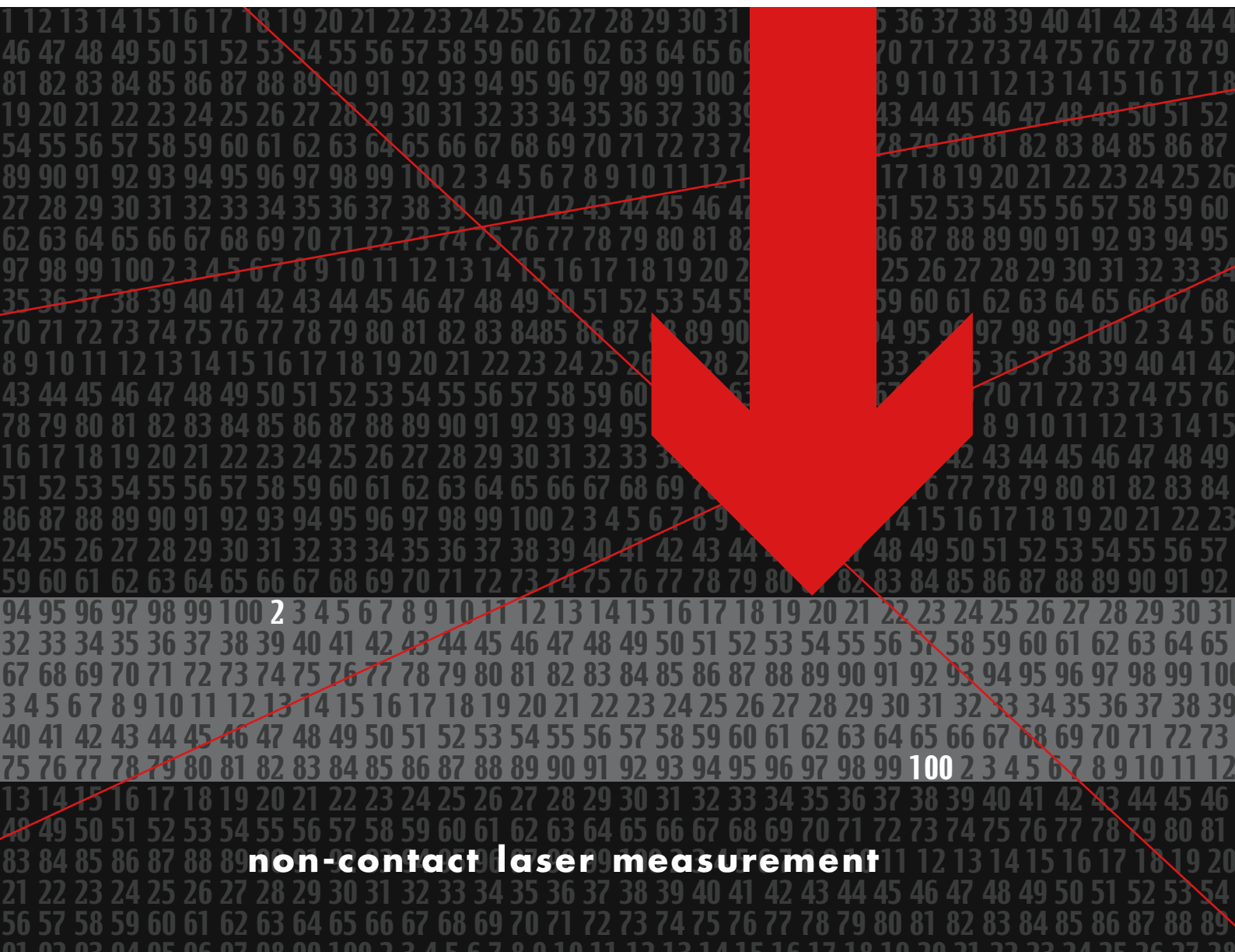


# ATLAS

 **DIGITAL LASER SENSORS**

with measurement ranges from 2 mm to 100 mm (0.08" - 4")



**non-contact laser measurement**





## LAP ATLAS LASER TRIANGULATION SENSORS.



### HIGHLIGHTS.

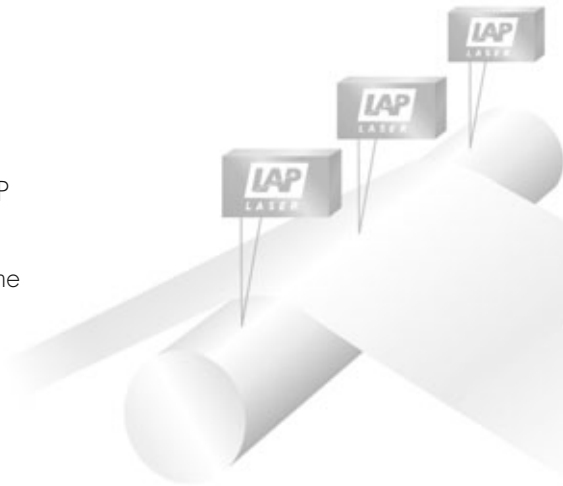
- Extremely high resolution (down to 0.04  $\mu\text{m}$ /0.002  $\mu\text{inch}$ )
- Very compact and lightweight
- Fast measurement rate (up to 10 kHz)
- Very high precision on virtually all surfaces
- Versatile interface options
- Programmable filter functions

### NON-CONTACT, HIGH-PRECISION, EFFICIENT.

Building on the successes and proven technology of the LAP POLARIS and LAP ANTARIS series sensors, LAP now offers the LAP ATLAS, a digital measurement sensor of smaller proportions, yet offering all of the precision of its larger siblings. The LAP ATLAS, having a user programmable DSP, offers flexibility no other sensor in its class can match. The pure digital signal processing from the CMOS-array through the DSP to the RS485 interface retains the quality of the measurements. Optional RS232, Profibus DP, analog or Ethernet UDP interfaces add versatility. LAP ATLAS sensors are especially suitable for automation and in-line production monitoring, paying in short time through improved production documentation and quality assurance.

### SMALL, VERSATILE, ADAPTABLE.

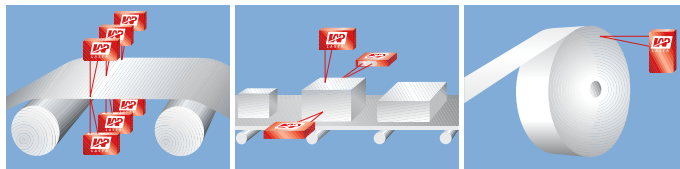
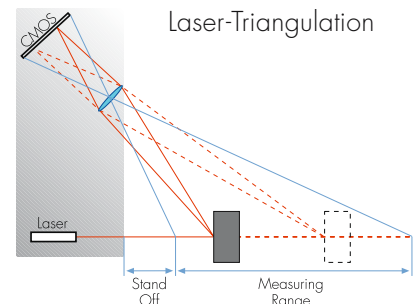
LAP ATLAS sensors can easily be integrated in machinery and equipment due to their small size. They measure virtually any surface, independent of color and surface finish. The automatic control of laser power and exposure time yields precise results on polished aluminum as well as on unvulcanized rubber. LAP ATLAS sensors do not require any external controllers and can be connected via analog or digital interfaces. In instrumentation and control, tolerance checking, sorting, position or alignment detection, LAP ATLAS laser sensors provide the precision and reliability to solve your measurement task!



# SOLUTIONS FOR YOUR COMPANY.

## THE OPERATING PRINCIPLE.

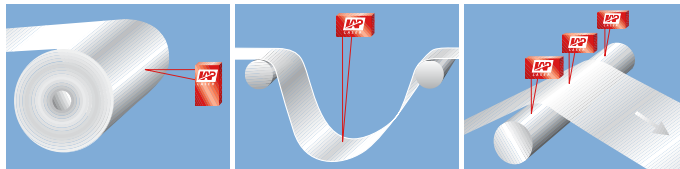
The LAP ATLAS sensors operate according to the triangulation method. A laser beam emitted from the sensor creates a visible spot on the surface of the measured object. Depending on the distance, a CMOS line scan camera besides the laser "views" this spot under varying angles. Using this angle and the known distance of laser and camera, the Digital Signal Processor computes the distance between the sensor and the measured object.



Multi-track differential thickness measurement: strip, web, boards

Width, height, sorting, classification

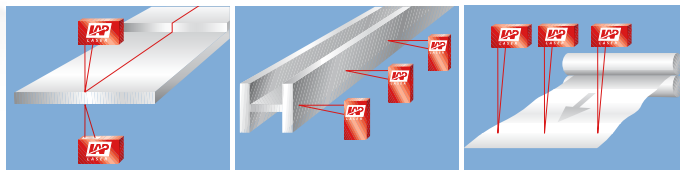
Coil: face profile measurement



Distance measurement, diameter of coils, rolls

Sag, buffer loop

Thickness measurement against roll, roll runout compensation, detection of taper



Thickness, double-layer detection, doubling, folding, longitudinal profile

Straightness

Edge waviness, flatness

## THE COMPLETE SOLUTION.

LAP ATLAS sensors measure distance, thickness, width, height, straightness, flatness, profiles and much more. They simplify measurement by combining easy operator setup and flexible interface modules. Multi-sensor applications, which in the past would have required external processors and programming, are now done easily in LAP ATLAS using the on-board DSP and multi-drop RS485 capability, providing easy communication and math capabilities.

LAP ATLAS also provides unrivaled real-time process monitoring. Immediate and precise feedback of process parameters allows corrections to be made quickly with minimal downtime.

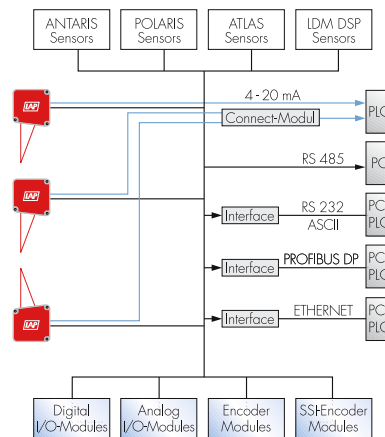
## EXAMPLE APPLICATIONS.

- Bar material (endless/piece): distance, width, thickness, straightness, longitudinal profile, cross profile
- Web material and boards: distance, width, thickness, flatness, longitudinal profile, cross profile, sag
- Materials on drums: diameter, face profile
- Other examples: position, alignment, deflection, sag, concentricity, clearance, runout

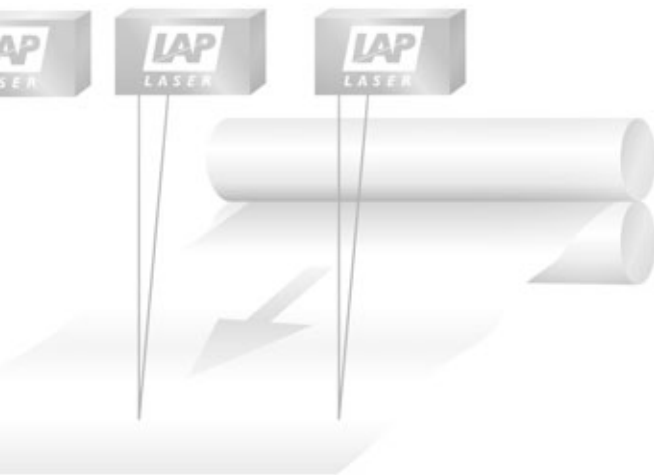
# SIMPLE INTEGRATION IN YOUR PROCESSES.

## DIGITAL PRECISION.

In contrast to conventional laser sensors, LAP ATLAS sensors combine a high resolution CMOS line scan camera with a DSP to provide pure digital acquisition and processing of measured values. This combination provides for a very stable output signal, regardless of surface conditions. LAP ATLAS sensors can communicate directly via their RS485 interface, and compute results, e.g. material thickness, without a "third box". The RS485 interface guarantees precise transmission in noisy industrial environments, even over long distances. A Windows® setup and softscope software allows full configuration of the LAP ATLAS sensor parameters for special requirements.



The integrated signal processing and the wide range of interfaces lets you easily handle applications from individual sensors up to complex multi-sensor measuring systems.



## EASY INTEGRATION.

LAP ATLAS sensors are equipped with:

- RS485 serial interface
- 4 - 20 mA analog output

Additional interface modules are available for:

- RS232 ASCII
- Ethernet UDP
- Profibus DP

## DATA ACQUISITION AND SPC SOFTWARE.

LAP offers software for data collection, visualization and documentation. For archiving it can be provided with a SQL database or it can be linked to existing customer databases. Software versions are available for distance measuring with single sensor to multi-track measurement of thickness, profile or flatness and for profile measurement with traversing sensors.

\*Windows is a registered trademark of Microsoft Corporation in the United States and other countries.



**L A S E R**

Sensors, Line Lasers, Projectors  
Systems & Solutions

# TECHNICAL DATA.

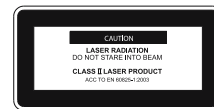
## MODELS.

### LAP ATLAS

Model	Measuring Range mm/inch		Stand Off mm/inch	Resolution $\mu\text{m}/\mu\text{inch}$	Repeatability $\mu\text{m}/\mu\text{inch}$	Linearity $\mu\text{m}/\mu\text{inch}$
LAP ATLAS 2	2	2/0.08	40 /1.6	0.033 /0.0013	$\pm$ 1.5/0.06	$\pm$ 2 /0.08
LAP ATLAS 5	5	5/0.2	53 /2.1	0.083 /0.0033	$\pm$ 3.5/0.14	$\pm$ 5 /0.2
LAP ATLAS 10	10	10/0.4	64 /2.5	0.166 /0.0066	$\pm$ 6.5/0.26	$\pm$ 10 /0.4
LAP ATLAS 30	30	30/1.2	70 /2.8	0.5 /0.02	$\pm$ 20 /0.79	$\pm$ 30 /1.2
LAP ATLAS 70	70	70/2.8	95 /3.7	1.17 /0.046	$\pm$ 45 /1.77	$\pm$ 70 /2.8
LAP ATLAS 100	100	100/3.9	105 /4.1	1.67 /0.066	$\pm$ 65 /2.56	$\pm$ 100 /3.9

## GENERAL DATA.

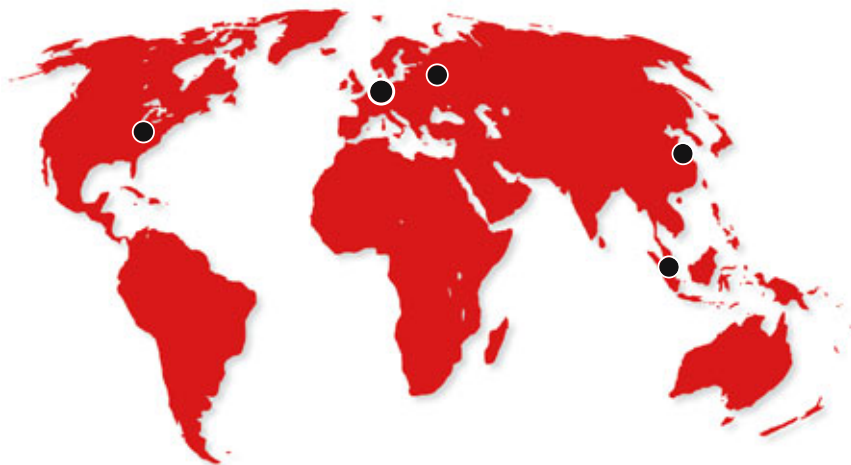
Laser type, wavelength	Diode, 670 nm, red
Laser power, class	1mW, 2
Measuring frequency	up to 10 kHz
Interfaces	analog 4 - 20 mA, serial RS485
Interface modules	RS232 ASCII, Ethernet UDP, Profibus DP
Power supply	24 VDC, 100 mA
Enclosure rating	IP 54
Dimensions	65x80x32 mm / 2.56x3.15x1.26 inch
Weight	250 g
Ambient conditions	0 - 40 °C, 35 - 85 % rel. humidity, non-condensing



LAP has a great deal of experience with customer-specific turn-key measurement systems in a multitude of different industries. Please inquire!



Sensors, Line Lasers, Projectors  
Systems & Solutions




---

**LAP Laser LLC.**

Sales, Service

7669 Wooster Pike  
Cincinnati, OH 45227  
USA

Phone +1 (513) 271-4529  
Fax +1 (513) 271-3821  
Email [info-us@lap-laser.com](mailto:info-us@lap-laser.com)

---

**LAP GmbH  
Laser Applikationen**

Headquarter: Production, Sales, Service

Zeppelinstr. 23  
21337 Lueneburg  
Germany

Phone +49 (0)4131 9511-95  
Fax +49 (0)4131 9511-96  
Email [info@lap-laser.com](mailto:info@lap-laser.com)

---

**LAP Laser Applications  
Asia Pacific Pte Ltd**

Sales, Service

Block 750A, #07-02 Suite 8  
Technopark at Chai Chee  
Singapore 469001  
Singapore

Phone +65 6536 9990  
Fax +65 6533 6697  
Email [info-asia@lap-laser.com](mailto:info-asia@lap-laser.com)

---

**LAP GmbH  
Laser Applikationen  
Представительство в Москве**

1, Казачий переулок 7  
119017 Москва  
Российская Федерация

Тел. +7 495 7304043  
Факс +7 495 7304044  
Email [info-russia@lap-laser.com](mailto:info-russia@lap-laser.com)

---

**LAP Laser Applications  
Asia Pacific Pte Ltd  
Shanghai Representative Office**

Sales, Service

31/F Haitong Securities Tower  
689 Guang Dong Road  
Shanghai 200001  
China

Phone +86 (21) 5047-8881  
Fax +86 (21) 5047-8887  
Email [info-asia@lap-laser.com](mailto:info-asia@lap-laser.com)

---

**Partners**
**Scantron Industrial Products Ltd**

Monarch Centre, Venture Way  
Taunton, Somerset TA2 8DE  
England

Phone +44 (0)1823 333343  
Fax +44 (0)1823 333684  
Email [scantron@scantronltd.co.uk](mailto:scantron@scantronltd.co.uk)  
Web [www.scantronltd.co.uk](http://www.scantronltd.co.uk)

---

**[www.LAP-LASER.com](http://www.LAP-LASER.com)**
**L A S E R**

Sensors, Line Lasers, Projectors  
Systems & Solutions