

# Leica Nova TM60

## Data sheet

Nova



Leica Geosystems' new monitoring solution comes with a strong promise: **real-time information and reports** you can always rely on, helping you make informed decisions in time and on time. Be it settling, flexing, shifting, sliding or any other change of state – you will have it **under control** 24 hours a day, seven days a week. The robust, precise and enduring TM60 comes with the world's longest **ATRplus range**, **half-second** automatic aiming accuracy, advanced **imaging** and the longest **continuous operation**. Combined with the **Leica GeoMoS monitoring solution**, you will be able to react to complex demands of any project – be it continuous or periodic. The decision is easy: maximum safety, minimum risk, half-second at a time.

#### LEICA NOVA TM60 MONITORING STATION: MONITOR IT.

- **Permanent monitoring (24/7):** remote operation, continuous monitoring, real-time measurement data, robust against various environmental conditions.
- **Campaign monitoring (periodical):** flexible instrument setup, automated measurements, Leica Captivate field software, dedicated monitoring app, connectivity to cloud services.
- **Buildings and structures:** monitoring of buildings, skyscrapers, industrial and sports facilities, offshore and underground structures.
- **Transportation infrastructure:** monitoring of tunnels, railway, bridges, roads & highways, airports, ports & canals.
- **Environmental monitoring:** monitoring of landslides, rock falls, subsidence.
- **Energy infrastructure:** monitoring of dams, oil & gas, nuclear facilities, pipelines power plants.
- **Mining:** monitoring of slope stability, high walls and quarries.

# Leica Nova TM60 Monitoring Station

## ANGLE MEASUREMENT

Accuracy <sup>1</sup> Hz and V	■ Absolute, continuous, quadruple	0.5" (0.15 mgon) or 1" (0.3 mgon)
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## DISTANCE MEASUREMENT

Range <sup>2</sup>	■ Prism (GPR1, GPH1P) <sup>3</sup>	0.9 m to 3,500 m
	■ Non-Prism / Any surface <sup>4</sup>	0.9 m to >1,000 m
Accuracy / Measurement time	■ Single (prism) <sup>2,5</sup>	0.6 mm + 1 ppm / typ. 2.4 s
	■ Single (any surface) <sup>2,4,5,6</sup>	2 mm + 2 ppm / typ. 2 s <sup>9</sup>
Laser dot size	At 50 m	8 mm x 20 mm
Measurement technology	System analyser	Coaxial, visible red laser

## IMAGING<sup>7</sup>

Overview and telescope camera	■ Sensor	5 megapixel CMOS sensor
	■ Field of view (overview / telescope)	19.4° / 1.5°
	■ Frame rate	Up to 20 frames per second

## MOTORISATION

Direct drives based on Piezo technology	Rotation speed / Time to change face	Maximum 200 gon (180°) per s / typically 2.9 s
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## AUTOMATIC AIMING - LONG RANGE ATRplus

Target aiming range <sup>2</sup>	■ Circular prism (GPR1, GPH1P)	■ 3,000 m
	■ 360° prism (GRZ4, GRZ122)	■ 1,500 m
Accuracy <sup>1,2</sup> / Measurement time	ATRplus angle accuracy Hz, V	0.5" (0.15 mgon) or 1" (0.3 mgon) / typically 3-4 s

## GENERAL

Operating System / Field Software	Windows EC7 / Leica Captivate with apps	
Processor	TI OMAP4430 1GHz Dual-core ARM® Cortex™- A9 MPCore™	
Autofocus <sup>8</sup> telescope	Magnification / Focus Range	30 x / 1.7m to infinity
Display and keyboard	5" (inch), WVGA, colour, touch, Face 1 standard, Face 2 optional	37 keys, illumination
Operation	3x endless drives, 1x Servofocus drive, 2x Autofocus keys <sup>8</sup> , user-definable SmartKey	
Power management	Exchangeable Lithium-Ion battery with internal charging capability	Operating Time up to 9 h
Data storage	■ Internal memory	2 GB
	■ Memory card	SD card 1 GB or 8 GB
Interfaces	RS232, USB, Bluetooth®, WLAN	
Weight	Total station including battery	7.2 kg
Environmental specifications	■ Working temperature range	-20°C to +50°C
	■ Dust & Water (IEC 60529) / Blowing rain	IP65 / MIL-STD-810G, Method 506.5-I
	■ Humidity	95%, non-condensing

<sup>1</sup> Standard deviation ISO 17123-3

<sup>2</sup> Overcast, no haze, visibility about 40 km, no heat shimmer

<sup>3</sup> 0.9 m to 2,000 m for 360° prisms (GRZ4, GRZ122)

<sup>4</sup> Object in shade, sky overcast, Kodak Gray Card (90% reflective)

<sup>5</sup> Standard deviation ISO 17123-4

<sup>6</sup> Distance > 500 m: Accuracy 4 mm + 2 ppm, Measurement Time typ. 6 s

<sup>7</sup> Available on TM60 I models

<sup>8</sup> Autofocus for TM60 I models, Servofocus only for TM60 models

<sup>9</sup> Up to 50 m, max. measurement time 15 s for full range



Laser radiation, avoid direct eye exposure.  
Class 3R laser product in accordance with IEC 60825-1:2014.

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