HILTI P3D 800
LASER SCANNER

Simplicity. Speed. Precision.

CAPTURE DATA WITH ACCURACY AND CONFIDENCE

Combining simplicity with precision, the Hilti P3D 800 laser scanner helps you to work smarter and faster. Pair it with the easy-to-use review features of Hilti OnSite Scan software, and enhance your ability to capture and process data even further.

With automatic calibration, self-leveling, and optimized workflows, this system empowers you to capture laser scans with precision and confidence. Seamlessly integrating with design software and QA/QC workflows, it helps increase productivity, reduce errors, and minimize the risk of costly rework.

Ease of use

- Simplified field workflows
- User-friendly interface
- Flexible control from tablet or one-button operation

Peace of mind

- Self-leveling for millimeter-level accuracy
- Reliable scanning with automatic calibration and monitoring
- Hilti OnSite Scan auto-registration backed by manual registration options

Full system solution

- Hilti OnSite Scan software to easily manage and validate scanned data in the field
- Seamless operation with the Hilti PLC 600 Layout tablet

Hilti OnSite Scan software

Features

Scanner operation	Remote control or cable	In-field documentation	Scan labels, annotations, pictures and measurements
Registration assist	Automatic and manual registration, refinement and reporting	Reports	Registration, field calibration and diagnostics reports
Auto sync	Automatic data sync from one-button operation	Data interaction	2D, 3D and Station View
Georeferencing	Laser pointer for georeferencing and precision point measurement	Data redundancy	Data stored on SD Card and tablet
		Export file formats	TDX, TZF, E57, PTX, RCP, LAS, POD
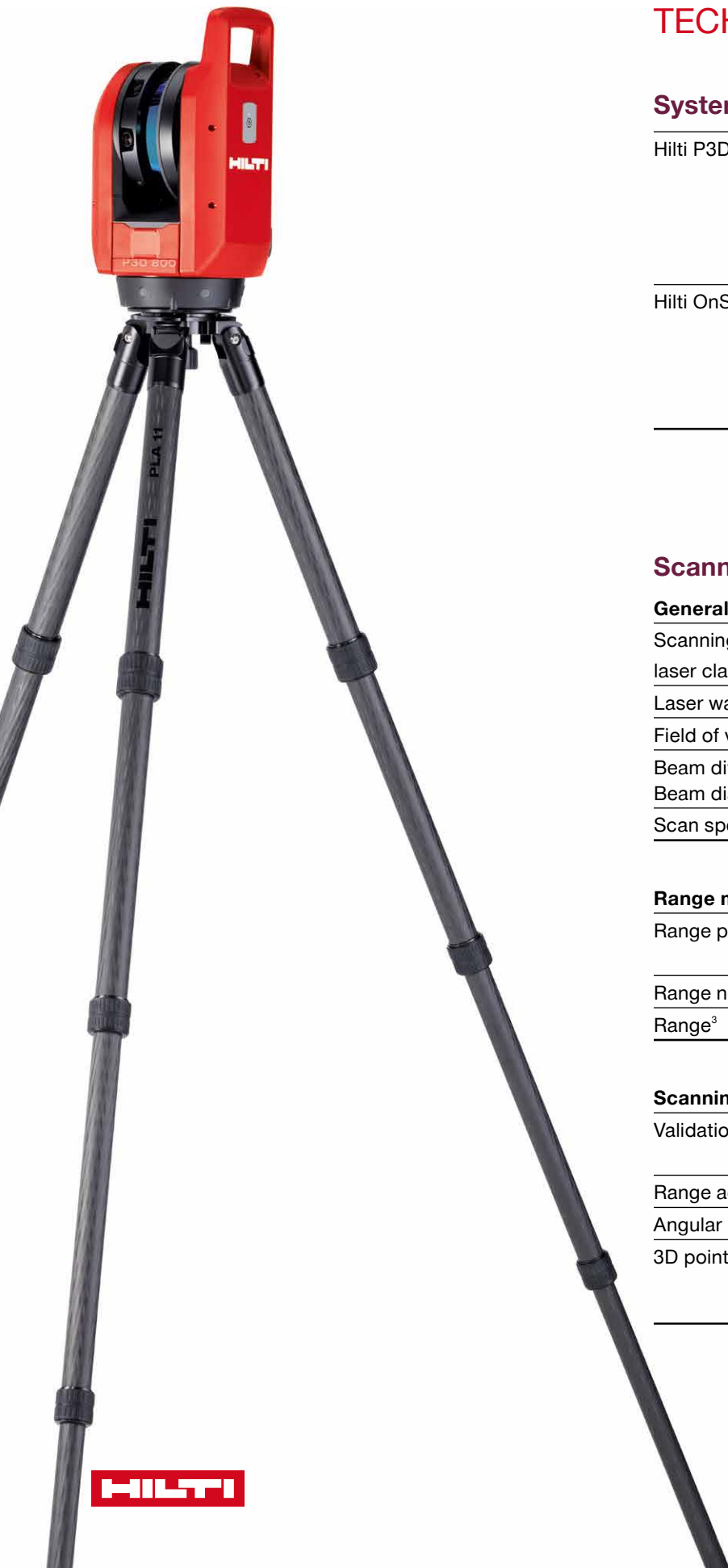
TECHNICAL DATA

System overview

Hilti P3D 800	High-speed 3D laser scanner with combined servo drive/scanning mirror, integrated HDR imaging, automatic calibration, survey-grade self-leveling and laser pointer
Hilti OnSite Scan	Easy-to-use software for automatic on-site registration, georeferencing, 3D visualization, annotations, processing and exporting

Scanning performance

General

Scanning EDM laser class	Laser class 1, eye safe in accordance with IEC EN60825-1
Laser wavelength	1530–1570 nm, invisible
Field of view	360° × 282°
Beam divergence / Beam diameter	0.8 mrad / 7.95 mm @ 10 m
Scan speed	Up to 500 kHz

Range measurement

Range principle	High speed, digital time-of-flight distance measurement
Range noise[1,2]	< 1.5 mm @ 30 m
Range[3]	0.6 m – 80 m

Scanning accuracy

Validation	Guaranteed over lifetime with auto-calibration
Range accuracy[1,2]	2 mm
Angular accuracy[1,5]	< 16"
3D point accuracy[1,5]	2.3 mm @ 10 m 3.0 mm @ 20 m 4.8 mm @ 40 m

Scanning parameters

Scan mode	Duration[4,5,6,7]	Spacing @ 10 m	Spacing @ 35 m	Spacing @ 50 m
Indoor	0:50 min	15 mm	–	–
Standard	2:03 min	8 mm	26 mm	38 mm
	3:33 min	5 mm	18 mm	25 mm
	5:36 min	4 mm	13 mm	19 mm

Imaging performance

Sensors	3 coaxial, calibrated 10 MP cameras
Resolution	3 840 × 2 746 pixels for each image
Raw image capture	Fast – 15 images – 158 MP – 1 minute – with HDR 3 minutes. Quality – 30 images – 316 MP – 2 minutes – with HDR 6 minutes.
Settings	Auto exposure and HDR Auto white balance correction and indoor/outdoor presets

Automatic calibration

Integrated calibration system	Full auto-calibration of range and angular systems when required with no user interaction or targets
Smart calibration	Monitors environmental temperature, ambient light, vibration, instrument temperature and vertical speed for optimum performance

Automatic level compensation

Type	Automatic self-leveling
Range	± 10° (survey grade) ± 45° (coarse)
Upside down	± 10° (survey grade)
Survey grade accuracy	< 3" = 0.3 mm @ 20 m

General specifications

Weight and dimensions

Instrument (including battery)	6.045 kg (13.33 lbs)
Internal battery	0.35 kg
Dimensions	178 mm × 353 mm × 170 mm

Power supply

Battery type	Hilti POA 99 Battery (6.5 Ah, 10.8 V, 70 Wh)
Typical duration	3.5 hours per battery

Environmental

Operating temperature	–20 °C to 50 °C (–4 °F to 122 °F)
Storage temperature	–40 °C to 70 °C (–40 °F to 158 °F)
Ingress protection rating	IP55 (dust protected and water jet)

Others

Laser pointer	Class 2 laser with a wavelength of 620 – 650 nm
Remote control	Hilti PLC 600 tablet via WLAN or USB cable (cable included)
Push button	One-button scan operation
Communications / data transfer	WLAN 802.11 A/B/G/N/AC or USB cable
Data storage	Standard SD Card (128GB SDHC included)
Accessories	Lightweight carbon fiber tripod

1 Specification given as 1 sigma.
2 On 80 % albedo. Albedo given @ 1 550 nm.
3 On matte surface with normal angle of incidence.
4 After automatic calibration and self-leveling within ± 10°.
5 Durations for scan times include self-leveling time within ± 10°.
6 Self-leveling will take ~ 10 seconds longer when scanner is not within ± 10°.
7 Scan times can increase up to 45 seconds for full calibrations after startup or idle time until thermal stabilization. Full system checks occur every 30 minutes.

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