LAND®

AMETEK®

Product guide

Our instrumentation at a glance

See degrees differently.

OVER 75 YEARS

OF INNOVATION

LAND is the world's leading designer and manufacturer of monitors and analysers for industrial infrared non-contact temperature measurement, combustion efficiency and environmental pollutant emissions.

Founded in the UK in 1947, Land Instruments International Limited developed a reputation for producing innovative, resilient measurement technologies designed to operate in the most challenging conditions. Acquired by the Process & Analytical Instruments Division of AMETEK, Inc. in 2006, today LAND is the premium supplier of product application solutions to world industries including steelmaking, glass making, minerals processing, hydrocarbon processing and thermal power generation.

Our highly accurate measurement solutions are supported by unrivalled applications knowledge, to meet every customer's precise process needs.

1947 Founded by Tom Land (Land Pyrometers)

1964 Move to new purpose-built factory at Dronfield

1970 Expansion into US market with formation of American subsidiary

Open British Calibration Services (now UKAS), first Thermal Accredited Laboratory in the UK

1977 Introduction of System 2 Family plus Combustion Efficiency Monitoring instruments with launch of Acid Dewpoint Monitors (Land Combustion)

1983 Introduction of System 3 Family

1958 Launch of first Surface Pyrometer - SP & Cambridge Indicator

1965 Launch of first Non-contact Infrared Pyrometer - System 1 Family (Land Infrared) and Blackbody Calibration Source

1976 Develop first In-flight Non-contact Thermometer

1981 Launch of first Portable Pyrometer – Cyclops

1987 Introducti of Infrared Linescann Landscan

FIND MORE INFORMATION ONLINE

Visit the LAND website for:

- Details of our extensive product range
- Application-specific solutions
- Industry information
- Downloadable brochures, manuals and application notes
- Free software downloads
- Your nearest LAND office

WWW.AMETEK-LAND.COM

1989 Become ISO 9001 certified

Introduction of first Thermal Imager - T135

1990 Land Pyrometers sold. Land Infrared and Land Combustion become Land Instruments International

1993 Open subsidiaries in France, Germany, Italy, Poland and Japan

Introduction of System 4 Family

1994 Launch of the opacity and dust monitor 4500 MkII

1996 LAND

First website is launched

2006 AMETEK

Join AMETEK, Inc. as part of Process & Analytical Instruments Division to become AMETEK Land

2013 Launch of latest Portable Gas Analyser – Lancom4

Launch of latest Non-contact Infrared Pyrometer – SPOT (System 5 Family) and received High Commendation at British Engineering Excellence Awards 2013

2016 Launch of next generation application specific Thermal Imagers - NIR-B Glass and NIR-B 3XR Industrial Gas

2020 Launch of human body temperature screening systems VIRALERT 2 & 3

WELCOME

TO OUR PRODUCT GUIDE

The LAND Product Guide is your complete reference resource for our comprehensive range of advanced solutions for industrial infrared non-contact temperature measurement, combustion efficiency and environmental pollutant emissions.

This easy-to-use guide is designed to help you to find the right product for your application, and contains details of all our latest solutions.

Once you've identified the product you believe is the best fit for your process, you can find out more about it from our website, which is kept up to date with the current specifications and product availability.

You can download brochures, manuals, or application notes that tell you more about the product's suitability for your requirements.

And, if you're in the United States, you can order the product you want directly from our US Web Store, with free shipping.

If you can't find what you need, get in touch. Our teams are constantly working on new solutions and capabilities, and we have many years of experience in developing customised solutions for a range of global industries.

GLOBAL SUPPORT

Our industry-leading after-sales support ensures you get the highest performance from your LAND instruments and systems. Dedicated service centres and on-site personnel across the world deliver:

- **Technical support**
- **Maintenance**
- **Emergency repairs**
- **Certification and calibration**
- **Servicing and service contracts**
- **Training**

See our website to learn more about the full range of service and support we provide.

WWW.AMETEK-LAND.COM/SERVICES

CONTENTS

FIXED SPOT NON-CONTACT THERMOMETERS/ PYROMETERS

WE OFFER AN EXTENSIVE RANGE OF INFRARED THERMOMETERS FOR ONLINE TEMPERATURE MEASUREMENTS AND CONTROL. THESE INNOVATIVE, FLEXIBLE SOLUTIONS ARE CUSTOMISABLE FOR DIVERSE PROCESSES AND SPECIALISED APPLICATIONS.

SPOT+

NEW PRODUCT

SPOT is a family of fully featured, high-performance pyrometers for fixed non-contact infrared spot temperature measurements. Available in range of operating wavelengths, temperature ranges and process requirements.

INDUSTRIES

- Power Generation
- Aluminium
- Steel
- Industrial Processing
- Minerals Industry

APPLICATIONS

- Cold Rolling – Cold Reducing Mill
- Cold Rolling – Sendzimir Mill (Z Mill)
- Hot Rolling – Blooming/Beam Mill
- Hot Rolling – Caster Straightener Exit
- Hot Rolling – Coil Box
- Hot Rolling – Combination Mill
- Hot Rolling – Equalising Furnace
- Hot Rolling – Plate Mill/Reversing Mill
- Hot Rolling – Roughing Mill
- Hot Rolling – Scalebreaker
- Iron to Steel - Blast Main and Tuyere
- Iron to Steel – Hot Blast Stove
- Rod Mill – Down Coiler Laying Head
- Rod Mill – Stands
- Rod Mill – Stelmor Coiler Runout
- Bushing Outlet (Fibreglass/Rockwool)
- Canal (Flat)
- Gob (Container/Speciality/Tableware)
- Melt Tank – Inside Refractory
- Mould
- Regenerators
- Forging – Drop
- Forging – Rotary
- Heat Treatment – Annealing
- Heat Treatment – Laser Hardening
- Heat Treatment – Plasma Nitriding
- Solar – Polysilicon Ingot Casting
- Solar – Polysilicon Reactors
- Brick – Tunnel Kiln
- Cement – Burning Zone
- Cement – Clinker Chute

TEMPERATURE RANGE

50 - 3500 °C / 122 - 6332 °F

BENEFITS

- Extensive temperature measurement range
- Fast, accurate, repeatable results
- Simple one-person operation
- Large model range and accessory options

SPOT+ AL – Aluminium Production and Processing Application Pyrometer

The SPOT AL/LT is an advanced smart/multi-wavelength application pyrometer providing a single sensor solution for aluminium production and processing industries.

BENEFITS

- Specialised aluminium algorithms
- Single sensor solution
- Powerful software support
- SPOT AL LT (Low Temp) also available
- Enhanced target alignment with SPOT Actuator

INDUSTRIES

- Aluminium Industry

APPLICATIONS

- Aluminium Extrusion
- Aluminium Strip
- Aluminium Forging
- Aluminium Other Processes
- Aluminium Liquid (tapping)

TEMPERATURE RANGE

200 - 900 °C / 392 - 1652 °F

SPOT AL Shown with optional Actuator

SPOT+ GS – Galvanised and Galvannealed Strip

An advanced non-contact infrared spot pyrometer specifically designed for continuous, highly accurate measurement of coated steel strip temperature during galvanising and galvannealing.

BENEFITS

- Three dedicated pre-set algorithms for steel strips
- Fast, accurate, repeatable results
- High-quality optics for precise targeting
- Adaptable to multiple steel application

INDUSTRIES

- Steel

APPLICATIONS

- CGL – Galvanneal Exit
- CAL – Soaking

TEMPERATURE RANGE

200 - 1200 °C / 392 - 2192 °F

PRODUCT GUIDE

SPOT+ MM – Liquid Metal and Tapping

An advanced non-contact infrared spot pyrometer specifically designed for liquid metal temperature measurements in foundry and tapping applications..

BENEFITS

- Fast tapping stream temperature measurements
- Fast, accurate, repeatable results
- High-quality optics for precise targeting
- Adaptable to multiple steel application

INDUSTRIES

- Steel

APPLICATIONS

- Automatic Casting Lines
- Melting Furnaces
- Ladle and Mold Tapping

TEMPERATURE RANGE

600 - 1800 °C / 1112 - 3272 °F

SYSTEM 4

High-precision, single-spot pyrometers provide exceptional flexibility across a wide range of temperatures, operating wavelengths and applications.

BENEFITS

- Broad temperature measurement range
- Fast, reliable and accurate results
- Interchangeable elements to fit different applications without recalibration
- Extensive model range and accessory options

INDUSTRIES

- Glass
- Industrial Processing
- Steel

TEMPERATURE RANGE

0 - 2600 °C / 50 - 4700°F

UNO

A rugged, low-cost, standalone temperature sensor range optimised for OEMs, plant designers and process operators.

BENEFITS

- Extensive range of optional accessories
- Traceable calibration with exceptional accuracy
- Rugged, versatile design
- Integrates directly into 4-20mA loop

INDUSTRIES

- Glass
- Hydrocarbon Processing (HPI)
- Industrial Processing
- Minerals

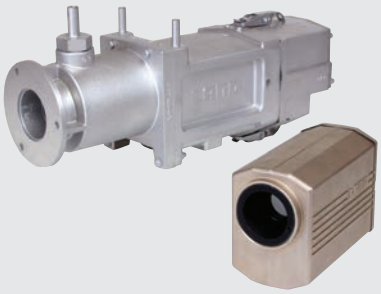
APPLICATIONS

- Hot Rolling – Reheat Furnace
- Hot Rolling – Steel Foundry
- Asphalt/Roadstone/Tarmac – Mixer and Chute

TEMPERATURE RANGE

50 - 2600 °C / 150 - 4700°F

RT8B



High-accuracy, non-contact infrared application pyrometer, designed for multiple process measurements in roadstone and glass plants and other challenging low temperature process applications.

BENEFITS

- Industry-standard output for easy integration
- Fast-response, highly accurate measurements
- Designed to meet the industry's demands
- 12-month warranty when used in roadstone applications

INDUSTRIES

- Glass
- Minerals

APPLICATIONS

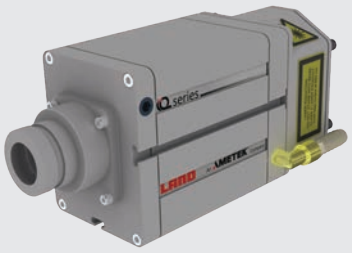
- Air Cooling (Flat)
- Batch Inlet (Container / Fibreglass/ Rockwool/ Flat/Speciality/Tableware)
- Asphalt/Roadstone/Tarmac – Mixer and Chute

TEMPERATURE RANGE

0 - 500 °C / 0 - 1000 °F

IQ

(Available in the Americas, China and India only)



A series of compact, rugged, industrial thermometers designed to meet the needs of high temperature process control applications.

BENEFITS

- Robust all-metal design
- Integrated air purge and water cooling
- Highly configurable with wide range of options
- Plug and play for easy installation

INDUSTRIES

- Glass
- Minerals

APPLICATIONS

- Bushing Outlet (Fibreglass/Rockwool)
- Oven Heating & Soak Zones (Architectural/Automotive Glass)
- Oven Outlet (Architectural / Automotive Glass)

TEMPERATURE RANGE

200 - 1750 °C / 392 - 3182°F

SOLOnet

Flexible, web browser-enabled digital infrared thermometers customisable to a wide range of process control applications in manufacturing and industry.

BENEFITS

- Field changeable optics without recalibration
- Robust, low-maintenance sapphire window as standard
- Completely user-configurable via web browser, Ethernet or RS485
- Four different thermometer types with multiple configuration options

INDUSTRIES

- Aluminium
- Glass
- Industrial Processing
- Minerals
- Steel

APPLICATIONS

- Bushing Outlet (Fibreglass/Rockwool)
- Oven Heating and Soak Zones (Architectural/Automotive Glass)
- Oven Outlet (Architectural/Automotive Glass)

TEMPERATURE RANGE

200 - 1750 °C / 392 - 3182 °F

PRODUCT GUIDE

SPRINT8

(Available in the Americas only)

TEMPERATURE RANGE
0 - 982 °C / 0 - 1800 °F

A compact, rugged non-contact thermometer designed for lower temperature industrial processes.

BENEFITS

- USB configuration interface
- Designed to survive harsh environments
- Standard two-wire 4-20mA loop output
- Optional green LED aiming diodes

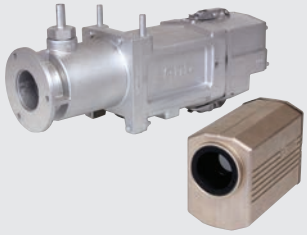
INDUSTRIES

- Industrial Processing

APPLICATIONS

- Paper – Super Calendering
- Paper – Yankee Dryer
- Plastic – Thermoforming

FURNACE GAS TEMPERATURE – CDB



TEMPERATURE RANGE
400 - 1800 °C / 752 - 3272 °F

Advanced non-contact infrared thermometer designed for measuring combustion gas temperature in boilers and incinerators.

BENEFITS

- Ignores cold atmospheres and gases other than CO_2
- Compatible with System 4 accessories
- Non-contact measurement doesn't interfere with the process
- Can also be used for furnace gas temperature

INDUSTRIES

- Industrial Processing
- Power Generation

APPLICATIONS

- Biomass – Boiler/Furnace Operation
- Waste – Boiler/Furnace Operation
- Coal – Boiler/Furnace Operation

DTT – DRAWING TOWER

TEMPERATURE RANGE
800 - 2600°C / 1500 - 4700°F

A short-wavelength infrared thermometer providing precise and stable temperature measurement for control of optical fibre drawing tower furnaces.

BENEFITS

- Precise, reliable non-contact measurement
- 2m light guide length
- Industry standard outputs and fittings
- Small target capability

INDUSTRIES

- Glass

APPLICATIONS

- Drawing Tower (Fibre-Optic Communication)

FG – GLASS FOREHEARTH

TEMPERATURE RANGE
850 - 1600 °C / 1562 - 2912 °F

A simple fibre-optic, two-wire, loop powered thermometer with 4-20mA output. Specifically designed to improve process control in the glass industry.

BENEFITS

- Precise measurements up to 1650 °C (3000 °F)
- Easy to install
- Cost-effective, no need for water cooling
- No need for on-line calibration

INDUSTRIES

- Glass

APPLICATIONS

- Forehearth
- Regenerators
- Canal
- Melt Tank – Bulk Glass
- Melt Tank – Inside Refractory

FLT5B – FLOAT LINE

TEMPERATURE RANGE
250 - 1300 °C / 482 - 2372 °F

Accurate and flexible infrared thermometer measurements for measuring glass surface temperature in the tin bath and annealing lehr on float lines.

BENEFITS

- 250 °C to 1100 °C (482 °F to 2012 °F) temperature range
- 4.8 to 5.2µm spectral response
- 50:1 optical field of view
- Compatible with System 4 mountings and accessories for accurate alignment

INDUSTRIES

- Glass

APPLICATIONS

- Tin Bath
- Tin Bath Exit
- Annealing Lehr Entry and Exit

SP – SPRAY CHAMBER

TEMPERATURE RANGE
600 - 2600 °C / 1112 - 4712 °F

Fibre optic infrared thermometer system, custom-designed for temperature measurements in the hostile environment of the continuous caster spray chamber.

BENEFITS

- Easy installation
- Simple, quick, no tools probe removal
- No electronics in the spray chamber
- Minimal services with no water cooling

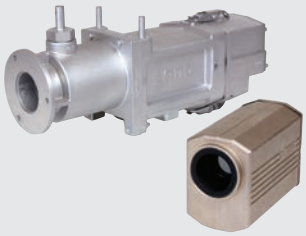
INDUSTRIES

- Steel

APPLICATIONS

- Hot Rolling – Continuous Caster Spray Chamber

VDT+ – VAPOUR DEPOSITION



TEMPERATURE RANGE
1000 - 2500 °C / 1800 - 4500 °F

Non-contact infrared thermometer custom-designed for accurate preform temperature measurements in vapour/thin film deposition processes.

BENEFITS

- Precise, reliable, drift-free measurements
- Rugged, flexible, modular design
- Focusable, through-the-lens sighting
- Industry standard outputs

INDUSTRIES

- Glass

APPLICATIONS

- Drawing Tower (Fibre-Optic Communication)

THERMAL IMAGERS AND LINE SCANNERS

BACKED BY ADVANCED SOFTWARE SUPPORT, OUR IMAGERS AND LINESCANNERS SET THE INDUSTRY STANDARD FOR PERFORMANCE, PROVIDING THE HIGH-RESOLUTION THERMAL INFORMATION NEEDED TO KEEP YOUR PROCESS RUNNING SAFELY AND EFFICIENTLY.

LWIR-640

TEMPERATURE RANGE
-20 - 1000 °C / -4 - 1832 °F

A long-wavelength smart thermal imager with integrated webserver and on-board I/O's.

BENEFITS
- High-resolution radiometric thermal imager
- Advanced image resolution
- Innovative Software Analysis
- Smart functionality

INDUSTRIES
- Minerals
- Industrial Processing
- Steel
- Power Generation
- Glass
- Hydrocarbon Processing

APPLICATIONS
- Tin Bath
- Ladle
- Annealing Lehr Entry and Exit
- Glass – Melt Tank
- HPI – Critical Piping
- Power Generation – Refining Pet Coke
- Power Generation – Storage

MWIR-640 390

TEMPERATURE RANGE
300 - 1800 °C / 572 - 3271 °F

A smart mid-wavelength thermal imager providing a full temperature measurement range in two ranges with a choice of different optics and lenses.

BENEFITS
- High-resolution radiometric thermal imager
- Advanced image resolution
- Innovative Software Analysis
- Smart functionality

INDUSTRIES
- Minerals
- Industrial Processing
- Steel
- Power Generation
- Glass
- Hydrocarbon Processing

APPLICATIONS
- Forming and Forging
- Secondry Steel Making
- Melting Operations
- Heat Treatment
- Copper, Platinum Refinement

NIR-656 AND NIR-2K

TEMPERATURE RANGE
600 - 1800 °C / 1112 - 3272 °F

A range of high-precision thermal imagers producing high-temperature and high resolution measurements in a wide range of applications.

BENEFITS
- High-resolution radiometric thermal imager
- Robust housings for harsh conditions
- Choice of models and options
- Two-year warranty

INDUSTRIES
- Hydrocarbon Processing
- Glass
- Speciality Metals

APPLICATIONS
- Nitric Acid – Ammonia Burner
- Spinner (Flat)
- Copper – Refining
- Platinum – Refining

MWIR-BORESCOPE-640

TEMPERATURE RANGE
300 - 1800 °C / 572 - 3272 °F

A highly accurate radiometric infrared borescope imaging camera with spectral filtering for continuous temperature measurement and furnace profiling applications.

BENEFITS
- High resolution
- Wide angle field of view
- Spectral filtering technology
- Full furnace profiling

INDUSTRIES
- Hydrocarbon Processing
- Minerals
- Steel
- Power Generation
- Industrial Processing

APPLICATIONS
- Refining/Petrochemical – Fired Heaters
- Cement – Burning Zone
- Hot Rolling – Reheat Furnace
- Biomass – Boiler/Furnace Operation
- Coal - Boiler/Furnace Operation
- Heat Treatment – Annealing

NIR-BORESCOPE-640

A short-wavelength radiometric infrared borescope imaging camera for continuous temperature measurement in furnace applications with a higher differential temperature in the field of view.

BENEFITS

- Continuous monitoring
- Wide measuring range
- Real-time thermal data
- Advanced spectral filtering

INDUSTRIES

- Minerals
- Steel
- Industrial Processing
- Power Generation

APPLICATIONS

- Cement – Burning Zone
- Cement – Kiln Shell
- Hot Rolling – Reheat Furnace
- Forging – Rotary
- Coal – Boiler/ Furnace Operation

TEMPERATURE RANGE

600 - 2000 °C / 1112 - 3632 °F

NIR-BORESCOPE-640-EX

The NIR-Borescope-640-EX is a short wavelength radiometric infrared borescope imaging camera for steam reformer and cracker tube continuous temperature.

BENEFITS

- High accuracy for optimum process control
- Real-time thermal data
- Short wavelength sensor
- ATEX Certified

INDUSTRIES

- Hydrocarbon Processing

APPLICATIONS

- Ammonia – Primary Syngas Reformer
- Ethylene Cracker – Steam Cracking Furnace
- Hydrogen – Primary Syngas Reformer
- Slurry to Syngas – Gasifier
- Methanol – Primary Syngas Reformer

TEMPERATURE RANGE

600 - 1800 °C / 1112 - 3272 °F

NIR-BORESCOPE-656 AND NIR-BORESCOPE-2K

High-resolution short-wavelength radiometric infrared borescope imaging cameras designed for a wide range of continuous process monitoring and control applications.

BENEFITS

- Continuous furnace monitoring
- Extreme wide-angle view
- Highly accurate temperature readings
- Advanced spectral filtering

INDUSTRIES

- Minerals
- Steel
- Industrial Processing

APPLICATIONS

- Cement – Burning Zone
- Cement – Kiln Shell
- Hot Rolling – Reheat Furnace
- Forging – Rotary
- Heat Treatment – Annealing

TEMPERATURE RANGE

600 - 1800 °C / 1112 - 3272 °F

NIR-BORESCOPE-2K-GLASS FURNACE (MELT TANK) MONITORING SYSTEM

The NIR-B-2K-Glass is a borescope thermal imaging camera, specifically developed to return precise temperature measurements in glass furnace applications.

BENEFITS

- Designed for glass melt furnace applications
- Monitor temperatures at any point in the image
- Requires only a small hole in refractory wall
- Optional auto-retract system for extra protection

INDUSTRIES

- Glass

APPLICATIONS

- Melt Tank – Bulk Glass
- Melt Tank – Inside Refractory

TEMPERATURE RANGE

1000 - 1800 °C / 1832 - 3272 °F

PORTABLE THERMAL IMAGING SYSTEM

NEW PRODUCT

The Portable furnace thermal imaging system is an accessory for NIR and MWIR borescopes to support on-site monitoring and prolong furnace or tube lifetimes.

BENEFITS

- Fully Portable System
- Advanced ImagePro Thermal Imaging Software
- Multiple wavelengths and temperature ranges available
- Protection & Safety
- Battery Powered System

APPLICATIONS

- Ammonia – Primary Syngas Reformer
- Ethylene Cracker – Steam Cracking Furnace
- Hydrogen – Primary Syngas Reformer
- Slurry to Syngas – Gasifier
- Methanol – Primary Syngas Reformer

TEMPERATURE RANGE

1000 - 1800 °C / 1832 - 3272 °F

LPAR AUTO-RETRACTION SYSTEM

NEW PRODUCT

The LPAR is a robust, air- and electrically-powered retraction system designed for continuous 24/7 operation in demanding industrial environments. Fully compatible with both water- and air-cooled furnace camera systems, it offers seamless integration across a wide range of furnace applications.

BENEFITS

- Air and Electric Powered
- Compatible with All Furnace Camera Types
- Built for 24/7 Industrial Reliability
- Available as Full System or Upgrade Option

INDUSTRIES

- Glass

APPLICATIONS

- Melt Tank – Bulk Glass
- Melt Tank – Inside Refractory

TEMPERATURE RANGE

1000 - 1800 °C / 1832 - 3272 °F

LSP-HD LINESCANNER

A highly homogeneous, compact and sophisticated high-accuracy infrared linescanner, designed to produce profiles advanced thermal images of moving processes.

BENEFITS

- Market-leading image definition
- Easy plug-and-play Ethernet control
- No separate processor required
- Backwards compatible

INDUSTRIES

- Hydrocarbon Processing
- Steel
- Industrial Processing

APPLICATIONS

- Architectural and Automotive glass
- Flat glass
- Glass toughening and bending
- Non-wovens
- Paper
- Plastic
- Solar
- Iron to steel
- Hot rolling mill
- CAL – Continuous Annealing Line
- CGL – Continuous Galvanising Line

TEMPERATURE RANGE

20 - 1700 °C / 68 - 3092 °F

HOTSPOTIR 9000

NEW PRODUCT

An extremely compact, fast-response infrared scanning system designed to detect emerging hot spots on conveyor belt materials.

BENEFITS

- Accurate, continuous temperature monitoring
- Simple, reliable alarm processing
- Compact design for industrial conditions
- Fast scan speed up to 100Hz

INDUSTRIES

- Hydrocarbon Processing
- Steel
- Industrial Processing
- Minerals
- Power Generation

APPLICATIONS

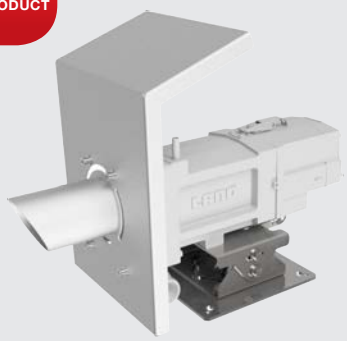
- Cement – Clinker Cooler
- Iron to Steel – Coke Conveyor
- Iron to Steel – DRI Transport
- Biomass/Coal – Conveyor Operations
- Paper – Super
- Calendering Wood – Wood Chips on Conveyor

TEMPERATURE RANGE

20 - 250 °C / 68 - 482 °F

SDS – SLAG DETECTION SYSTEM V2

NEW PRODUCT



The Slag Detection System (SDS) delivers improved yields, higher-quality steel and reduces costly downstream processing.

BENEFITS

- Fully automatic operation
- Lower slag content for improved steel quality
- Reduced downstream processing and material costs
- Accurate, rapid and repeatable detection with advanced software

INDUSTRIES

- Steel

APPLICATIONS

- Iron to Steel – Basic Oxygen Furnace
- Iron to Steel – Electric Arc Furnace – Tap
- Iron to Steel – SDS

BEST SELLER

PORTABLE NON-CONTACT THERMOMETERS

OUR HIGH-QUALITY HANDHELD THERMOMETERS PROVIDE SPOT TEMPERATURE MEASUREMENTS WITH UNMATCHED ACCURACY AND RELIABILITY. TRIGGER-OPERATED FOR EASY USE, THEY DELIVER PRECISE TARGET VIEWING AND ON-BOARD DATA STORAGE.

CYCLOPS L

TEMPERATURE RANGE
200 - 3000 °C / 392 - 5432 °F

Cyclops L portable pyrometers are a range of premium quality, highly accurate hand-held instruments. They provide easy, accurate point-and-measure temperature readings.

BENEFITS

- Easy, 'point and measure' operation
- On-board data storage
- Bluetooth and USB connectivity
- Calibrated and traceable to National Standards

INDUSTRIES

- Steel
- Glass
- Industrial Processing
- Hydrocarbon Processing

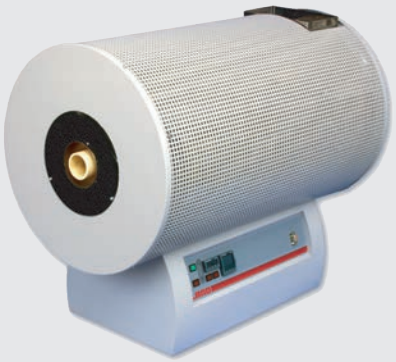
APPLICATIONS

- Hot Rolling – Steel Foundry
- Iron to Steel – Tapping
- Bushing Outlet (Fibreglass/Rockwool)
- Melt Tank – Bulk Glass (Container/Speciality/Tableware)
- Melt Tank – Inside Refractory
- Ammonia – Primary Syngas Reformer
- Ethylene Cracker – Steam Cracking Furnace
- Hydrogen – Primary Syngas Reformer
- Methanol – Primary Syngas Reformer
- Refining/Petrochemical – Fired Heaters
- Forging – Drop
- Forging – Rotary
- Heat Treatment – Flame Hardening
- Heat Treatment – Plasma Nitriding
- Specialist Coating – Plasma Ceramic Coatings

CALIBRATION SOURCES

OUR COMPREHENSIVE RANGE OF BLACKBODY CALIBRATION SOURCES ENABLES HIGH-PRECISION CALIBRATION OF RADIATION THERMOMETERS UNDER ON-SITE AND LABORATORY CONDITIONS. THEY ARE DESIGNED TO WORK SEAMLESSLY WITH OUR INSTRUMENTS, PRIMARY AND REFERENCE SOURCES AVAILABLE.

LANDCAL



A comprehensive range of blackbody primary and reference sources providing high-precision calibration of radiation thermometers under on-site or laboratory conditions.

BENEFITS

- Six models covering all LAND thermometers
- Portable, transportable and bench-mounted versions
- High-precision calibration to National Standards
- Temperature range from -10-1600 °C (15- 2900 °F)

TEMPERATURE RANGE
-10 - 1600 °C / 15 - 2900 °F

COMBUSTION EFFICIENCY MONITORS

CLOSE MONITORING OF OXYGEN, CARBON MONOXIDE AND SULPHURIC ACID DEWPOINT CAN HELP IMPROVE COMBUSTION EFFICIENCY, LOWER ENERGY USE, REDUCE EMISSIONS AND PREVENT PLANT CORROSION. OUR INSTRUMENTS PROVIDE PRECISION MEASUREMENTS FOR THESE APPLICATIONS.

FGA SERIES

A compact, reliable multi-gas analyser for measuring flue gas emissions in processes burning natural gas and biomass.

BENEFITS

- Easy to install and service
- Meets international approval standards
- Dual sensor technology for high sensitivity
- Automatic calibration for unattended operation

INDUSTRIES

- Power Generation
- Steel

APPLICATIONS

- Emissions Monitoring – Stack Emissions
- Waste – Boiler/Furnace Operations
- Waste – Stack Emissions
- Iron to Steel – Stack Emissions

GAS MEASURED

Measures CO, O_2, NO
Calculates CO_2 and NOx

WDG 1200 AND 1210 (OXYGEN)

A highly flexible range of high-precision flue gas oxygen analysers developed specifically for combustion analysis and control applications.

BENEFITS

- Designed for easy maintenance
- Simple user interface
- Versatile probe and mounting
- Industry-trusted zirconium oxide technology

INDUSTRIES

- Steel
- Industrial Processing

APPLICATIONS

- Flue Gas (Container/Fibreglass/Rockwool /Flat/Speciality/Tableware)
- Chemical Processing – Stack Emissions

GAS MEASURED

0 to 25% Oxygen Concentration

OPACITY AND DUST MONITORS

OUR RANGE OF OPACITY, DUST AND PARTICULATES MONITORS ARE THE MOST ADVANCED PRODUCTS AVAILABLE, USING PATENTED TECHNOLOGY TO DELIVER HIGHLY ACCURATE RESULTS. WITH NO MOVING PARTS, THEY COMBINE HIGH RELIABILITY WITH LOW MAINTENANCE.

4500 MKIII (PS-1 & ASTM D6216)

A high-specification opacity and dust monitor meeting US and European standards for monitoring combustion processes.

CERTIFICATION

QAL 1/PS-1/ASTM D6216/PROCEDURE 3/ PS-11

BENEFITS

- Suitable for environmental compliance measurements
- Meets requirements of ASTM D6216, US EPA PS-1, EN 15267 and QAL1
- No moving parts for high reliability
- Industry-leading accuracy
- Flood LED for thermal stability
- Lifetime warranty on LED source

INDUSTRIES

- Glass
- Minerals
- Industrial Processing
- Steel
- Power Generation

APPLICATIONS

- Flue Gas (Container/Fibreglass/ Rockwool/Flat/Speciality/Tableware)
- Chemical Processing – Stack Emissions
- Paper – Stack Emissions
- Biomass/Coal – Stack Emissions
- Emissions Monitoring – Stack Emissions
- Waste – Stack Emissions
- Iron to Steel – Stack Emissions
- Cement – Stack Emissions

MEASUREMENT RANGE

Opacity 0-10 % to 0-100 %
Optical Density 0-0.1 to 0-3.0
Dust Density 0-15 to 0-1000 mg/m³ (at 5m pathlength)

4750-PM (PM-CEMS – EN 15267)

A back-scatter laser PM analyser designed for use as a continuous emissions monitor for compliance or process monitoring.

CERTIFICATION
TUV approved to EN 15267

BENEFITS
- Large area collection optics
- Unaffected by flue gas conditions
- Highly stable and reliable
- Wide measurement range

INDUSTRIES
- Glass
- Minerals
- Industrial Processing
- Steel
- Power Generation

APPLICATIONS
- Cement – Stack Emissions
- Biomass – Boiler/Furnace Operation
- Coal – Boiler/Furnace Operation
- Waste – Boiler/Furnace Operations
- Paper – Stack Emissions
- Flue Gas (Container/Fibreglass/ Rockwool/Flat/Speciality/Tableware)
- Iron to Steel – Stack Emissions

MEASUREMENT RANGE
0-1000 mg/m³

4650-PM (PM-CEMS – QAL1)

High-sensitivity, forward-scatter laser measurement for particulate matter, for use in combustion processes where condensed water is not present.

CERTIFICATION
PS-11 Continuous Particulate Matter Measurement

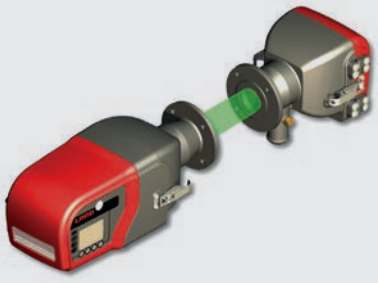
BENEFITS
- Advanced optics for better detection limit
- Wide measurement range
- High stability and reliability
- Built-in data-logging

INDUSTRIES
- Glass
- Minerals
- Industrial Processing
- Steel
- Power Generation

APPLICATIONS
- Chemical Processing – Stack Emissions
- Paper – Stack Emissions
- Biomass/Coal – Stack Emissions
- Emissions Monitoring – Stack Emissions
- Waste – Stack Emissions
- Iron to Steel – Stack Emissions

MEASUREMENT RANGE
0-15 mg/m³ to 0-200 mg/m³

4400 (OPACITY – EN 15267)



Dust and opacity monitor for monitoring combustion processes where automatic calibration checks are not needed.

CERTIFICATION
TUV approved to EN 15267

BENEFITS
- Flood LED for maximum stability
- Stable, high-brightness LED light source
- Patented retro-reflector for lowest drift

INDUSTRIES
- Glass
- Industrial Processing
- Power Generation
- Minerals
- Steel

APPLICATIONS
- Iron to Steel – Stack Emissions

MEASUREMENT RANGE
Opacity 0-10 % to 0-100 %
Optical Density 0-0.1 to 0-3.0
Dust Density 0-20 to 0-1000 mg/m³
(at 5m pathlength)

DETECTORS

PROVIDING EARLY WARNING OF COMBUSTION IN PROCESS AND STORAGE AREAS, OUR HIGHLY SENSITIVE CO DETECTORS MONITOR THE ENTIRE PROCESS TO GIVE THE BEST CHANCE OF EARLY DETECTION, ALLOWING RAPID ACTION TO PREVENT THE THREAT OF FIRE.

MILLWATCH

MEASUREMENT RANGE
0-100 up to 2000 ppm in 50 ppm steps

An advanced carbon monoxide detector designed to provide early warning of spontaneous combustion in pulverisers for coal and biomass.

BENEFITS

- Continuous, accurate monitoring
- Fast response to changing CO levels
- Auto-calibration to ensure system integrity
- Optional oxygen measurement

INDUSTRIES

- Power Generation – Biomass

APPLICATIONS

- Biomass/Coal – Milling

SILOWATCH

MEASUREMENT RANGE
0-100 up to 2000 ppm in 50 ppm steps

An advanced carbon monoxide detector designed to provide early warning of spontaneous combustion in coal and biomass storage silos.

BENEFITS

- Rapid response to a rise in CO levels
- Precise, continuous monitoring
- Optional measurement for oxygen
- System integrity ensured by auto-calibration

INDUSTRIES

- Power Generation – Biomass

APPLICATIONS

- Biomass/Coal – Storage Silo

SOFTWARE

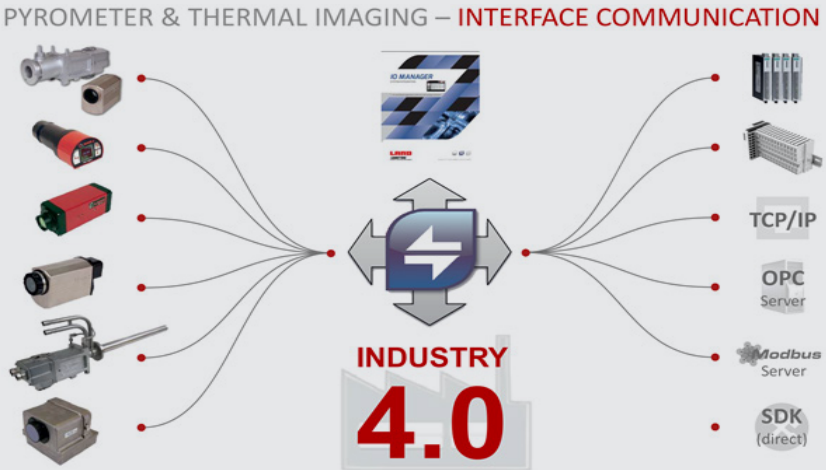
WE FULLY SUPPORT OUR WORLD-LEADING PRODUCTS THROUGH THE LATEST SOFTWARE TECHNOLOGY, WITH STANDARD AND APPLICATION-SPECIFIC PACKAGES THAT DELIVER THE HIGHEST PERFORMANCE AND FUNCTIONALITY TO SUPPORTED INDUSTRIES AND APPLICATIONS.

LAND AND INDUSTRY 4.0

Industry 4.0 is a term used to describe the digitisation of industrial processes and the associated bi-directional data exchange via digital interfaces, enabling comprehensive and automated communications between machines, sensors and operators.

This optimises processes, reduces cycle times, and increases productivity, quality and safety.

The LAND range provides innovative products with industry-standard interfaces, such as Modbus/TCP and Power over Ethernet (PoE), which can be quickly and easily integrated into new or existing networks. As a result, much more data can be exchanged continuously between the measuring system and the process than just the pure measuring signal.



SPOTPRO

FREE TRIAL

SPOTPro, an advanced software utility, provides a single control point to configure, store and view data for up to 40 SPOT infrared pyrometers.

BENEFITS

- Control multiple spot thermometers
- Data logging, trending and analysis
- Alarm status display
- User management of pyrometer settings

MINIMUM PLATFORM SPECIFICATION

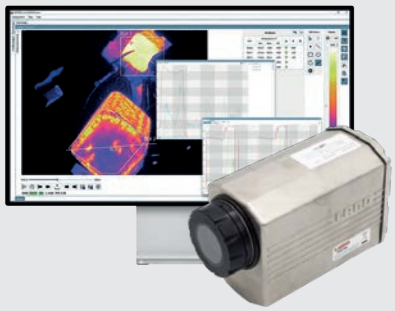
- Processor: Intel i5 2GHz or equivalent
- Memory: 4GB
- Hard Drive: 256GB recommended
- Graphics: 256MB
- Display: 1024 x 768 pixels
- Operating System: Windows 7 SP2, Windows 8.1, Windows 10 with .NET Framework: 4.6.2
- Dedicated network card recommended

ASSOCIATED PRODUCTS

SPOT

IMAGEPRO V2

FREE TRIAL



The innovative IMAGEPro V2 software is an advanced image processing software for controlling, monitoring, analysing and capturing imager data.

BENEFITS

- Supports up to 16 imagers
- Extensive functionality
- Real-time thermal analysis
- Flexible communications options

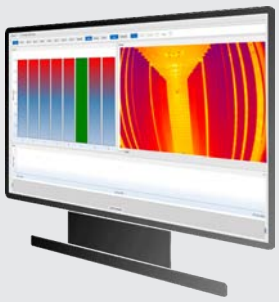
MINIMUM PLATFORM SPECIFICATION

- Intel i5 2.5GHz
- 8GB RAM
- 512MB graphics card
- 1GBPS network adapter.
- Platforms: Windows 7 SP1, Windows 8.1, Windows 10 with .Net Framework 4.6.2

ASSOCIATED PRODUCTS

LWIR, MWIR BORESCOPE, NIR/NIR BORESCOPE, SDS

IMAGEPRO AFM (ADVANCED FURNACE MONITORING) BETA



The IMAGEPro Advanced Furnace Monitoring (AFM) BETA system automates temperature monitoring and visual furnace inspection.

BENEFITS

- Provides continuous 24/7 temperature and visual monitoring.
- Offers alarming, trending, and archiving functionalities.
- Enhances furnace efficiency, reducing CO2 emissions.
- Increases yields and lowers maintenance costs.

MINIMUM PLATFORM SPECIFICATION

- Intel i5 2.5GHz
- 8GB RAM
- 512MB graphics card
- 1GBPS network adapter.
- Platforms: Windows 7 SP1, Windows 8.1, Windows 10 with .Net Framework 4.6.2

ASSOCIATED PRODUCTS

NIR/MWIR BORESCOPE,
NIR/NIR BORESCOPE

IMAGEPRO AM (ASSET MONITORING)

The innovative IMAGEPro AM (Asset Monitoring) software is for monitoring 24/7 critical vessels.

BENEFITS

- Prevent critical leaks and break-outs
- Extend life of vessel and furnaces
- 24/7 monitoring of critical vessels or furnaces
- Fully customised system setup

MINIMUM PLATFORM SPECIFICATION

- Intel i5 2.5GHz
- 8GB RAM
- 512MB graphics card
- 1GBPS network adapter.
- Platforms: Windows 7 SP1, Windows 8.1, Windows 10 with .Net Framework 4.6.2

ASSOCIATED PRODUCTS

LWIR, MWIR BORESCOPE,
NIR/NIR BORESCOPE, SDS

SOLOnet AND IQ CONFIGURATOR

A free Windows PC software utility providing configuration and data visualisation for the SOLONet and IQ ranges of digital infrared thermometers.

BENEFITS

- Flexible communications options
- Live temperature data display
- Visual display of alarms
- Easy emissivity setting

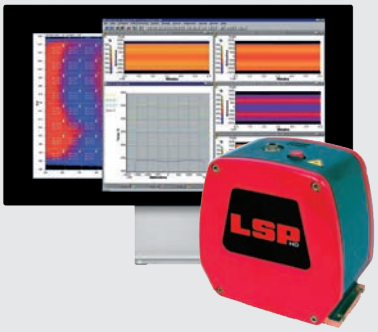
MINIMUM PLATFORM SPECIFICATION

- Processor: Dual Core Pentium or equivalent
- Memory: 1GB
- Hard Drive: 100MB
- Graphics: 256MB
- Display: 1024 x 768 pixels
- Operating System: Windows XP SP2 32 bit

ASSOCIATED PRODUCTS

SOLONet/IQ SERIES

LANDSCAN WINDOWS CONTROL AND ANALYSE (WCA)



PC software package providing detailed control and analysis for multiple LSP-HD thermal imaging linescanners. Software can support up to eight linescanners simultaneously.

BENEFITS

- Multi-scanner operation
- Simultaneous data stream display and processing
- Fully scalable input/output capabilities
- Powerful post-processing capabilities

MINIMUM PLATFORM SPECIFICATION

- Processor: Dual Core Pentium or equivalent
- Memory: 1GB
- Hard Drive: 100MB
- Graphics: 256MB
- Display: 1024 x 768 pixels
- Operating System: Windows XP SP2 32 bit

ASSOCIATED PRODUCTS

LSP-HD

CYCLOPS LOGGER (PC AND MOBILE)

FREE DOWNLOAD

Free software utility enabling Cyclops L portable pyrometer users to view, analyse and save measurement data, defining routes and data.

BENEFITS

- Real-time thermal analysis
- Full range of analysis and control functions
- Automatic storage of images and video in the event of an alarm
- Monitors or controls up to four imagers at full frame rate

MINIMUM PLATFORM SPECIFICATION

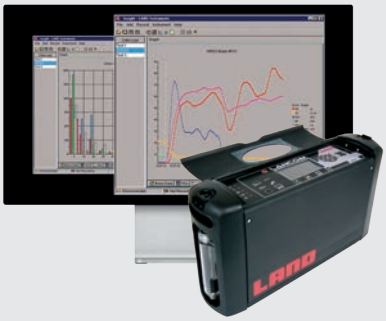
- Processor: Dual Core Pentium or equivalent
- Memory: 1GB
- Hard Drive: 100MB
- Graphics: 256MB
- Display: 1024 x 768 pixels
- Operating System: Windows XP SP2 32 bit
- Platforms: Windows XP, Windows 7, Windows 8, and Windows 10

ASSOCIATED PRODUCTS

Cyclops L

INSIGHT DATA ACQUISITION AND ANALYSIS

FREE DOWNLOAD



PC data acquisition software for direct logging of stack emissions measurements from Lancom 4 portable gas analysers.

BENEFITS

- Real-time data display, capture and storage
- Easy-to-use, Windows-based software
- Range of display formats for information
- Export data to Microsoft Excel or text file

MINIMUM PLATFORM SPECIFICATION

- Processor: 450MHz Pentium processor
- Memory: 128MB RAM
- Hard Drive: 40MB
- Graphics: 256MB
- Display: 1024 x 768 pixels
- TCP/IP networking must also be installed for Insight to run
- Platforms: Windows 7 and Windows 8

ASSOCIATED PRODUCTS

LANCOM 4

INDUSTRY APPLICATION SPECIFIC

PARTICULAR INDUSTRIAL APPLICATIONS REQUIRE SYSTEMS SPECIFICALLY DESIGNED TO SOLVE CRITICAL TEMPERATURE MEASUREMENT PROBLEMS. OUR SPECIALISED SOLUTIONS PROVIDE OPTIMISED PERFORMANCE IN THESE CHALLENGING PROCESSES.

GOLD CUP

TEMPERATURE RANGE
30 - 81 °C / 86 - 178 °F

LAND's unique reference pyrometer designed specifically for temperature measurements on the surface of reformer tubes.

BENEFITS

- Removes errors inherent in other measurement methods
- Gives a true value regardless of emissivity
- Portable, battery-powered operation
- Increases accuracy of your thermal monitors

INDUSTRIES

- Steel
- Glass
- Power Generation
- Minerals

APPLICATIONS

- Hydrogen – Primary Syngas Reformer

SD – BLAST FURNACE STOVE DOME

TEMPERATURE RANGE
20 - 30 °C / 68 - 86 °F

A short wavelength infrared thermometer system designed for high-precision, and rapid non-contact temperature measurements of refractories on top of blast furnace stoves.

BENEFITS

- System designed for furnace application
- Easy maintenance significantly reduces costs
- Shut-off valve for problem-free removal
- Developed to withstand hot, high-pressure conditions

INDUSTRIES

- Glass
- Steel

APPLICATIONS

- Melt Tank – Inside Refractory (Container/ Fibreglass /Rockwool/Speciality/Tableware)
- Iron to Steel – Hot Blast Stove
- Iron to Steel – Blast Main and Tuyere

UNDERSTRIP

(Pyrometers available depending on temperature required)

TEMPERATURE RANGE
600 - 2600 °C / 1112 - 4712 °F

Fibre-optic temperature measurement system designed to provide continuous, accurate monitoring of metal surfaces in cooling zones and water cooling applications.

BENEFITS

- Minimal services with no water cooling
- Electronics positioned at safe distance
- Simple installation and removal and non-critical positioning

INDUSTRIES

- Steel

APPLICATIONS

- Hot Rolling – Continuous Caster Spray Chamber
- Hot Rolling – Blooming/Beam Mill
- Hot Rolling – Plate Mill/Reversing Mill
- Hot Rolling – Roughing Mill
- Hot Rolling – Scalebreaker

AMECARE®

PERFORMANCE SERVICES

ENSURE PEAK PERFORMANCE

LAND'S AMECARE PERFORMANCE SERVICES KEEP YOUR EQUIPMENT OPERATING AT OPTIMUM EFFICIENCY, SO YOU GET THE BEST RETURN ON INVESTMENT OVER THE LIFETIME OF YOUR PRODUCT.

CERTIFICATION AND CALIBRATION

Our accredited, best-in-class service ensures you obtain the optimal operating performance from your temperature measurement systems, improving the accuracy of your measurement capability and meeting required national and international quality standards.

ON-SITE SERVICES

Our highly trained technicians are ready to attend your site to cover planned maintenance schedules and deal with emergency breakdowns. We deliver on-site calibration, servicing, and commissioning, along with remote technical support.

PART-EXCHANGE PROGRAM

Where an instrument being returned is, unfortunately, found to be beyond economical repair or obsolete, the part-exchange program offers LAND's customers a cost-effective alternative to repair.

RETURNS

If you need to return an instrument to us for warranty, repair, calibration/certification, or routine maintenance, we'll send it back to you fully tested and complete with a certificate of conformity.

SERVICE CENTRES

Our worldwide network of service centres provide a full range of support operations, including repairs, calibration, and technical advice. Global coverage ensures someone is always available to deal with your enquiry, with a rapid turnaround for parts or returns.

AMECare SERVICE CONTRACTS

Available in gold, silver and bronze levels, an AMECare Service Contract ensures your instrument operates at peak performance throughout its lifetime, with annual preventative maintenance, extended warranty, and other benefits.

TECHNICAL SUPPORT

In the unlikely event of a problem with an instrument – or if you simply have a question about issues such as installation, performance, or configuration – our technical support team is ready to help.

TRAINING

Tailored to the needs of those attending, our customised training courses deliver the essential application, product and measurement know-how to achieve optimum performance from your LAND instrument.

DISCONTINUED/ OBSOLETE PRODUCTS

Find details of our discontinued or obsoleted products, including recommended newer product replacements. Our discontinued products remain fully supported by our service teams, internal technical support engineers, and spare parts service.

PRODUCT DOCUMENTATION RESOURCE LIBRARY

Find the latest available product documentation with our online database including brochures, white papers, technical drawings, and certificates (some technical information available to registered users only).

FOR OUR FULL RANGE OF PRODUCTS AND SERVICES VISIT: WWW.AMETEK-LAND.COM

DOWNLOAD APPLICATION NOTES AT WWW.AMETEK-LAND.COM

LAND® AMETEK®

CONTACT US

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EMAIL: land.enquiry@ametek.com

We are fully committed to Quality Assurance. See all our accreditations at **AMETEK-LAND.COM/QUALITY**

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