

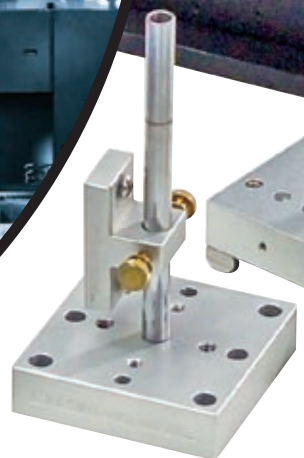
LASER MICROGAGE 2D



DUAL-AXIS MEASURING & ALIGNMENT SYSTEM



Pinpoint
Laser Systems





PRECISE

CONVENIENT

AFFORDABLE

EASY TO USE

- CHECK MACHINE TOOLS
- INSTALL NEW MACHINERY
- ALIGN GEARBOXES AND BEARINGS
- ALIGN ROLLS AND WEB SYSTEMS
- ALIGN BORES AND SHAFTS
- SET AND ALIGN TRACKS AND RAILS

PUT THE TIME AND MONEY SAVING BENEFITS OF THE LASER MICROGAGE 2D TO WORK FOR YOU.

The Laser Microgage 2D is compact, easy to use, and intuitive. It makes alignments and measuring possible using incredibly high standards and measuring resolutions as precise as 0.0001 inch (2.5 microns) at ranges of 150 feet (45 meters) and longer.

Pinpoint's headquarters and state of the art manufacturing facility is located on Boston's North Shore.

LASER MICROGAGE 2D BENEFITS

- Improves machinery efficiency
- Reduces equipment down time
- Extends machinery life
- Increases manufacturing profits
- Reduces dependence on outside contractors
- Allows for a fast return on investment
- Versatile design can be used in many places
- Supports preventative maintenance programs
- Easy to use



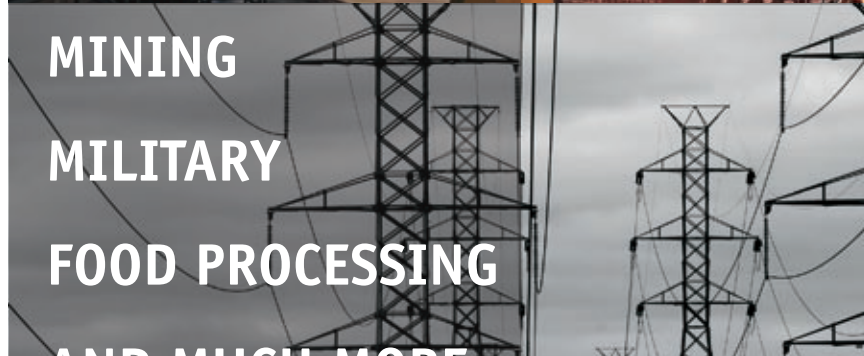
**PINPOINT'S LASER
MICROGAGE 2D
IS THE CHOICE
OF INDUSTRY
PROFESSIONALS**

From ocean going vessels to machine shops to aircraft manufacturers, the Microgage 2D is being used in a wide variety of industrial measuring and alignment tasks. Users appreciate the ease of use and the convenience of having two-axis measuring capability and precise measurements to 0.0001 inch.

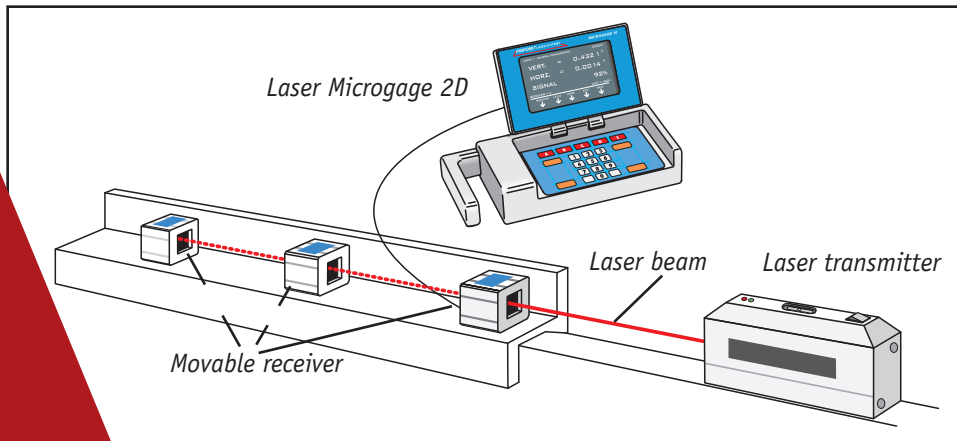
**MACHINERY
UTILITIES
AIRCRAFT/
AEROSPACE
MEDICAL
SHIPBUILDING
ELECTRONICS**

**MINING
MILITARY
FOOD PROCESSING
AND MUCH MORE**

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a comprehensive
list of Laser
Microgage 2D
benefits.

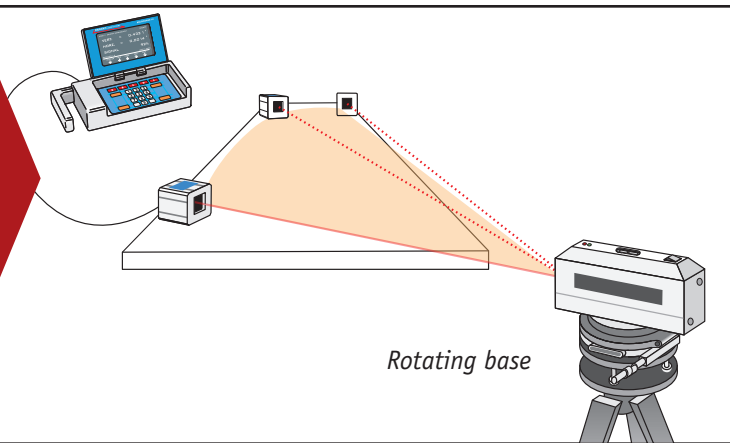


STRAIGHTNESS, LINEAR MEASUREMENTS



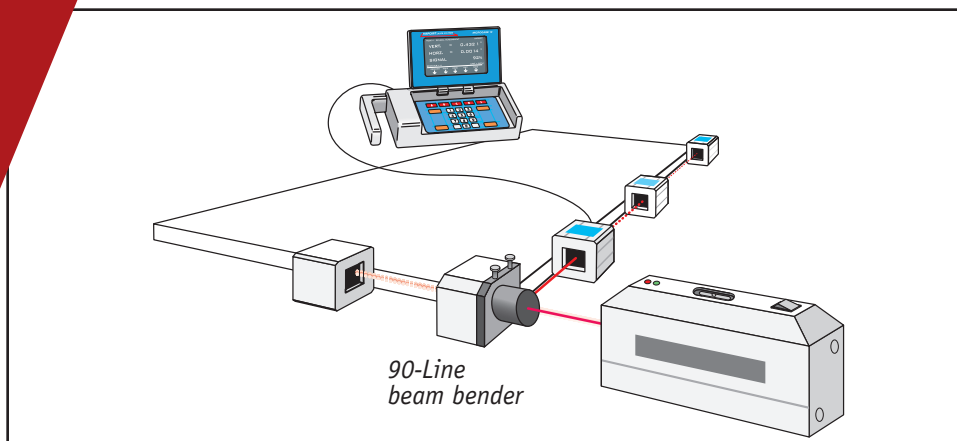
The Microgage 2D receiver detects instantly if a linear run is straight and true. Detect even the slightest deviations in long machinery beds, profile assemblies, measure machinery deflection, track alignment, and more.

FLATNESS, PLANER MEASUREMENTS



Set the laser transmitter on our adjustable rotating base to define a flat plane of laser light for measuring surface flatness and aligning components and assemblies in a precise plane. Perfect for profiling machine beds, adjusting web and roller systems, checking gantry travel, setting tracks and rails, and positioning machinery.

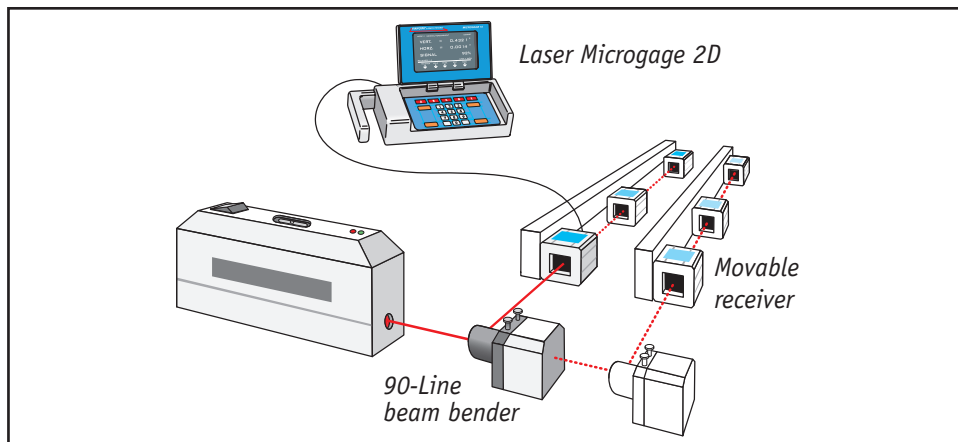
SQUARENESS, PERPENDICULAR MEASUREMENTS



Expand the options for geometric measuring and alignment with the 90-Line Right Angle. The 90-Line redirects the laser beam at a precise right angle, enabling the digital receiver to provide measurements of squareness. Applications include: adjusting the Z axis on machine tools, squaring machinery and equipment, aligning gantry rails and cross bridges, adjusting web and roller systems, checking gantry travel, setting tracks and rails, and positioning machinery.

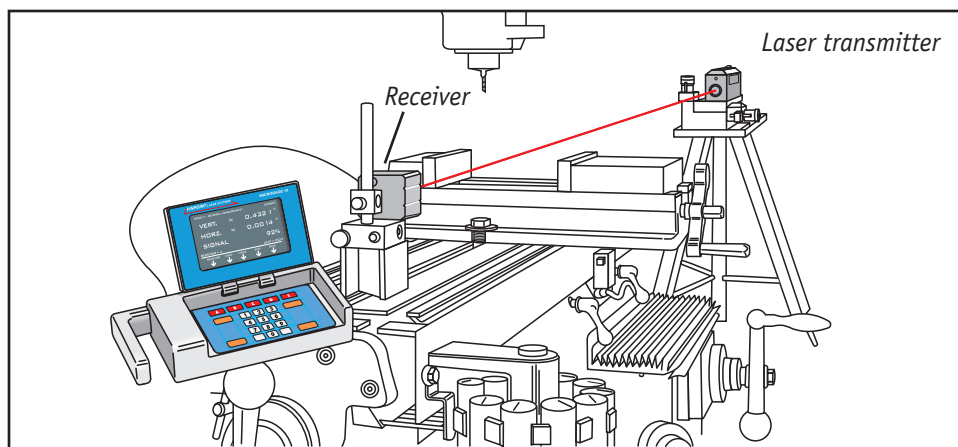
**LASER 2D
MICROGAGE
CAPABILITIES**

PARALLELISM MEASUREMENTS



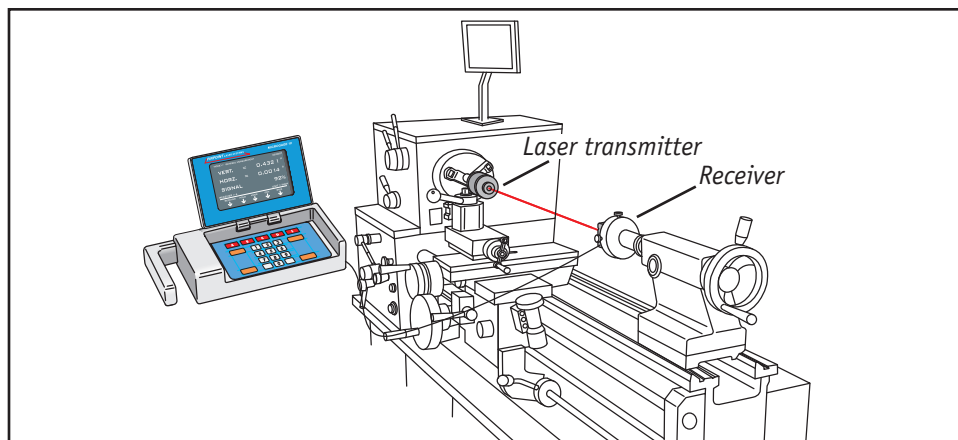
Easily achieve pairs of parallel lines by moving the 90-Line Right Angle to different locations along the beam path and comparing readings along each line. Check assemblies, align rolls and idlers, adjust web systems, position tracks and guide rails, adjust gantry and stage systems, position moving slides, and other applications.

RUN OUT MEASUREMENTS



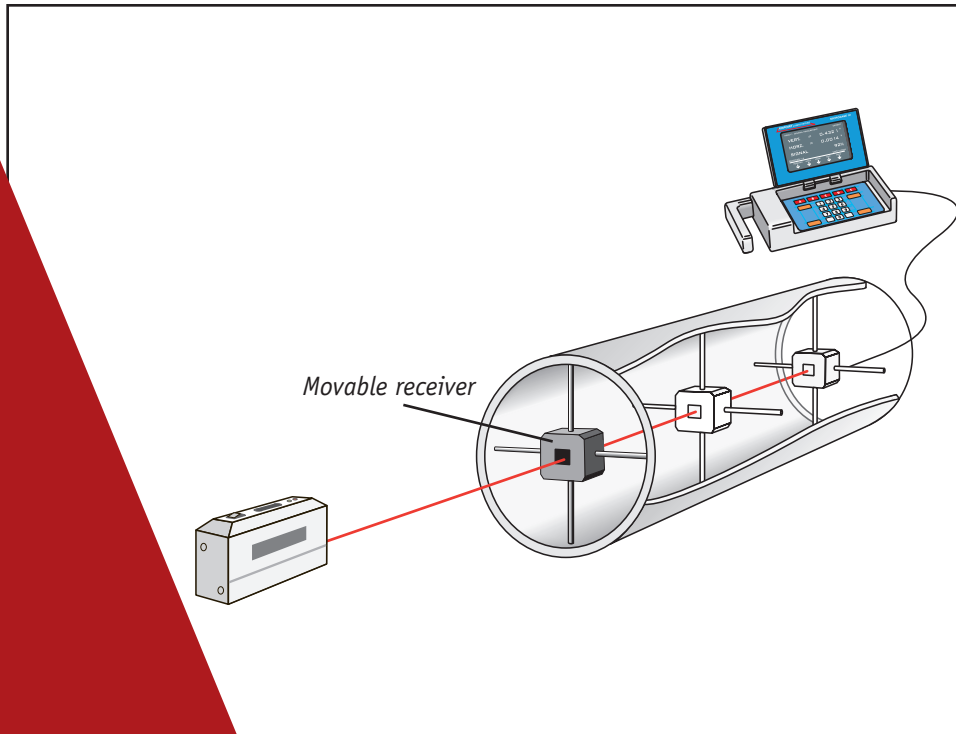
Attach the Microgage receiver to a moving machine slide or assembly and measure the run-out in the travel. Multiple machinery axes can be checked and measurements made over long distant runs. Quickly find worn machinery areas and create compensation tables or use the Laser Microgage to re-align machine travel. High precision readings are ideal for machine tools, printer heads, scanners and other moving mechanical devices.

LATHE AND SPINDLE ALIGNMENT



Placing a laser in a machine tool spindle or collet or in a lathe chuck projects a precise laser reference line for measurements. Locating the Microgage receiver on the tool holder, tailstock, bar feeder, and other machinery elements is a precise and easy way to check alignment and verify that the machine runs straight and true. These quick, precise measurements are ideal for lathes, CNC turning centers, boring machines and other spindle based tools.

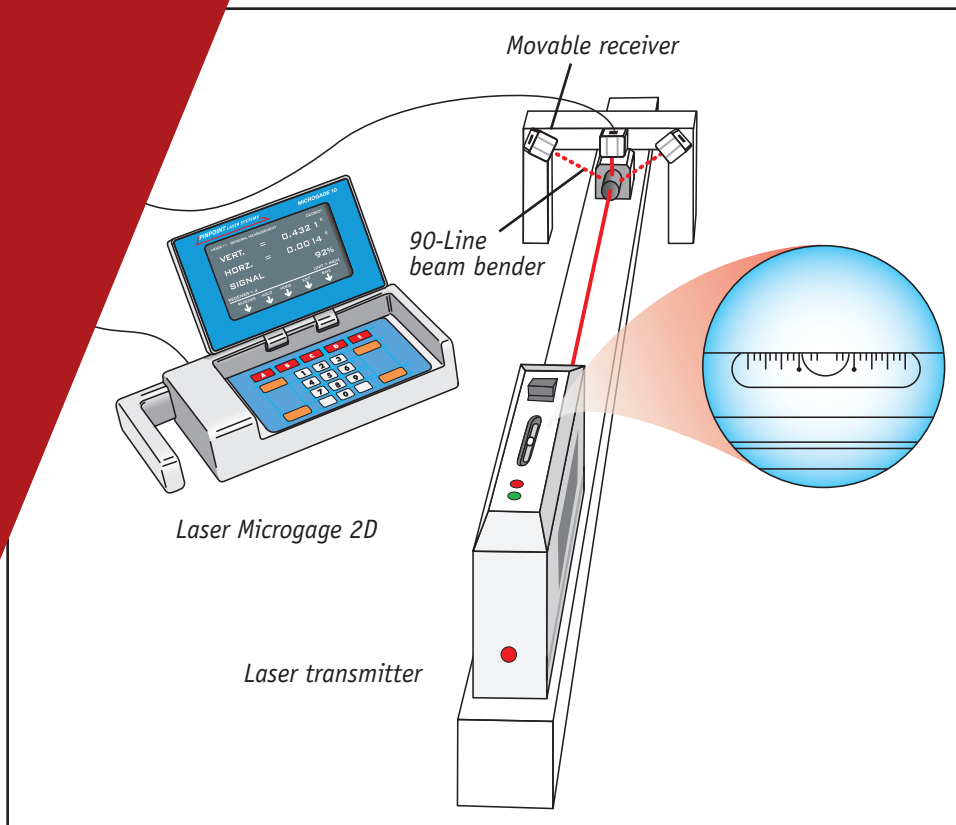
DUAL-AXIS BORE ALIGNMENT



The Microgage laser forms a precise reference beam for checking bore alignment, parallelism, runout, and centerline position. The laser reference beam can be adjusted and centered inside single or multiple bore tubes. The Microgage receiver, supported on a variety of mounts, can check bore position, concentricity, parallelism, and other geometric features. Ideal for checking piston and ram alignment, adjusting propulsion shafts and bearings, evaluating engine bore tubes, and extruder screw alignment.

LASER 2D MICROGAGE CAPABILITIES

MACHINERY LEVELING



A precision level on the laser transmitter allows for leveling and adjusting the laser reference beam to align and level machinery and production equipment. A series of adjustable mounts for the laser transmitter and other Pinpoint accessories, expand the capabilities for gantry alignment, checking machine tools, squaring axes, measuring runout and travel errors, and many other applications.

PINPOINT'S LASER MICROGAGE 2D: MADE FOR THE MOST EXACTING JOBS, BUILT WITH DEMANDING PRECISION

Our customers expect nothing but the highest standards in our innovative, intuitive, solidly built measuring instruments. After all, precision is our goal.



Visit www.pinlaser.com for a partial list of our satisfied customers and a comprehensive list of Laser Microgauge 2D benefits.



- EASY TO USE
- PRECISE MEASURING AND ALIGNING CAPABILITIES
- TWO- OR FOUR-AXIS MEASUREMENT PER RECEIVER
- HANDLES UP TO FOUR VERSATILE RECEIVERS
- KEYPAD ALLOWS EASY DATA ENTRY AND CONTROL
- DISPLAY PROVIDES EASY INSTRUCTIONS
- OPERATES OVER LONG WORKING RANGES
- CLEAR READABLE LCD GRAPHICS DISPLAY
- ALIGNMENT UPDATE IN REAL TIME
- BATTERY OPERATED
- RUGGED COMPACT LASER AND RECEIVER DESIGN
- HIGHLY PORTABLE, FITS INTO COMPACT CASE
- COMPUTER INTERFACE AND SOFTWARE OPTIONS
- EXPANDABLE KITS COVER ALL APPLICATIONS



SATISFIED MICROGAGE CUSTOMERS

3M CORPORATION	MASTERFOODS, USA
AIRBUS	MEAD PACKAGING
ALCOA, INC.	MILLIPORE CORPORATION
ANALOG DEVICES, INC.	M & M MARS, INC.
AXCELIS TECHNOLOGIES, INC.	MERCK & COMPANY
BELL HELICOPTER	NATIONAL OILWELL
BOEING	DEPARTMENT OF NAVY
BOSTON SCIENTIFIC	NAVISTAR INTERNATIONAL
CONTINENTAL PLASTICS CORP.	NEWPORT NEWS SHIPBUILDING
CONTINENTAL AIRLINES	NORTHROP GRUMMAN CORP
CORNING INC.	OTIS ELEVATOR CO.
DETROIT EDISON	OWENS CORNING
DUPONT	PHILIPS LIGHTING
ELECTRIC BOAT CORPORATION	PPG INDUSTRIES, INC.
ETHAN ALLEN, INC.	QUAD-GRAPHICS
FIELD AVIATION COMPANY, INC.	REYNOLDS METALS COMPANY
FLEXCON COMPANY, INC.	SANDIA NATIONAL LABS
FORT HOWARD CORPORATION	SIEMENS MEDICAL SOLUTIONS
GE HEALTHCARE	SMITH KLINE BEECHAM
GENERAL MOTORS	SMITHSONIAN
GOODYEAR TIRE & RUBBER	STANLEY TOOLS
HEIDELBERG WEB SYSTEMS	SUNOCO PRODUCTS
HEWITT, LTD	TRW
HITACHI MEDICAL SYSTEMS	UNILEVER BEST FOODS – LIPTON
HITCHINER MANUFACTURING, INC.	U.S. COAST GUARD
HONEYWELL, INC.	U.S. POSTAL SERVICE
HEWLETT PACKARD	VARIAN SEMICONDUCTOR
I.M.C. CANADA LTD	WALT DISNEY IMAGINEERING
KIMBERLY CLARK	WESTINGHOUSE
LOCKHEED MARTIN	WEYERHAEUSER COMPANY

Pinpoint

Laser Systems

EASY. MOBILE. ALIGNMENT.

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www.pinlaser.com

MICROGAGE 2D PRODUCT SPECIFICATIONS

MEASURING SYSTEM:

Measurement Resolution:	0.0001 inch (2.5 micron)
Measurement Range:	± 0.350 inch dual axis X-Y $\pm 0.5''$ single axis (± 9 mm or ± 13 mm)
Operating Distance:	0 to 150 feet standard ($> 150'$ optimized)(45 meters)
Measurement Accuracy:	± 0.0002 inch or 1% of measurement (5 micron)

LASER CHARACTERISTICS:

Laser Source:	Laser Diode, 635 Nm, < 1 mW, Class IIIA (Class II Available)
Laser Beam Accuracy:	< 2 arc-seconds
Laser Beam Repeatability:	< 1 arc-second
Laser Level:	Bubble, machinists level < 10 arc-second
Laser Power:	4 AA-Alkaline batteries
Laser Run Time:	> 20 hours per battery set
Laser Controls:	On/Off switch, laser on, low battery
Laser Dimensions:	8" long x 2" wide x 3" high (203mm x 51mm x 76mm)
Laser Mounting Points:	1/4-20 and 10-32 mounting holes
Laser Housing:	Solid machined aluminum & hard anodized coating

RECEIVER CHARACTERISTICS:

Active Detection Area:	.750 inch x .750 inch (19mm x 19mm)
Protective Window:	Bandpass filter, metallic coating
Receiver Dimensions:	2.00" high x 2.00" wide x 2.00" deep (51mm)
Receiver Mounting:	1/4-20 and 10-32 mounting holes
Receiver Cable:	10' long, reinforced cladding, black

DISPLAY CHARACTERISTICS:

Display Unit:	Multi, dual-axis processing system
Display Inputs:	Up to 4 dual-axis receivers at one time
Display Screen:	LCD graphic screen 5.0" x 3.0" (127mm x 76mm)
Display Controls:	Keypad, zero, function, multi-purpose keys
Display Information:	X/Y data, signal, functions, alignment steps
Display Units:	Inch, MM, Mils, Custom
Display Resolution:	0.0001 inch (2.5 micron)
Display Processing:	Multiple user programs for alignment
Display Connections:	4 Receiver inputs, USB, Aux, Serial
Display Interface:	USB & Serial RS232c
Interface Communication:	Pinpoint Capture (Windows-based)
Display Power:	2 C-cell Alkaline
Display Run Time:	> 30 hours per battery set
Display Housing:	Solid machined aluminum & hard anodized coating
Display Housing Design:	Flip-up display, reversible handle
Display Housing Dimensions:	12" long x 5" wide x 2" high (305mm x 127mm x 51mm)
Operating Conditions:	30° to 130° F (-10° to $+55^{\circ}$ C), Humidity 0-95%, non-condensing