mti instruments

A worldwide leader in precision measurement solutions

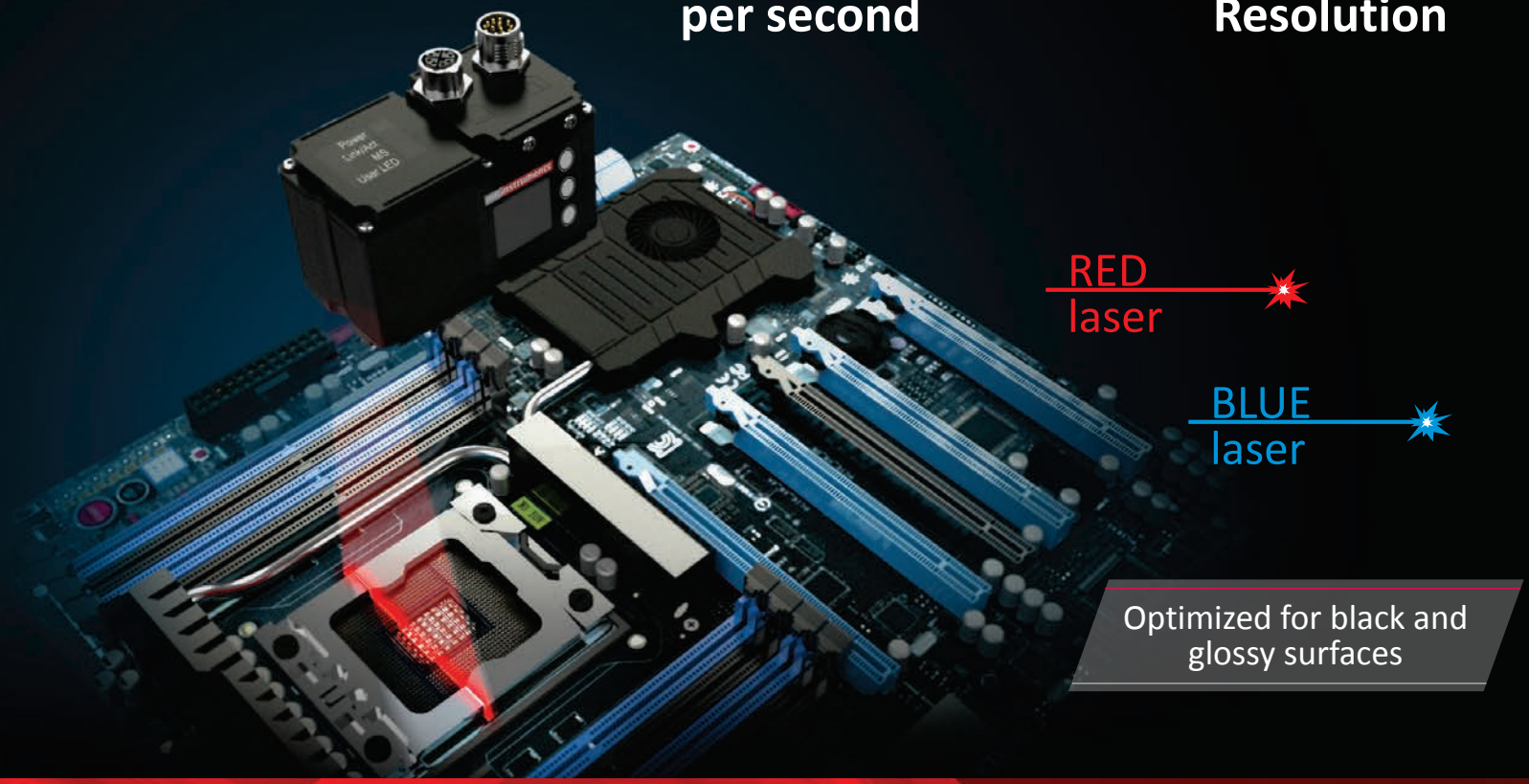
ProTrak™ 2D/3D series

GbE data rate

SUPER FAST

4,000 Frames per second

up to 3.3 µm Resolution



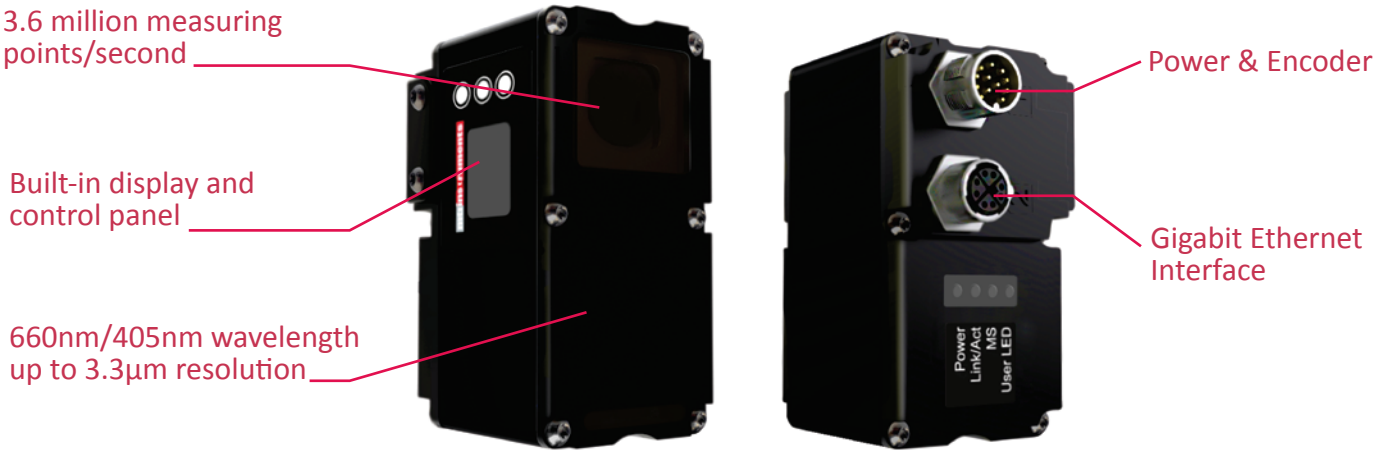
Optimized for black and glossy surfaces

Accurate and repeatable measurements from highly reflective to dull surfaces

mti instruments SDK with NI LabVIEW available

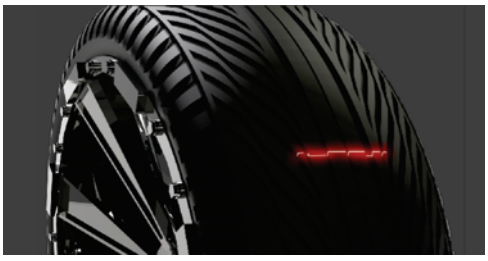
Unmatched Features for Different Types of Applications

The ProTrak™ G series are high resolution compact profiling sensors that fit in tight spaces. These 2D/3D sensors provide accurate measurement using the latest CMOS technology, high resolution and fast measuring rate of up to 4,000 Hz, built-in set-up display, excellent measuring accuracy, Software Development Kit (SDK) included, GigE camera standard interfaces over Ethernet. Available with measuring ranges from 36 mm to 400 mm.



4 Measurement Ranges Available

36 mm 60 mm 190 mm 400 mm



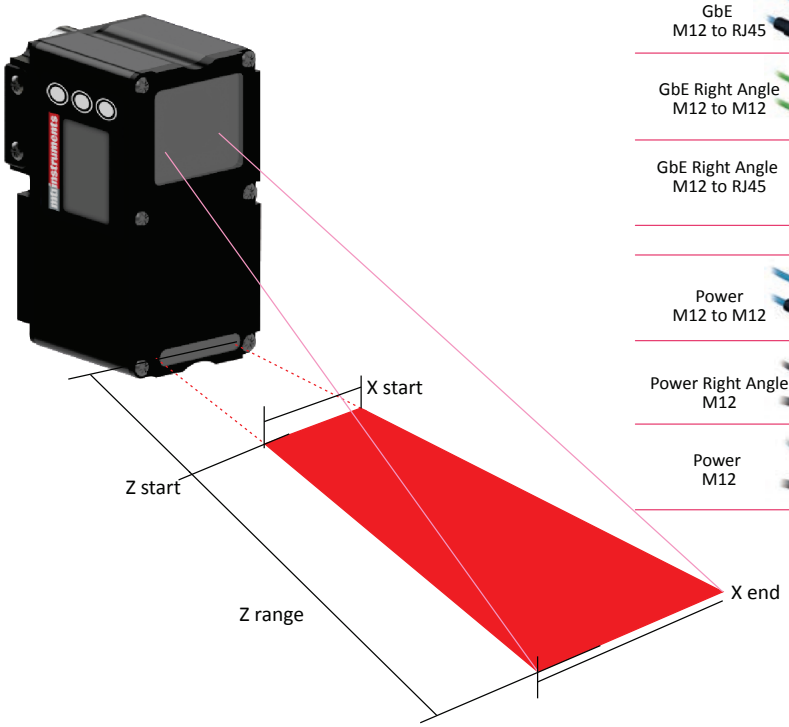
A quad B encoder input is available to sync Y dimension

- Welding
- Thickness
- Displacement
- Warpage
- Step height
- Run-out
- Dimensional gauging
- Angle measurement
- Flatness
- Alignment
- Profiling
- Adhesive bead inspection
- Fill height
- Expansion/Contraction
- Structural Dynamics
- Presence/Absence and volume of product

Technical Specifications

Model	PT-G 36/27/34	PT-G 60/40/58	PT-G 190/62/145	PT-G 400/70/280
Start of Range Z mm	72	65	90	100
Z Range mm	36	60	190	400
Resolution Z µm	3.3 to 5.2 µm	4.8 to 9.6 µm	9.4 to 49 µm	12.4 to 160 µm
Start of Range X mm	*27*	*40*	*62*	*70*
X End mm	*34*	*58*	*145*	*280*
Resolution X µm	22 to 28 µm	33 to 47 µm	54 to 123 µm	68 to 246 µm
Linearity Z µm	18 µm	30 µm	95 µm	200 µm

Laser Color	RED	BLUE	RED	BLUE	RED	BLUE	RED	BLUE
Wave Length	660 nm	405 nm	660 nm	405 nm	660 nm	405 nm	660 nm	405 nm
Laser Class								
1M Product #	8000-1065-001		8000-1065-002		8000-1065-003		8000-1065-004	
2M Product #	8000-1066-001	8000-1067-001	8000-1066-002	8000-1067-002	8000-1066-003	8000-1067-003	8000-1066-004	8000-1067-004



Optional Accessories

	Product #	Description
GbE M12 to RJ45	8000-1050-020	2m Ethernet M12 to RJ45
	8000-1050-050	5m Ethernet M12 to RJ45
	8000-1050-100	10m Ethernet M12 to RJ45
GbE Right Angle M12 to M12	8000-1054-020	2m Ethernet M12 to M12 (8-pin right-angle)
	8000-1054-050	5m Ethernet M12 to M12 (8-pin right-angle)
	8000-1054-100	10m Ethernet M12 to M12 (8-pin right-angle)
GbE Right Angle M12 to RJ45	8000-1072-020	2m Ethernet M12 (8-pin right-angle) to RJ45
	8000-1072-050	5m Ethernet M12 (8-pin right-angle) to RJ45
	8000-1072-100	10m Ethernet M12 (8-pin right-angle) to RJ45
	8000-1057-100	10m Ethernet M12 (8-pin right-angle)
Power M12 to M12	8000-1056-020	2m Power M12 to M12 cable (12-pin)
	8000-1056-050	5m Power M12 to M12 cable (12-pin)
	8000-1056-100	10m Power M12 to M12 cable (12-pin)
Power Right Angle M12	8000-1055-020	2m Power M12 to ferrule cable (12-pin right-angle)
	8000-1055-050	5m Power M12 to ferrule cable (12-pin right-angle)
	8000-1055-100	10m Power M12 to ferrule cable (12-pin right-angle)
Power M12	8000-1040-020	2m Power M12 to ferrule cable (12-pin straight)
	8000-1040-050	5m Power M12 to ferrule cable (12-pin straight)
	8000-1040-100	10m Power M12 to ferrule cable (12-pin straight)
	8000-1058-001	Cooling unit
	8000-1061-001	Protective disc holder
	8000-1063-001	Heat conducting foil
	8000-1060-001	5 pairs of protective plastic discs
	8000-1060-002	5 pairs of protective glass discs
	8000-1062-001	Mounting fixture (aluminum 8 to 12.5mm diameter)
	8000-1062-002	Mounting fixture (plastic 30mm diameter)
	8000-1059-001	Mounting-Set (2xM4, 8mm screws, 2xM4 spring washer, 4x washers
	8000-1017-002	Power supply


Cooling unit


Protective disc holder


Heat conducting foil

Protective discs


Mounting set

for extreme environments

Software Interface

- DLL available for every product purchased.
- GigE interface allows NI LabVIEW Vision software integration.

Line Scanner Measurement Principles

The ProTrak™ G uses the triangulation principle to obtain a two dimensional height profile of target surfaces. A laser line generator projects a diverging line that has a beginning dimension of starting range x and maximum width dimension at of end of range x. The line is diffusely reflected back onto the CMOS camera array through focusing lenses. The CMOS line profile image is then processed by the internal electronics and an X-Z array output is made available for the application or display software at up to 4kHz update rate. Moving the sensor along the target allows the application software to build a 3D image of the target. Encoder inputs allow synchronization of the motion with X-Z profile data.

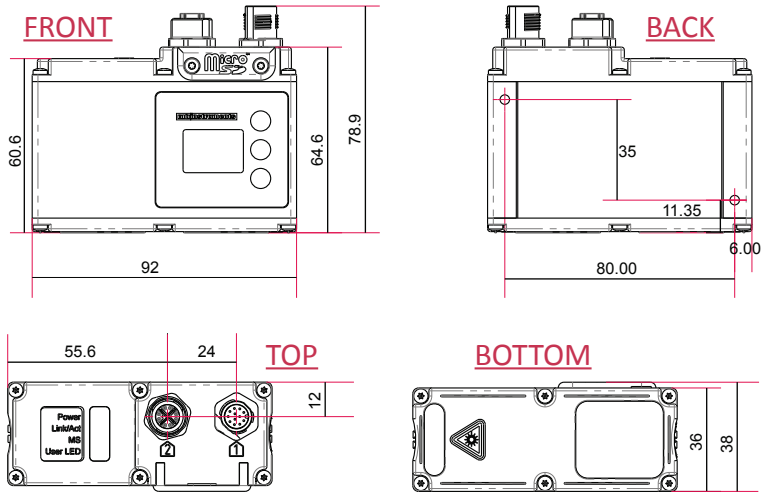
Electrical Data

Supply Voltage	18 to 30VDC
Measuring Rate	200 to 4000/s
Temperature Range	0 to 45°C
Storage temperature	-20 to 70°C
Inputs/Outputs	4
Interface	Ethernet TCP/IP up to 1 Gigabit/s
Data Rate	1 Gigabit/s
Encoder	RS-422 TTL or Standard HTL

Mechanical Data

HousingMaterial	Aluminium;Plastic
Protection	IP67
Cooling Units and Protective Accessories available for extreme environments	
Connection	M12×1;12-pin
Ethernet Connection	M12×1;8-pin
OpticCover	Plastic
Webserver	Yes

Product Dimensions (mm)



available

The ProfileTrak G series has a free SDK software and LabVIEW drivers. Each SDK contains the DLL for C# and C++.

A free demo program is available to get the 2D/ 3D sensor working immediately on a PC so the user can visualize a 2D profile or a 3D profile if encoder input is provided. Additionally, the PT-G series sensors can also work with most GiGE client software such as Matlab, Halcon, NI LabVIEW and etc.

CE GiGE IP67

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