

CONTOUR

POWERED BY KAARTA ENGINE

KAARTA®



Integrated, real-time 3D mobile mapping system

Kaarta Contour™ enables 3D modeling from input to output in real time, condensing the workflow process by eliminating time and cost, and allowing decision-making at the point of work.

Lightweight and battery powered, Contour is hand carried through an environment as it scans to generate a 3D map without additional infrastructure. A typical 10,000 sq m (110,000 sq ft) space can be scanned in about 2.5 hours.

The onboard touchscreen enhances Contour's ease and usability. The screen displays the model as it's being built in real time, allowing the user to improve results during mapping and even control the display to provide immediate knowledge of the environment. Users are able to pause, rewind, and resume during scanning. Transition mode dramatically eliminates many alignment issues associated with room transitions such as doorways during scanning. Error Reporting during scanning alerts users if there is a mapping or processing failure, sparing the user from learning of a problem only after leaving the job site.

Kaarta Engine, Kaarta's patent-pending advanced 3D mapping and localization algorithms, is at the heart of Contour, providing highly accurate and robust maps.

Kaarta Reality Layer integrated post-processing enables one-click cleanup and colorization of Contour datasets, running the gamut from point cloud to surface mesh to RGB point cloud to rich photorealistic model. These colorization capabilities make it possible to quickly capture and process just the level of color detail needed for a wide range of applications. At its most immersive and photorealistic level of detail, Reality Layer automatically connects the dots on a dimensionally-accurate, high-fidelity point cloud to create faithful surface models for the seamless overlay of high resolution color imagery – all rapidly captured and processed with one mobile handheld device. Reality Layer reveals features such as surface textures and colors, locations of electrical, plumbing, HVAC and other features, or even details as fine as the text on signage or labeling.

Contour is ideal for scanning as-built multi-room interiors, multi-floor plans, buildings, industrial plants and infrastructure and more for both planning and maintenance purposes.

CONTOUR SPECIFICATIONS

FORMAT	.ply or .las
MODES	Baseline mapping Transition mapping Pause, rewind, resume during scanning Merge maps for large and complex areas Add on mapping compatible with Kaarta Stencil® files
IMU	Internal MEMS-based IMU Six DOF: X, Y, Z, Roll, Pitch, Yaw
PROCESSOR	Intel i7 dual core
PORT	1 USB 3.0
STORAGE	250 GB SSD
OS	Ubuntu Linux OS
LASER	.1m [min] – 30m [max] range 190° horizontal FOV 190° vertical FOV Accurate to ± 3cm
ACCURACY	±30mm ±10mm post-processed for typical room environments
SPEED	40 scans/second ~5km/hr (3.1 mph) typical walking speed ~ 2.5 hrs to scan 10k sq m (110,000 sq ft)
CAMERA	Onboard HD color camera
ADD'L SENSOR	Feature tracking B/W camera
SCREEN	18cm (7") touchscreen
WEIGHT	2.78 kg (6.13 lb)
OP TEMP	0°C [min] – 50°C [max]
HUMIDITY	<85%
POWER	Input 12-24 vDC
BATTERY TYPE	Internal LiPo
BATTERY LIFE	2 hours , extended through external batteries
MOUNTING	Hand-held
INCLUDED ACCESSORIES	23000 mAh, 85W external battery for add'l runtime AC power adaptor Neck strap Pelican case
WARRANTY	1 year
SAFETY	Laser safety classification 1
MODEL NUMBERS	KRT-CNT-XX-00-010: Contour KRT-CNT-SW-00-010: 1 yr software service KRT-CNT-HW-01-010: 1 yr extended hardware warranty KRT-CNT-HW-02-010: 2 yr extended hardware warranty

KAARTA ENGINE

- Real-time registered point cloud generation
- Real-time localization
- Multi-sensor input (IMU, feature camera, lidar)
- Continuously self-correcting minimal drift techniques
- Implicit loop closure
- Point-of-scan work confirmation
- Fast, explicit loop closure at point of scan
- Point cloud sharpening technology
- Patent-pending technology

1st place Microsoft Indoor Localization Competition 2016 & 2017

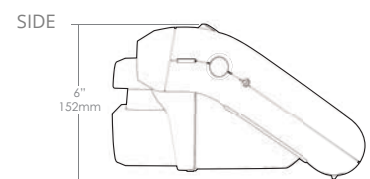
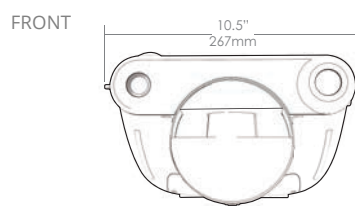
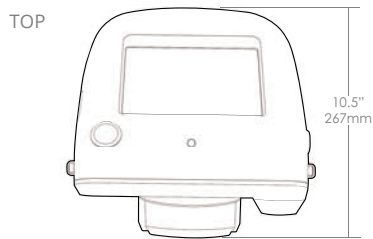
1st & 2nd ranking KITTI Vision Benchmark Suite



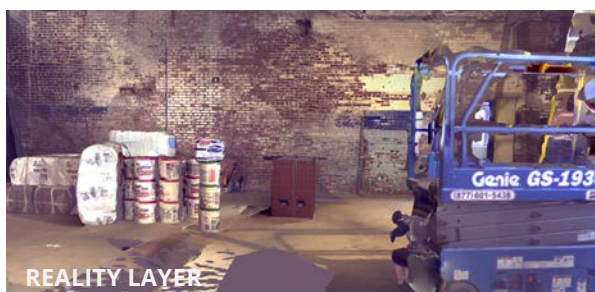
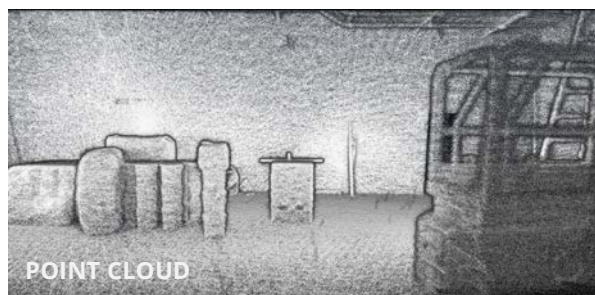
CONTOUR

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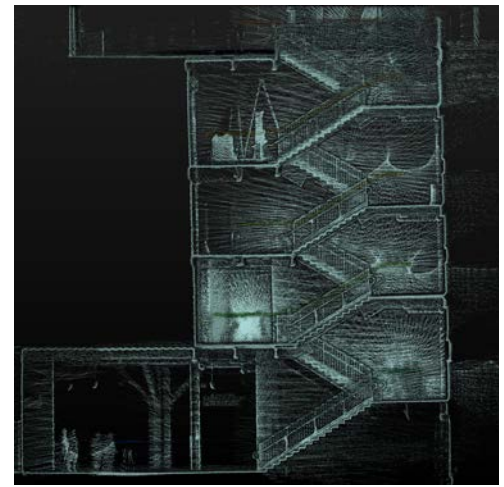
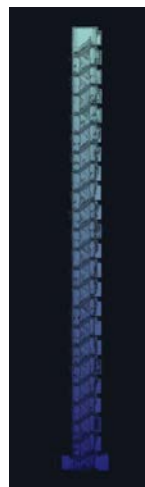
DIMENSIONS



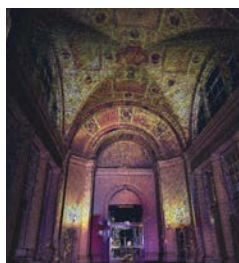
SAMPLE OUTPUT



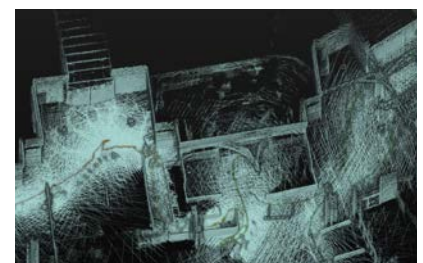
Construction site scan showing actual photo, point cloud, colorized point cloud and Reality Layer photorealistic model



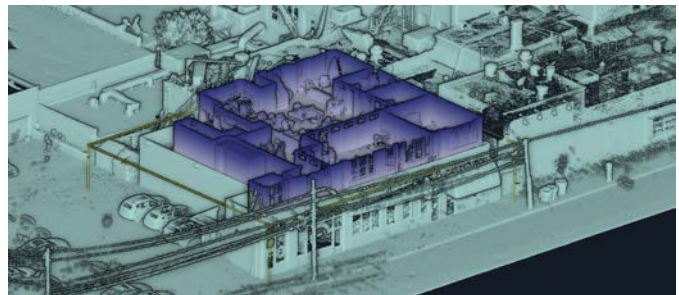
Two different stairwell examples. Traditionally stairs are difficult to map since they are narrow and confining with a turn at every landing.



Color point cloud of detailed ceiling & archway



Great Hall at Heinz Stadium. As easy as point, scan, walk.



Two separate scans of a commercial office building seamlessly merged together - interior (represented in purple) scanned in 20 minutes with Contour, exterior scanned with Stencil in under 30 minutes