APDIS

Intelligent Quality Stations

Automotive-Focused Inspection Systems
Introducing the APDIS Intelligent Quality Stations

APDIS is the new generation of the Nikon Laser Radar. It introduces a new design with new benefits, whilst maintaining the inherent features that make the Laser Radar a truly unique metrology system.

Intelligent measurement allows measurements over 6 times faster than a traditional CMM, without adapters, coatings or reference targets. The long range capability also allows measurements of previously inaccessible areas greatly increasing measurement coverage.

Intelligent analysis allows you to measure only what you need, where you need, how you need. With minimal post processing, real-time feedback and analysis is possible allowing you to identify problems faster. Whether it is 1 or 1000 features, the IQ stations can give fast results in absolute, traceable coordinates.

Intelligent quality therefore means inspection where it is needed, when it is needed, whether that is in a metrology room, or on the shop floor right where you need it.

FLEXIBLE OPTIONS FOR THE SHOP FLOOR OR METROLOGY ROOM

The APDIS Intelligent Quality Stations provide self-contained, accurate, precision CMM systems for a range of component sizes from car doors to a full vehicle chassis.

Choose from a single Laser Radar setup for smaller components, through dual turntables and dual Laser Radars for the ultimate level of measurement productivity on larger components, equally at home in a metrology room, or on the shop floor right where you need it.

INTELLIGENT MEASUREMENTS, INTELLIGENT ANALYSIS, INTELLIGENT QUALITY

Intelligent measurement allows measurements over 6 times faster than a traditional CMM, without adapters, coatings or reference targets. The long range capability also allows measurements of previously inaccessible areas greatly increasing measurement coverage.

Intelligent analysis allows you to measure only what you need, where you need, how you need. With minimal post processing, real-time feedback and analysis is possible allowing you to identify problems faster. Whether it is 1 or 1000 features, the IQ stations can give fast results in absolute, traceable coordinates.

Intelligent quality therefore means inspection where it is needed, when it is needed, whether that is in a metrology room, or on the shop floor for maximum efficiency. Minimal setup with simplified programming and modification makes for a truly flexible and easy-to-use system. Measurements can be made by simply choosing from pre-set routines, further reducing inspection and analysis times.
Exploiting the power of the APDIS Laser Radar

APDIS LASER RADAR TECHNOLOGY
Innovative frequency modulated steered laser beam for precision measurements. Combines angle and range data to give high accuracy, absolute measurements in a large volume.

Learn more at www.industry.nikon.com

APDIS LASER RADAR TECHNOLOGY
Already used by global automotive OEMs to measure 1000s of cars each day, Laser Radar technology is a long-range, non-contact, accurate CMM.

LARGE OFFSET FOR SAFETY
NO PROBES, TARGETS OR ADAPTERS FOR SIMPLE SETUP
FAST MEASUREMENTS FOR HIGH PRODUCTIVITY
LATEST GENERATION APDIS MV430E LASER RADAR
PRECISION FEATURE MEASUREMENTS FOR SMALL DATA SETS
LONG RANGE FOR EXCELLENT COVERAGE
IP54 FOR SHOP FLOOR ENVIRONMENTS
R-Series
Productive panel machines

Choose from 1 or 2 turntables for measurement efficiency.

**ALL-ROUND VISIBILITY**
A turntable allows the part to be rotated to the optimal orientation for measurement, whilst the robot gives visibility of features from above or below.

**FAST AND PRECISE**
With an average of 2-3 seconds per feature, measurements are fast and you only need to measure what you need to measure, whether it’s one or one hundred features.

**SMALL TO MEDIUM SIZED PARTS**
A 1.8m diameter turntable plate with a pre-drilled hole pattern allows for varying part sizes to be accommodated.

**NO SETUP, NO FUSS**
Directly measure features with no adapters, probes or coatings. Setup is as easy as putting the part in place.

**DUAL TURNTABLES FOR INCREASED PRODUCTIVITY**
With the dual turntable option, different fixtures can be installed allowing for minimal swap out time. One turntable can be loaded whilst the other one is being measured.

**SIMPLIFIED PROGRAMMING**
Pre-defined positions for the turntable and robot make programming easy, with the number of positions automatically minimized for each part. No complex robot programming required.

**FIXTURE ALIGNMENT**
Tooling balls define the fixture alignment independently of the part from all angles, allowing for minimal measurement routines and keeping accuracies independent of the robot.

**SAFE OPERATION**
Certified to international safety standards, floor scanners and light curtains give easy load and unload access whilst maintaining operator safety when running a measurement.

**INSTALL WHERE YOU NEED**
Able to operate within a wide temperature range and with no effects from background lighting, the R-Series is equally at home on the shop floor or in the metrology room. The environment is open.
DR-Series Large Volume CMM

Designed with body in white, underbody and larger components in mind, two Laser Radars drive ultimate measurement productivity.

ALL-ROUND VISIBILITY
With two Laser Radars, two robots and two rails, measurements are possible for all-around large components. Even measure features deep inside a car body with the long standoff of the Laser Radar.

LOW MAINTENANCE
Minimal robot moves means minimal impact on cables and moving parts, requiring minimal maintenance.

FIXTURE ALIGNMENT
Tooling balls define the fixture alignment independently of the part from all angles, allowing for minimal measurement routines and keeping accuracies independent of the robot.

SIMPLIFIED PROGRAMMING
Pre-defined positions for the robots make programming easy, with the number of positions automatically minimized for each part. No complex robot programming required.

FAST AND PRECISE
With an average of 2-3 seconds per feature and simultaneous measurements from both sides, measurement routines are fast and you only need to measure what you need to measure, whether it’s one or one hundred features.

LARGE VOLUME
With a large internal measurement volume of over 70m³, the DR series can cope with a wide variety of large parts and components.

NO PREPARATION, NO FUSS
Directly measure features with no adapters, probes or coatings. Setup is as easy as putting the part in place.

DUAL TURNTABLES FOR INCREASED PRODUCTIVITY
By choosing the dual turntable option, smaller components can be measured independently, whilst larger parts are loaded and unloaded out of the main body of the station.

INSTALL WHERE YOU NEED
Able to operate within a wide temperature range and with no effects from background lighting, the DR-Series is equally at home on the shop floor or in the metrology room. The environment is open.

FAST AND PRECISE
With an average of 2-3 seconds per feature and simultaneous measurements from both sides, measurement routines are fast and you only need to measure what you need to measure, whether it’s one or one hundred features.

LARGE VOLUME
With a large internal measurement volume of over 70m³, the DR series can cope with a wide variety of large parts and components.

NO PREPARATION, NO FUSS
Directly measure features with no adapters, probes or coatings. Setup is as easy as putting the part in place.

DUAL TURNTABLES FOR INCREASED PRODUCTIVITY
By choosing the dual turntable option, smaller components can be measured independently, whilst larger parts are loaded and unloaded out of the main body of the station.

INSTALL WHERE YOU NEED
Able to operate within a wide temperature range and with no effects from background lighting, the DR-Series is equally at home on the shop floor or in the metrology room. The environment is open.
Benefits Summary

MORE DATA, FASTER
Over 6x faster than traditional CMM, no part preparation and 2-3 seconds per feature on average. React to problems more quickly.

LOW MAINTENANCE
Minimal robot moves for minimal wear and tear. High availability.

PRECISION MEASUREMENTS
Only measure what is required with real-time results, whether 1 or 1000 features. Faster measurements, faster analysis.

SIMPLIFIED SETUP
No adapters, no coatings, no stickers. Directly measure even difficult features.

ALL ROUND VISIBILITY
Long range measurements and wide field of view even inside a vehicle. Excellent feature coverage.

EASY PROGRAMMING
Pre-configured robot positions and software optimization. Simple and fast programming and modifications.

INSTALLED FLEXIBILITY
Shop floor or metrology room installation. Results where you need them with minimal transport time.

PART SAFE
>500mm standoff for zero risk of collision in normal use. No damage, no downtime, no scrap.

Specifications

<table>
<thead>
<tr>
<th>Name</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R-Series</td>
</tr>
<tr>
<td>R180S</td>
<td>Robot and Turntable</td>
</tr>
<tr>
<td>R180D</td>
<td>Robot and dual Turntables</td>
</tr>
<tr>
<td></td>
<td>DR-Series</td>
</tr>
<tr>
<td>DR600</td>
<td>Dual robot on rails</td>
</tr>
<tr>
<td>DR600T</td>
<td>Dual robot on rails</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Install Size1(mm)</th>
<th>Measurement volume2(mm)</th>
<th>TT Diameter (mm)</th>
<th>Rail Travel3(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R180S</td>
<td>8000</td>
<td>5000</td>
<td>4000</td>
<td>1800</td>
</tr>
<tr>
<td>R180D</td>
<td>9000</td>
<td>11000</td>
<td>4000</td>
<td>2 x 1800</td>
</tr>
<tr>
<td>DR600</td>
<td>11000</td>
<td>8000</td>
<td>4000</td>
<td>9000</td>
</tr>
<tr>
<td>DR600T</td>
<td>13000</td>
<td>13000</td>
<td>4000</td>
<td>9000 + 2 x 1800</td>
</tr>
</tbody>
</table>

1 Fenceline and minimum clearance height
2 Approximate internal measurement volume
3 Rail travel can vary depending on rail used

Measurement Specifications

<table>
<thead>
<tr>
<th>Name</th>
<th>MV430E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Rate</td>
<td>4000Hz</td>
</tr>
<tr>
<td>Scanning Speed1</td>
<td>1000 pts/sec 1 sec/cm2</td>
</tr>
<tr>
<td>Feature Measurement2</td>
<td>Enhanced Feature Scan</td>
</tr>
<tr>
<td>Vibration Measurement</td>
<td>2000Hz Max; 1µm/m displacement sensitivity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Range</th>
<th>Azimuth</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5m – 30m</td>
<td>± 180°</td>
<td>± 45°</td>
</tr>
<tr>
<td>Accuracy (MPE)</td>
<td>20µm + 5µm/m</td>
<td>13.6µm/m</td>
</tr>
</tbody>
</table>

1 Default settings - stacking 4; point spacing 0.1mm, line spacing 1mm
2 Up to twice the feature measurement speed versus standard system. Exact speed depends on settings.

View more specifications at [www.industry.nikon.com](http://www.industry.nikon.com)
NIKON CORPORATION
Shinagawa Intercity Tower C, 2-15-3, Konan, Minato-ku, Tokyo 108-6290 Japan
Tel: +81 3 6433 3701 Fax: +81 3 6433 3784
www.nikon.com/products/industrial-metrology/

NIKON METROLOGY EUROPE NV
Interleuvenlaan 86, B-3001 Leuven, Belgium
Tel: +32 16 74 01 00 Fax: +32 16 74 01 03
Sales.Europe.NM@nikon.com

NIKON METROLOGY UK LTD.
UNITED KINGDOM Tel: +44 1332 811 349
Sales.UK.NM@nikon.com

NIKON METROLOGY SARL
FRANCE Tel: +33 1 60 86 09 76
Sales.France.NM@nikon.com

NIKON METROLOGY GMBH
GERMANY Tel: +49 211 45 44 69 51
Sales.Germany.NM@nikon.com

NIKON METROLOGY, INC.
12701 Grand River Road, Brighton, MI 48116 U.S.A.
Tel: +1 810 220 4360 Fax: +1 810 220 4300
Sales.NM-US@nikon.com

NIKON METROLOGY - MÉXICO
MÉXICO Tel: +52 442 688 5067
Sales.NM-MX@nikon.com

NIKON INSTRUMENTS (SHANGHAI) CO. LTD.
CHINA Tel: +86 21 6841 2050 (Shanghai)
CHINA Tel: +86 10 5833 2028 (Beijing)
CHINA Tel: +86 20 3882 0551 (Guangzhou)

NIKON INSTRUMENTS KOREA CO. LTD.
KOREA Tel: +82 2 2186 8400

NIKON SINGAPORE PTE. LTD.
SINGAPORE Tel: +65 6559 3651
NSG.Industrial-sales@nikon.com

PT. NIKON INDONESIA
INDONESIA Tel: +62 217 864 3949
PTN.Instruments@nikon.com

NIKON SALES (THAILAND) CO., LTD.
THAILAND Tel: +66 2633 5100

ISO 14001 Certified for NIKON CORPORATION
ISO 9001 Certified for NIKON CORPORATION
Industrial Metrology Business Unit

More offices and resellers at www.industry.nikon.com

Search ‘Nikon Metrology’ to follow