PRODUCT DESCRIPTION

Deposition Sciences’ exclusive IsoDyn™ low pressure chemical vapor deposition (LPCVD) coating technology is a thermally driven organo-metallic process that is configured to deposit single layers of aluminum oxide and multi-layers of silicon dioxide and tantalum pentoxide. LPCVD is a high-temperature process (475°C) that provides extremely conformal and seamless coatings on a wide variety of substrates including glass, ceramics, and metals.

The unique aspect of the LPCVD process is its capability to uniformly coat all surfaces, even the most complex shapes, with a high quality multi-layer optical coating. Deposition Sciences’ IsoDyn™ ultra-durable optical coatings also feature laser damage threshold (LDT) levels as high as 25 MW/cm². These are ideal for use in laser and other high-energy systems such as gas, diode and diode-pumped solid-state (DPSS) systems.

APPLICATIONS

Deposition Sciences IsoDyn™ coatings are used in a multitude of industries. Applications that require high durability, seamless and conformal deposition on highly curved surfaces are supported utilizing our LPCVD process.

- Telecom
- Medical Devices
- Imaging Systems
- Laser Systems
- Wafer Level Testing
- Complex Geometries
- Curved Surfaces
- Barrier Coatings
- Domes

FEATURES & BENEFITS

Spheres, Tubes, Fibers, Domes:

- Multi-layer coating capability provides broad band AR coatings (e.g. 1310/1550 dual band). Dual band coatings allow one lens to be used for either wavelength, reducing lens inventories.
- Wide choice of lens materials which allows maximum freedom of optical design and minimizes cost.
- Hard, scratch resistant coatings (passes 20 eraser rub).
- Coating deposited on entire surface.
- Orientation of spherical lenses in your device is not required (uniform coating over the lens surface), reducing device assembly costs.
TECHNICAL DATA SHEET

LPCVD LOW PRESSURE CHEMICAL VAPOR DEPOSITION

STANDARD SPECIFICATIONS

- Optical: Single wavelength coating insertion loss < 0.022dB (T > 99.5%) at wavelength of interest.
- Dual wavelength coating insertion loss < 0.044 dB (T > 99%) at wavelengths of interest.
- Spectral range 0.35 – 5 microns

ENVIRONMENTAL TESTING

Environmental Testing can be performed in accordance with various military specifications, including MIL-C-48497 and MIL-F-48616.

- Humidity
- Salt Fog
- Abrasion
- Temperature Cycle
- Adhesion
- Solubility
- Cleanability

COATING MATERIALS

- Ta$_2$O$_5$
- SiO$_2$
- Al$_2$O$_3$

COMMON COATED OPTICS

- Indices from 1.44 to 2.15 at 1550 nm
- Optical Materials – ceramics, sapphire, fused silica, glass, cubic zirconia, metals.
- Geometries up to ø8.5” x 24”
- Sphere diameters from 0.2mm to 10mm+
- Fiber diameters from 0.08mm to 1.0mm+
- Many grades of lenses available to fit your budget or technical needs.

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