



HEA®

High Efficiency Anti-Reflection Coating



Key Features

- Unsurpassed AR coating at affordable prices
- Low reflectance (<0.2% brightness)
- Highly durable coating
- Controlled reflected color and transmission

Applications

- Avionics displays
- Touch screens
- Ruggedized displays
- Digital signage & kiosks
- GPS displays
- Handheld instruments
- Medical displays

MAC Thin Films **High Efficiency Anti-Reflection**, HEA® coating forms the building block for higher performing displays by offering crisp images, bright colors, unparalleled viewability, and glare reduction.

This coating was initially used on the windows of the two-man Gemini spacecraft in 1964, and was employed on all subsequent NASA manned spacecraft from Apollo to the Space Shuttle program.

For demanding performance requirements with competitive pricing, MAC Thin Films HEA® coating, with photopic brightness of <0.2 percent photopic reflection, is the perfect solution to your AR needs.

MAC Thin Films HEA® coating is manufactured using rare & optically unique dielectric materials that are thermally evaporated and vacuum deposited, providing exceptional performance and high durability. Environmental attributes for each coating are referenced in MIL-C-675C and MIL-C-14806A.

MAC Thin Films HEA® coating is available on a variety of standard glass substrates:

Thickness (mm)	0.55	1.00	1.10	1.25	1.60	1.90	2.30	3.00	4.00	5.00	6.00
Size (in)	16x25	25x32	25x32	25x32	25x32	25x32	32x50	32x50	32x50	32x50.7	32x50

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In addition to producing exceptional low-reflectance, MAC Thin Films HEA® coating also controls reflected color.

The reflection curve in Figure 1 shows the performance of our HEA® coating. With this AR coating, MAC Thin Films offers a cost and performance package to meet an array of requirements.

Environmentally Tested Per MIL-C-675C & MIL-C-14806A

- 24 hour humidity
- Adhesion: Snap tape
- Abrasion: 20 eraser rub
- Salt solubility
- Temperature resistance

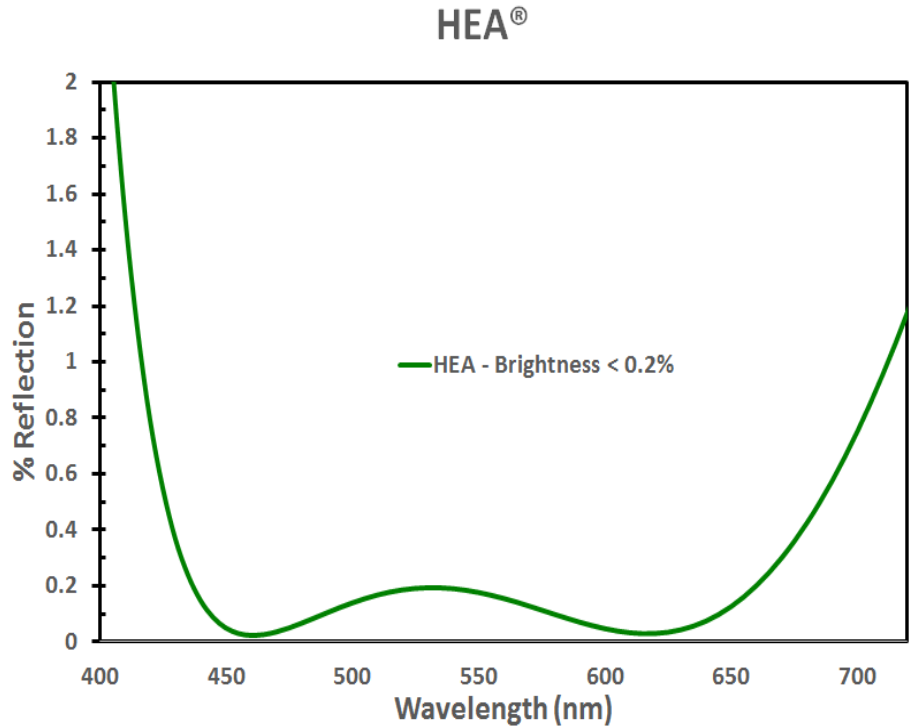


Figure 1

CIE 1976 UCS Chromaticity Diagram

Point	u'	v'
A	.258	.020
B	.125	.344
C	.210	.471
D	.353	.441
E	.466	.308

CIE 1931 Chromaticity Diagram

Point	X	Y
A	.177	.006
B	.155	.190
C	.330	.330
D	.450	.250
E	.425	.125

Glass Thickness (mm)	Photopic Transmission	
	Single Sided HEA	Double Sided HEA
≤ 1.1	94.0	96.9
1.2 - 2.2	93.5	96.4
2.3 - 2.8	93.0	95.9
3.0 - 3.2	92.7	95.6
4.0	92.2	95.1
5.0	91.6	94.5
6.0	91.0	93.9

For ordering or additional product information, please contact us at; www.macthinfilms.com