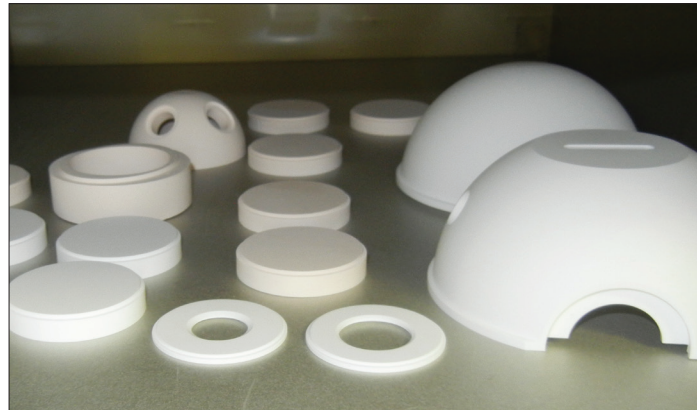


Spectralon® EPV

Spectralon for extreme physics and vacuum



The world standard in diffuse reflectance

Optical Grade Spectralon has been an industry standard material for over twenty-five years and continues to find new niches every day as optical technology continues to expand. A perfectly white and diffuse material - a Lambertian >99% reflector - can be of great benefit to radiometric problems. The premier example of this is Labsphere flagship Space Grade Spectralon. This ultra-purified product is now on orbit in over 20 major optical satellite systems as a fundamental element in the absolute calibration chain for the science of those projects.

In recent years, more and more applications have arisen on the terrestrial scene where not only is there need for a great diffuse reflector, but the material also needs a level of purity driven by energy levels or special environments.

A process for extreme applications

Labsphere has developed a new production and handling process that provides a purified output product for ground-based applications. We call this innovation, **Spectralon EPV: Spectralon for Extreme Physics and Vacuum.**

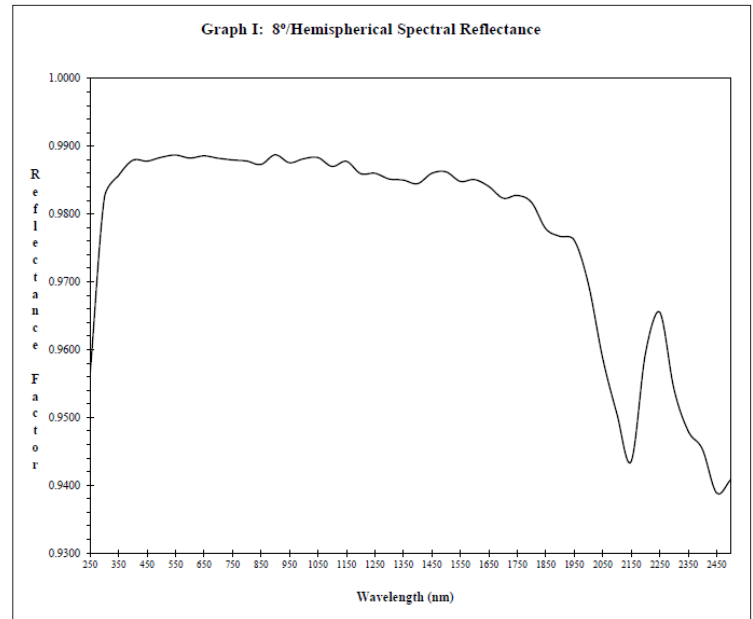
A purified product requires a pure environment

The EPV process and materials are created for long term use in nitrogen, UV, vacuum or other isolated environments. Performance degradation will be observed if the material is subjected to contamination through use of environmental volatiles or with human contact or interaction. Clean room environments may not be suitable for EPV due to volatile contaminants.

Applications for Spectralon EPV

- High energy levels where low contamination will lead to longer product lifetimes
 - Laser pump chambers
 - Fission and fusion reactors (Examples: JET, NIF, PPPL)
 - “Ghosting” material for diffusion of high energy stray light
- Particle accelerators & physics experiments (Examples: CERN, PPPL)
- Medical applications requiring low contamination
- Dark matter detection chambers: low particulate contamination and low radiological background levels
- Vacuum chambers for optical spectroscopy or sensor testing
- High UV (<300 nm) stability
 - UV LED measurement
 - UV water sanitization
 - Deep UV spectroscopy
 - Curing and drying of UV polymers materials
 - 3D printing curing
- Service life prediction – rapid weathering of materials using UV, temperature and humidity
 - Spectralon has the triple benefit of being extremely impervious to each of these items

Typical 8° Hemispherical Reflectance of Spectralon EPV



Ordering Information

| Order Number | Model Number | Description |
|--------------|-----------------|---|
| AA-01451-000 | SRS-99-010-EPV | Standards, Diffuse Reflectance, Ind., 1" - 99% - NVLAP ACCREDITED |
| AA-01451-100 | USRS-99-010-EPV | Uncalibrated Diffuse Reflectance Standard, 1" - 99% |
| AA-01451-200 | SRS-99-020-EPV | Standards, Diffuse Reflectance, Ind., 2" - 99% - NVLAP ACCREDITED |
| AA-01451-300 | USRS-99-020-EPV | Uncalibrated Diffuse Reflectance Standard, 2" - 99% |
| AA-01451-400 | SRT-99-020-EPV | Targets, Spectralon Diffuse Reflectance UV-VIS-NIR, 2" - 99% Single Center-Point Calibration 250 - 2500 nm |
| AA-01451-500 | USRT-99-020-EPV | Targets, Reflectance, UnCal, 2" - 99% |
| AA-01451-600 | SRT-99-050-EPV | Targets, Spectralon Diffuse Reflectance UV-VIS-NIR, 5" - 99% Single Center-Point Calibration 250 - 2500 nm |
| AA-01451-700 | USRT-99-050-EPV | Targets, Reflectance, UnCal, 5" - 99% |

All models include nickel-plate aluminum holder and cover.

Parts that are made under the current EPV process should be specified at:

- Not greater than +/-0.010" on any mechanical dimension – applies to parts with <4" dimensions
- Not greater than +/-1° on any mechanical angle – applies to parts with <4" dimensions.
- For longer or larger parts of greater than 4" add +/-0.001" to any dimension for every dimensional inch added to the part.
- For longer or larger parts of greater than 4" add +/-0.1° to any angular dimension for every dimensional inch added to the part.



Advancing the Technology of Light: Measure. Create. Reflect.

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