

Custom Coating Design & Fabrication

Coatings can dramatically change the performance of your finished optical assembly. Ross Optical can recommend coating options that reduce the time, cost, and complexity of multi-element optical systems and subassemblies. We offer a full range of coatings down to 220 nm.

In-House Optical Coatings

Our expanded in-house optical coating capabilities offer customers better timeline and quality control. We can provide in-house coating for our custom and standard optical lenses, or customers' lenses, from 250 to 2400 nm in as few as 3 days.

Our coating chambers supply the best quality coating in terms of film hardness, laser damage threshold, and optical performance. We can even achieve full-surface coating of micro optics.

Coating Capabilities

- Single layer magnesium fluoride coating
- Broadband anti-reflection (BBAR)
- Single wavelength AR coating (V-coating)
- Dual-band AR coating (W-coating)
- Beam splitters (plates and cubes)
- Polarization beam splitters
- Band pass filters
- High reflection all-dielectric coating
- Metallic mirrors (aluminum, silver, gold; protected; enhanced)
- Wavelength range from UV, visible, mid-IR to far IR
- Infrared coating services between 2 and 12 microns

Available Substrate Materials

- Optical glass
- Sapphire
- Fused silica
- Quartz
- Silicon
- Germanium
- and more

Unparalleled Service

Ross Optical delivers with exceptional service that is well-suited to the needs of our OEM customers. Using our years of optics experience, we help customers get the best quality and performance for their optics investment. Our world-class testing and inspection team works to make sure that our optic components meet high standards for quality and reliability. Exhaustive testing and inspection means significant cost and time savings for OEM customers. And thanks to our extensive in-house coating expertise, we can offer coatings performance for even the smallest micro lenses.

At Ross Optical, service continues beyond the sale. We're particularly proud of our inventory control management processes and work to provide an ongoing flow of parts that keep our OEM customers moving, without supply chain headaches and without the added cost of maintaining huge parts inventories.



Four Ways to Save Money with Integrated Coating Design

In order to improve the final performance and cost of your optical assembly, coating choices must be an integral part of the design process.

1. Consider possible inter-wavelength effects, and optimize the sequence of coated optical elements during design.
2. Carefully choose surface locations, angles, and curvatures to maximize performance.
3. Tolerance your coatings as thoroughly as you tolerance your surfaces to avoid having to recoat.
4. Talk to a coating engineer early in the optical design process.



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ITAR Registered. ISO 9001:2015 Certified.

Ross Optical Industries Coating Codes

Single Layer MgF2

| Code | Wavelength / Range | Spectral Specs |
|------|--------------------|----------------------|
| 100 | 340 nm | Depends on Substrate |
| 101 | 364 nm | Depends on Substrate |
| 102 | 408 nm | Depends on Substrate |
| 105 | 490 nm | Depends on Substrate |
| 110 | 550 nm | Depends on Substrate |
| 112 | 633 nm | Depends on Substrate |
| 120 | 660 nm | Depends on Substrate |
| 125 | 680 nm | Depends on Substrate |
| 127 | 720 nm | Depends on Substrate |
| 129 | 770 nm | Depends on Substrate |
| 130 | 785 nm | Depends on Substrate |
| 135 | 800 nm | Depends on Substrate |
| 140 | 830 nm | Depends on Substrate |
| 141 | 850 nm | Depends on Substrate |
| 145 | 875 nm | Depends on Substrate |
| 150 | 900 / 904 nm | Depends on Substrate |
| 152 | 940 nm | Depends on Substrate |
| 160 | 1064 nm | Depends on Substrate |
| 162 | 1200 nm | Depends on Substrate |
| 163 | 1300 nm | Depends on Substrate |
| 165 | 1550 nm | Depends on Substrate |
| 166 | 1650 nm | Depends on Substrate |
| 167 | 1800 nm | Depends on Substrate |
| 170 | 2000 nm | Depends on Substrate |

Broad Band AR (BBAR)

| Code | Wavelength / Range | Spectral Specs |
|------|----------------------|----------------|
| 200 | 245-400 nm | Ravg<0.8% |
| 205 | 300-500 nm | Ravg<0.8% |
| 210 | 350-650 nm | Ravg<1.0% |
| 211 | 350-800 nm | Ravg<1.5% |
| 212 | 380-650 nm | Ravg<0.8% |
| 215 | 400-700 / 450-650 nm | Ravg<0.8% |
| 217 | 380-850 nm | Ravg<1.0% |
| 220 | 400-900 nm | Ravg<1.0% |
| 222 | 430-660 nm | Ravg<0.7% |
| 225 | 420-1100 nm | Ravg<1.5% |
| 227 | 450-1500 nm | Ravg<2.0% |
| 228 | 470-550 nm | Ravg<0.5% |
| 230 | 550-900 nm | Ravg<1.0% |
| 232 | 550-1100 nm | Ravg<1.0% |
| 233 | 500-1500 nm | Ravg<1.5% |
| 235 | 600-700 nm | Ravg<0.5% |
| 240 | 600-850 nm | Ravg<0.5% |
| 241 | 600-1000 nm | Ravg<1.0% |
| 242 | 610-930 nm | Ravg<1.0% |
| 243 | 630-870 nm | Ravg<0.7% |
| 244 | 650-790 nm | Ravg<0.7% |
| 245 | 780-850 nm | Ravg<0.5% |
| 248 | 700-900 nm | Ravg<1.0% |
| 250 | 700-1100 nm | Ravg<1.0% |
| 252 | 700-1500 nm | Ravg<1.0% |
| 253 | 800-1600 nm | Ravg<1.0% |
| 254 | 700-1700 nm | Ravg<1.5% |
| 255 | 875-1125 nm | Ravg<1.0% |
| 256 | 900-1100 nm | Ravg<0.5% |
| 257 | 900-1700 nm | Ravg<1.5% |
| 258 | 1000-1600 nm | Ravg<1.0% |
| 260 | 1064-1342 nm | Ravg<0.8% |
| 265 | 1100-1800 nm | Ravg<1.0% |
| 270 | 1200-1800 nm | Ravg<1.0% |
| 280 | 1300-1600 nm | Ravg<0.7% |
| 282 | 1300-2400 nm | Ravg<1.0% |
| 285 | 1500-1600 nm | Ravg<0.5% |

Narrow Band AR (NBAR)

| Code | Wavelength / Range | Spectral Specs |
|------|--------------------|----------------|
| 287 | 635-675 nm | Ravg<0.25% |
| 288 | 660-690 nm | Ravg<0.25% |
| 290 | 780-850 nm | Ravg<0.25% |
| 291 | 800-900 nm | Ravg<0.50% |
| 292 | 810-850 nm | Ravg<0.25% |
| 293 | 830-850nm | Ravg<0.50% |
| 294 | 970-990 nm | Ravg<0.25% |
| 295 | 878-926 nm | Ravg<0.50% |
| 296 | 1500-1600 nm | Ravg<0.25% |
| 298 | 1530-1560 nm | Ravg<0.25% |
| 299 | 1545-1565 nm | Ravg<0.25% |

Single Wavelength V-coat

| Code | Wavelength / Range | Spectral Specs |
|------|--------------------|----------------|
| 300 | 253 nm | Rabs<0.25% |
| 305 | 355 nm | Rabs<0.25% |
| 309 | 400 nm | Rabs<0.25% |
| 310 | 405 nm | Rabs<0.25% |
| 313 | 450 nm | Rabs<0.25% |
| 315 | 488 nm | Rabs<0.25% |
| 320 | 532 nm | Rabs<0.25% |
| 322 | 589 nm | Rabs<0.25% |
| 325 | 632 / 633 / 639 nm | Rabs<0.25% |
| 326 | 650 nm | Rabs<0.25% |
| 327 | 660 nm | Rabs<0.25% |
| 328 | 670 nm | Rabs<0.25% |
| 330 | 680/ 685 nm | Rabs<0.25% |
| 333 | 755 nm | Rabs<0.25% |
| 335 | 780 nm | Rabs<0.25% |
| 340 | 810 nm | Rabs<0.25% |
| 342 | 830 nm | Rabs<0.25% |
| 345 | 840 nm | Rabs<0.25% |
| 347 | 850 nm | Rabs<0.25% |
| 349 | 860 nm | Rabs<0.25% |
| 350 | 880 nm | Rabs<0.25% |
| 355 | 900 / 904 nm | Rabs<0.25% |
| 360 | 945 nm | Rabs<0.25% |
| 370 | 1060 / 1064 nm | Rabs<0.25% |
| 380 | 1300 nm | Rabs<0.25% |
| 385 | 1450 nm | Rabs<0.25% |
| 388 | 1535 nm | Rabs<0.25% |
| 390 | 1550 nm | Rabs<0.25% |
| 394 | 1582 nm | Rabs<0.25% |
| 395 | 1590 nm | Rabs<0.25% |
| 397 | 1600 nm | Rabs<0.25% |
| 398 | 1647 nm | Rabs<0.25% |

Metal-Coated Mirrors

| Code | Wavelength / Range | Spectral Specs | Spectral Specs |
|------|---------------------------|----------------|----------------|
| 500 | Bare Aluminum Mirror | 400-1200 nm | R > 90% |
| 503 | Protected Aluminum Mirror | 400-800 nm | R > 85% |
| 505 | Enhanced Aluminum Mirror | 450-650 nm | R > 95% |
| 550 | Silver Mirror | 450-1000 nm | R > 95% |
| 555 | Protected Silver Mirror | 450-10000 nm | R > 90% |
| 580 | Bare Gold Mirror | 700-10000 nm | R > 98% |
| 585 | Protected Gold Mirror | 700-10000 nm | R > 95% |
| 800 | Infrared Coating | 3-5 microns | Ravg < 3.0% |

Dual Wavelength AR Coating

| Code | Wavelength / Range | Spectral Specs |
|------|---------------------|----------------|
| 600 | 532 & 633 nm | R < 0.5% |
| 605 | 532 & 852nm | R < 0.5% |
| 610 | 533 & 1064 nm | R < 0.5% |
| 611 | 532 & 1535 nm | R < 0.5% |
| 612 | 635 & 852nm | R < 0.5% |
| 615 | 633 or 635 & 880 nm | R < 0.5% |
| 620 | 650 & 1064 nm | R < 0.5% |
| 630 | 400 & 800 nm | R < 0.5% |
| 640 | 980 & 1535-1570 nm | R < 0.5% |
| 660 | 1064 & 1550 nm | R < 0.5% |
| 680 | 1310 & 1550 nm | R < 0.5% |
| 690 | 1550 & 2025 nm | R < 0.5% |

Triple Wavelength AR Coating

| Code | Wavelength / Range | Spectral Specs |
|------|---------------------|----------------|
| 700 | 830, 1300 & 1550 nm | R < 0.5% |
| 702 | 532, 1064 & 1550 nm | Ravg < 0.5% |
| 705 | 830, 1064 & 1550 nm | R < 0.5% |

Beam Splitter

| Code | Wavelength / Range | Spectral Specs |
|------|--------------------|----------------|
| 400 | 400-700 nm | T/R = 95/05 |
| 410 | 400-700 nm | T/R = 90/10 |
| 420 | 400-700 nm | T/R = 80/20 |
| 430 | 400-700 nm | T/R = 70/30 |
| 440 | 400-700 nm | T/R = 50/50 |
| 450 | 400-700 nm | T/R = 30/70 |