

2D-S (Stereo) Optical Array Probe Specifications



- Two independent 128 pixel photodiode arrays with optics configured for 10 micron pixel resolution, resulting in a maximum field of view of 1.28 mm.
- Electronics can operate at true airspeeds up to 200 m/s.
- Particles up to 1.28 mm are completely imaged, and even larger particles can be sized in the direction of flight.
- Sensor Head operates up to 60,000 feet altitude.
- De-ice heaters are temperature controlled and user can change set point in flight.
- 2D-S is designed for unmanned use, with AI parameters to optimize performance without supervision.
- Probe is hermetically sealed and fits into a standard PMS airborne canister. Hermetically Sealed PMS can available as separate option.

2D-S Power Requirements

Input	Voltage	Frequency	Power	Usage
Computer (in cabin)	115 VAC - 240 VAC	50-60 Hz	200 W	Data System Power
Probe AC1	115 VAC	50-60 Hz or 400 Hz	570 W	Heaters
Probe Electronics	28 VDC	DC	140 W	Sensor Electronics

2D-S Probe Electrical Interface Requirements:

Power:

3 conductors (1-AC and 1-return 1-frame) (5.0 A max)

2 conductors (+28v, Gnd) (5.0 A max)

Signaling:

4 conductors (twisted pair or Cat 5/6 for Ethernet)

Connectors:

PMS Can connector: Standard 24 Pin Amphenol connector

24 pin (Amphenol 26-159-24)

Mate for cabling = (Amphenol 26-190-24)

Two circular connectors at the Data System (out to probe):

5 pin (MS3122E14-5S 1003). Mate for cabling = (MS3126F14-5P 1003)

23 pin (MS3122E16-23S 1003). Mate for cabling = (MS3126F16-23P 1003)

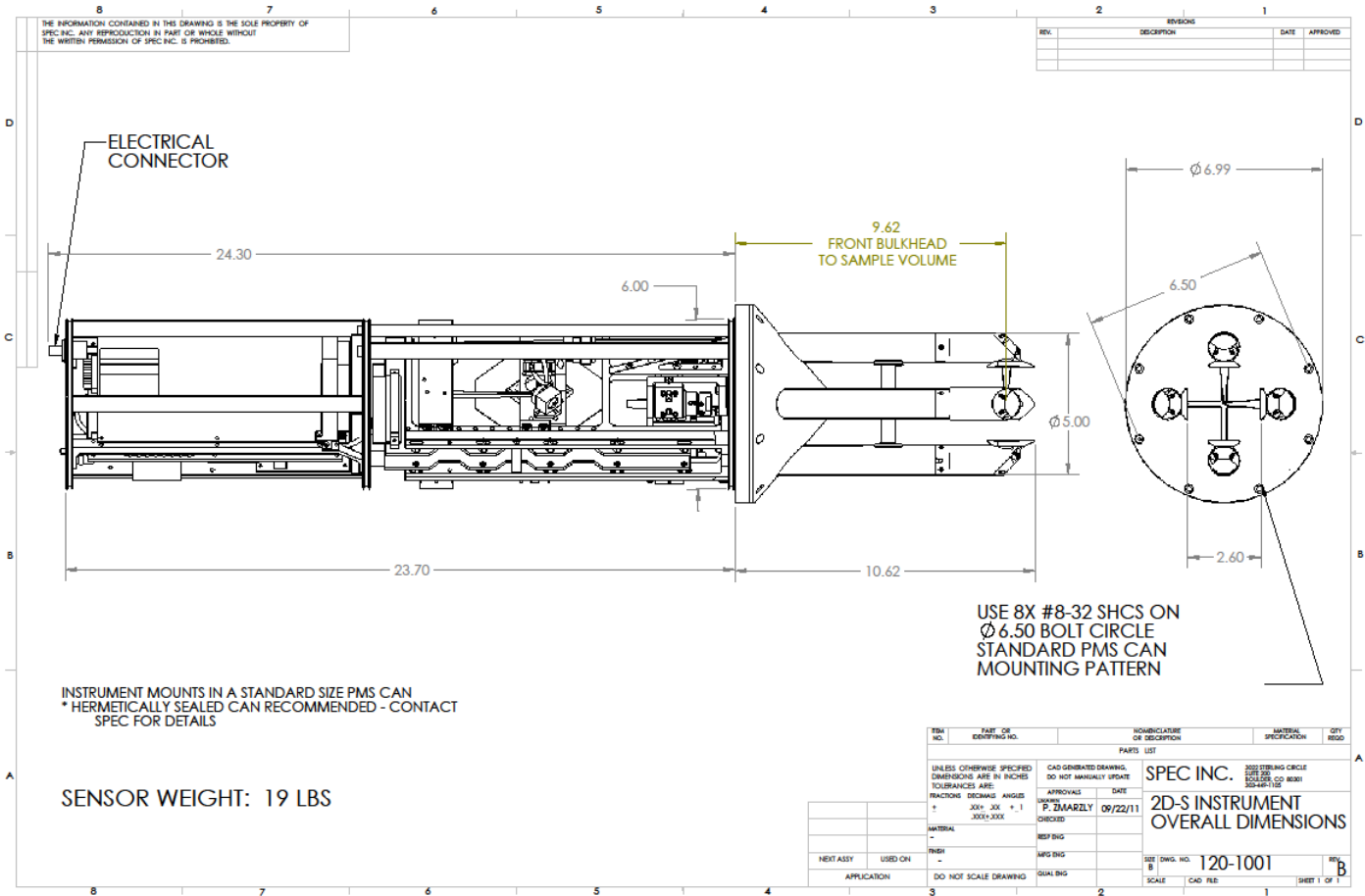
(only 4 pins are used)

Weights & Size:

Probe (w/o can): 19 lbs; 35" x 7" x 7"
(8.6 kg; 89 cm x 18 cm x 18 cm)

Data system: 25 lbs; 19" x 18" x 3.5"
(12 kg; 48 cm x 46 cm x 9 cm)
Smaller options are available

2D-S Mechanical Specifications:



2D-S's have operated in numerous field campaigns including:

NSF RICO
 NASA CR-AVE
 NASA TC4
 NASA NAMMA
 MACPEX
 DOE SPARTICUS
 NSF ICE-T