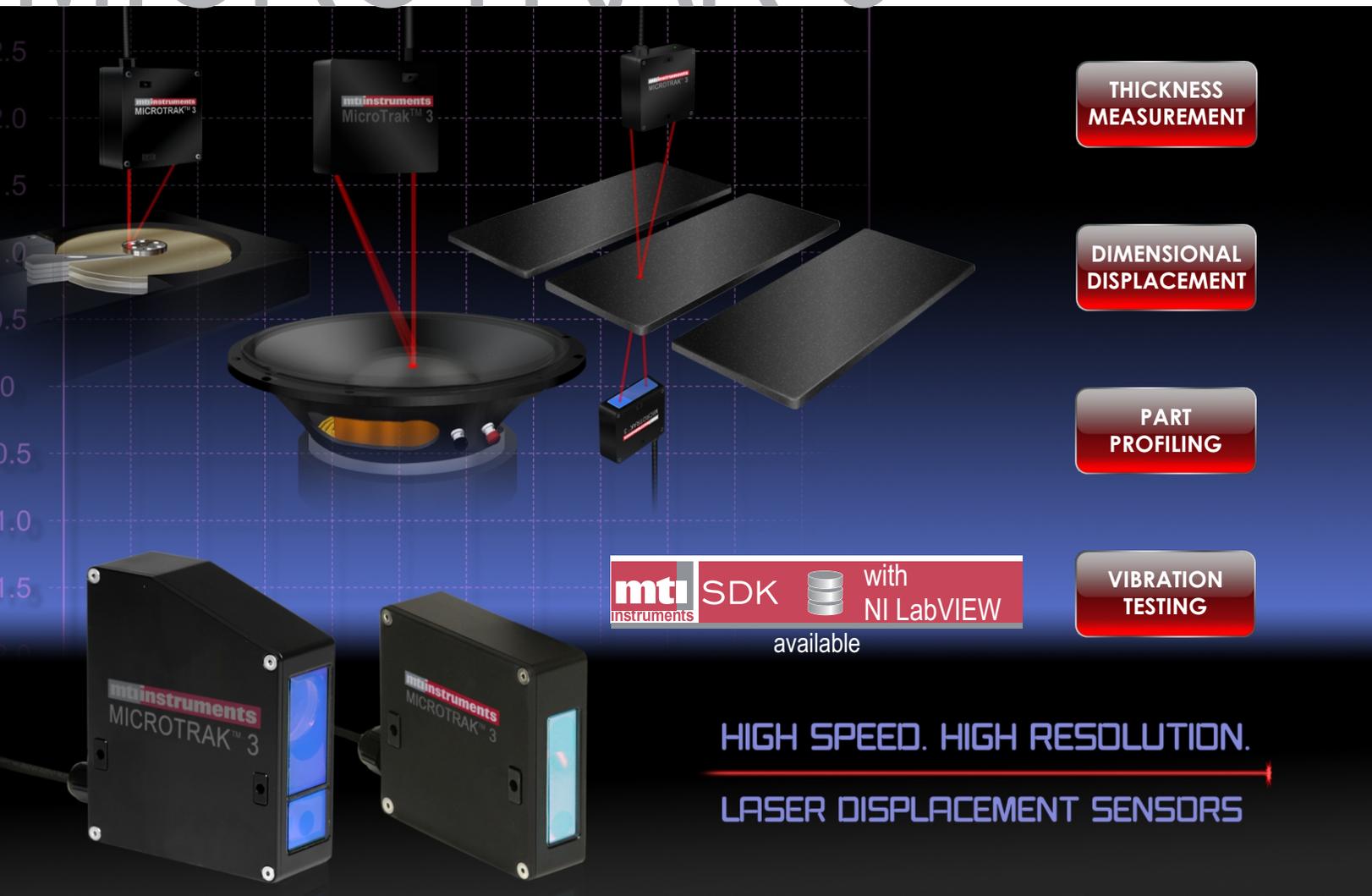# MICROTRAK™3

THICKNESS MEASUREMENT

DIMENSIONAL DISPLACEMENT
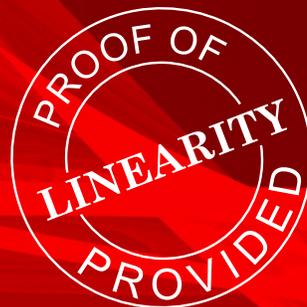
PART PROFILING

VIBRATION TESTING

mti instruments SDK with NI LabVIEW
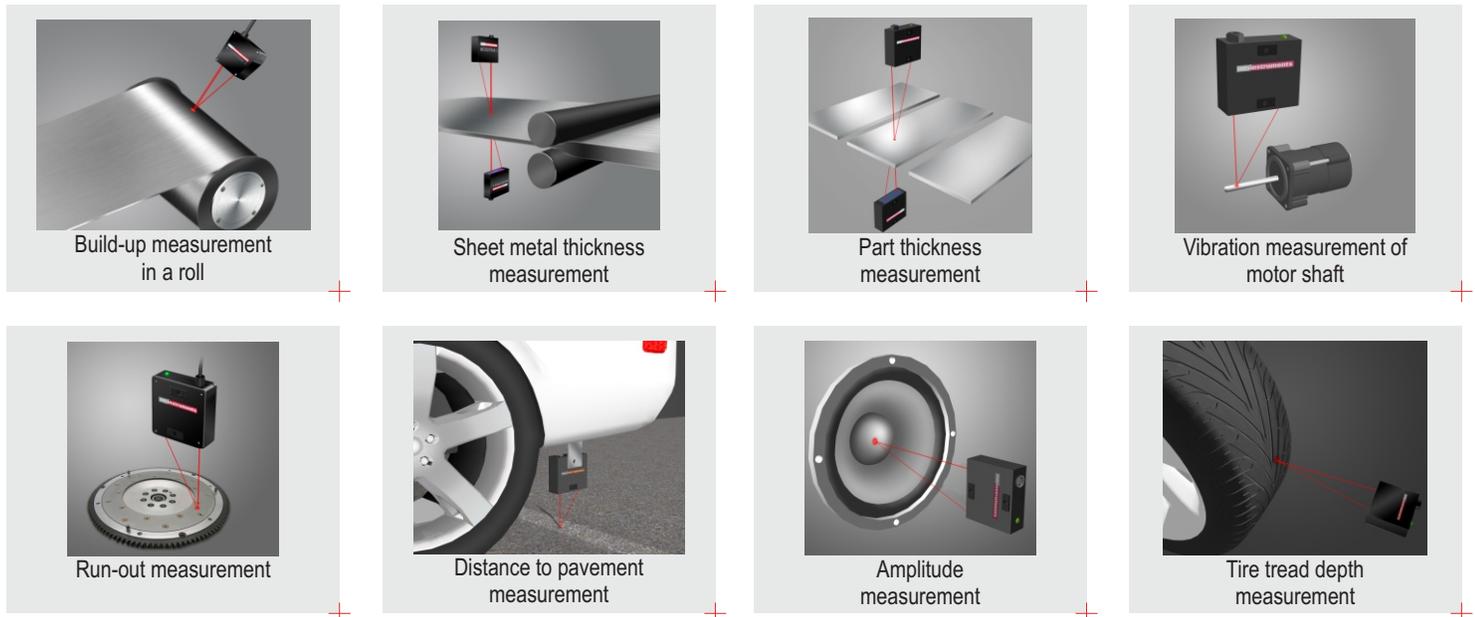
available

HIGH SPEED. HIGH RESOLUTION.

LASER DISPLACEMENT SENSORS

Accurate and repeatable measurements from

highly reflective to dull surfaces

PROOF OF LINEARITY PROVIDED

with every system shipped!

Unmatched Features for Different Types of Applications

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

Microtrak™ 3 - High Quality, Compact and Reliable Non-contact Measurement

The Microtrak™ 3 laser displacement sensor head is the ideal solution for quality and process control applications. Using the latest CMOS sensor technology, the Microtrak™ 3 precisely monitors the intensity of light received on a pixel array and optimizes itself to the sensed conditions. This makes Microtrak™ 3 ideal for even for the most difficult measurement challenges such as, black, colored, metallic, wood, ceramic, steel, or plastic surfaces.

Key Features

-
  - •No Controller Needed - 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.
-
  mti instruments **SDK** with NI LabVIEW
  Software Development Kit Available

-
  - •Dual Output - Analog (0-10V) and Digital (RS-485 and USB).
  - •Cut-Time Feature - Ignore holes and cutouts with its bridging function.
  - •Included Microtrak 3 Basic Software - Intuitive and straight forward buttons makes configuring and acquiring data easy.
  - •Specular and Glass Models Available - Accurate measurement for shiny surfaces
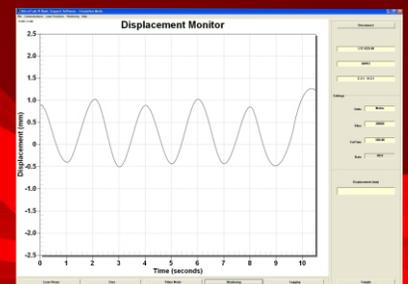
Simple Software Interface

Bundled with the Microtrak™ 3 Basic Support Software, users are presented with graphical displays of displacement signal. Acquired data can also be stored as a widely supported (.csv) format for further analysis. Compatible with Windows® XP, Vista, Windows® 7 Windows® 8 and Windows®10.
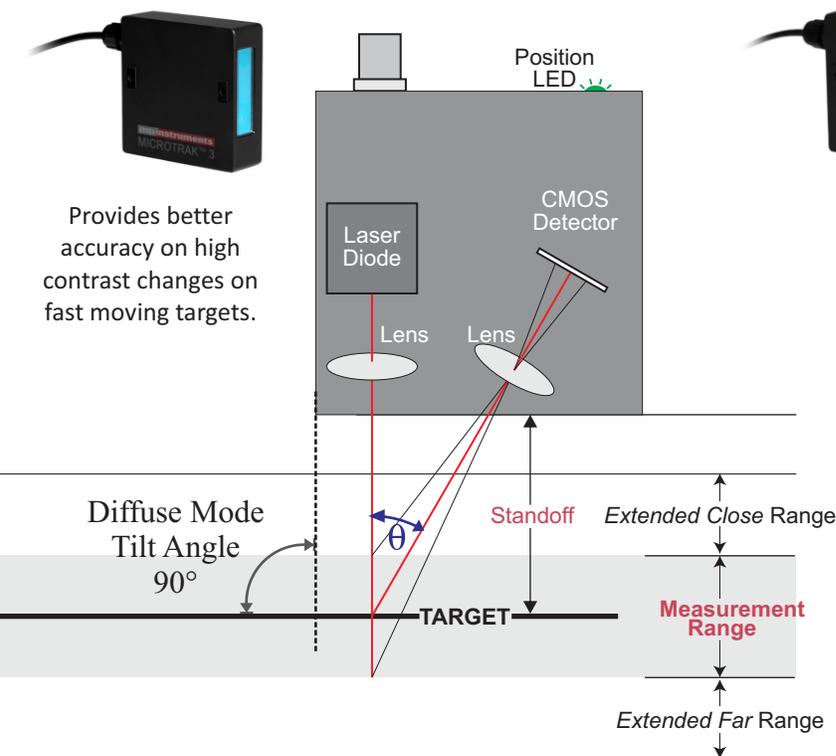
8 Highly Accurate Models to Choose From

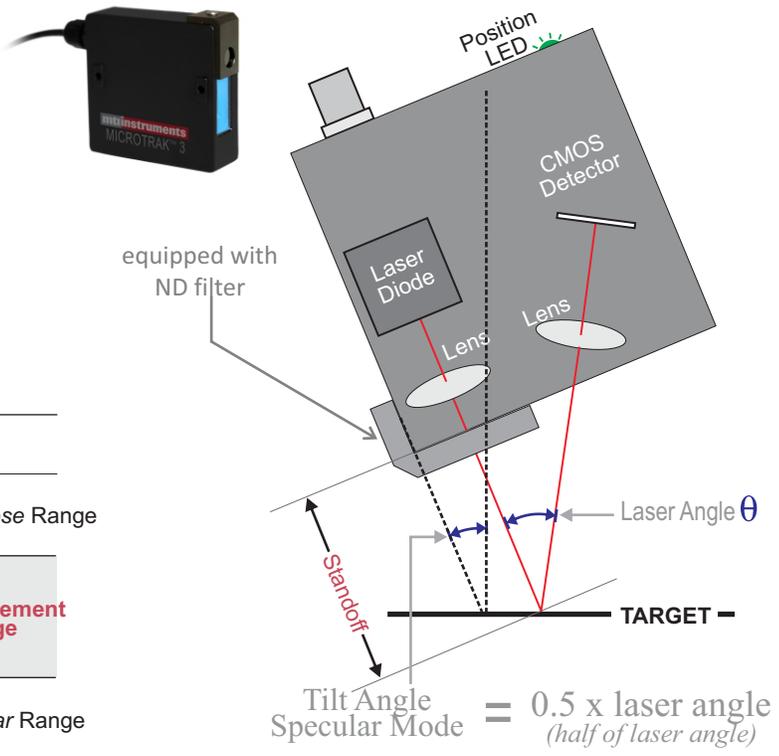| Model		LTS 25-02	LTS 25-04	LTS 50-10	LTS 50-20	LTS 120-20	LTS 120-40	LTS 200-100	LTS 300-200
Product #		8000-6471	8000-6472	8000-6473	8000-6474	8000-6475	8000-6476	8000-6477	8000-6478
Max. Linearity Error	μm	0.6	1.2	3.0	6.0		12.0	30.0	60.0
Extended Range[1]	mm	2.5	5.0	12.5	25.0		50.0	125.0	250.0
Standoff	mm	25		50		120		200	300
Available in Specular Mode (Laser head with ND filter) -specify when ordering									
Extended Close Range	mm	23.75	22.50	43.75	37.50	107.50	95.00	137.50	175.00
Close Range	mm	24	23	45	40	110	100	150	200
Range	mm	2	4	10	20		40	100	200
Extended Far Range	mm	26.25	27.50	56.25	62.50	132.50	145.00	262.50	425.00
Far Range	mm	26	27	55	60	130	140	250	400
Noise[2]	μm RMS	0.325	0.650	1.625	3.250		6.500	16.500	32.500
Analog Out Scale Factor	$\mu m/mV$	0.250	0.500	1.250	2.500		5.000	12.500	25.000
Digital Resolution[3]	μm	0.038	0.076	0.191	0.382	0.382	0.763	1.907	3.815
Laser Angle	θ	45°	45°	30°	30°	20°	20°	12°	8°
Spot Size[4]	μm	30		36			100		130

[1] Linearity guaranteed at standard range
[2] ±White photo paper at 500Hz
[3] Minimum Digital Resolution = FSO/65535
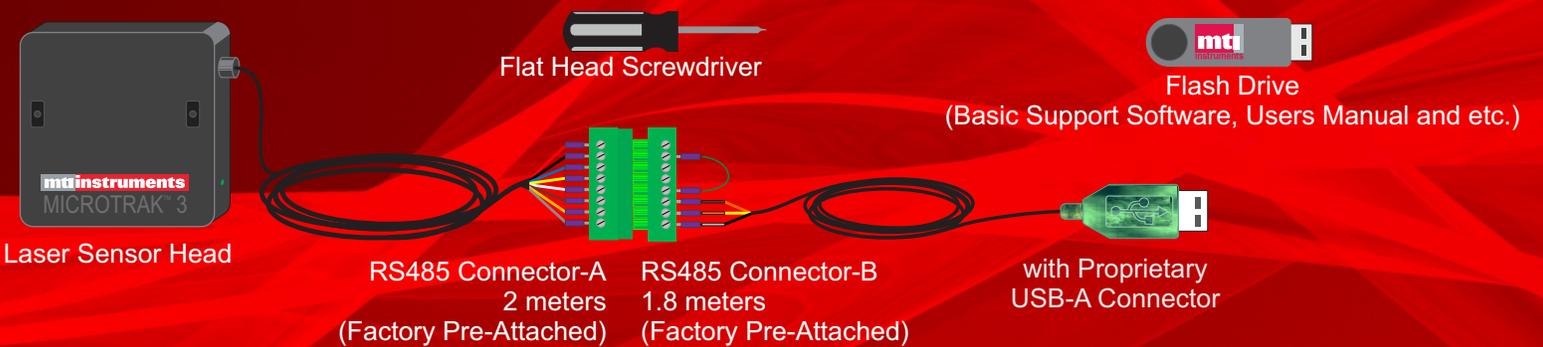[4] Major diameter measured at standoff

Diffuse Mode

Provides better accuracy on high contrast changes on fast moving targets.

Specular Mode *(recommended for shiny surfaces)*

$$\text{Tilt Angle Specular Mode} = 0.5 \times \text{laser angle}$$
(half of laser angle)

What's in the box?

Laser Sensor Head

Flat Head Screwdriver

Flash Drive
(Basic Support Software, Users Manual and etc.)

RS485 Connector-A
2 meters
(Factory Pre-Attached)

RS485 Connector-B
1.8 meters
(Factory Pre-Attached)

with Proprietary
USB-A Connector

Technical Specifications

- Laser Power[1]: <5mW
- Laser Class (IEC 60825): 3R
- Frequency Response: Up to 20kHz[2]
- Measurement Rate: 40,000/sec.
- Operating Temperature Range: 0°C to 40°C
- Storage Temperature Range: -20°C to 70°C
- Humidity Range: 10 to 95% Non-Condensing
- Temperature Stability: 0.05% FSR/°C
- Digital Interface: RS-485/USB (Half Duplex)
- Supplied Cable Length: 2m ±0.025m *(other cable length optional)*
- Supply Voltage: SELV[3]: 15 to 28VDC
- Nominal Supply Voltage: SELV[3] 24VDC
- Maximum Power Draw: 2.8W
- Output Impedance: 50Ω
- Nameplate Range Voltage Output: 1 to 9V
- Extended Range Voltage Output: 0 to 10V
- Software Selectable Filters: 0.1Hz, 1Hz, 25Hz, 200Hz, 1kHz, 4kHz, 20kHz
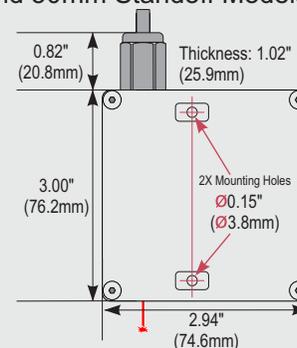- Nominal Laser Wavelength[4]: 670nm

[1]*Laser power is based on standard products.*
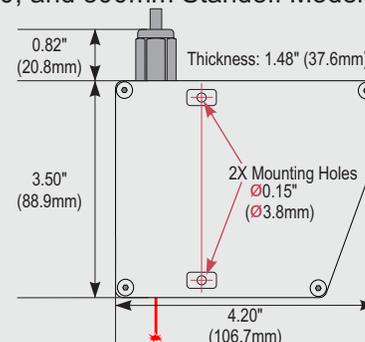[2]*Measurement based on analog output*
[3]***Safety Extra Low Voltage***
[4]*Nominal laser wavelength is based on standard products.*

25 and 50mm Standoff Models

0.82" (20.8mm) — Thickness: 1.02" (25.9mm)
3.00" (76.2mm)
2X Mounting Holes Ø0.15" (Ø3.8mm)
2.94" (74.6mm)

120, 200, and 300mm Standoff Models

0.82" (20.8mm) — Thickness: 1.48" (37.6mm)
3.50" (88.9mm)
2X Mounting Holes Ø0.15" (Ø3.8mm)
4.20" (106.7mm)

Optional Accessories

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

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

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

Universal Input Power Supply
(DIN Mount) Assembly
P/N: 8000-6925

Includes power cord and 24VDC harness (specify country for correct line cord)

BNC to Ferrule Converter
P/N: 8000-6782

PanelPilot Meter
To bundle a programmed panel meter with your purchase, contact MTI Instruments for support and pricing.
(See App Note)
P/N: 8000-6333

Other Accessories	Product Number
SDK with LabVIEW included	2075-0066
Replacement Connector-A	2100-2085
Replacement Connector-B	2100-2086
Extension Cable 1m	8000-6923-001
Extension Cable 2m	8000-6923-002
Extension Cable 5m	8000-6923-005

FDA compliant   CE