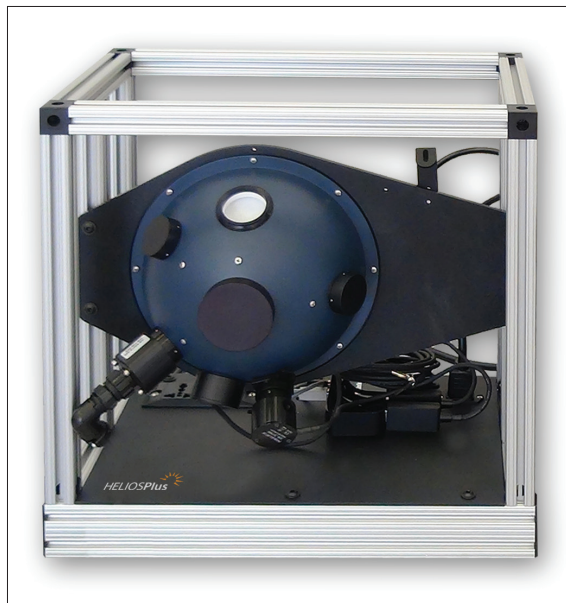


HSA Sphere Assemblies



The HELIOS®Plus Sphere Assembly (HSA) is an innovative robust chassis to carry the integrating sphere and provide a home and hub for our optical and electrical components. The HSA features the Cage, a unique channeled aluminum structure designed for mounting and protection of our systems during bench top laboratory use or field use. There are (5) sphere models available to suit different sizes of apertures, spectral ranges and environmental testing needs.

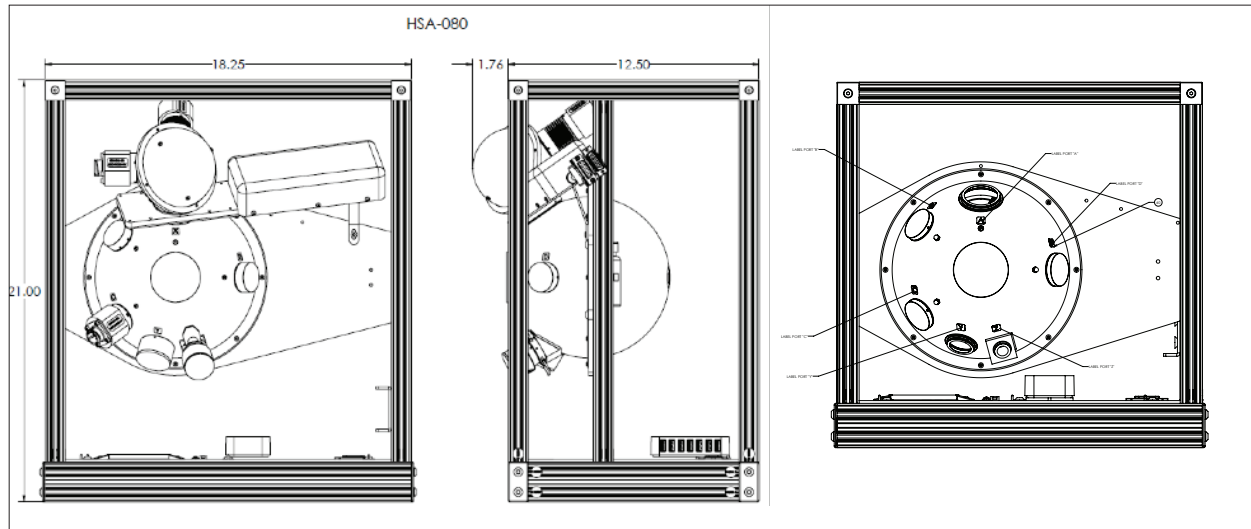
Features

- Rugged cage design provides protection and support for HELIOSPlus components and systems
- Spectrafect® and Spectralon® sphere material options
- Many additional ports for current and future requirements
- Modular baffles
- Plugs and covers for more ports (see specifications to ensure needed items are sourced)
- Powered universal plugs
- (7) port, powered USB hub and cable routing
- Memory capability in the sphere chassis to store configurations and settings
- Spectrafect touch-up paint and tool kit
- Optional travel cases for spheres may be added
- Optional Dark-Kit for enclosing HELIOSPlus Sphere Cages to minimize stray light

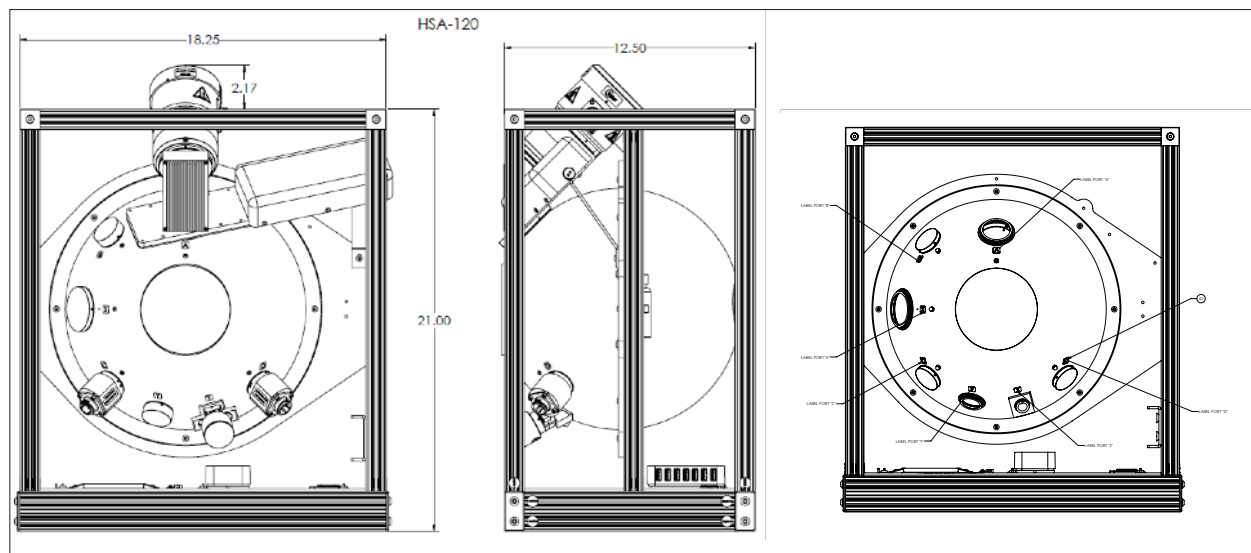
Specifications

Model Number	HSA-20F	HSA-12F	HSA-08F	HSA-12L	HSA-08L
Coating/Material:	Spectrafect	Spectrafect	Spectrafect	Spectralon	Spectralon
Sphere Internal Diameter: Inches (Meters)	20 (0.5)	12 (0.3)	8 (0.2)	11.5 (0.29)	7.5 (0.19)
Frame Type:	20" Cage	12" Cage	12" Cage	12" Cage	12" Cage
Output Port Size: Inches (Meters)	8" (0.2)	4" (0.1)	2" (0.05)	4" (0.1)	2" (0.05)
Port Cover (black) For Output:	(1) 8"	(1) 4"	(1) 2"	(1) 4"	(1) 2"
Number of Input Ports - (#) Size:	(1)-1.75", (1)-1.5", (4)-1"	(1)-1.75", (1)-1.5", (3)-1"	(1) 1.5", (3) 1"	(1)-1.75", (1)-1.5", (3)-1"	(1) 1.5", (3) 1"
Number of Detector Ports - (#) Size:	(1) 1", (1) 0.5" w/wedge	(1) 1", (1) 0.5" w/wedge	(1) 1", (1) 0.5" w/wedge	(1) 1", (1) 0.5" w/wedge	(1) 1", (1) 0.5" w/wedge
Reducers for Input Ports - (#) Size:	None	None	None	None	None
Port Plugs (white) for Input Ports - Sizes:	(3) 1"	(3) 1"	(3) 1"	(3) 1"	(3) 1"
Baffle Configuration:	Diff/Flag/Flag/Flag/Flag	Diff/Flag/Flag/Flag	Diff/Flag/Flag/Flag	Diff/Flag/Flag/Flag	Diff/Flag/Flag/Flag
Baffle Locations: (O'Clock)	12/1/4/8/10	12/4/8/10	12/3/8/10	12/4/8/10	12/3/8/10
Baffle Plugs:	N/A	N/A	N/A	(3) SL Baffle Plugs	(3) SL Baffle Plugs
Labsphere Tool Kit:	Yes	Yes	Yes	Yes	Yes
Spectrafect Touch Up Kit:	Yes	Yes	Yes	Yes	Yes
Powered Universal Plug:	(2)	(2)	(2)	(2)	(2)
7 Port Powered USB Hub:	Yes	Yes	Yes	Yes	Yes

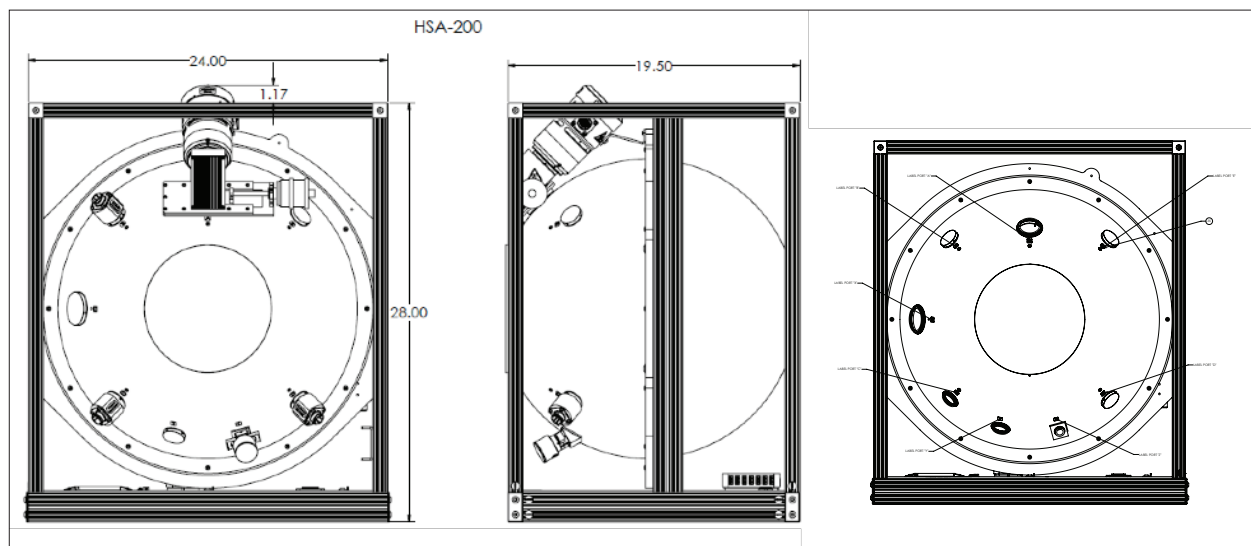
HSA-080 Dimensional Drawing



HSA-120 Dimensional Drawing



HSA-200 Dimensional Drawing



Drawings are representations only and used to indicate the dimensional footprint of the sphere assembly. Any light sources, variable attenuators, and sphere accessories, are for illustrative purposes only and are not included with the sphere assembly.