



DT-200 SERIES

***DIGITAL (LASER)
THEODOLITES***

Electronic Digital Theodolites with Laser Pointer

Topcon proudly introduces a range of electronic theodolites that integrate the very latest in electronic and optical technology.

The new DT-200 Series theodolites now feature the same high quality absolute circle reading technology as in Topcon total stations, thus ensuring the highest accuracy and reliability.

The DT-200 series are built to the highest waterproof standards and designed to be durable and easy to use even under the most difficult construction site conditions.

For even greater functionality, models are available which include a visible laser pointer to easily identify the point being measured.



Features

Highly accurate measurements

The DT-202 and DT-205 are provided with a tilt sensor for vertical angle correction assuring a high precision measurement accuracy of 2" (0.6mgon) and 5" (1.5mgon) respectively. The correction range of the tilt sensor is +/- 3'. The DT-202/205 and 207 assures high accuracy angle measurement due to the two-sided detection system for horizontal angle readings. The DT-202 and 205 have 1" (0.2 mgon) minimum reading for both horizontal and vertical angles.

Water and dust protected

All models are protected against penetration by dust and water to the international standard IP66. This ensures that the instruments will perform reliably even under the most difficult site conditions, guaranteeing maximum productivity during working hours and the high reliability of an instrument requiring minimal workshop maintenance.

Data Output

The DT-202 and 205 have an RS-232C serial port that allows data communication with data collectors or computers.

Compact and light weight

The DT-200 is extremely compact and lightweight for easy portability. DT-209 weighs only 3.4 Kg including batteries.

Simple operation

Topcon has combined precise reliable measurement in an easy to use, functional package. Anyone on the construction site can use the DT-200 series with only minimal instruction.

Long life battery power

The power supply is provided by 4AA type batteries, which can provide over 140 hours of continuous use.

Easy set up

DT-202, DT-205 and DT-207 have detachable tribrach to make easy exchange between traverse stations. The DT-209 has a fixed tribrach to make easy set up on a tripod. The DT-209P "quick centering" model has a shifting base tribrach for quick and easy setup over the required point.



Electronic Laser Theodolites

The DT-200L Series have similar specifications to the standard DT-200 models but have the added benefit of a visible laser point that can be used to identify the targeted point without looking through the telescope.

Wide range of applications

An electronic theodolite with a laser pointer is ideal for monitoring applications where many repeat measurements need to be taken. Without looking through the telescope the target can be sighted and the measurement made. In conditions of low lighting where viewing through the telescope is difficult, such as in tunnels or mines, the laser point can clearly identify the required point. For setting out, the person placing the nail or stake can use the laser beam to help him align on the correct direction.

Laser specifications

The laser is a visible red, class 2 laser. Wavelength 633nm with a maximum output power of 0.6mW. The range of the laser beam is approximately 50 meters depending on lighting conditions. The size of the laser spot is approximately 5mm at 20 meters. This varies over distance and depending on conditions.

Laser beam diameter (when focused)*

TELESCOPE MAGNIFICATION	DISTANCE	5	10	20	30	50
30x	Beam diameter (cm)	0.1x0.2	0.2x0.4	0.5x0.7	0.7x1.1	1.2x1.9
26x	Beam diameter (cm)	0.1x0.2	0.3x0.4	0.6x0.8	0.8x1.2	1.4x2.0

* The laser beam diameters are theoretical values. The visible laser beam diameter will vary with brightness of circumstance.



MODEL		DT-202	DT-205	DT-207	DT-209/ 209P	DT-202L	DT-205L	DT-207L	DT-209L
Telescope	Length	149mm	149mm	149mm	149mm	152mm	152mm	152mm	152mm
	Objective lens	45mm	45mm	45mm	40mm	45mm	45mm	45mm	40mm
	Magnification	30x	30x	30x	26x	30x	30x	30x	26x
	Field of view	1°30'	1°30'	1°30'	1°30'	1°30'	1°30'	1°30'	1°30'
	Resolving power	2.5"	2.5"	2.5"	3"	2.5"	2.5"	2.5"	3"
	Minimum focus	90cm	90cm	90cm	90cm	1m	1m	1m	1m
	Stadia ratio	100	100	100	100	100	100	100	100
	Stadia constant	0	0	0	0	0	0	0	0
	Sighting collimator	Double	Double	Double	Double	Double	Double	Double	Double
Electronic Angle Measurement	Method	Absolute Reading	Absolute Reading	Absolute Reading	Absolute Reading	Absolute Reading	Absolute Reading	Absolute Reading	Absolute Reading
	Detecting	Horizontal: 2 side	Horizontal: 2 side	Horizontal: 2 side	Horizontal: 1 side	Horizontal: 2 side	Horizontal: 2 side	Horizontal: 2 side	Horizontal: 1 side
		Vertical: 1 side	Vertical: 1 side	Vertical: 1 side	Vertical: 1 side	Vertical: 1 side	Vertical: 1 side	Vertical: 1 side	Vertical: 1 side
	Minimum Reading	1"/5" 0.2mgon/ 1mgon	1"/5" 0.2mgon/ 1mgon	5"/10" 1mgon/ 2mgon	10"/20" 2mgon/ 5mgon	1"/5" 0.2mgon/ 1mgon	1"/5" 0.2mgon/ 1mgon	5"/10" 1mgon/ 2mgon	10"/20" 2mgon/ 5mgon
	Accuracy	2" (0.6mgon)	5" (1.5mgon)	7" (2.0mgon)	9" (3.0mgon)	2" (0.6mgon)	5" (1.5mgon)	7" (2.0mgon)	9" (3.0mgon)
	Diameter Circle	71mm	71mm	71mm	71mm	71mm	71mm	71mm	71mm
Display	Unit	2 side LCD	2 side LCD	2 side LCD	1 side LCD	2 side LCD	2 side LCD	2 side LCD	1 side LCD
		7 segments	7 segments	7 segments	7 segments	7 segments	7 segments	7 segments	7 segments
Data Output	Serial signal connector	Yes (RS-232C)	Yes (RS-232C)	No	No	Yes (RS-232C)	Yes (RS-232C)	No	No
Illumination	Display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Reticle	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Compensator	Tilt sensor	Yes (Vertical)	Yes (Vertical)	No	No	Yes (Vertical)	Yes (Vertical)	No	No
	Compensating range	+/-3'	+/-3'	No	No	+/-3'	+/-3'	No	No
Optical Plummet Telescope	Magnification	3x	3x	3x	3x	3x	3x	3x	3x
	Field of view	3°	3°	3°	3°	3°	3°	3°	3°
	Focusing	0.5m to infinity	0.5m to infinity	0.5m to infinity	0.5m to infinity	0.5m to infinity	0.5m to infinity	0.5m to infinity	0.5m to infinity
Level Sensivity	Plate level	40"/2mm	40"/2mm	40"/2mm	60"/2mm	40"/2mm	40"/2mm	40"/2mm	60"/2mm
	Circular level	10'/2mm	10'/2mm	10'/2mm	10'/2mm	10'/2mm	10'/2mm	10'/2mm	10'/2mm
Water Protection	Standard	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Power Supply	Battery	4AA batteries	4AA batteries	4AA batteries	4AA batteries	4AA batteries	4AA batteries	4AA batteries	4AA batteries
Operating time (Alk.)	Theodolite only	140h	140h	150h	170h	140h	140h	150h	170h
	Laser only	-	-	-	-	80h	80h	80h	80h
	Theodolite and laser	-	-	-	-	45h	45h	45h	45h
Operating temperature	-20°C~+50°C	-20°C~+50°C	-20°C~+50°C	-20°C~+50°C	-20°C~+50°C	-20°C~+50°C	-20°C~+50°C	-20°C~+50°C	-20°C~+50°C



TOPCON EUROPE B.V.

Essebaan 11
2908 LJ Capelle a/d IJssel
The Netherlands

Phone: 31-(0)10 - 458 50 77
Fax: 31-(0)10 - 458 50 45
E-mail: survey@topcon.nl
http: //www.topconeurope.com

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Certificatie No. 03682548
TOPCON EUROPE B.V.
Capelle a/d IJssel, The Netherlands