Leica iCON robot 60
Product information

Leica Geosystems intelligent CONstruction.
Whether you construct buildings, roads, bridges or tunnels, you benefit from intelligent CONstruction. Leica iCON is more than a new product line or software package, it enables you to enhance your performance, and increase your profitability through perfecting your construction workflow.

Understanding construction demands outstanding solutions:
- Custom-built
- Complete
- Straightforward
- High performance

When it has to be right.

Swiss Technology
by Leica Geosystems

CRP pole
Flip pole to get best prism position

Leica MPR122, 360° prism
Highly accurate target, suitable for machine control.

Leica iCON CC65/66
Rugged, mobile tablet PC with enhanced connectivity and functionality.

Leica iCON CC55
Lightweight, handy PDA for easy and efficient field work.

Leica iCON builder 60
The intuitive user interface paired with the highest quality manual total station perfects any job.

Leica Builder
Intuitive, powerful and scalable manual total station series for routine construction tasks on site.

Leica iCON gps 60
Versatile SmartAntenna for multi-purpose positioning tasks.

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- when it has to be **right**

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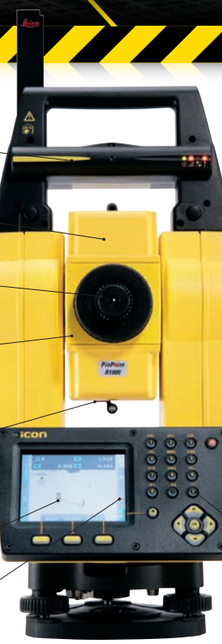
Leica iCON robot 60 perfects one-person construction layout and 3D machine control.
Its high performance tracking, innovative lock & find mechanisms and software that is tailored per work step, make it the ideal partner on site.
The powerful iCONstruct field software used as remote control optimises the functionality.

- Setup Pilot – world's first fully automatic setup measurement method
- Cube Search – boosts prism search to a maximum
- Target Snap – ignores other prisms, just locks to yours
- ATACK support for PaveSmart 3D

Electronic Guide Light (EGL) steers rod-man to line of sight

PART OF HEXAGON



- when it has to be **right**

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Leica iCON robot 60
One instrument for many tasks

Applications

- Layout lines for footings or chalk line for formwork on foundation

- Layout points on blinding layer such as pipe insert or cut-outs before pouring concrete

- MEP layout of wall penetrations for pipes, hanger locations for HVAC and duct work, inserts and slits for sheet metal work

- Controlling a wide variety of machines, such as curb & gutter or milling machines, asphalt or concrete pavers, graders or dozers, rock drilling machines or excavators

Hardware Features

- Cube Search builds a virtual cube around the prism position, dynamically updates its position and searches only within its dimensions when the tracking is interrupted.

- Industry leading coloured touch screen for best visibility
- Target Snap ensures to lock only to your pole or machine prism by excluding any "learned" points during a search routine

- Finish job in two-person mode if controller is unavailable

- PinPoint R1000 laser for highest measurement precision

Software Features

- Setup Pilot automatically finds and measures all prisms in range, compares their geometry and calculates the total station's position without user interaction

- ATACK supports the automated track alignment procedure of curb & gutter and main line pavers

- Graphical map view for quick navigation and point/ line selection

- No matter if on-board manual total stations, in combination with GPS or on a tablet as remote control of robotic total stations, the same iCONstruct software is now seamlessly integrated across the entire portfolio

Legend technical specifications:

1. Standard deviation ISO 17123-3.
2. Overcast, no haze, visibility about 40 km; no heat shimmer.
3. Standard deviation ISO 17123-4.
4. To Round Prism GPR1.
5. Under optimal conditions on Kodak Grey Card (90% reflective). Maximum range varies with atmospheric conditions, target reflectivity and surface structure.
6. Distance >500 m 4 mm + 2 ppm.
7. Single measurement every 30 second at 25° C. Battery time may be shorter if battery is not new.
8. Reflectorless measurement time may vary according to measuring objects, observation situations and environmental conditions.
9. Target perfectly aligned to the instrument.

Technical Specifications iCON robot 60

Angle Measurement (Hz, V)	
Accuracy [1]	1" (0.3 mgon), 2" (0.6 mgon), 5" (1.5 mgon)
Method	Absolute, continuous, diametrical
Display resolution	0.1" / 0.1 mgon
Compensation	Quadruple Axis compensation
Compensator setting accuracy	0.5" (0.2 mgon), 1.5" (0.5 mgon)
Distance Measurement (Prism)	
Range [2]	
Round prism (Leica GRP1)	3.500 m (12.000 ft)
360° prism (MPR122, GRZ4, GRZ122)	2.000 m (7.000 ft)
360° mini prism (Leica CRZ101)	1.000 m (3.300 ft)
Mini prism (Leica CRP111, GMP101)	2.000 m (7.000 ft)
Reflective tape (60 mm x 60 mm)	250 m (800 ft)
Accuracy [3] [4], Measurement time	
Standard:	1.0 mm + 1.5 ppm / typ. 2.4 s
Tracking:	3.0 mm + 1.5 ppm / typ. <0.15 s
Distance Measurement (Any Surface) [8]	
Range [5] PinPoint R1000	1000 m (3.280 ft)
Accuracy [3] [6], Measurement time	2 mm + 2 ppm / typ. 3 s
Laser dot size	At 30 m: approx. 7 x 10 mm At 50 m: approx. 8 x 20 mm
Shortest measurable distance	1.5 m
Data storage / Communication	
Internal memory	1 GB, > 50.000 points
USB memory stick	1 GB
SD card	8 GB
Interfaces	– Serial (Baudrate up to 115'200) – USB Type A and mini B, – Bluetooth® Wireless, class 1 – Bluetooth® > 1000 m (with TCPS29-S)
Data formats	TXT/CSV (ASCII), DXF, HeXML, TRM, GEO, LIN

Guide Light (EGL)	
Working range (average atmospheric conditions)	5 m – 150 m
Positioning accuracy	5 cm at 100 m
Telescope	
Magnification	30 x
Field of View	1° 30' (1.66 gon) 2.7 m at 100 m
Focusing range	1.7 m to infinity
Keyboard & Display	
Display	High resolution Color & Touch display, 65'000 colors, graphics, Full-VGA, display illumination, 10 brightness levels
Keyboard	22 keys (4 function keys, 12 alphanumeric keys), illumination
Operating System & Processor	
Operating system	Windows CE 6.0
Processor	Freescale i.MX31 533 MHz ARM Core
Laserplummet	
Type	Laser point
Centering accuracy	1.5 mm at 1.5 m Instrument height
Internal Battery	
Type	Lithium-Ion
Operating time [7]	approx. 5-7 hours
Weight	
Total station including battery GEB222 and tribrach	5.9 kg
Height / Width / Length	345 mm / 226 mm / 203 mm
Environmental	
Working /Storage temperature range	-20° C to +50° C / -40° C to +70° C
Dust / Water (IEC 60529) Humidity	IP55, 95%, non condensing

Leica iCONstruct Onboard Software	
Functionality of iCON robot 60 Starter Kit	Data settings, Communication settings, Levelling, Field Calibration
Extra functionality	iCON build, iCON site, iCON build plus, iCON site plus, iCON app "Sketch", iCON app "Volumes", iCON app "Stakeout", iCON app "Control Line", iCON app "As-Built", iCON app "Layout Lines", iCON app "Cut & Fill", iCON app "Roading", iCON app "Slopes", iCON app "Checks", iCON app "Machine Control", Power Search Option, Reflectorless Option, Setup Pilot Option, Target Snap Option, Cube Search Option, ATACK Option, iCONstruct MC Kit
Leica iCONstruct MC Kit	
Includes	Data Settings, Communication Settings, Levelling, Field Calibration, Instrument Setup, Measure app, Machine Control app, Power Search, Setup Pilot, Target Snap, Cube Search.

One-person or Machine Control Mode

Motorization	Rotation speed	45° (50 gon) / s	
Automatic Target Aiming (ATR)	**Range**	**ATR Mode**	**Lock Mode**
	Round prism (GPR1)	1000 m (3300 ft)	800 m (2600 ft)
	360° prism (GRZ4, GRZ122)	800 m (2600 ft)	600 m (2000 ft)
	360° mini prism (GRZ101)	350 m (1150 ft)	200 m (660 ft)
	Mini prism (GMP101)	500 m (1600 ft)	400 m (1300 ft)
	Reflective tape (60 mm x 60 mm)	45 m (150 ft)	–
	Shortest distance to 360° prism	1.5 m	5 m
	Maximum Speed (Lock Mode)		
	Tangential (standard mode)	5 m / s at 20 m, 25 m / s at 100 m	
	Radial (tracking mode)	4 m / s	
	Searching		
	Search time in field of view	Typ. 1.5 s	
	Field of View	1° 30' (1.66 gon)	
Power Search (PS)	**Range**		
	Round prism (GPR1)	300 m (1000 ft)	
	360° prism[9] (MPR122, GRZ4, GRZ122)	300 m (1000 ft)	
	Mini prism (CPR111, GMP101)	100 m (330 ft)	
	Shortest distance	1.5 m	
	Searching		
	Typical search time	5 – 10 s	
	Default search area	Hz: 360° (400 gon), V: 36° (40 gon)	
	Definable default search	Yes: Prediction / Cube Search / Power Search Window / 360° Search or combination	
	Dynamic search window	Cube Search	
	Definable search windows	Yes	