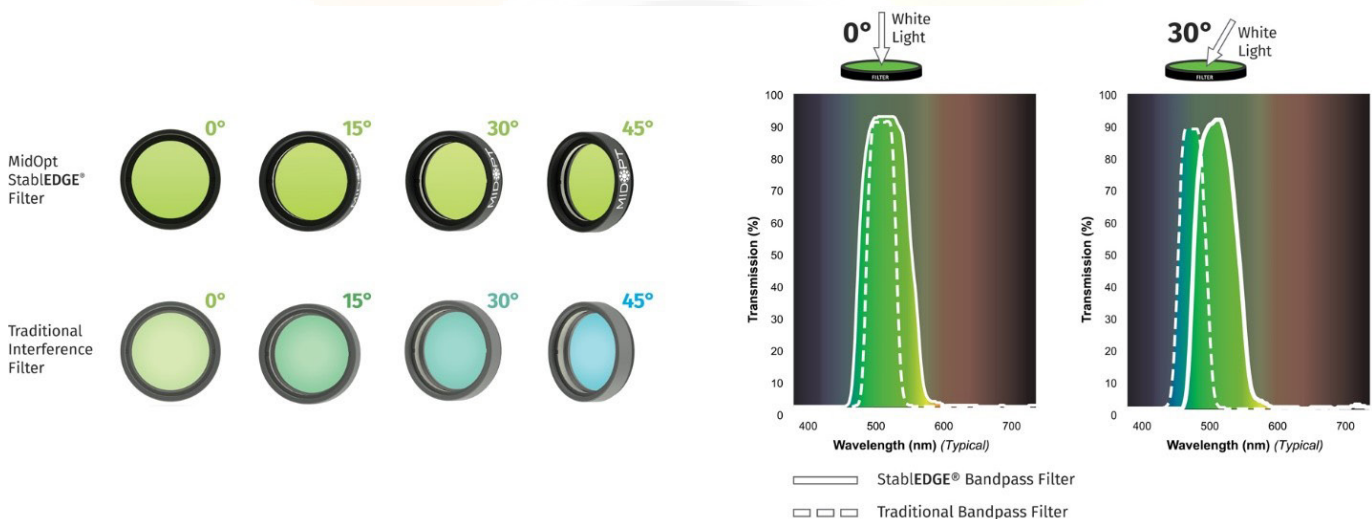


MIDOPT STABLEDGE®

Minimize the Effects of Short Shifting

MidOpt StablEDGE® optical filters are specifically designed to be less susceptible to effects from angular shifting seen when optical filters are placed in front of short focal length (<12mm) camera lenses. This feature is becoming increasingly important as today’s trend in machine vision imaging progresses towards more compact inspection layouts, which utilize less space – forcing the camera and lens closer to the subject. As a result, short focal length lenses are now more widely used than ever before.

Using a traditional coated interference filter in these more compressed configurations results in contrast loss toward the edges of the image. Because of the angle imposed by the field of view (FOV) of the lens, the passband shifts and allows short wavelength ambient light to overwhelm the subject. Light from LED or laser diode lighting is also cut off. In contrast, peak transmission of MidOpt’s StablEDGE® filters is not significantly altered, and effects due to short shifting are minimized.



StablEDGE® filters take advantage of absorptive filter glass to form the leading edge of the filter passband. This assures no shifting in this region, even when the lens FOV exceeds 100°. Filter glasses also offer far superior lower wavelength blocking of ambient light, sharp transition slopes and unmatched durability. MidOpt’s StablEDGE® Filter cut-off slopes utilize interference filter coatings, however the cut-off slope is positioned to be sufficiently broad, and the Gaussian passband profile ensures that excessive ambient light is not allowed to degrade image contrast. Thus, shifting will not significantly encroach into peak transmission, assuring angular insensitivity over the desired range.

Among all machine vision filter manufacturers, MidOpt is unique in incorporating StablEDGE® technology across a full range of products. StablEDGE® designs are less angle-of-incidence sensitive, inherently more rugged, and are environmentally stable.

