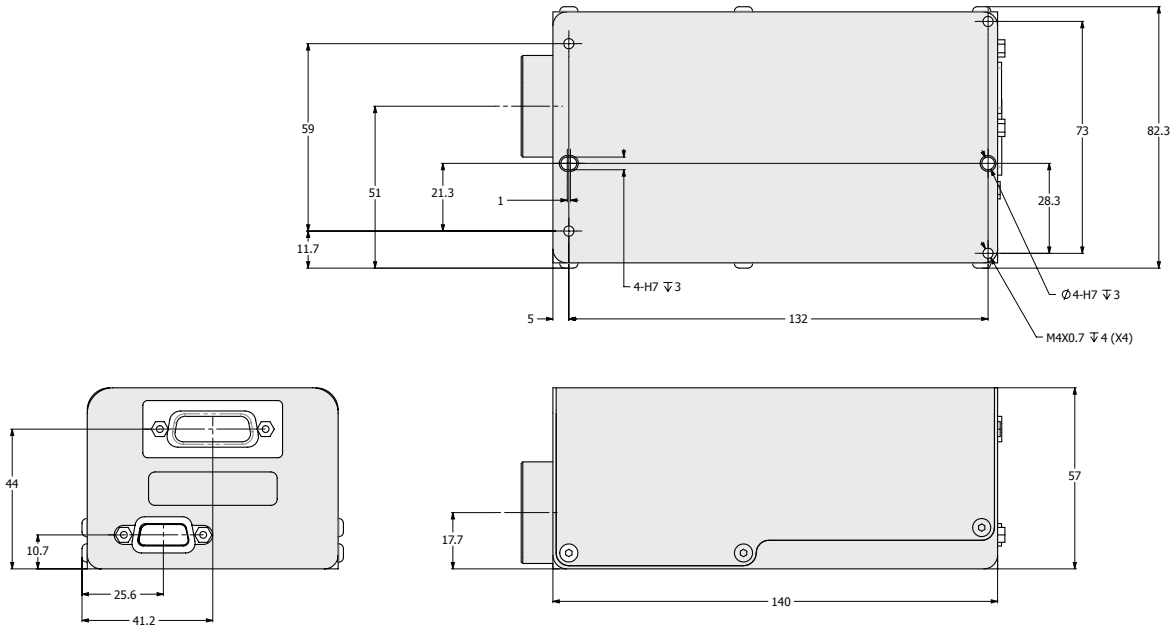
ConoPoint-20

Laser displacement sensor

The ConoPoint-20 is the latest version in Optimet's family of point sensors. It's a non-contact optical sensor for distance and 3D measurements based on the unique Conoscopic Holography technology. The ConoPoint-20 measures the distance to a single point at a rate of up to 20,000 points/second with up to sub-micron precision.

Features:

- The ConoPoint-20 offers a variety of objective lenses allowing various accuracies, resolutions, standoffs and measurement ranges in the same sensor
- All data processing is performed in the sensor head
- The ConoPoint-20 supports external and internal trigger operation modes
- Communication to PC is accomplished via standard Ethernet
- Software integration is possible by using DLL without any additional drivers or setups
- Measurement rate up to 20,000 Hz
- Sub-micron precision with short focal length objectives
- Analog output (optional)
- Auto-exposure mode enabling measurement of high and low reflective surfaces in real time without changing laser power
- Measurement of complex geometries, steep grooves, and angles up to ±85°
- Integration capability with relay optics
- The sensor can act as a master synchronizer or as a slave synchronized by a system
- OPS (Optimet Position Synchronizer) capability which records encoders output and synchronizes the accurate position of up to three system axes together with the sensor's measurements



Technical specification

Standard lenses

Objective lens type		16	25	25G	40	50	75	100	150	200	250
P/N		3Z83016	3Z83025	3Z81030	3Z83040	3Z81050	3Z81075	3Z81100	3Z82006	3Z82007	3Z82008
Measurement range [1]	mm	0.6	1.8	1.8	4	8	18	35	70	125	180
Standoff [2]	mm	9.5	14	18	43.5	44	70	95	145	200	250
Accuracy [3]	µm	2	3	3	4	6	10	15	35	70	100
Linearity [4]	±%	0.33	0.17	0.17	0.1	0.08	0.06	0.05	0.05	0.06	0.06
Reproducibility (dynamic) [5]	µm	0.15	0.4	0.4	0.6	1	2	4	15	25	35
X laser spot size [7]	µm	20	27	27	34	37	47	63	85	105	126
Angular coverage [8]	°	150	150	150	150	170	170	170	170	170	170

Sensor general specifications

Measurement frequency	Hz	Up to 20,000
Dimensions (without lens)	mm	140 x 79 x 57
Weight	gr	700

Interface

Communication	Ethernet 10/100 UDP
Software development kit	C, C++, C#, Labview

Analog signal (optional)

Boundary ranging	V	±4.5 ±0.004
Analog linearity [9]	%	±0.1

Light source

Type	Red laser
Laser safety class	Class 3R, IEC60825-1:2014 complies with 21CFR and 1040.11 Laser Notice No.50

Electrical specification

Power supply voltage	12 VDC±10% 65-265 VAC 50/60Hz

Synchronization

Trigger input	TTL/LVTTL	5/3.3V
Strobe output	TTL	5V

Environmental resistance

Operational temperature	ºC	18 to 45
Temperature dependency [10]	F.S./ºC	≤0.03%
Permissible ambient light [11]	lx	Up to 15,000

***Preliminary spec**

Measurement range