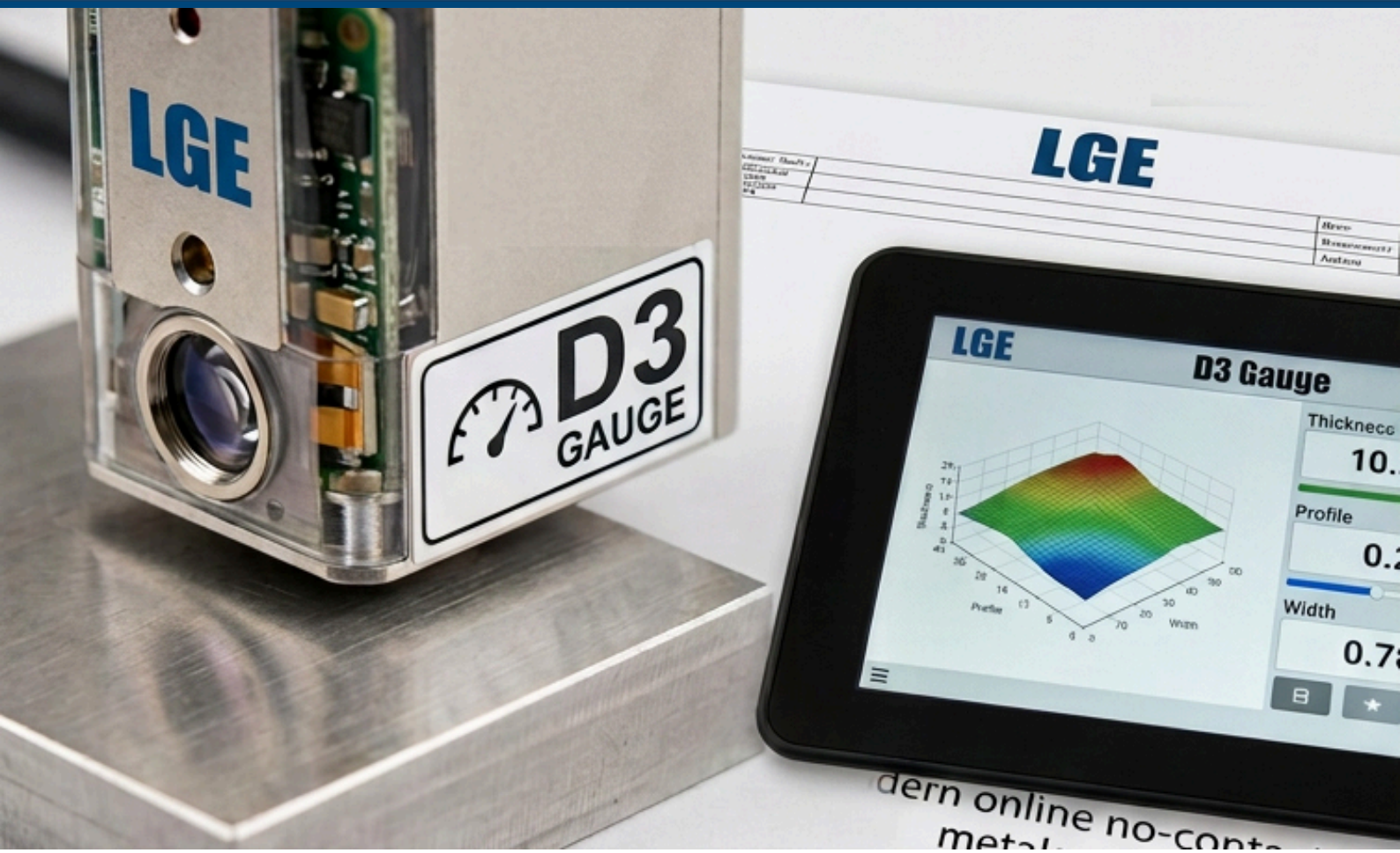
LGE



Accurate by Design.
Proven in the field.

For more visit
lgeweb.com >

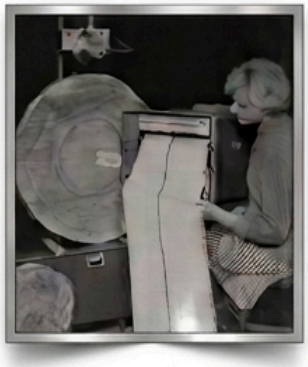


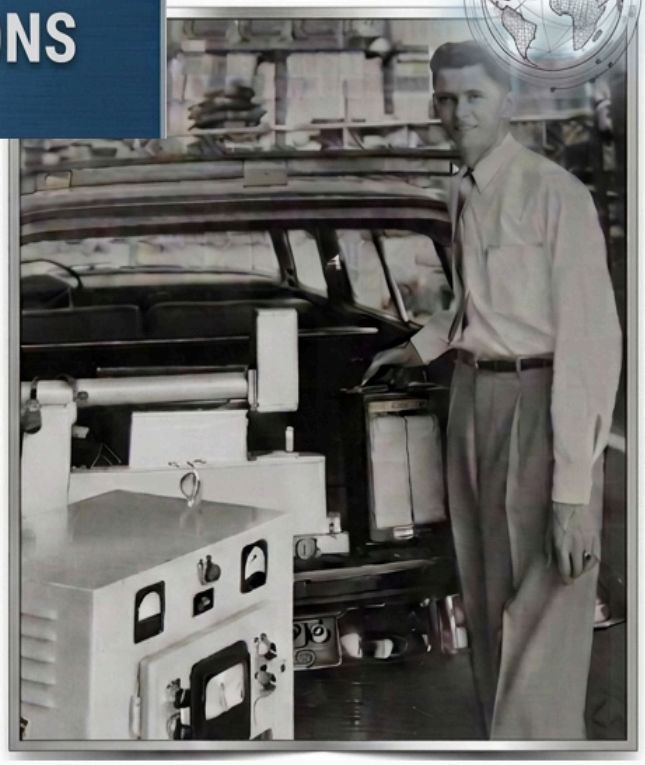


Specialists in numbers that count

30+ Years.
400+ Systems Worldwide.
90% Customers Retention.

TRADITIONS





Open, linear and proven.

Sheffield Bendix Corporation
Measuray Corporation
which are part of the history of the world thickness gauges markets since the 1950s.





Solutions





- Thickness Gauging
- Width, planarity and flatness
- Shape and dimensions
- Fluids concentration control
- Thermal distribution
- Welding inspection
- Shape (hollow profiles, billets and pipes)
- Surface Inspection (flat products)
- Dimensional controls



SMART GAUGING technologies

DIGITAL ON ETHERNET | PC BASED | UP TO DATE | OPEN | READY

100%
- Rugged
- Reliable
- Accurate
- Noise Free
- Digital
- Open

1 x-rays

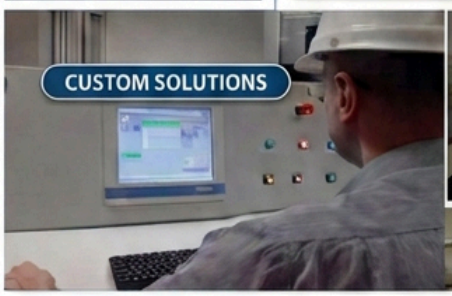
2 laser profilometry

3 vision



HMI & SCADA
on latest Windows, Linux and MAC OS
DATA SERVERS | Remote Maintenance







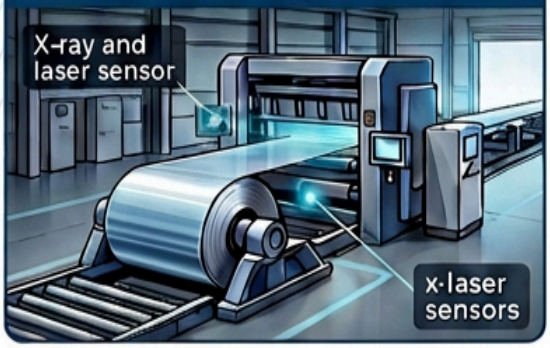
CORE | KERNELS
HARD REAL TIME
ACQUISITION LOOPS
from
100 microseconds



The Core unit software does not perform any fonvat cerwersien, sinca: corwersion is already made into the Smart Which is sending the data.

Applications

FLAT PRODUCTS
(COILS, STRIP, PLATES)



THICKNESS



High-precision X-ray technology for accurate thickness profiles.

- Real-time monitoring.
- For all steel grodes.

WIDTH & EDGES



Laser-based width measurement with high speed and precision.

- Edge profile analysis.

FLATNESS & SHAPE



Multi-track laser sensors for comprehensive flatness control.

- Detects waves, buckles, and shape defects.
- Surface mapping.

CORE TECHNOLOGIES



X-ray



Laser Scanner

SHAPE & STRAIGHTNESS



Full 3D shape scanning for deviation from straightness.

- Ends conditioning.
- Ovality check.

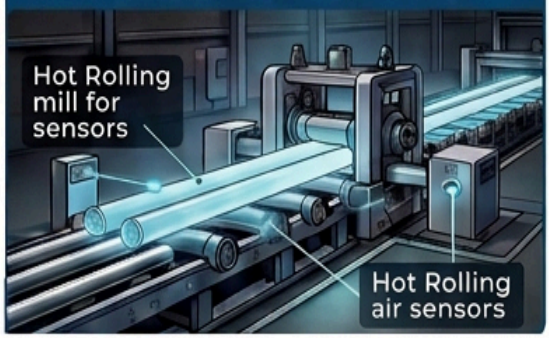
BILLET DIMENSIONS

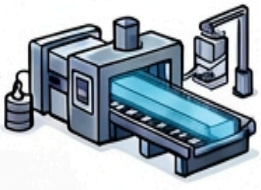


Laser systems for width, height, and diagonal measurement of square and rectangular billets.

- Detects imperfections.

LONG PRODUCTS
(PIPES, BILLETS, BARS)





KEY BENEFITS



- Reduced scrap
- Optimized material usage
- Consistent quality
- Increased production efficiency
- Fully automated

360° Process Control



FLAT PRODUCTS (COILS, STRIP, PLATES)

nGauge Thickness Scanner (X-RAY)



CABINETS



GAUGE MODELS

	nGauge	nG-RTL	D3Gauge	Perfecta
Response time	> 5ms	> 180 microsec	> 19ms	> 16ms
Statistieal noise	+/-0.05%	+/-0.12%	+/-0.05%	+/-0.10%
Accuracy	+/-0.08%	+/-0.10%	+/-0.08%	+/-0.10%
Drift (8h)	+/-0.10%	+/-0.10%	+/-0.10%	+/-0.10%



HMI and SCADA

LGauge Thickness Scanner (LASER)

Models
LG-15
LG-8
CL-150
3HS / 5HS



Embedded Compact Cabinet



Full-size Cabinet



Scanning Frames
Dual heads and multi-sensor configurations

MULTI-POINT DATA ACQUISITION
High-speed laser sensors unparalleled profile resolution.
Modular architecture for customized sensor arrays.



INTEGRATION



Seamless Factory Floor Integration
Engineered for demanding industrial environments. Minimal production downtime for installation.

COMMUNICATION

C C M
Ethernet / EtherCAT IP
Modbus TCP/IP Ethernet
Serial / Analog

ANALYTICS & MONITORING

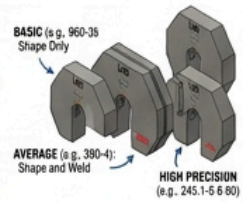


Live Process Monitoring
Halt exception screen and profilitie data deta, and full instant quality alerts.

3DShaper Laser Profilometer

Models
3DS-980
3DS-380
3DS-245





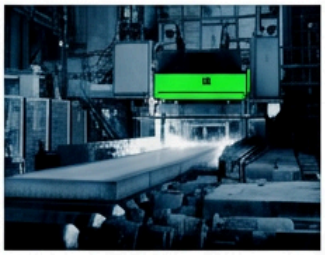
• Non-contact • High-speed • 360° profilometry • Real-time defect detection

LONG PRODUCTS (PIPES, BILLETS, BARS)

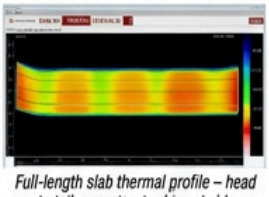
Detectable External Shape:



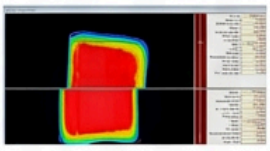
Vision Width Gauge



Full-width and full-length 2D thermal maps of reclalimal is generated in real time



Full-length slab thermal profile – head to tail, opsrator to drive st side



Crop optimization via thermal imaging – head and & tall shape analysis



Thickness and Profile

nGauge Thickness Scanner (X-RAY)



CABINETS

GAUGE MODELS

	nGauge	nG-RTL	D3Gauge	Perfecta
Response time	> 5ms	> 180 microsec	> 19ms	> 16ms
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HMI and SCADA

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CL-150
3HS / 5HS



Embedded Compact Cabinet



Full-size Cabinet



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Dual heads and multi-sensor configurations

MULTI-POINT DATA ACQUISITION
High-speed laser sensors unparalleled profile resolution.
Modular architecture for customized sensor arrays.



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Seamless Factory Floor Integration
Engineered for demanding industrial environments. Minimal production downtime for installation.

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Live Process Monitoring
High resolution screen and profilitie data dela, and full instant quality alerts.

nGauge THICKNESS SCANNER

X-RAY THICKNESS GAUGES









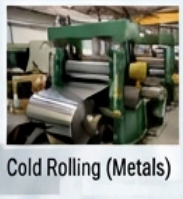
CABINETS

	nGauge	nG-RTL	D3Gauge	Perfecta
Response time	> 3ms	> 100 microsec	> 10ms	> 10ms
Statistical noise	+/-0.05%	+/-0.12%	+/-0.05%	+/-0.10%
Accuracy	+/-0.08%	+/-0.10%	+/-0.08%	+/-0.10%
Drift (8h)	+/-0.10%	+/-0.10%	+/-0.10%	+/-0.10%

GAUGE MODELS



FRAMES



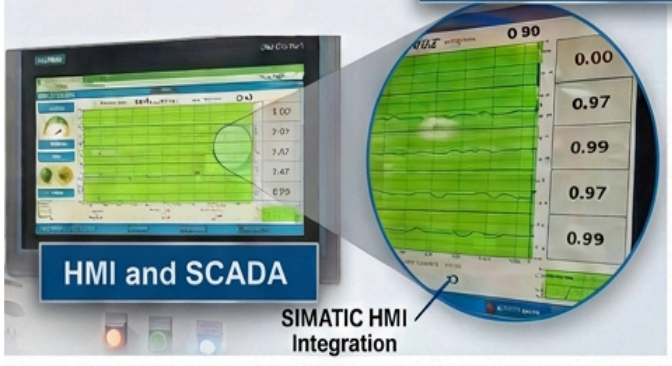
Cold Rolling (Metals)



Plastic Extrusion



Metal Coil Processing



FULL DIGITAL

HPM -HSM - Tandem- Skin Pass- Pickle- Cold Finishing-Extra thin films- Corrective- Electrolytic

LGauge
THICKNESS SCANNER
Precision Meets Industry 4.0

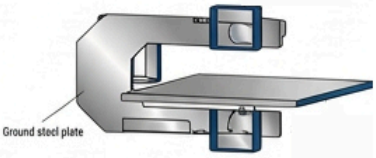
LASER THICKNESS GAUGES

Models
LG-15
LG-8
CL-150
3HS / 5HS


Embedded


Compact Cabinet


Full-size Cabinet







Scanning Frames
Dual-frame and multi-sensor configurations

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Modular architecture for customized sensor arrays.

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Seamless Factory Floor Integration
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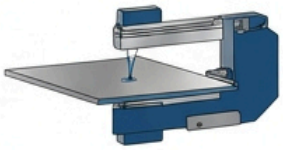


ANALYTICS & MONITORING



Live Process Monitoring
High-resolution screen and profilliro data data, and full instant quality alerts.

COMMUNICATION

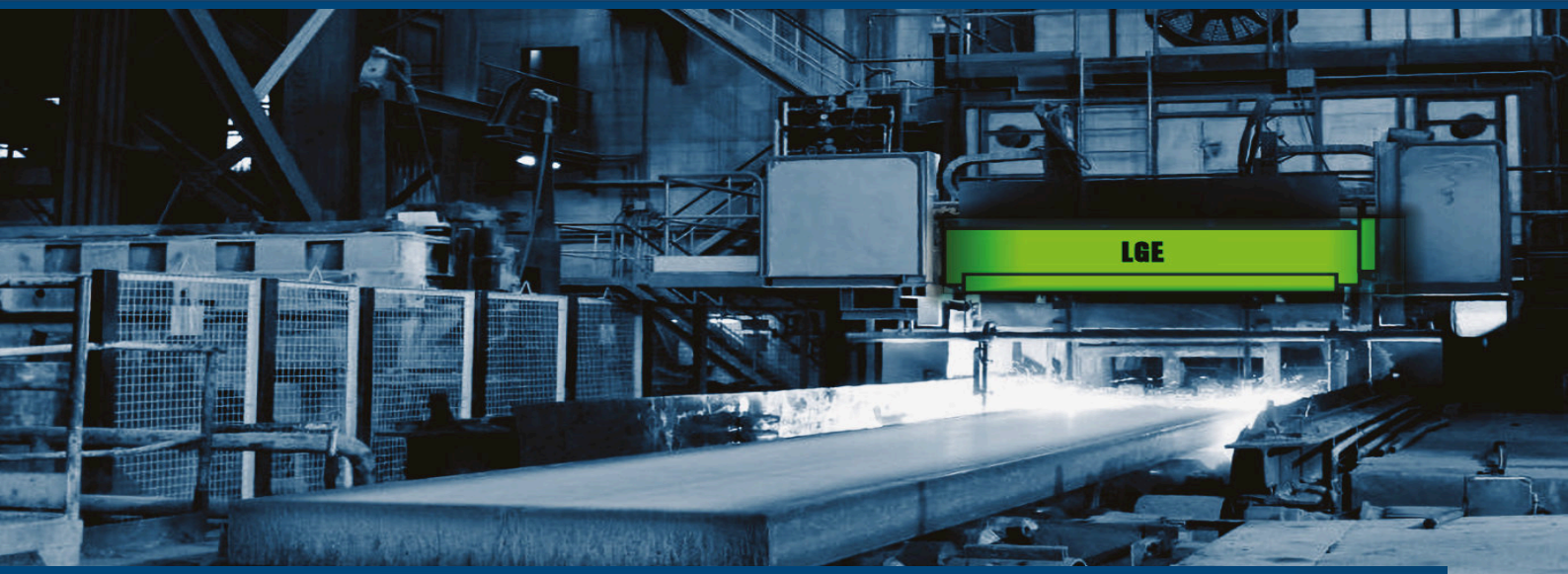
C C M

Ethernet / Ethernet IP
Madbus Over Ethernet
TCP/UP/UDP/IP
Serial / Analog

SCANNING SYSTEMS

0.01mm resolution

Slitting - CTL- Tinning- Skin Pass- Pickle- Cold Finishing-Extra thin films-Extra thick Plates- Recoiling- Corrective- Electrolytic



Width and Flatness





The advanced analytic software (AAS) gives access to a wide range of information which may drive the quality optimization purposes.

Bar details are presented in the data tables to the right of the images. Typical data displayed includes the Bar ID, Thickness, Optimization Criteria (i.e. customer defined strategy),overall width, cut line, cut length, cut status (to cut or not), crop area, crop weight, etc.

Vision Width and Surface Flatness Gauges

Precision for Industry 4.0 Applications

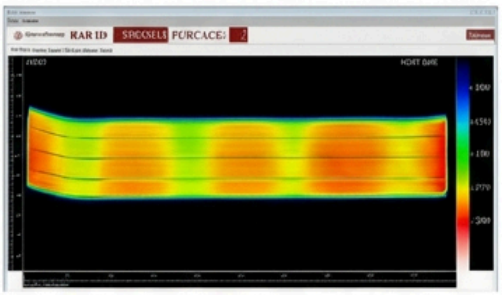
Standard industrial line-scan cameras image hot slab/strip as ii ts exits the refnace or roughing roughing mill

Full-width and full-length 2D thermal maps of reclalimal is generated in real time

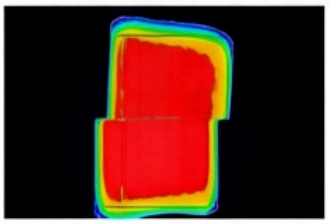
Pixel intensity correlates directly to surface temperature via Planck's radiation law – no thermal cameras required

Accuracy: ±2-3°C across the measurement range

Flexible communications with any L2 System

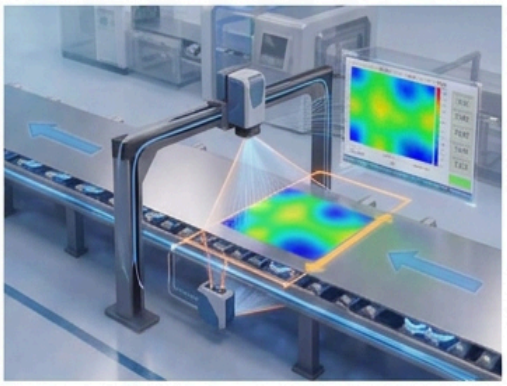


Full-length slab thermal profile – head to tail, operator to drive si side



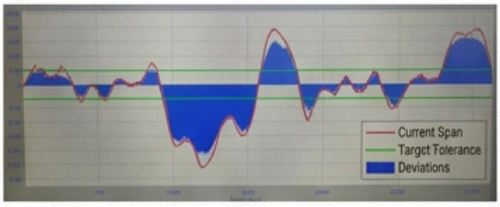
Crop optimization via thermal imaging – head and & tail shape analysis

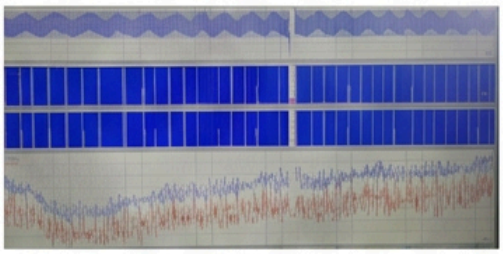
Models: MISPLANA-1100, MISPLANA-800



KEY FEATURES:

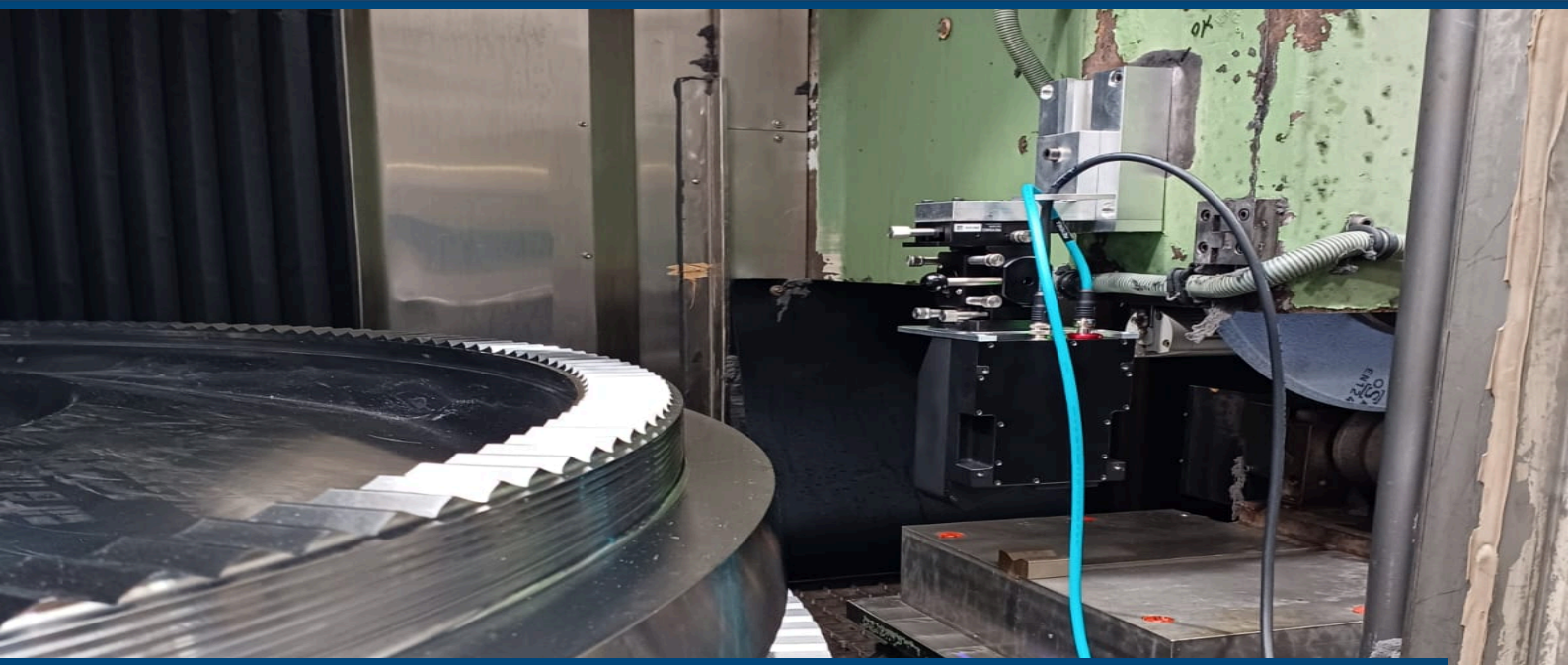
1. Ultra-high resolution
2. Real-time vibration compensation
3. Automated defect classification





Mean Surface Roughness Profile





3D Profilometry



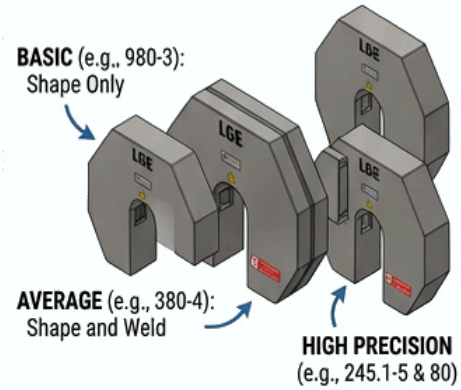
Pipes - Hollow Profiles - Billers - Bars - Rods

3DShaper Laser profilometer

Precision Meets Industry 4.0

Models
3DS-980
3DS-380
3DS-245



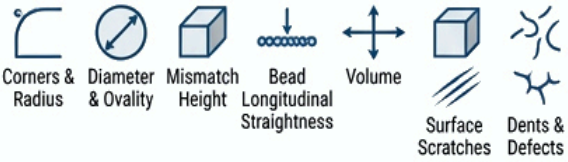


• Non-contact • High-speed • 360° profilometry • Real-time defect detection

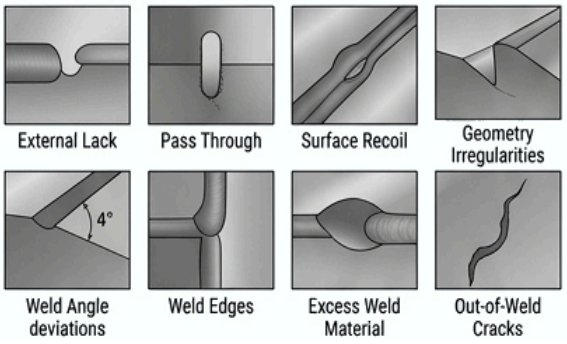
MODEL CAPABILITIES MATRIX

MODEL	SHAPE DETECTION	WELD DETECTION
980-3	YES	YES
380-4	YES	NO
380-5	YES	YES
380.4-245.1	YES	NO
245.1-5	YES	NO
80	YES	NO

Detectable External Shape:



Detectable Weld Defects:



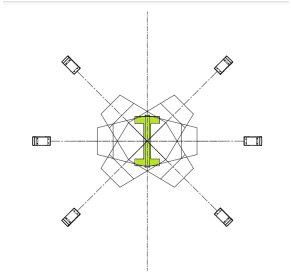
TECHNICAL SPECIFICATIONS

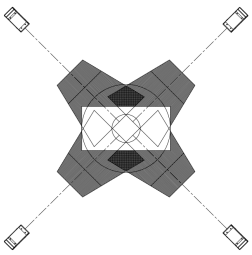
SHAPE - HI-RANGE MINIMUM DETECTABLE DEFECT (mm)			
	X length	Y width	Z depth accuracy
980-3	0.15	0.075	0.50
380-4	0.15	0.075	0.10
380.4-245.1	0.15	0.02	0.05

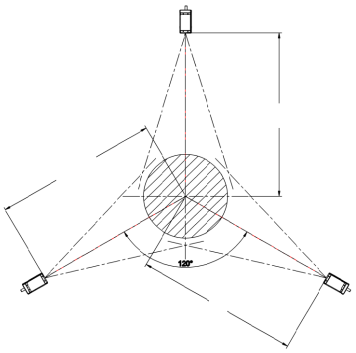
NOT DETECTABLE: • Internal Tensions • Wall Thickness • Inside Cracks

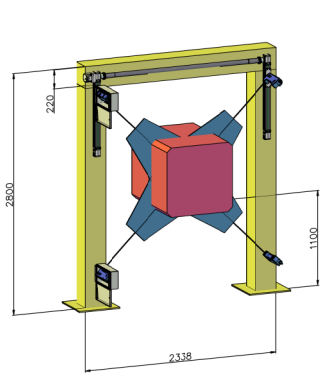


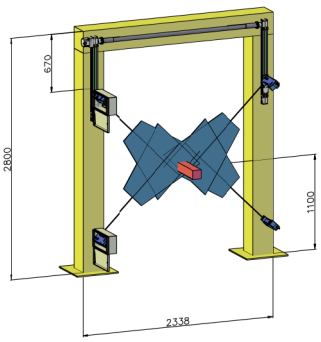
Shape and Dimension



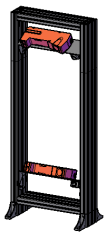


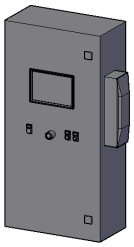


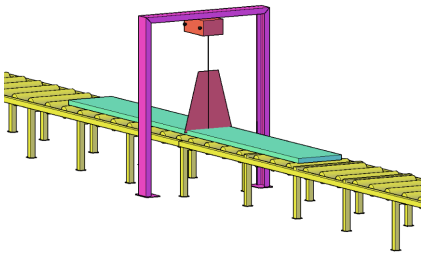




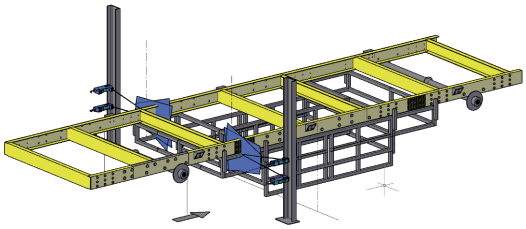




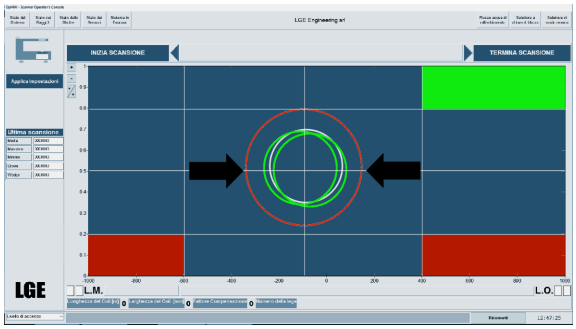


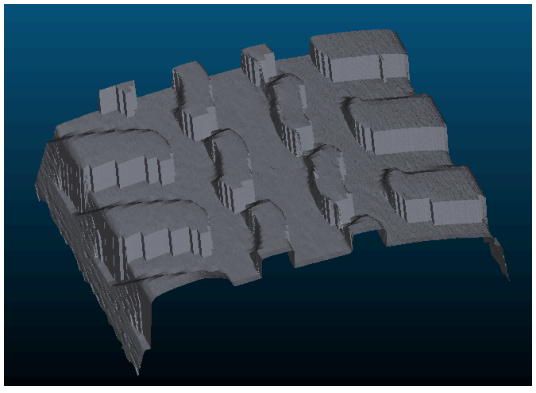


Robot Guidance





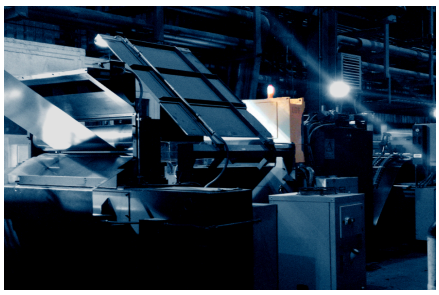
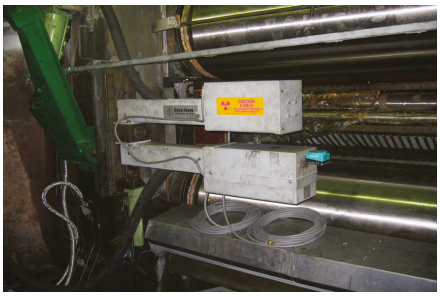
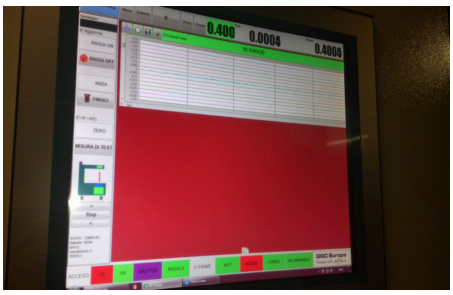


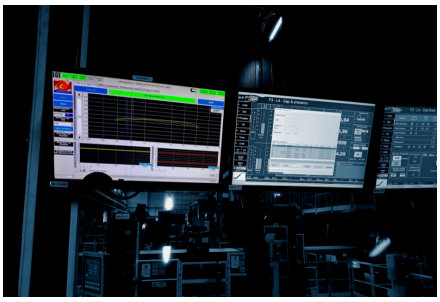






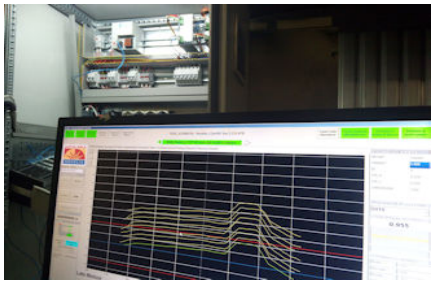


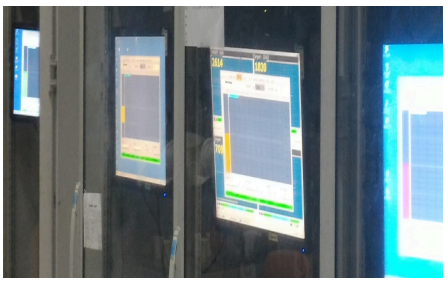













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tenova
ansaldo energia
NUCOR
Nidec
Acciaierie d'Italia
KEYENCE
LIBERTY STEEL
U. S. Steel
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