



SYNOPTICS™

Coating Capabilities

Specializing in High Laser
Damage Threshold Thin Films

Resistive Source

Single Layer MgF₂ AR coatings for YAG and TGG

Electron-Beam

High LDT coatings for pico-second through micro-second applications, 60J/cm² typical for 20ns

Ion Assist Electron-Beam

Economical dense oxide films

Ion Beam Sputtering (conventional)

Typical low-loss discreet material oxide films

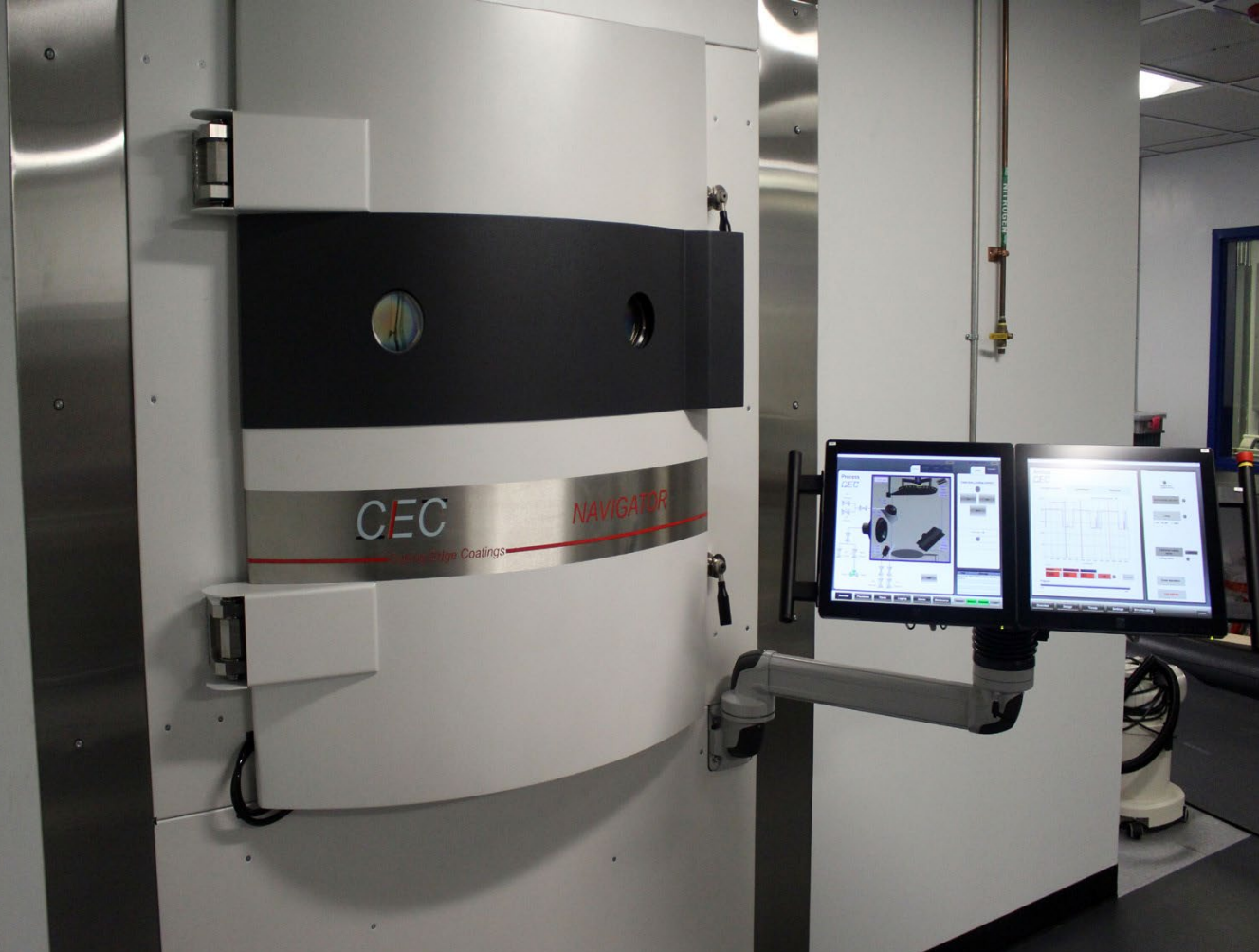
Ion Beam Sputtering (material blends)

High LDT Quasi-Rugate coatings for ultra-fast through CW applications from NUV to NIR

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**NORTHROP
GRUMMAN**

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Ion Beam Sputtering

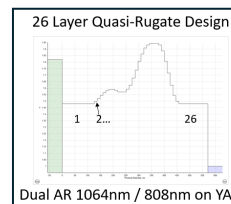
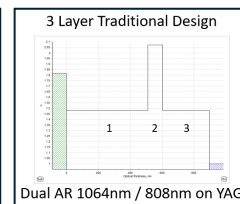
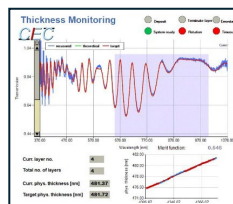
Specializing in High Laser
Damage Threshold Thin Films

Ion Beam Sputtering (conventional)

- Stable low loss oxide films
- Robust and environmentally stable
- Discreet material coatings utilizing $\text{HfO}_2/\text{SiO}_2$ or $\text{Ta}_2\text{O}_5/\text{SiO}_2$ multi layer designs

Ion Beam Sputtering (material blends)

- Quasi-Rugate AR coatings from 355nm to 2200nm
- HfO_2 - SiO_2 and Ta_2O_5 - SiO_2 material blends allow for "index of refraction" tuning
- Reflectivity losses below 50ppm for selected applications
- Highest demonstrated Laser Damage Thresholds for Ion Beam Sputtered films



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