mtiinstruments

A worldwide leader in precision measurement solutions

MICROTRAK™ 4

HIGH SPEED DIGITAL LASER DISPLACEMENT SENSOR

RANGES
FROM 2mm
TO
200mm

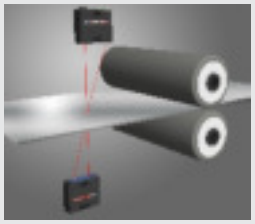
- Direct power from USB port
- ~40kS/sec. CMOS sensor full frame rate
- Included Software Development Kit (NI LabVIEW, DLL and .NET)

Accurate and repeatable measurements from highly reflective to dull surfaces

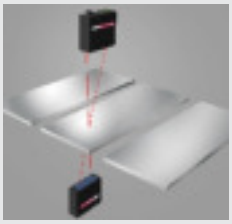
PROOF OF LINEARITY PROVIDED

with every system shipped!

Build-up measurement in a roll



Sheet metal thickness measurement

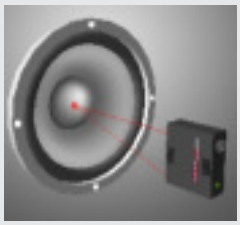


Part thickness measurement

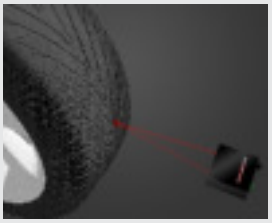
Vibration measurement of motor shaft

Run-out measurement

Distance to pavement measurement



Amplitude measurement



Tire tread depth measurement

No External Controller Needed - Out of the box, the MTI basic program runs on your PC to make measurements. Intuitive and straight forward buttons makes configuring and acquiring data simple.

Software Development Kit Included - for custom programs used by system integrators.

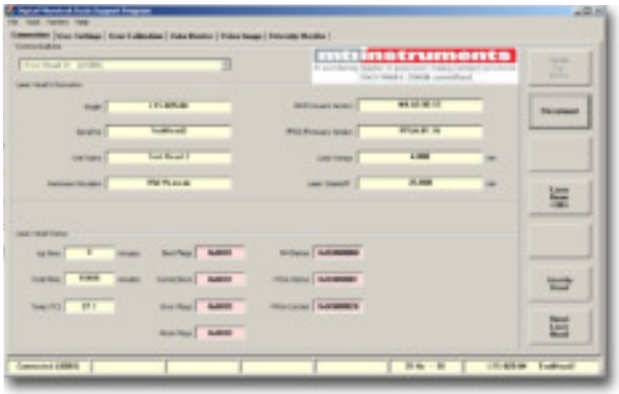
Visible Laser Spot - Allows for easy positioning and alignment of the laser head.

Easy Setup - With the built-in 5-color position indicator, there is no need for an external controller to determine the laser mounting location and attain the precise distance placement.

Built-in Low Pass Filters

Auto Gain Circuitry - Automatically determines and adjusts the ideal laser power needed for accurate and repeatable measurements on different surface types.

Cut-Time Feature - Ignore holes and cutouts with its bridging function.



Reliable measurements for very dark or very shiny (mirror-like) targets - using available 2X exposure function

Plug and Play USB

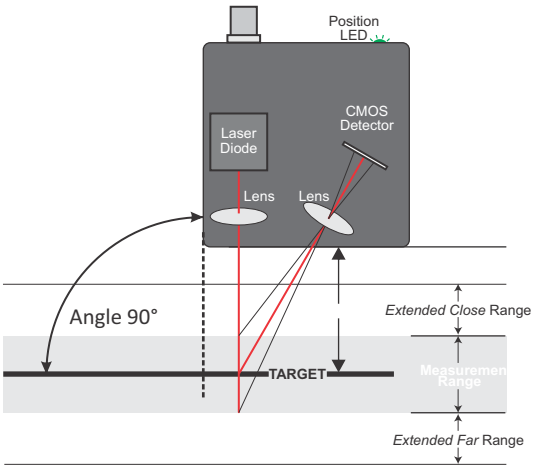
No separate power supply needed

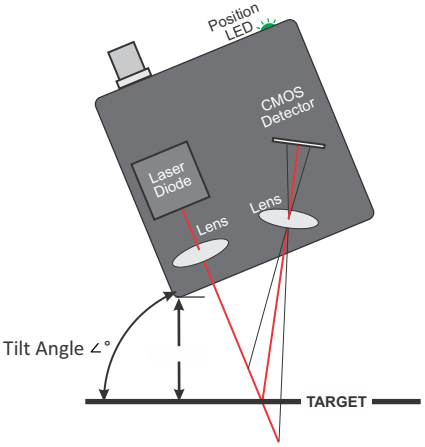
All digital output

Applications

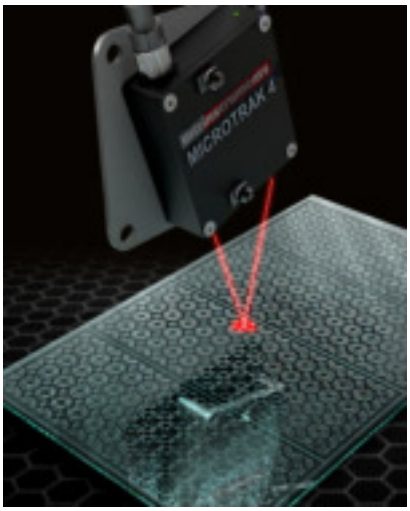
- Thickness
- Warpage
- Alignment
- Displacement
- Vibration
- Step Height
- Shaft Run-out
- Road Profile
- Presence
- Fill Height
- Flatness
- Profiling
- Thermal Expansion/ Contraction
- Structural Dynamics
- Dimensional Gauging

Standard Range	mm	2	4	10	20	20	40	100	200
Standoff	mm	25	25	50	50	120		200	300
Displacement									
Close Extended Mode	mm	23.75	22.5	43.75	37.5	107.5	95	137.5	175
Close Standard Mode	mm	24	23	45	40	110	100	150	200
Far Standard Mode	mm	26	27	55	60	130	140	250	400
Far Extended Mode	mm	26.25	27.5	56.25	62.5	132.5	145	262.5	425
Linearity (standard range)									
1X exposure, 20kHz	% FSO	0.0375%							
2X exposure, 5kHz	% FSO	0.0300%							
1X exposure, 20kHz	µm	0.75	1.50	3.75	7.50	7.50	15.00	37.50	75.00
2X exposure, 5kHz	µm	0.6	1.2	3	6	6	12	30	60
Noise (2X, 500Hz)									
At standoff to white	µm RMS	0.125	0.25	0.625	1.25	1.25	2.5	6.25	12.5
Spot Size									
Major at standoff	µm	30	30	25	25	100			130
Maximum Resolution	nm	38	76	191	381	381	763	1,907	3,815





Model		DTS-025-02/S	DTS-025-04/S	DTS-050-10/S	DTS-050-20/S
Product #		8000-7040-001	8000-7032-001	8000-7033-001	8000-7034-001
Standard Range	mm	1.8	3.7	9.7	19.3
Stand-off	mm	16.7		44.0	
Tilt Angle	∠	67.5°		75°	



Model		DTS-025-04/G
Product #		8000-7032-002
Standard Range	mm	3.7
Stand-off	mm	16.7
Tilt Angle	∠	67.5°

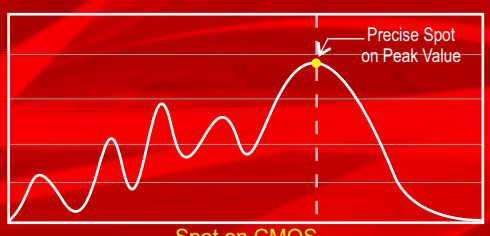
*Linearity is defined as the peak measured variation, using bandwidth limited data, from the best fit linear line constructed from all the points taken over the full scale range.

++ Please refer to the Users Manual for complete instructions for mounting specular heads.

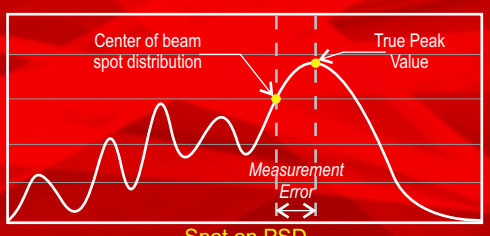
MICROTRAK™ 4 uses Highly Precise CMOS Technology

The Microtrak™ 4 laser displacement sensor head is the ideal solution for quality and process control applications. Using the latest CMOS sensor technology, the Microtrak™ 4 precisely monitors the intensity of light received on a pixel array and optimizes itself to the sensed conditions.

Accurate advanced CMOS sensor



Errors occur using competitive PSD sensors



What's In the Box

(1) MICROTRAK™ 4
Laser Sensor Head

(1) USB drive
Software, Manual & Drivers

USB/Power cable is available as a separate item. Please check optional accesories for length selections.

USB/Power Cable

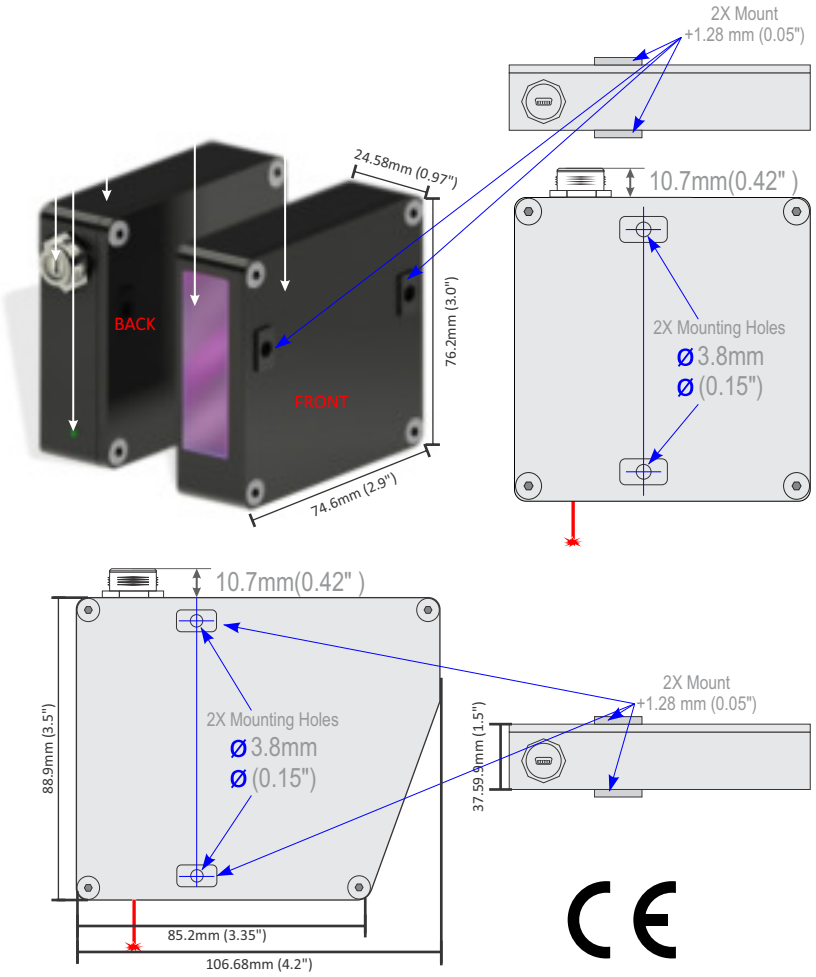
2 meters	8000-7020-002
4 meters	8000-7020-004

FS-5 Laser Head Mount and Positioner
P/N: 8000-6725

FS6-1 Right Angle Bracket (25/50) P/N: 8000-6431

FS6-2 Right Angle Bracket (120/200/300) P/N: 8000-6432

Maximum Sampling Rate	40k (38277.5) Frames/s
Exposure Time	
1x	25 µs
2x	50 µs
Filter	0.1Hz to 20kHz (1st order, exponential)
Practical Maximum Bandwidth	15kHz
Interfaces Supported	
Digital	USB2.0
Analog	None
Supported Datarates	100, 200, 500, 1k, 5k, 10k, 20k, 40k Samples/s
Software	
MicroTrak™ 4 Basic	Windows® 7, 8, 10
Supported Interface Software	
DLL	Windows® 7, 8, 10
.NET	Windows® 7, 8, 10
LabVIEW™	Windows® 7, 8, 10
Laser Wavelength	630nm to 670nm
Maximum Power Level (factory set)	
Maximum	4.9mW
Typical	2mW
Laser Power Class	3R IEC60825
Nominal Supply Voltage	
SELV from USB2.0	5 V
Maximum Supply Ripple	100 mVpp
Nominal Supply Current	100 mA During Enumeration
Nominal Supply Current	500 mA During Operation
Maximum Power Draw	2.25 W During Operation
Intrusion Protection	IP67 IEC60529
Operational Temperature Range	0 to 40 °C
Storage Temperature Range	-20 to 70 °C
Humidity	5 to 95 % Non-Condensing



MTI Instruments, Inc.
325 Washington Avenue Extension
Albany, NY 12205-5505
PH: +1-518-218-2550
OR USA TOLL FREE: 1-800-342-2203
FAX: +1- 518-218-2506
EMAIL: sales@mtiinstruments.com
www.mtiinstruments.com

mtiinstruments

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