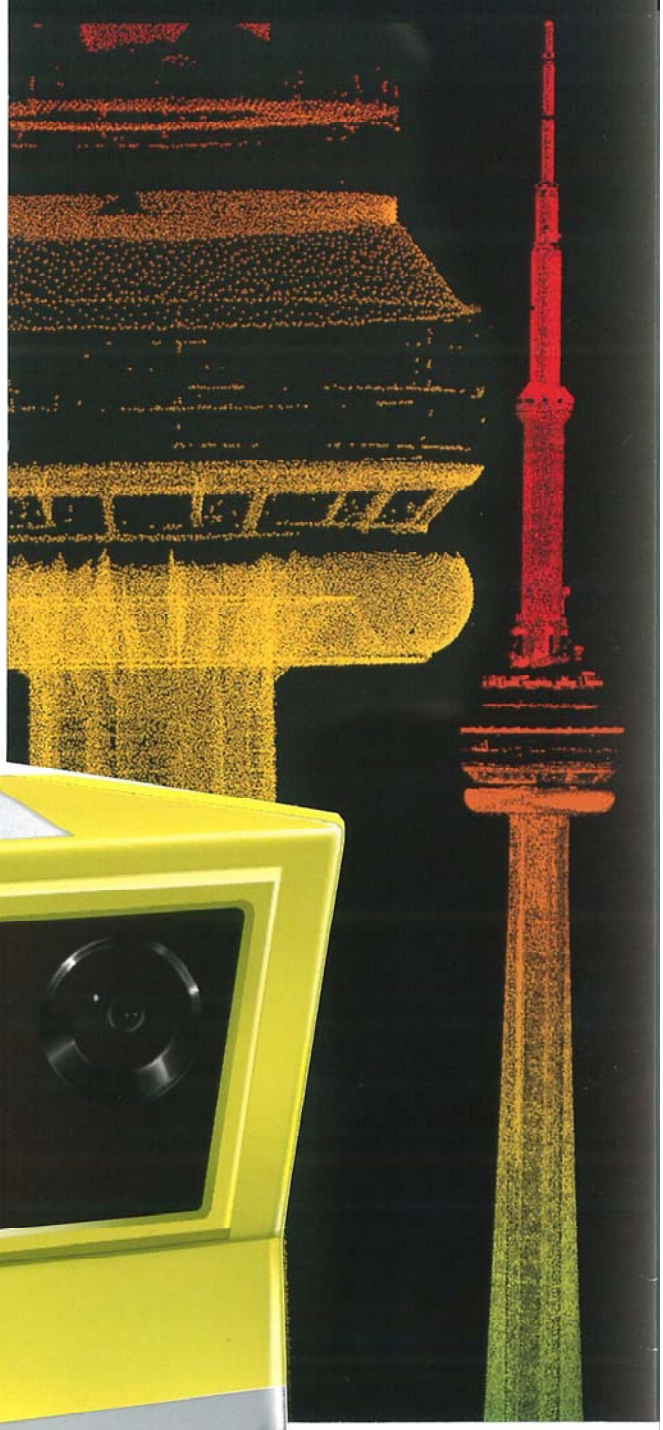
Optech

ILRIS-3D



LIVE IN A LARGER WORLD

ILRIS 3D

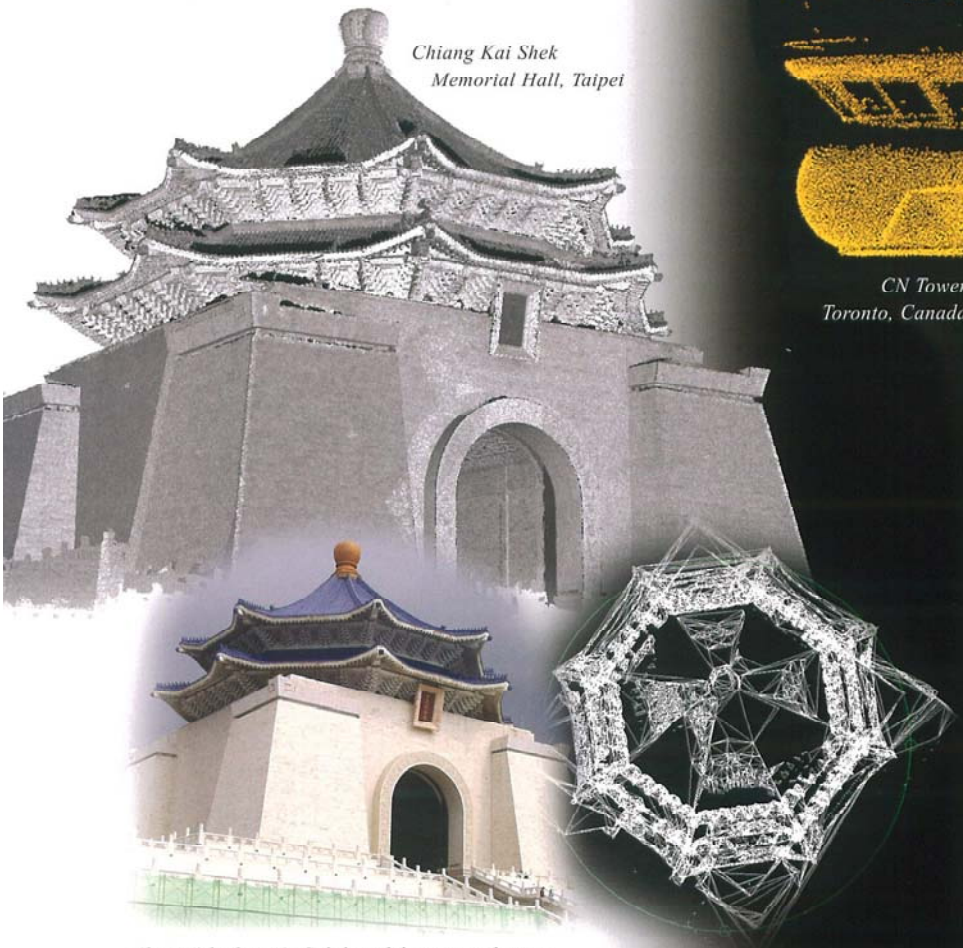
ILRIS-3D

Finest Detail and Accuracy

A wealth of information on historical edifices can now be directly digitized, where range and accuracy limitations previously made this impossible or impractical. Millimetrically accurate polygonal models are rendered and exported in a variety of formats.

Chiang Kai Shek Memorial Hall, Taipei

CN Tower Toronto, Canada



Above (clockwise): Solid model generated using PolyWorks® software from InnovMetric; wireframe model visualized using AutoCAD 2000; photo of survey scene.

Industrial Grade Applications

ILRIS-3D offers quick conversion of scan data to CAD plan/elevation take-offs, facilitating rapid planning. All features such as utility location, road centerline and curb extents are accurately and completely located. Collateral data is also utilized in determining vegetation type, tree caliper size (and in some cases species), canopy volume, and more.

Survey scene and point cloud data of an intersection. Point cloud data courtesy: Northway-Photomap Inc.

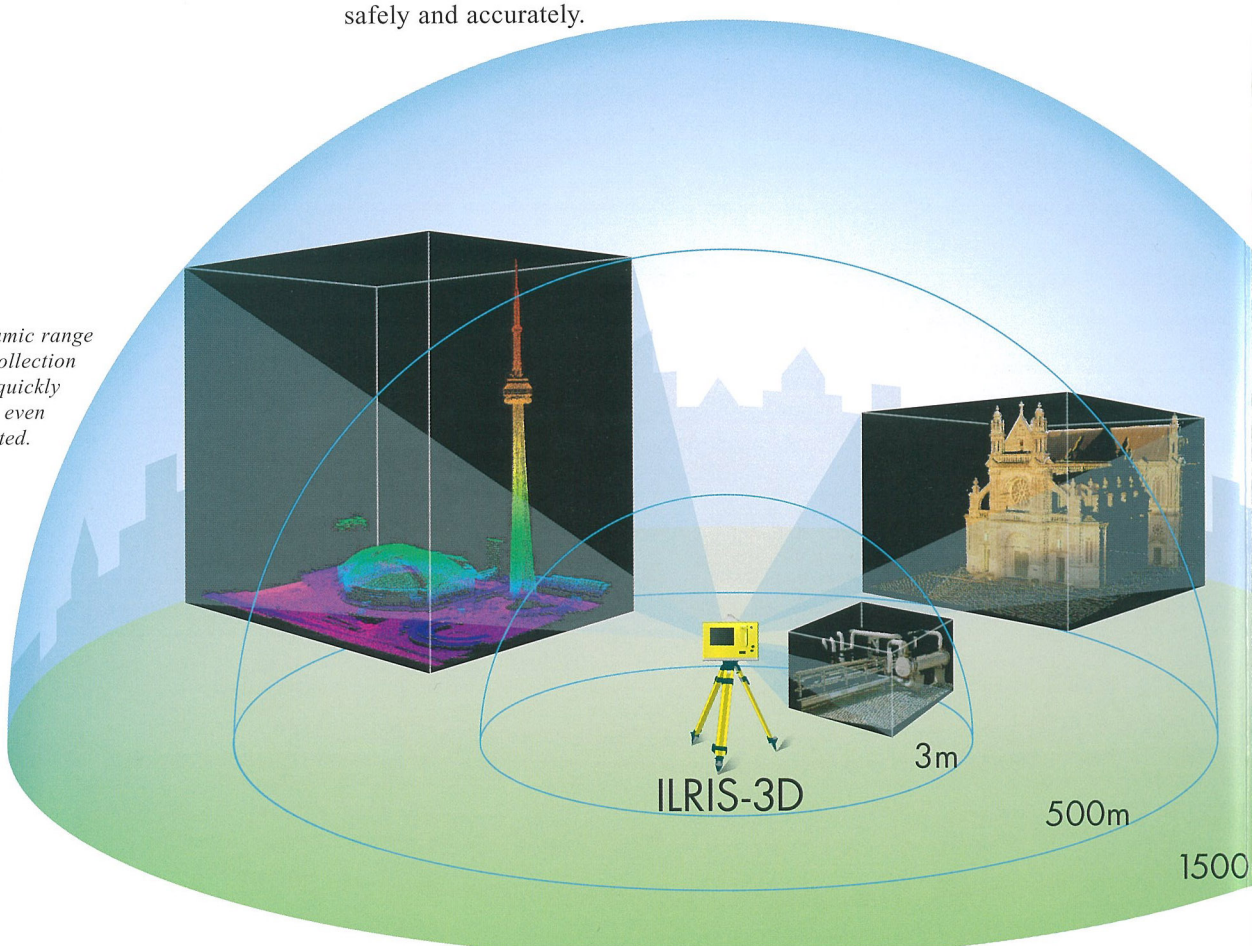
ILRIS-3D: Intelligent Laser Ranging and Imaging System

Optech's ILRIS-3D is a complete, fully portable, laser-based imaging and digitizing system for the commercial survey, engineering, mining and industrial markets.

A compact and highly integrated package with digital image capture and sophisticated software tools, ILRIS-3D is a 21st-century solution that addresses the needs of commercial users. ILRIS-3D is field-ready and requires no specialized training for deployment. About the size of a motorized total station, with an on-board 6 megapixel digital camera and large-format LCD viewfinder, ILRIS-3D has a visual interface similar to that of a digital camera. Field deployment is made extremely efficient by ILRIS-3D's high data rate and large dynamic range - from 3 m up to 1,500 m. ILRIS-3D is completely eyesafe in all modes of operation, even when its invisible beam is viewed directly through binoculars.

ILRIS-3D is deployed by a single operator. The modular design ensures that all functionality is available, making operation as easy as possible. Setup is rapid and simple - no leveling required - and the system is controlled via a wireless handheld PDA or laptop. The target area and scan status are displayed locally on screen, and data is written directly to removable media. Measurement area and spot density are user definable.

ILRIS-3D is designed for rugged field use, based on Optech's experience in designing and manufacturing laser-based industrial level monitors, object positioners and mining equipment. It is rated for operation from 0° C to 40° C, and is weatherproof for use outdoors. NEMA 4X and IP65 ratings, a Class I eyesafety rating, large dynamic collection range and compact size all ensure that difficult surveys can be completed quickly, safely and accurately.



The large dynamic range ensures the collection of accurate data quickly and efficiently - even when accessibility is limited.

Introducing the ILRIS-3$_6$D

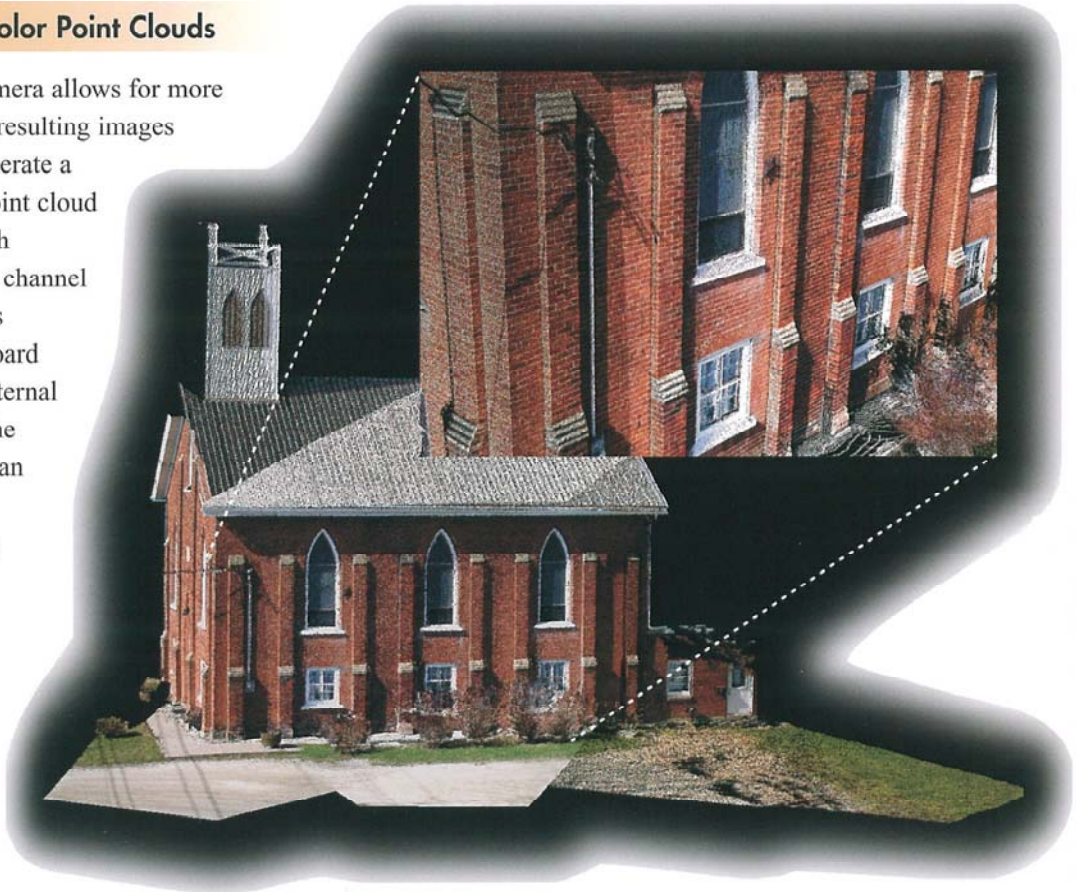
ILRIS-3$_6$D offers all of the capability of ILRIS-3D while providing the added functionality of a 360° x 360° field of view. ILRIS-3$_6$D comes equipped with a fully motorized panning and tilting base that allows for seamless coverage of large areas. The base is operationally integrated with the scanner and is controlled seamlessly through scanner control software.

An accurate, on-board encoder ensures that the resulting data sets are seamless and accurately aligned. When the extended field of view is not required or when size and weight are of paramount importance, the user can easily remove the base and operate the scanner with a 40° x 40° field of view, with no loss of accuracy or functionality.

The ILRIS-3$_6$D has an industry leading 360° x 360° field of view.

Color Channel: True Color Point Clouds

An on-board 6 megapixel camera allows for more accurate targeting, while the resulting images are used to automatically generate a geometrically accurate 3D point cloud that includes the color of each measurement. Optech's color channel technology provides seamless integration between the on board sensors. In addition, other external imagers can be mounted to the system and the information can be added seamlessly and automatically to the resulting 3D data set.



Power Options

ILRIS-3D Portable Field Power

The availability and reliability of field power in remote locations is a key element to efficiency that cannot be overlooked. The ILRIS-3D battery/charging system shares the same technology that has been universally adopted worldwide by video and broadcast professionals.

Dual battery charger

Robust and Modular Battery System

- Two batteries provide scan time of approx. 2.5 hours
- Hot-swap capability, allowing the user to change batteries (in multiples of two) without interrupting scanner operation
- As many multiples of two batteries that the user chooses can be used simultaneously
- Easily transportable, simple to set up and re-pack for transport
- Use anywhere in the world with universal 85-265 VAC, 50/60 Hz operation

Battery and holder

Economical Operation from Line AC

- Compact, rugged universal input voltage (85-265 VAC, 50/60 Hz) for operation where AC Mains voltage is available

AC power supply, shown with a penny

Automated true color point clouds with the revolutionary new color channel option.

System Features

System Performance

- Target registration and modeling accuracy is typically 3 mm (at 100 m). Minimum feature resolution is scan and application specific. It is not uncommon to resolve fine features (such as hairline cracks in concrete or the graticule used on survey targets).

Eye Safety

- Class I laser, eyesafe in all ranges, all conditions
- CHRH, US FDA and IEC approved as Class I

Product Approvals

ILRIS-3D carries Class I laser safety approval, as well as a CE marking. The unit has passed the most stringent tests for EMC (radiated and immunity), as carried out by an independent testing authority (Canadian Standards Association). The unit is also sealed for operation in wet and damp locations, and meets NEMA 4X and IP65 ratings (with anti-corrosion external finish) for use in demanding field applications.

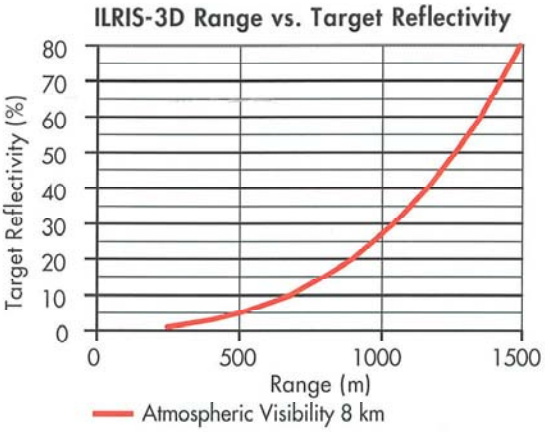
Convenient and easy traveling case

Multi-Purpose Utility

ILRIS-3D is the most versatile scanning system of its kind:

- Cross-deployable over a wide variety of applications and industries
- Convenient to use
- Quick to set up in any environment.

ILRIS-3D Specifications



Performance

Dynamic scanning range

3 m - 1,500 m to an 80% target
3 m - 800 m to a 20% target
3 m - 350 m to a 4% target

Data sampling rate (actual measurement rate)	2,000 points per second
Beam divergence	0.00974°
Minimum spot step (X and Y axis)	0.00115°
Modeling accuracy	3 mm
Scanning target registration accuracy	4 mm
Laser wavelength	1,500 nm infrared
Laser class (IEC 60825-1)	Class I
Digital camera	Integrated digital camera, 6 megapixel optional external camera
Scanner field of view (ILRIS-3$_6$D)	-20° through 90° (V) x 360° (H) -90° through 20° (V) x 360° (H)
Scanner field of view (ILRIS-3D)	40° x 40°

Physical Size

Scanner weight and physical size	13 kg, 320 (L) x 320 (W) x 220 (H) mm
Rotating base weight and physical size	8 kg, 300 (L) x 280 (W) x 127 (H) mm
Power supply and consumption	24 VDC 75 W
Battery life (standard battery pack)	5 hours operation
Data storage	Solid state ATA compact flash (non-volatile) memory card, field interchangeable
External GPS and digital camera mounts	
Standard software	Data output to a variety of metafile and XZY coordinates, including active laser intensity photograph and digital photo

Environmental

Operating temperature	0° C to 40° C (for extended range, consult Optech)
Storage temperature	-20° C to 50° C
Environment	NEMA 4X rated, water- and dust-proof, IP65

Eye Safety

Laser class	Class I laser product IEC 60825-1, US FDA 21 CFR1040, Eyesafe in all modes of operation

Note: all accuracies quoted as 1 Sigma at 100 m under Optech test conditions

All information is subject to change without notice.

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