



PRODUCT GUIDE



MIDOPT.COM

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MIDOPT FILTERS: A NECESSITY, NOT AN ACCESSORY.

MidOpt has more than 30 years of experience in industrial optics and is a worldwide leader in manufacturing filters specially designed for machine vision. MidOpt is represented in over 30 countries, offers more than 3,000 cutting-edge products and serves the following industries:

- Factory Automation
- Security and Surveillance
- License Plate Recognition
- Intelligent Transportation Systems
- Aerial Imaging
- Motion Analysis
- Medical/Life Science
- Scientific Research
- Photography/Cinematography
- 3D Metrology



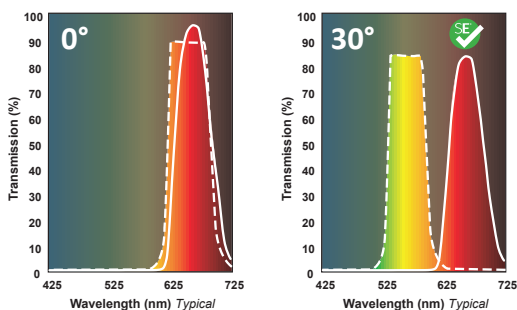
KEY FEATURES OF A FILTER

Optical filters are critical components for machine vision applications. They're used to maximize contrast, improve color, enhance subject recognition and control the light that's reflected from the object being inspected. A MidOpt machine vision filter is not just a machine vision filter. Here's what to look for when choosing a filter for your machine vision system...



WAVELENGTH CONTROL

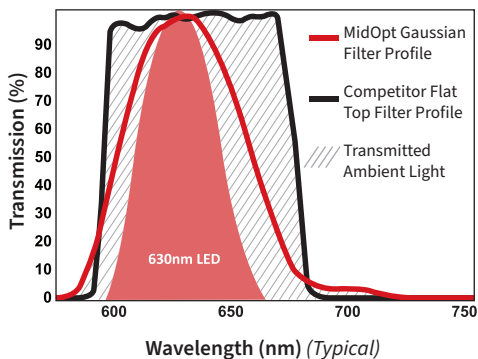
Compared to traditional filters, StableEDGE® filters are less sensitive to angular shifting, are more rugged and offer superior lower wavelength blocking. Short-shifting occurs when the angle of light passing through a traditional filter increases. This is most commonly seen when the filter is placed in front of a lens with a focal length of 12mm or less (lenses with greater than 50° ($\pm 25^\circ$) angular fields of view) — accounting for 60% of all lenses used today.



KEY FEATURES OF A FILTER

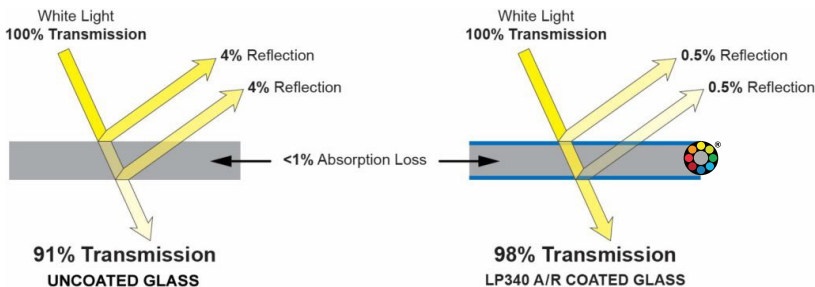
PASSBAND PERFORMANCE

Some filters on the market have a high, flat transmission profile. With this design, an overwhelming amount of ambient light is able to pass through at the weaker tail ends of the LED spectral output curve. To ensure maximum performance, the position, height and width of the passband should emulate the bell-shaped spectral output curve of the LED illumination being used.



HIGH TRANSMISSION

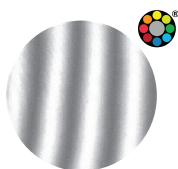
When a ray of light passes through a glass surface, a portion of the light is reflected, resulting in a 4% transmission loss per surface. MidOpt uses anti-reflection coating on all filter designs, reducing surface reflection to less than 1%. This improves the efficiency of the vision system by increasing transmission, enhancing contrast and eliminating ghost images.



KEY FEATURES OF A FILTER

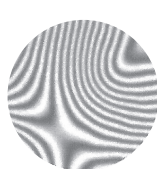
QUALITY ASSURANCE & REPEATABILITY

MidOpt sets the quality standard for machine vision filters. Every filter is examined to ensure near-flawless surface quality and is 100% inspected by state-of-the-art spectrophotometer technology to ensure optimal performance and repeatability. They are also one of the only manufacturers to use controlled torque when securing filters into their mounts, eliminating distortion and guaranteeing optical flatness.



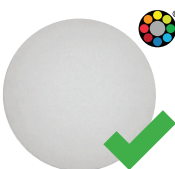
MidOpt Filter

PV: 0.068 wave



Competitor Filter

PV: 5.131 wave



Good Filter



Reject Filter

**PV = Transmitted Wavefront Irregularity*

MOUNTING SOLUTIONS

MidOpt offers same-day shipping and stocks over 20,000 mounted filters, ranging in size from M13.25 to M105. A variety of other mounting solutions are also available, including options for applications without filter threads, custom mounting solutions and the MidOpt exclusive 25.4[®] C-Mount filter.



FILTER KITS



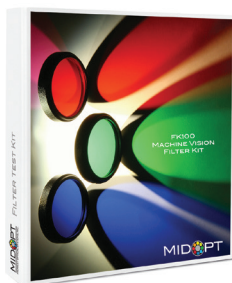
FK200
MACHINE VISION FILTER KIT



FK201
MACHINE VISION FILTER KIT



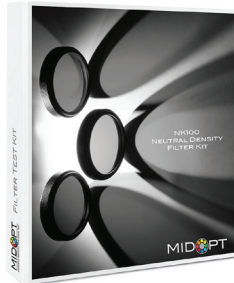
FK220
BN SERIES FILTER KIT



FK100
MACHINE VISION BINDER KIT
FOR SIZES M22.5-M105



IK100
NIR FILTER BINDER KIT
FOR SIZES M22.5-M105



NK100
ND FILTER BINDER KIT
FOR SIZES M22.5-M105



FS100
SWATCH FILTER KIT



NS100
ND FILTER SWATCH KIT



SK100
SUPER FILTER KIT
INCLUDES 70 FILTERS FOR UV,
VISIBLE AND NEAR-IR IMAGING

ACCESSORIES & OPTICS



EXTENSION RINGS



ROTATING RIGHT
ANGLE ATTACHMENTS



STEP ADAPTER RINGS



CLOSE-UP LENS SET



LENS ENCLOSURES



CLEANING KITS



CUSTOM LENSES



WINDOWS



MIRRORS



PRISMS



WEDGES



LIGHT PIPES



BEAMSPLITTERS

T/R	Thickness
50:50	0.5-3.0 mm
70:30	1.0-2.0 mm
30:70	1.0-2.0 mm
80:20	1.0-2.0 mm
20:80	1.0-2.0 mm



TEST GLASS RENTAL

MidOpt® has more than 3,000 test glass radii in house, contact us for more information.



BACKLIGHT fluoreSHEET®

MOUNTING SOLUTIONS



THREADED MOUNT

Designed for lenses with filter threads.

CREATE PART #: Select a filter, and add a mount size (e.g. M27)

Example: BP470-27



SLIP MOUNT

Designed for wide-angle lenses without filter threads.

CREATE PART #: Select a filter, use "S" for slip and add the outside diameter of the lens in millimeters. (e.g. S43mm)

Example: BP470-S43



25.4[®] C-MOUNT

Threads directly into any C-mount camera between the lens and sensor.

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

Example: BP470-25.4



SOLUTIONS FOR M12 LENSES

Offered in aluminum slip mount over the lens.

CREATE PART #: Select a filter, use "S" for slip and add the outside diameter of the lens in millimeters followed by the letter "A". (e.g. S14mmA)

Example: BP470-S14A

UNMOUNTED

Designed for wide-angle lenses without filter threads

CREATE PART #:

CIRCLE:

Use "D" and add diameter in mm (e.g. 19mm)

Example: BP470-D19

SQUARE:

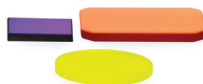
Use "R" and add side measurement in mm (e.g. 15mm)

Example: BP470-R15

RECTANGLE:

Use "R" and add length in mm (e.g. 30mm) x width in mm (e.g. 15mm)

Example: BP470-R30x15



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 Dia. 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

+ M12 MOUNT

Outside Dia. Range	Part #
13.2-14.2	S14A
14.3-15.0	S15A

+ UNMOUNTED

Custom Shapes
& Sizes Available

FILTER LINE UP

BANDPASS | BP Series: Broad Bandwidth

Part #	Description	Useful Range (nm)	SE		A/R	40% ₂₀
 BP250	Deep-to-Near UV Bandpass	240-260		•		★
 BP324	Near-UV Bandpass	290-365	•	•	•	•
 BP340	Near-UV Bandpass	315-365	•	•	•	•
 BP365	Near-UV Bandpass	335-400		•	•	•
 BP450	Indigo Bandpass	425-470				•
 BP470	Blue Bandpass	425-495	•	•	•	•
 BP485	Absorptive VIS Bandpass/NIR Block	380-585	•	•	•	•
 BP500	Green-Blue Bandpass	440-555	•	•	•	•
 BP505	Cyan Bandpass	485-550	•	•	•	•
 BP525	Light Green Bandpass	500-555	•	•	•	•
 PE530	Photopic Response Filter	495-565	•	•	•	•
 BP550	NIR/UV Block-Visible Bandpass	405-690			•	•
 BP590	Orange Bandpass	560-600	•	•	•	•
 BP635	Light Red Bandpass	615-645	•	•	•	•
 BP660	Dark Red Bandpass	640-680	•	•	•	•
 BP695	NIR Bandpass	680-720	•	•	•	•
 BP735	NIR Bandpass	715-780	•	•	•	•
 BP800	NIR Bandpass	745-950	•	•	•	•
 BP850	NIR Bandpass	820-910	•	•	•	•
 BP880	NIR Bandpass	845-930	•	•	•	•
 BP1000	SWIR Bandpass	930-1030			•	•
 BP1550	SWIR Bandpass	1485-1645			•	•

BANDPASS | BN Series: Narrow Bandwidth

Part #	Description	Useful Range (nm)	SE		A/R	40% ₂₀
 BN450	Narrow Indigo Bandpass	435-465	•	•	•	•
 BN470	Narrow Blue Bandpass	460-490	•	•	•	•
 BN520	Narrow Green Bandpass	510-545	•	•	•	•
 BN532	Narrow Green Bandpass	525-550	•	•	•	•
 BN535	Narrow Green Bandpass	520-545	•	•	•	•
 BN595	Narrow Orange Bandpass	580-610	•	•	•	•
 BN630	Narrow Light Red Bandpass	625-645	•	•	•	•
 BN660	Narrow Dark Red Bandpass	645-675	•	•	•	•
 BN740	Narrow NIR Bandpass	730-755	•	•	•	•
 BN785	Narrow NIR Bandpass	770-790	•	•	•	•
 BN810	Narrow NIR Bandpass	798-820	•	•	•	•
 BN850	Narrow NIR Bandpass	840-865	•	•	•	•
 BN880	Narrow NIR Bandpass	855-890		•	•	•
 BN940	SWIR Bandpass	928-955		•	•	•

FILTER LINE UP

BANDPASS | Bi Series: Narrow Interference

Part #	Description	Useful Range (nm)	SE		A/R	40% λ ₂₀
Bi350	Near UV Interference Bandpass	344-358		•		•
Bi385	Near UV Interference Bandpass	370-390		•		•
Bi405	Violet Interference Bandpass	400-415		•		•
Bi450	Blue Interference Bandpass	445-465		•		•
Bi520	Light Green Interference Bandpass	515-525		•		•
Bi525	Light Green Interference Bandpass	518-538		•		•
Bi550	Green Interference Bandpass	535-558		•		•
Bi615	Amber Interference Bandpass	605-620		•		•
Bi632	Light Red Interference Bandpass	625-640		•		•
Bi650	Red Interference Bandpass	643-665		•		•
Bi660	Dark Red Interference Bandpass	650-665		•		•
Bi685	Dark Red Interference Bandpass	675-692		•		•
Bi725	Red Edge Interference Bandpass	717-732		•		•
Bi750	NIR Interference Bandpass	740-765		•		•
Bi808	NIR Interference Bandpass	798-820		•		•
Bi830	NIR Interference Bandpass	810-850		•		•
Bi832	NIR Interference Bandpass	822-846		•		•
Bi850	NIR Interference Bandpass	845-860		•		•
Bi905	NIR Interference Bandpass	895-915		•		•
Bi940	NIR Interference Bandpass	930-952		•		•
Bi1300	SWIR Interference Bandpass	1290-1310		•	•	•
Bi1450	SWIR Interference Bandpass	1440-1460		•	•	•
Bi1550	SWIR Interference Bandpass	1540-1560		•	•	•

DUAL BANDPASS | DB Series: Dual Bandwidth

Part #	Description	Useful Range (nm)	SE		A/R	40% λ ₂₀
DB395/870	Absorptive VIS + NIR	375-425, 745-970	•		•	•
DB475/850	Blue + 850nm NIR	460-490, 830-870		•		•
DB550/850	Green + 850nm NIR	535-565, 830-870		•		•
DB660/850	Red + 850nm NIR	645-675, 830-870		•		•
DB735	Visible + 735nm NIR	405-645, 725-755				•
DB850	Visible + 850nm NIR	405-645, 835-875				•
DB940	Visible + 940nm NIR	405-650, 925-965				•

TRIPLE BANDPASS | TB Series: Triple Bandwidth

Part #	Description	Useful Range (nm)	SE		A/R	40% λ ₂₀
TB475/550/850	Blue + Green + 850 NIR	468-483, 543-558, 835-865		•	•	•
TB550/660/850	Green + Red + 850 NIR	543-558, 653-668, 835-865		•	•	•

FILTER LINE UP

LONGPASS | LP Series: Longpass

Part #	Description	Useful Range (nm)	SE		A/R	40% 20
 LP170	Fused Silica Protective Window	200-2300	•			•
 LP171	Fused Silica Multi-Layer A/R Protective Window	380-900	•			•
 LP190	Sapphire Protective Window	250-2300	•			★
 LP285	Borofloat® Multi-Layer A/R Protective Window	350-1100	•		•	•
 LP286	Borofloat® Oleophobic A/R Protective Window	350-1100	•		•	•
 LP330	Industrial-Grade Glass Protective Window	350-1100	•			•
 LP340	Industrial-Grade Multi-Layer A/R Glass Protective Window	350-800	•		•	•
 LP341	Industrial-Grade Oleophobic A/R Glass Protective Window	365-1100	•		↑	•
 LP345	Precision Multi-Layer A/R Glass Protective Window	350-800	•		↑	•
 LP347	NIR A/R Glass Protective Window	690-1090			•	•
 LP389	Precision Multi-Layer VIS + NIR A/R Glass Protective Window	400-1100	•		•	•
 LP390	UV-Absorbing Protective Window	410-1100	•			•
 LP415	UV Block A/R Protective Window	415-1100			•	•
 LP418	UV Block A/R Protective Window	425-1100			•	•
 LP470	Light Yellow Longpass	480-1100	•		•	•
 LP500	Yellow Longpass	510-1100	•		•	•
 LP515	Yellow-Orange Longpass	520-1100	•		•	•
 LP530	Orange Longpass	545-1100	•		•	•
 LP550	Orange Longpass	560-1100	•		•	•
 LP580	Red-Orange Longpass	585-1100	•		•	•
 LP590	Red Longpass	605-1100	•		•	•
 LP610	Red Longpass	620-1100	•		•	•
 LP630	Red Longpass	645-1100	•		•	•
 LP645	Dark Red Longpass	650-1100	•		•	•
 LP665	Dark Red Longpass	680-1100	•		•	•
 LP695	NIR Longpass	715-1100	•		•	•
 LP715	NIR Longpass	730-1100	•		•	•
 LP780	NIR Longpass	800-1100	•		•	•
 LP800	NIR Longpass	820-1100	•		•	•
 LP815	NIR Longpass	825-1100	•		•	•
 LP830	NIR Longpass	845-1100	•		•	•
 LP850	NIR Longpass	870-1100	•		•	•
 LP920	NIR Longpass	930-2300			•	•
 LP1000	SWIR Longpass	1010-2300	•		•	•
 LP1070	SWIR Longpass	1100-2300	•		•	•
 LP1475	SWIR Longpass	1490-2300			•	•
 LP1850	SWIR Longpass	1.9-12μ	•		•	•
 LP8000	Germanium DLC Coated LWIR Protective Window	7.5-12.5μ	•		•	•

FILTER LINE UP

SHORTPASS | SP Series: VIS Pass

Part #	Description	Useful Range (nm)	SE		A/R	40/20
 SP510	Blue Shortpass	340-500			•	•
 SP570	Blue-Green Shortpass	410-560			•	•
 SP585	Cyan Shortpass	395-575			•	•
 NF550	Magenta Dichroic (Green Block)	395-475, 605-700			•	•

SHORTPASS | SP Series: VIS Pass / NIR Block

Part #	Description	Useful Range (nm)	SE		A/R	40/20
 SP625	Blue-Orange Shortpass	425-620			•	•
 SP635	Absorptive VIS Shortpass/NIR Block	380-585	•		•	•
 SP644	NIR/Mid-Red Dichroic Block	395-638			•	•
 SP645	NIR/Mid-Red Dichroic Block	400-640			•	•
 SP650	NIR/Mid-Red Dichroic Block	400-640			•	•
 SP651	Near-UV/VIS Pass and NIR/ Mid-Red Dichroic Block	355-635			•	•
 SP675	NIR/Deep Red Dichroic Block	355-635			•	•
 SP700	NIR/UV Block-Visible Shortpass	405-690			•	•
 SP701	Extended Hot Mirror	410-690			•	★
 SP705	NIR/Deep Red Absorp. Block	370-630	•		•	•
 SP713	Extended Hot Mirror/Reflects up to 1300nm	420-695			•	•
 SP730	NIR/Colorless Dichroic Block	400-710			•	•
 SP785	Modified NIR Dichroic Block	425-770			•	•
 SP870	NIR Dichroic Block/Multi-Spectral Compatible Shortpass	415-870			•	★
 SP910	NIR Dichroic Block/NVG Simulation Shortpass	420-905			•	★

NEUTRAL DENSITY | ND Series: VIS

Part #	Description	Useful Range (nm)	SE		A/R	40/20
 ND030	Absorptive 50% Avg. Transmission	425-675	•			•
 ND060	Absorptive 25% Avg. Transmission	425-675	•			•
 ND090	Absorptive 12.5% Avg. Transmission	425-675	•			•
 ND120	Absorptive 6.25% Avg. Transmission	425-675	•			•
 ND200	Absorptive 1.0% Avg. Transmission	425-675	•			•
 ND300	Absorptive 0.1% Avg. Transmission	425-675	•			•
 ND400	Absorptive 0.01% Avg. Transmission	425-675	•			•

NEUTRAL DENSITY | Ni Series: VIS/SWIR

Part #	Description	Useful Range (nm)	SE		A/R	40/20
 Ni030	Low Reflectivity 50% Avg. Transmission	400-2000			•	•
 Ni060	Low Reflectivity 25% Avg. Transmission	400-2000			•	•
 Ni090	Low Reflectivity 12.5% Avg. Transmission	400-2000			•	•
 Ni120	Low Reflectivity 6.25% Avg. Transmission	400-2000			•	•
 Ni200	Reflective 1% Avg. Transmission	400-2000				•

FILTER LINE UP

POLARIZING FILTERS

Part #	Description	Useful Range (nm)	Contrast Ratio	A/R	40/20
● PR032	Linear Polarizer	400-700	Up to 3000:1		●
● PC052	Circular Polarizer	400-700	Up to 700:1		●
● PR120	Ultra High Contrast Linear Polarizer	400-700	Up to 10,000:1	↑	★
● PG120	Ultra High Contrast Glass Linear Polarizer	400-700	Up to 10,000:1		
● PR1000	VIS-NIR Wire Grid Linear Polarizer	400-2000	Up to 8000:1	↑	★
● PG1000	VIS-NIR Wire Grid Glass Linear Polarizer	400-2000	Up to 8000:1		

POLARIZING FILM

Part #	Description	Useful Range (nm)	Contrast Ratio	A/R	80/50
■ PS007	High Contrast Linear Polarizer Film .007" thk	400-700	Up to 3000:1	●	●
■ PSA007	High Contrast Linear Polarizer Film .007" thk	400-700	Up to 3000:1	●	★
■ PS010	High Contrast Linear Polarizer Film .010" thk	400-700	Up to 3000:1	●	●
■ PS030	Ultra High Contrast Linear Polarizer Film .030" thk	400-700	Up to 7000:1	●	★
■ HT025	High Temp. Linear Polarizer Film .025" thk	400-700	Up to 5000:1		
■ HT008	High Temp. Linear Polarizer Film .008" thk	400-700	Up to 10,000:1	●	
■ HTA008	High Temp. Linear Polarizer Film .008" thk	400-700	Up to 10,000:1	●	
■ PS1000	VIS-NIR Wire Grid Linear Polarizer Film Polarizer	400-2000	Up to 8000:1	●	
■ PSA1000	VIS-NIR Wire Grid Linear Polarizer Film Polarizer	400-2000	Up to 8000:1	●	

PROTECTIVE | AC & LP Series: Protective Filters

Part #	Description	Useful Range (nm)	SE	∩	A/R	40/20
○ AC370	Acrylic Oleophobic A/R Protective Window	380-850	●		↑	★
○ AC380	Acrylic A/R Protective Window	400-850	●		●	★
○ AC385	Hard-Coated Acrylic Protective Window	390-1100	●			★
○ AC389	Acrylic VIS + NIR A/R Protective Window	420-1100	●		●	★
○ AC400	Acrylic Oleophobic A/R Protective Window	415-1100	●		↑	●
○ LP170	Fused Silica Protective Window	200-2300	●			●
○ LP171	Fused Silica Multi-Layer A/R Protective Window	200-2300	●			●
○ LP190	Sapphire Protective Window	250-2300	●			★
○ LP285	Borofloat® Multi-Layer A/R Coated Protective Window	350-1100	●		●	●
○ LP286	Borofloat® Oleophobic A/R Coated Protective Window	350-1100	●		●	●
○ LP330	Industrial-Grade Glass Protective Window	350-1100	●			●
○ LP340	Industrial-Grade Multi-Layer A/R Glass Protective Window	350-800	●		●	●
○ LP341	Industrial-Grade Oleophobic A/R Glass Protective Window	365-1100	●		↑	●
○ LP345	Precision Multi-Layer A/R Coated Glass Protective Window	365-1100	●		↑	●
○ LP347	NIR A/R Glass Protective Window	690-1090	●		↑	●
○ LP389	Precision Multi-Layer VIS + NIR A/R Glass Protective Window	400-1100	●		↑	●
○ LP390	UV-Absorbing Protective Window	410-1100	●			●
○ LP415	UV Block A/R Protective Window	415-1100			●	●

FILTER LINE UP

PROTECTIVE | AC & LP Series: Protective Filters *(continued)*

Part #	Description	Useful Range (nm)	SE		A/R	40% ₂₀
○ LP418	UV Block A/R Protective Window	425-1100			•	•
● LP8000	Germanium DLC Coated LWIR Protective Window	7.5-12.5μ	•		•	•

ACRYLIC | AB Series: Acrylic Bandpass

Part #	Description	Useful Range (nm)	SE		A/R	40% ₂₀
● AB555	Acrylic Absorptive NIR/UV-Block VIS Bandpass	470-645	•	•		•

ACRYLIC | AC Series: Acrylic Longpass

Part #	Description	Useful Range (nm)	SE		A/R	40% ₂₀
○ AC370	Oleophobic A/R Acrylic Protective Window	380-850	•		↑	•
○ AC380	A/R Acrylic Protective Window	400-850	•		•	•
○ AC389	Acrylic VIS + NIR A/R Protective Window	420-1100	•		•	★
○ AC400	Acrylic Oleophobic A/R Protective Window	415-1100	•		↑	•
○ AC400	Acrylic Oleophobic A/R Protective Window	415-1100	•		↑	•
● AC685	Acrylic NIR Longpass	710-1100	•			•
● AC760	Acrylic NIR Longpass	780-1100	•			•
● AC800	Acrylic NIR Longpass	815-1100	•			•
● AC850	Acrylic NIR Longpass	880-1100	•			•
● AC900	Acrylic SWIR Longpass	930-1650	•			•
● AC915	A/R Acrylic SWIR Longpass	960-1650, 1750-1890, 1925-2090	•		•	•

LIGHT BALANCING

Part #	Description	Useful Range (nm)	SE		A/R	40% ₂₀
● LA080	Light Balancing (Minus Blue)	400-700	•			•
● LA120	Light Balancing (Minus Blue)	400-700	•		•	•
● LB080	Light Balancing (Minus Red)	400-700	•			•
● LB120	Light Balancing (Minus Red)	400-700	•			•
● FL550	Light Balancing (Minus Green)	400-700	•			•

DIFFUSERS

Part #	Description	THICKNESS	TOTAL LIGHT TRANSMISSION
○ DF035	Acrylic Diffuser	.8mm	35%
○ DF045	Acrylic Diffuser	2mm	45%
○ DF050	Acrylic Diffuser	1.5mm	50%
○ DF055	Acrylic Diffuser	1mm	55%
○ DF065	Acrylic Diffuser	1mm	65%
○ DF070	Acrylic Diffuser	1mm	70%
○ DF075	Acrylic Diffuser	1mm	75%
○ DF080	Acrylic Diffuser	1mm	80%
○ DF085	Acrylic Diffuser	1mm	85%
○ DF090	Acrylic Diffuser	1mm	90%
○ DF093	Acrylic Diffuser	1mm	93%

KEY TERMS



StableEDGE® Technology



Gaussian Design



Anti-Reflection Coated



40/20 Scratch/Dig

† Oleophobic AR Coating

★ 60/40 Scratch/dig surface quality

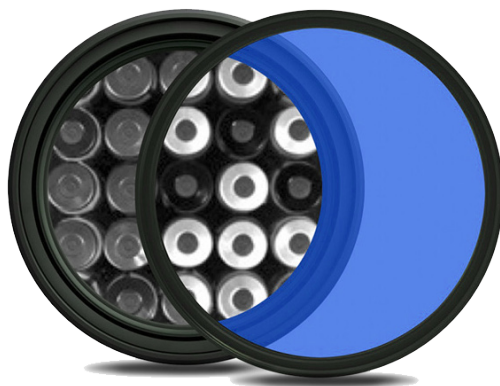
★ 80/50 Scratch/dig surface quality

FILTER PERFORMANCE

The performance of a filter is based on what happens to light passing through the filter. The apparent color of light reflected off the surface is not a reliable way to judge the filter's capabilities. Batch-to-batch difference in the apparent color of the coatings or filter substrates can often be easily seen when looking at two examples of the same filter type. The color of the coating does not indicate a disparity in performance. Standard surface quality for most filters is 40/20 scratch/dig. Filters 62mm and greater have a surface quality tolerance of 60/40 scratch/dig.

Due to continuous product improvement, specifications are subject to change without notice. For the most up-to-date information, **visit [midopt.com](https://www.midopt.com)**

FILTERS: A NECESSITY, NOT AN ACCESSORY.



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