

# Leica RTC360 3D Reality Capture Solution

## Fast. Agile. Precise.



### Fast

The Leica RTC360 laser scanner makes 3D reality capture faster than ever before. With a measuring rate of up to 2 million points per second and advanced HDR imaging system, the creation of coloured 3D point clouds can be completed in under 2 minutes. Plus, automated targetless field registration (based on VIS technology) and the seamless, automated transfer of data from site to office reduce time spent in the field and further maximise productivity.



### Agile

Small and lightweight, the Leica RTC360 scanner's portable design and collapsible tripod mean it's compact enough to fit into most backpacks, ready to be taken anywhere. Once on-site, easy-to-use one-button operation makes for fast, hassle-free scanning.



### Precise

Low noise data allows for better images, resulting in crisp, high-quality scans that are rich in detail and ready for use in a range of applications. Combined with Cyclone FIELD 360 software for automated registration in the field, the Leica RTC360 scanner offers outstanding precision that can be checked on-site.

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# Leica RTC360 Product Specifications

## GENERAL

|                  |  |
|------------------|--|
| 3D laser scanner | High-speed 3D laser scanner with integrated HDR spherical imaging system and Visual Inertial System (VIS) for real time registration |
|------------------|--|

## PERFORMANCE

|                        |  |
|------------------------|--|
| Data acquisition       | < 2 mins for complete full dome scan and spherical HDR image at 6mm @ 10 m resolution  |
| Real time registration | Automatic point cloud alignment based on real time tracking of scanner movement between setups based on Visual Inertial System (VIS) by video-enhanced inertial measurement unit |
| Double scan            | Automatic removal of moving objects  |
| Check & Adjust         | Field procedure for targetless checking of angular parameters  |

## SCANNING

|                      |  |
|----------------------|--|
| Distance measurement | High-speed, high dynamic time of flight enhanced by Waveform Digitising (WFD) technology                                       |
| Laser class          | 1 (in accordance with IEC 60825-1:2014), 1550 nm (invisible)   |
| Field of view        | 360° (horizontal) / 300° (vertical)  |
| Range                | Min. 0.5 - up to 130 m   |
| Speed                | Up to 2,000,000 pts / sec  |
| Resolution           | 3 user selectable settings (3/6/12 mm @ 10 m)  |
| Accuracy*            | Angular accuracy 18"<br>Range accuracy 1.0 mm + 10 ppm<br>3D point accuracy<br>1.9 mm @ 10 m<br>2.9 mm @ 20 m<br>5.3 mm @ 40 m |
| Range noise**        | 0.4 mm @ 10 m, 0.5 mm @ 20 m   |

## IMAGING

|        |  |
|--------|--|
| Camera | 36 MP 3-camera system captures 432 MPx raw data for calibrated 360° x 300° spherical image |
| Speed  | 1 minute for full spherical HDR image at any light condition                               |
| HDR    | Automatic, 5 brackets  |

## NAVIGATION SENSORS

|                        |  |
|------------------------|--|
| Visual Inertial System | Video enhanced inertial measuring system to track movement of the scanner position relative to the previous setup in real time |
| Tilt                   | IMU based, Accuracy: 3' for any tilt   |
| Additional sensors     | Altimeter, Compass, GNSS   |

## OPERATION

|                |  |
|----------------|--|
| On scanner     | Touch-screen control with finger touch, full colour WVGA graphic display 480 x 800 pixels  |
| Mobile devices | Leica Cyclone FIELD 360 app for iOS and Android tablet computers and smartphones including:<br>- Remote control of scan functions<br>- 2D & 3D data viewing<br>- Tagging<br>- Automatic alignment of scans |
| Wireless       | Integrated wireless LAN (802.11 b/g/n)   |
| Data storage   | Leica MS256, 256 GB exchangeable USB 3.0 flash drive   |

## DESIGN & PHYSICAL

|                    |   |
|--------------------|---|
| Housing            | Aluminium frame and sidecovers  |
| Dimensions         | 120 mm x 240 mm x 230 mm / 4.7" x 9.4" x 9.1"   |
| Weight             | 5.35 kg / 11.7 lbs, nominal (without batteries)   |
| Mounting mechanism | Quick mounting on 5/8" stub on lightweight tripod / optional tribrach adapter / survey tribrach adapter available |

## POWER

|                  |   |
|------------------|---|
| Internal battery | 2 x Leica GEB361 internal, rechargeable Li-Ion batteries.<br>Duration: Typically up to 4 hours<br>Weight: 340 g per battery |
| External         | Leica GEV282 AC adapter   |

## ENVIRONMENTAL

|                                |   |
|--------------------------------|---|
| Operating temperature          | -5° to +40°C  |
| Storage temperature            | -40° to +70°C   |
| Operating low temperatures**** | -10° to +40°C   |
| Dust/Humidity***               | Solid particle/liquid ingress protection IP54 (IEC 60529) |



Leica Cyclone FIELD 360



Leica Cyclone REGISTER 360



Leica ScanStation P50

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All specifications are subject to change without notice.

All accuracy specifications are on a level of confidence of 68% according to the Guide of the Expression of Uncertainty in Measurement (JCGM100:2008) unless otherwise noted.

\* At 89% albedo.

\*\* For single shot measurements

\*\*\* For upright and upside down setups with a +/- 15° inclination

\*\*\*\* Extended low temperature operation is possible to -10°C if internal temperature is at or above -5°C when powered on. For extended low temperature measurement, it is recommended that QA procedures are followed.

Scanner: Laser class 1 in accordance with IEC60825:2014

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# Leica RTC360 LT - 3D Reality Capture Solution

## Fast. Agile. Precise.



### Fast

The Leica RTC360 LT laser scanner makes 3D reality capture more economical than ever before. With a measuring rate of up to 1 million points per second and advanced HDR imaging system, the creation of coloured 3D point clouds can be completed in under 2 minutes. Plus, semi-automated targetless field registration and the seamless, automated transfer of data from site to office reduce time spent in the field and further maximise productivity.



### Agile

Small and lightweight, the Leica RTC360 LT scanner's portable design and collapsible tripod mean it's compact enough to fit into most backpacks, ready to be taken anywhere. Once on-site, easy-to-use one-button operation makes for fast, hassle-free scanning.



### Precise

Low noise data allows for better images, resulting in crisp, high-quality scans that are rich in detail and ready for use in a range of applications. Combined with Cyclone FIELD 360 software for semi-automated registration in the field, the Leica RTC360 LT scanner offers outstanding precision that can be checked on-site.

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# Leica RTC360 LT Product Specifications

## GENERAL

|                  |  |
|------------------|--|
| 3D laser scanner | High-speed 3D laser scanner with integrated HDR spherical imaging system |
|------------------|--|

## PERFORMANCE

|                  |   |
|------------------|---|
| Data acquisition | < 3 mins for complete full dome scan and spherical HDR image at 6mm @ 10 m resolution |
| Double scan      | Automatic removal of moving objects   |
| Check & Adjust   | Field procedure for targetless checking of angular parameters                         |

## SCANNING

|                      |  |
|----------------------|--|
| Distance measurement | High-speed, high dynamic time of flight enhanced by Waveform Digitising (WFD) technology                                       |
| Laser class          | 1 (in accordance with IEC 60825-1:2014), 1550 nm (invisible)   |
| Field of view        | 360° (horizontal) / 300° (vertical)  |
| Range                | Min. 0.5 - up to 130 m   |
| Speed                | Up to 1,000,000 pts / sec  |
| Resolution           | 3 user selectable settings (3/6/12 mm @ 10 m)  |
| Accuracy*            | Angular accuracy 18"<br>Range accuracy 1.0 mm + 10 ppm<br>3D point accuracy<br>1.9 mm @ 10 m<br>2.9 mm @ 20 m<br>5.3 mm @ 40 m |
| Range noise**        | 0.4 mm @ 10 m, 0.5 mm @ 20 m   |

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| Speed  | 1 minute for full spherical HDR image at any light condition                               |
| HDR    | Automatic, 5 brackets  |

## NAVIGATION SENSORS

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| Tilt               | IMU based, Accuracy: 3' for any tilt |
| Additional sensors | Altimeter, Compass, GNSS             |

## OPERATION

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| On scanner     | Touch-screen control with finger touch, full colour WVGA graphic display 480 x 800 pixels   |
| Mobile devices | Leica Cyclone FIELD 360 app for iOS and Android tablet computers and smartphones including:<br>- Remote control of scan functions<br>- 2D & 3D data viewing<br>- Tagging<br>- Visual alignment of scans |
| Wireless       | Integrated wireless LAN (802.11 b/g/n)  |
| Data storage   | Leica MS256, 256 GB exchangeable USB 3.0 flash drive  |

## DESIGN & PHYSICAL

|                    |   |
|--------------------|---|
| Housing            | Aluminium frame and sidecovers  |
| Dimensions         | 120 mm x 240 mm x 230 mm / 4.7" x 9.4" x 9.1"   |
| Weight             | 5.2 kg / 11.5 lbs, nominal (without batteries)  |
| Mounting mechanism | Quick mounting on 5/8" stub on lightweight tripod / optional tribrach adapter / survey tribrach adapter available |

## POWER

|                  |   |
|------------------|---|
| Internal battery | 2 x Leica GEB361 internal, rechargeable Li-Ion batteries.<br>Duration: Typically up to 4 hours<br>Weight: 340 g per battery |
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| Dust/Humidity***               | Solid particle/liquid ingress protection IP54 (IEC 60529) |



Leica RTC360



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