AC380 ACRYLIC VIS A/R PROTECTIVE WINDOW

MidOpt Protective Filters

MidOpt specializes in manufacturing custom made Protective Windows, which can be designed for nearly any type or size application at any wavelength range requirement. MidOpt custom windows can be manufactured from different substrates and include various coatings depending on the application requirements.

- Glass, acrylic, polycarbonate, sapphire and other substrates
- Oleophobic, anti-reflection, anti-smudge, anti-fog and hydrophobic coatings available
- Chemically strengthened glass options, including Gorilla Glass®
- Wavelength and polarization filtering
- Adhesive backing for easy fastening
- Custom silk screening service for borders, masking, fiducial marks, logos or patterns
- Available with various mounting configurations based on need

Protective Filter Information

Protective Filters are designed to shield your lens and lighting from dirt, dust, liquids, impact and harsh environments without sacrificing image quality.

Custom Protective Filter Applications

- Industrial camera enclosures
- Dashboard camera enclosures
- LCD screen covers
- Sensor and scanner covers
- Autonomous Vehicle LiDAR enclosures
- Drone camera enclosures
- Sign enclosures
- Display covers
- Quartz tile assembly
- Thermal applications

APPLICATIONS: Protective Filters are useful in all imaging applications. The LP285 can withstand high temperatures and is impact resistant (similar qualities to Pyrex).

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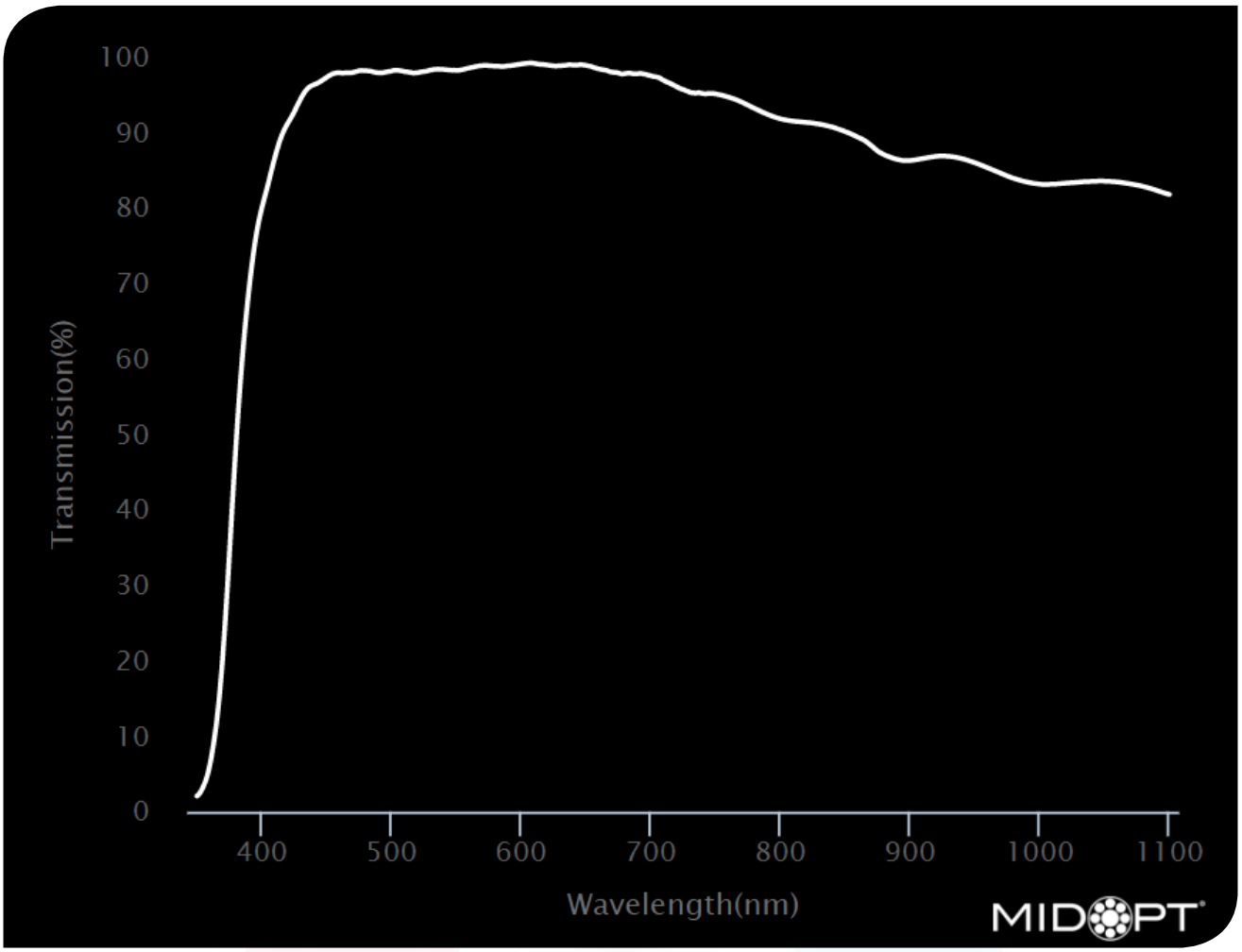
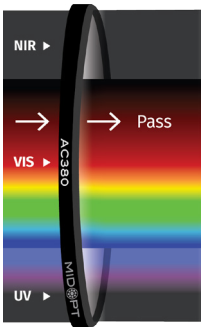


Useful Range:	400-850nm
Cut-on Wavelength 50% T:	380nm
Tolerance:	+/- 10nm
Peak Transmission:	≥95%
Surface Quality:	80/50
STABLEDGE:	Yes

AC380 is an abrasion, scratch, breakage and solvent resistant acrylic protection window made to withstand harsh environments that is also half the weight of glass windows.



Compared to untreated acrylic, the vacuum-sputtered coatings applied to these windows are 50 times more scratch resistant and impervious to all types of fuels and chemicals, especially chlorinated solvents, acetone and MEK.

AC380 material blocks almost all UV light while averaging greater than 98% transmission in the 450-700nm visible spectrum. This protection window is a highly effective yet economical solution for covering camera enclosures and on-axis lighting. Available from stock in 2mm and 3mm thicknesses, custom sizes and shapes can be quickly laser cut in house. This material is often used in FDA/EFSA applications.

*F0r 1mm thickness or standard 25.4™ C-Mount option, please see AC370. For filters thicker than 1mm, we offer an alternative mounting C-mount solution that has an overall thickness of 5.5mm. This mount can accommodate filters up to 3.5mm thick. To view this alternative C-Mount option, *click here*.

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AC380 TRANSMISSION DATA (TYPICAL)

Wavelength (nm)	Transmission (%)
1100	81.84
1090	82.37
1080	82.88
1070	83.23
1060	83.48
1050	83.59
1040	83.56
1030	83.45
1020	83.32
1010	83.19
1000	83.19
990	83.49
980	83.95
970	84.63
960	85.35
950	86.03
940	86.57
930	86.88
920	86.87
910	86.59
900	86.33
890	86.47
880	87.09
870	88.32
860	89.40
850	90.16
840	90.77
830	91.15
820	91.37
810	91.54
800	91.85

Wavelength (nm)	Transmission (%)
790	92.45
780	93.24
770	94.08
760	94.72
750	95.16
740	95.21
730	95.36
720	96.10
710	96.96
700	97.56
690	97.83
680	97.84
670	98.05
660	98.47
650	98.94
640	98.98
630	98.91
620	98.99
610	99.21
600	99.12
590	98.87
580	98.86
570	98.90
560	98.59
550	98.29
540	98.41
530	98.32
520	97.96
510	98.11
500	98.17
490	97.96

Wavelength (nm)	Transmission (%)
480	98.22
470	97.98
460	97.94
450	97.33
440	96.36
430	94.52
420	91.25
410	86.67
400	80.01
390	69.07
380	48.40
370	20.82
360	6.25
350	2.08

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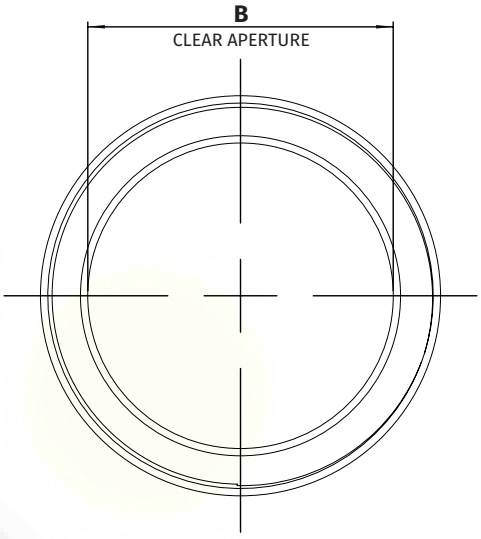
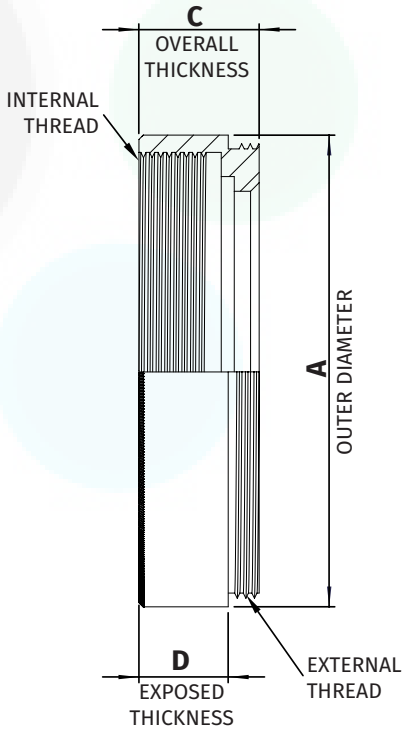
STANDARD THREADED MOUNT DIMENSIONS

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.

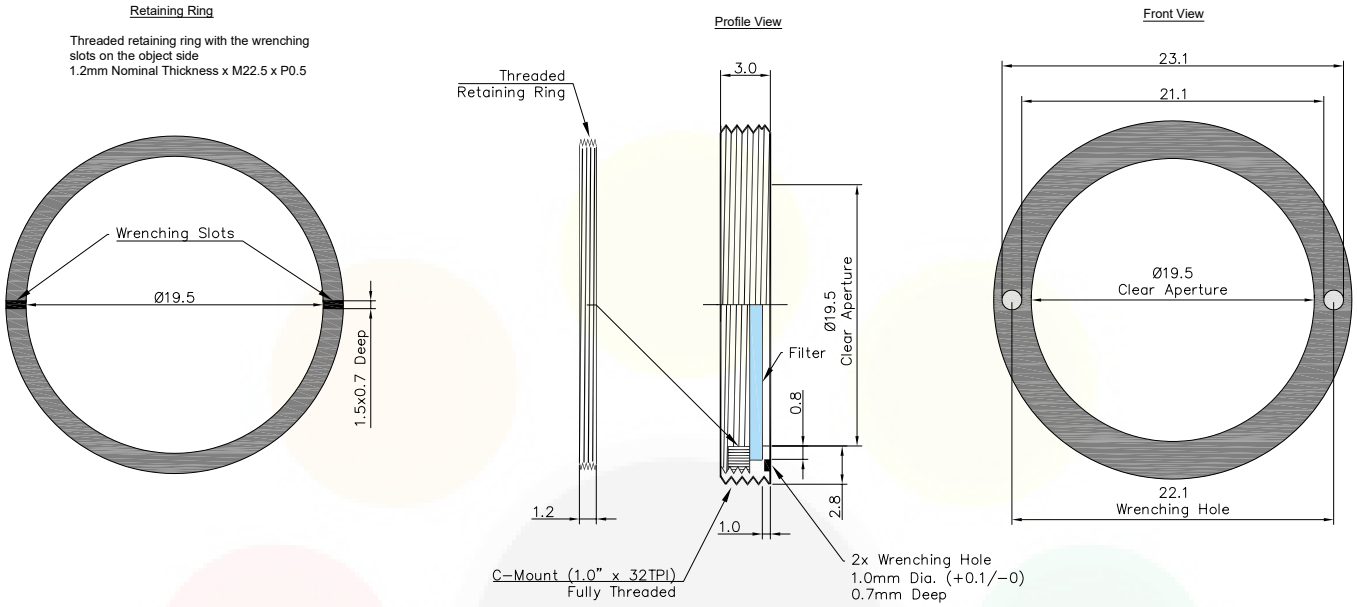




Mount Size	A	B	C	D
M13.25 x P0.5	14.3	10.6	7.5	5.7
M22.5 x P0.5	24	18.5	7	5.2
M25.5 x P0.5	27.5	21	7	5.2
M27 x P0.5	29	22.5	7	5.2
M30.5 x P0.5	32.5	25.5	7	5.2
M34 x P0.5	36	29	7	5.2
M35.5 x P0.5	37.5	30.5	7	5.2
M37 x P0.75	39	31.9	6.5	4.5
M37.5 x P0.5	39.5	32.5	7.2	5.2
M39 x P0.5	41	34	7	5.2
M40.5 x 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

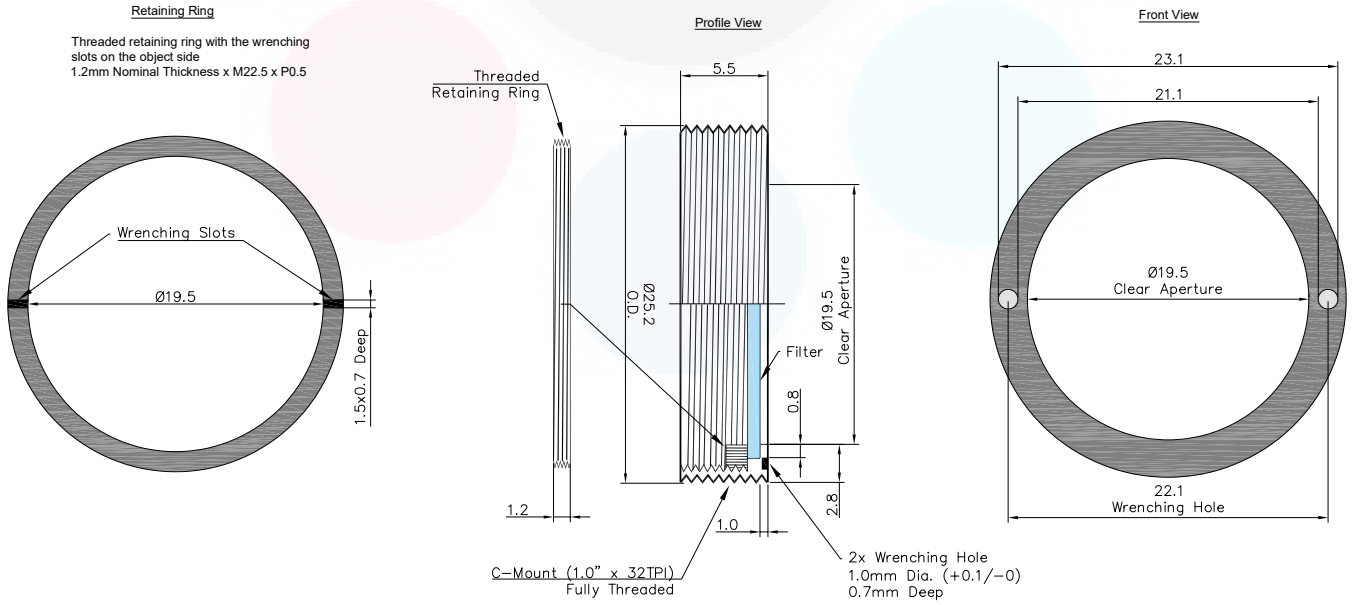
C-MOUNT DIMENSIONS (-25.4)

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.

› 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*

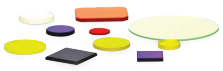
- 25.4™ C-Mount Camera Filter exclusively designed by MidOpt to thread directly into any C-Mount Camera between the lens and sensor
- Recommended for use with wide angle lenses to prevent vignetting and angle shift
- Helpful in applications with space constraints and lenses without filter threads
- Custom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

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

HOW TO ORDER

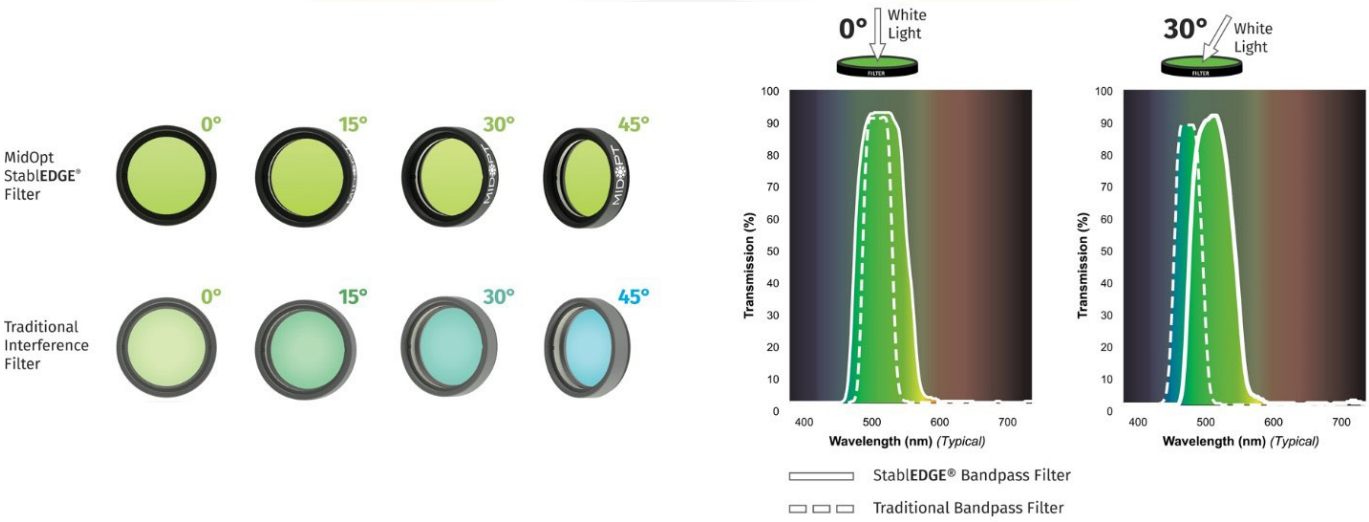
To order a filter with a threaded mount, first select a filter (e.g. BP470) and add the mount size (e.g. M27) to build your part number (e.g. BP470-27).

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.