

HYDROPHOBIC COATINGS FOR IR MARITIME & NAVAL SECURITY & SURVEILLANCE APPLICATIONS



Understanding the unique challenges faced by maritime or naval security and surveillance operations in wet, humid, and salty coastal environments.

Traditional coatings often struggle to withstand these extreme conditions, compromising the durability and performance of infrared (IR) imaging technology. To overcome this obstacle, we have developed AquaShieldIR™, an advanced hydrophobic coating specifically designed to provide long-lasting protection and enhance the capabilities of IR imaging lenses in maritime environments.

Unmatched Durability and Performance

AquaShieldIR™ coatings have undergone rigorous testing, surpassing the requirements set by the MIL 810 standard for durability testing in salt fog and salt solution. By setting the highest standards, we ensure a long-lifetime expectancy, making our coatings ideal for extreme sea environments.

Surpassing MIL Standard

Maritime and naval environments present challenges with high humidity and salt spray, significantly limiting the lifetime of traditional coatings. At Ophir, we rise above these challenges by exceeding the MIL 810 standard requirements. AquaShieldIR™ coatings have been extensively tested for 14 days in a salt fog chamber, showcasing exceptional durability and longevity.

AquaShieldIR™ Key Benefits:

1. **Water Repellency:** AquaShieldIR™ creates a water-repellent surface on IR imaging lenses, preventing water droplets from adhering. This feature ensures clarity and visibility, even in rainy or foggy conditions, allowing naval and maritime personnel to effectively monitor and respond to security threats.
2. **Enhanced Visibility in Wet Conditions:** By repelling water droplets, AquaShieldIR™ enables IR imaging lenses to perform optimally in wet conditions. Whether it's rain, fog, or operating in a maritime environment, AquaShieldIR™ ensures clear imaging and reliable performance.
3. **Improved Image Quality:** AquaShieldIR™ prevents water droplets and contaminants from adhering to the lens surface, resulting in improved image quality. This helps reduce distortion or degradation and ensures accurate detection and identification of objects, vessels, or individuals, even in adverse weather conditions.

Rely on Ophir for Unparalleled Quality

AquaShieldIR™ has been meticulously developed and rigorously tested to meet the demanding needs of maritime and naval security and surveillance applications. Our commitment to exceed industry standards and deliver exceptional performance ensures that our coatings provide unmatched protection, visibility, and image quality in the harshest environments. When it comes to safeguarding coastal areas and maritime operations, Ophir is the trusted partner you can rely on.

AquaShieldIR Coating Specification:

LWIR Ge Coatings					
Family	Spec	Standard			AquaShieldIR (WA* > 110deg)
Durability Type		HD	LRHC	HC	HDH
		1006	1290	1007	1557
		High Durability	Low Reflectance Hard Carbon	Hard Carbon	High Durability Hydrophobic
Severe Abrasion	MIL STD 675 & MIL STD 810	V	V	V	V
Adhesion		V	V	V	V
Humidity		1 day	1 day	1 day	1 day
Salt Fog		1+1 day	1+1 day	7 day	14 day
Salt Solution		1 day	1 day	1 day	1 day
Wiper		-	V	V	-
Acid Attack		-	V	V	-
AVG Transmittance 8-12µm			96%	91%	88%

MWIR Si Coatings							
Family	Spec	Standard			AquaShieldIR (WA* > 110deg)		
Durability Type		HD	LRHC	HC	AquaShieldIR HDH	AquaShieldIR LRHCH	AquaShieldIR HCH
		1178	1221	1039	1558	1564	1566
		High Durability	Low Reflectance Hard Carbon	Hard Carbon	High Durability Hydrophobic	Low Reflectance Hard Carbon Hydrophobic	Hard Carbon Hydrophobic
Severe Abrasion	MIL STD 675 & MIL STD 810	V	V	V	V	V	V
Adhesion		V	V	V	V	V	V
Humidity		1 day	1 day	1 day	1 day	1 day	1 day
Salt Fog		1+1 day	1+1 day	14 day	14 day	14 day	21 days
Salt Solution		1 day	1 day	1 day	1 day	1 day	1 day
Wiper		-	V	V	-	V	V
Acid Attack		-	V	V	-	V	V
AVG Transmittance 3.4-5µm			98%	97%	93%	97%	96%

* WA = Wetting Angle

Transmittance vs. Durability for Standard & AquaShieldIR Coatings

