



# Dynavac Diamond-Like Carbon Deposition Systems



Dynavac provides precise, reliable deposition systems for commercial and military infrared applications. Our RF plasma deposition systems produce diamond-like-carbon films that create a hard, smooth film for hostile-environment protection across an array of optical surfaces, including germanium and silicon optics.

## System Highlights

- 24-inch diameter cathodes allow flexibility in substrate sizes, doubling throughput and eliminating the need for multiple systems
- Quick-to-install systems are simple to use and require little maintenance
- Self-cleaning features maximize production uptime
- Deposition occurs at a constant rate set by plasma parameters, with film thickness controlled by deposition time

## Key DLC System Characteristics

- Excitation 13.56 MHz
- Auto-tuning matching network
- Deposition rate more than 10nm/minute

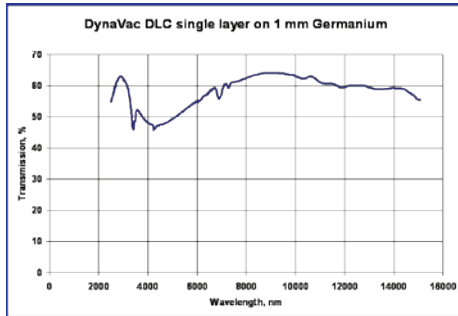
## Dynavac's DLC systems pass a wide range of industry-standard environmental tests including:

- Scotch® tape adherence
- Eraser abrasion
- Salt-water immersion
- Salt fog/spray
- Cycled temperature/humidity
- Sand slurry with windshield wipe



## DLC Optical Properties

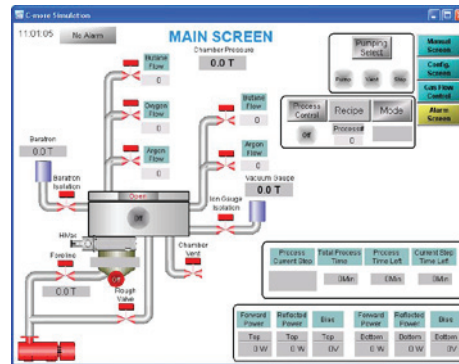
The transmission spectrum in the graph shows results obtained for a DLC film on one surface of germanium with the rear side uncoated.



- Peak transmission is above 63%, showing less than a 1% loss
- Optical thickness is one quarter wavelength at 9.5 microns
- Optical index of about 2.2 producing low reflectance over a wide wavelength range, typically 3-5 or 8-12 microns

## Process Control System

Dynavac's automated control system delivers a high degree of accuracy and repeatability in the deposition of coatings. The user interface is with menu-driven computer screens via LabVIEW® software. Sequences include vacuum pump-down, substrate pre-clean, and deposition. When the process is complete, the system shuts off gas flow and power, and then remains under vacuum until vented by the operator.



## ABOUT DYNAVAC

Dynavac delivers complete systems for thin film deposition, space simulation, and custom/unique applications. Systems range from compact, batch-type chambers to large-scale, continuous production tools.

Dynavac is committed to providing its customers with quality workmanship, cost-effective solutions, and excellent customer service. For a consultation on the best solution for your needs, call 781-740-8600 or e-mail a Dynavac customer representative at [sales@dynavac.com](mailto:sales@dynavac.com).

