

PTFE Collimated Beam Integrating Spheres

819C SERIES



Features

Our Spectralon (PTFE) diffuse material integrating sphere bodies are designed for collimated input beams. PTFE based integrating spheres can be used in more demanding environments, including underwater and high or low temperature processes.



Product Features

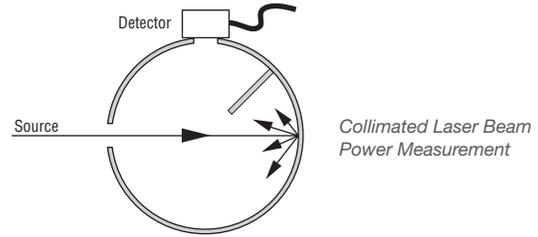
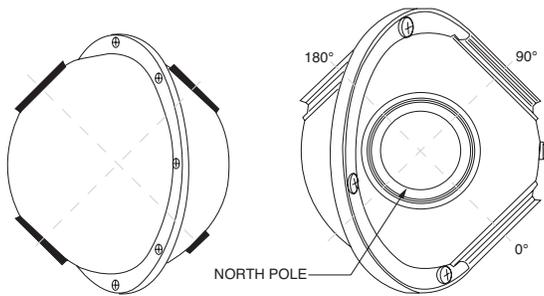
- 4-Port Integrating sphere designed for collimated input beam
- Spectralon (PTFE) diffuse material for demanding environments
- Sphere provides for total collection of light and spatial integration
- Signal attenuation through multiple bounces in high reflectance coating
- Power measurements are insensitive to exact detector positioning



Models	819C-IS-2	819C-IS-3.3	819C-IS-5.3
Part Number	7N6324A	7N6321A	7N6310A
Spectral Range	250 nm to 2.5 μ m	250 nm to 2.5 μ m	250 nm to 2.5 μ m
Sphere Size	2 in.	3.3 in.	5.3 in.
North Pole Port Size	0.5 in.	1.0 in.	1.0 in.
0 Degree Port Size	1.0 in. (w/ 819M-PP-1.0)	1.5 in. (w/ 7Z08359N)	2.5 in. (w/ 819M-PP-2.5)
90 Degree Port Size	0.5 in.	1.0 in.	1.0 in.
180 Degree Port Size	0.5 in.	1.0 in.	1.0 in.
Thermal Limit	350°C	350°C	350°C
Material	PTFE	PTFE	PTFE

Ideal Integrating Sphere for Collimated Beams

819C Series modular integrating sphere bodies feature four ports located at 0, 90 and 180 degrees, as well as at the north pole. The 0-degree port is plugged with a port plug and the 180-degree port is used as the input. The baffle is located between the 0- and the 90-degree ports. A fourth sphere port adds functionality to an integrating sphere but also diminishes the uniformity of the light distribution inside the sphere. We offer a wide variety of integrating sphere accessories that mount to the port frames, allowing the sphere to be customized for multiple applications.

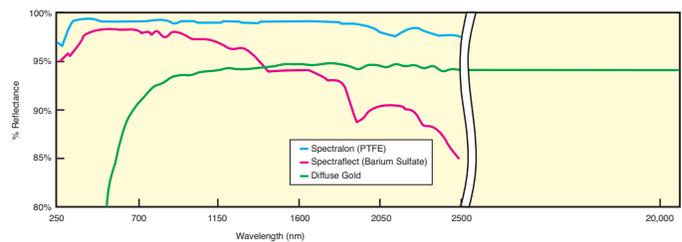


819C Series Integrating Sphere Applications

The 819C Series Integrating sphere is ideal for applications that require use of the 180° port. A detector is typically mounted on the 90° port, while the source beam may enter the sphere through either the 0° or 180° port, depending on the application. Common applications include measuring total collimated laser beam power (including the collimated output of an optical fiber), measuring transmitted radiation from an irradiated sample and measuring reflected radiation from an irradiated sample. For more details about these applications, please see our Integrating Sphere Fundamentals and Applications tutorial.

PTFE Sphere Material for Demanding Applications

819C Series modular integrating sphere bodies feature four ports located at 0, 90 and 180 degrees, as well as at the north pole, to provide a diffuse reflectance/transmittance measurement capability. The baffle is located between the 0- and the 90-degree ports. A variety of sphere accessories that mount to the port frames, allowing the sphere to be customized for multiple applications.



Our integrating spheres are available with PTFE (spectralon), barium sulfate (spectrafect), and diffused gold sphere materials.

Selecting an integrating sphere size

Among the factors in selecting the size of an integrating sphere is the physical limitation of the measurement setup that will be used. Generally, as the sphere diameter grows, the “integration” property of the sphere improves, the port size can be larger and higher input power can be accommodated. However, with the increasing attenuation of the setup, the throughput will be decreased.

Integrating Sphere Accessories

Newport offers accessories that are compatible with our integrating spheres to build a complete integrating sphere system. Various adapters are available to change port frame diameter, reduce an input port’s clear aperture, measure fiber optic power, connect lens tubes and mount sensors. Port plugs to block an unused sphere port are also available.

