



The logo for Edmund optics, featuring a stylized 'EO' in yellow and white on a dark grey background. The 'E' and 'O' are interconnected. To the right of the logo, the word 'Edmund' is written in a large, bold, white sans-serif font, with 'optics | worldwide' in a smaller, white sans-serif font below it.

Aspheric Lens Technology

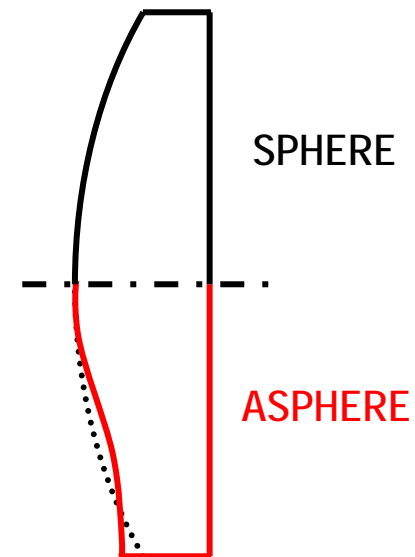
WORLD'S LARGEST INVENTORY OF OPTICAL COMPONENTS



Why Aspheres?

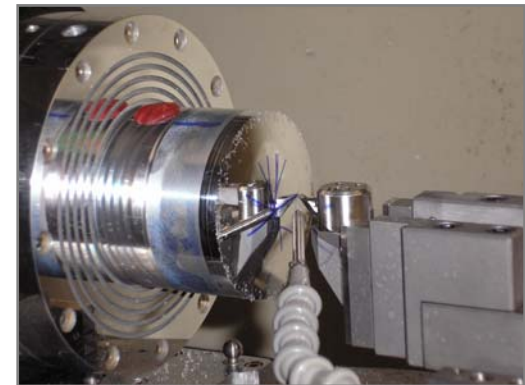
Improved System Performance

- Better optical aberration correction
- Increase the light gathering ability of your system
- Decrease the volume / weight of your system
- Increased SNR
- Reduction of Auto-Fluorescence
- Reduction of Straylight
- Lower image distortion
- System wavefront correction



Edmund Optics' Investments

- **Manufacturing Capital Equipment**
- **Coating Equipment and Process Development**
- Engineering and Technology Intensive Problems
- Material Process Development
- Advanced Metrology Development
- Metrology Capital Equipment
- Aspheric Assembly Development
- Investments in Multiple Technologies

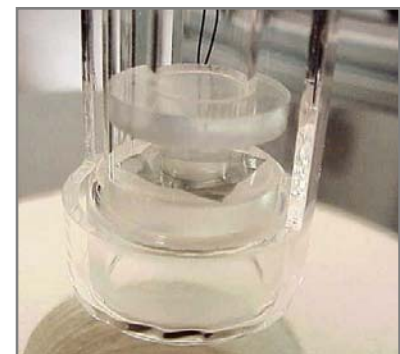
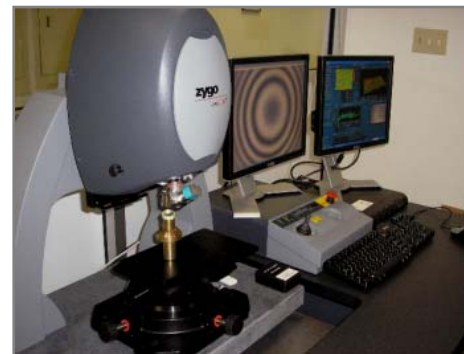
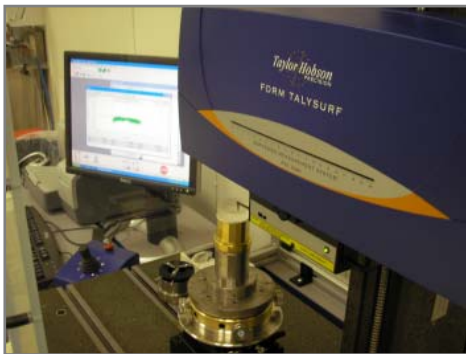


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Machined Aspheres

CNC Machining

- Sub-Aperture G&P
- Onboard Metrology Feedback
- 2 - 1 wave PTV

MRF Processing

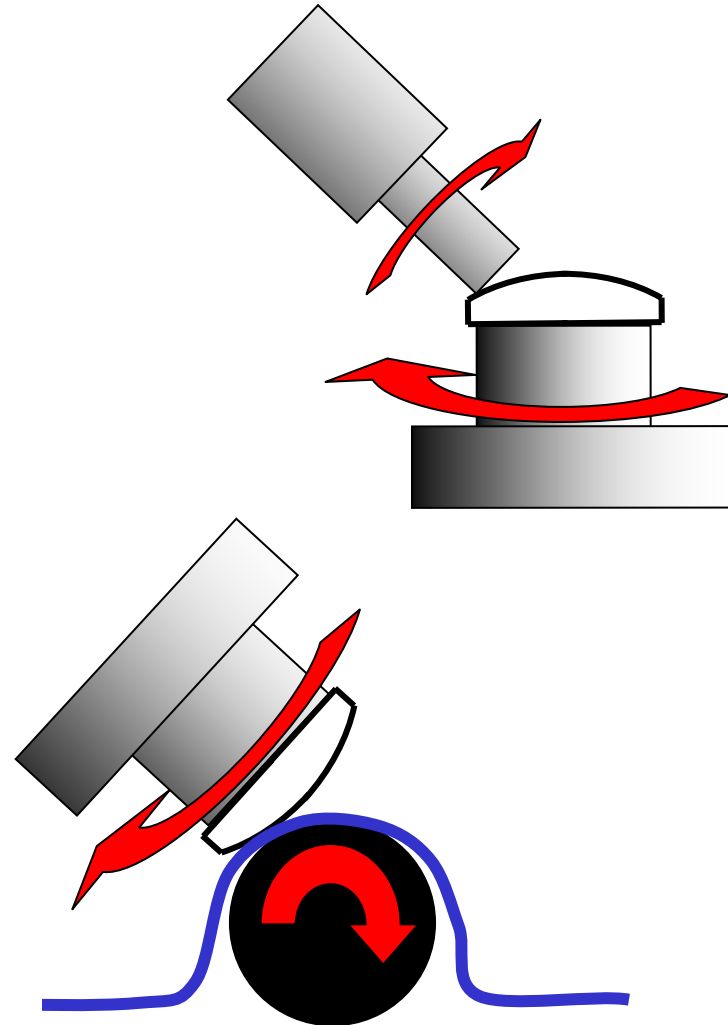
- MRF Fluid
- Deterministic Polishing
- 1 - 1/4 wave PTV

General Benefits of Machined Aspheres

- Quick Turn
- High Quality

General Drawbacks

- Limited Capacity
- Relatively Expensive



Precision Glass Molded (PGM) Aspheres

PGM Technology

- Principle

PGM Magic?

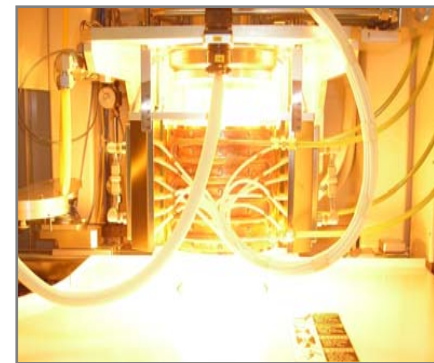
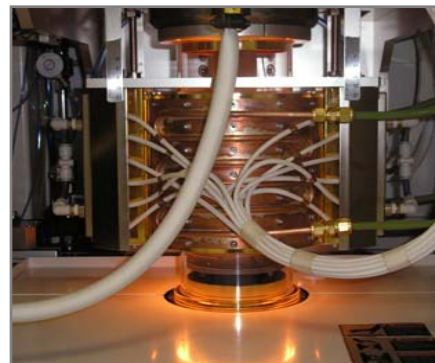
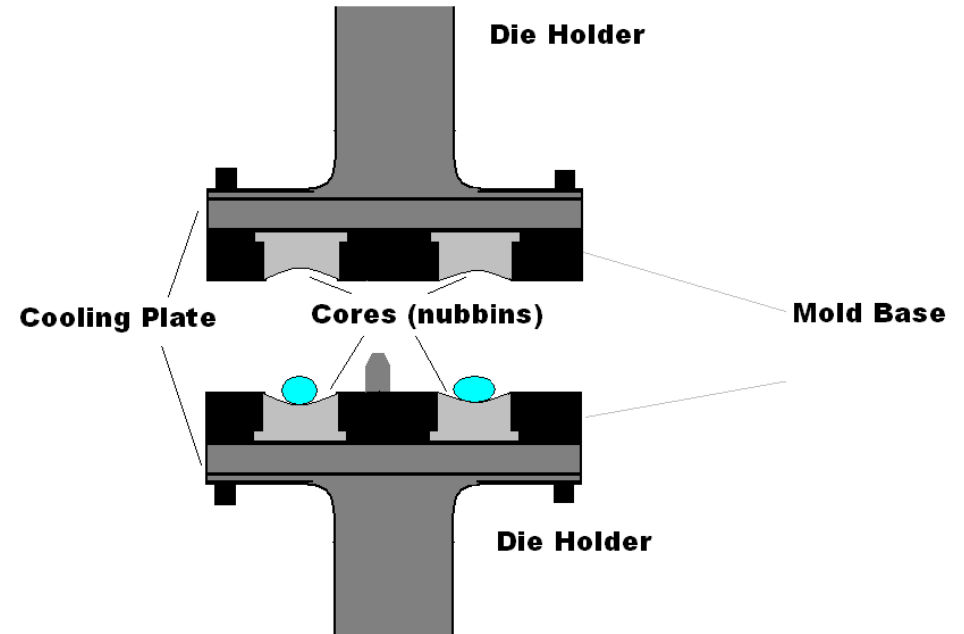
- Tool prediction
- Release coatings
- Optimized Processes

General Benefits of PGM

- Consistency in Production
- Production Cost-Effectiveness

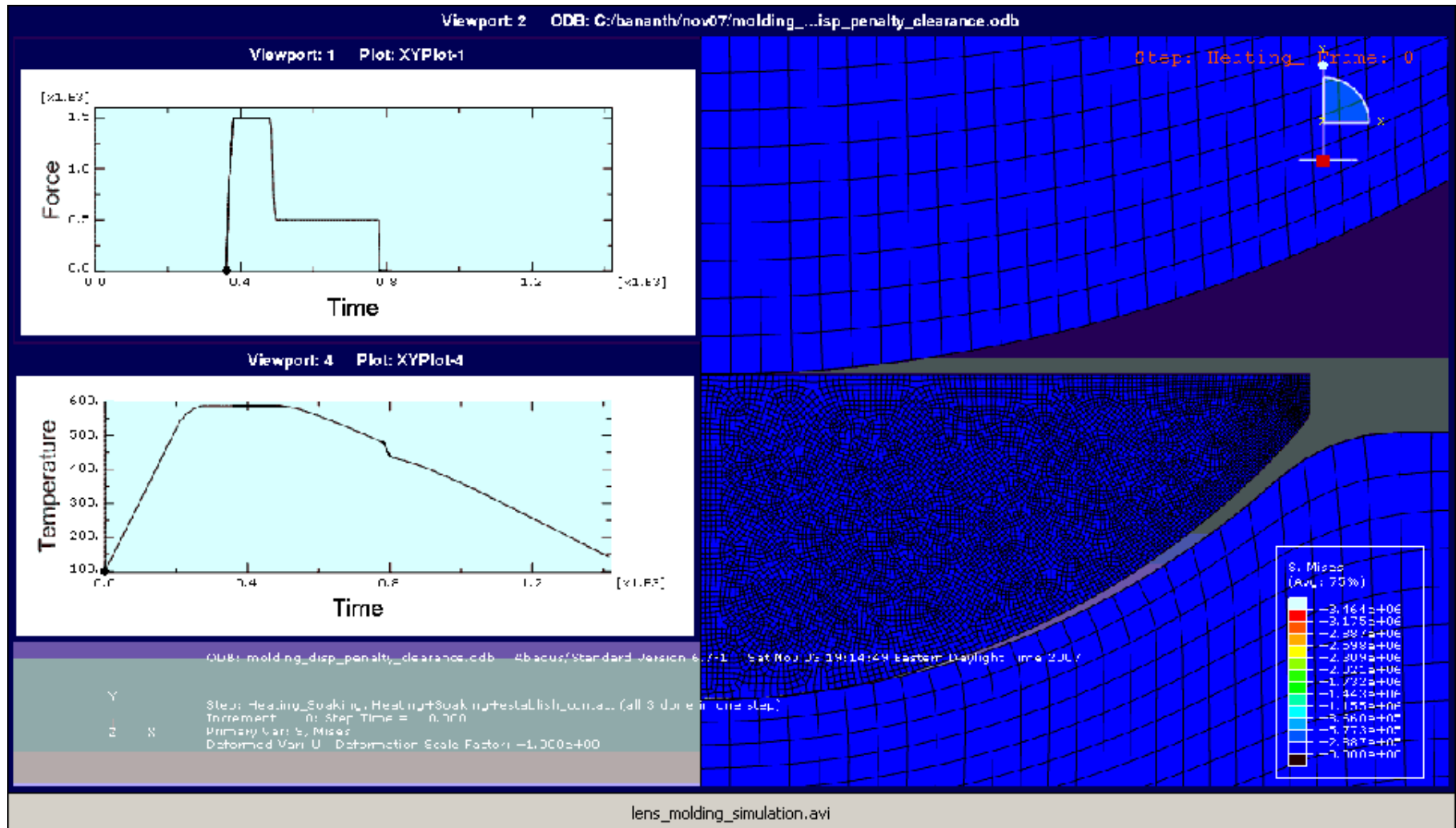
General Drawbacks of PGM

- Design Limitations
- Tooling Cost
- Development Time



Precision Glass Molded (PGM) Aspheres

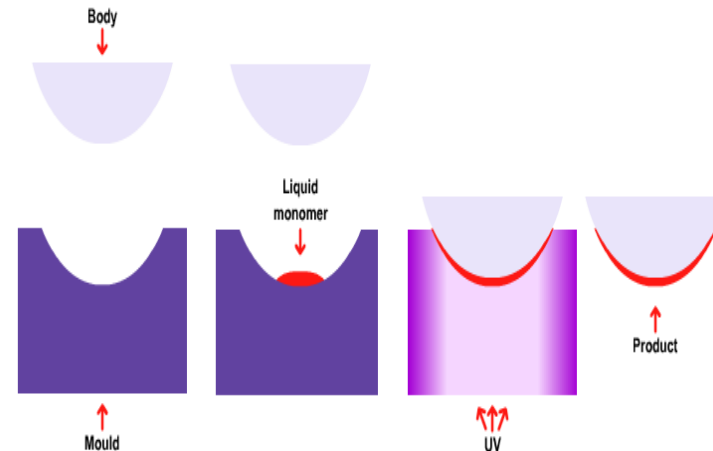
Completed in Conjunction with Clemson University



Hybrid Monomer Technology

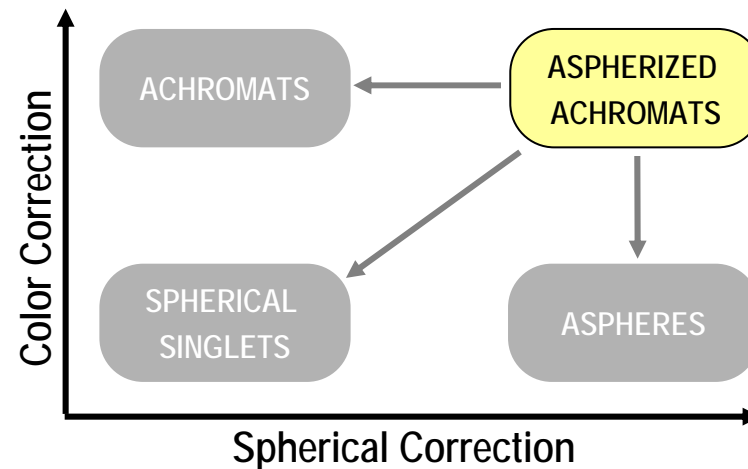
Technological Developments:

- Optical Quality
- Thermal Stability (-20° to 80° C)
- Application to Achromatic Lenses
- Cost-Effective Production
- Virtually No Capacity Limitations



TECHSPEC® Aspherized Achromats

- High Performance
- Excellent Light Collection
- Aberration Correction



Innovating Optical Technology

ASPHERES



TECHSPEC® Precision
Aspheric Lenses



Aspheric
Condenser Lenses



Polymer Molded Aspheres



Precision Molded
Aspheric Lenses



TECHSPEC®
Aspherized Achromats



TECHSPEC® Precision Aspheric
Lenses UV Fused Silica



Fiber Optic Collimator /
Focusing Assemblies



Acrylic Molded Aspheres



Aspherically Contoured
Fresnel Lenses