TRAAK

POWERED BY KAARTA ENGINE

KAARTA®

Low density mapping ideal for autonomous robots

Kaarta Traak™ provides 200Hz real-time updates on system pose providing x, y, z, roll, pitch, and yaw.

Traak works beneath tree canopies, inside buildings, or in areas where GPS is obscured. Traak doesn't need GPS for fast, accurate, and low-cost 3D real-time position estimation. Traak also provides pose with respect to a prior map for drift free performance.

Kaarta Engine, Kaarta's patent-pending advanced 3D mapping and localization algorithms, is integrated with 3D lidar and IMU to provide 6 DOF State information at 200 Hz with less than 15 msec latency for automating robots.

Traak is available in a ready-to-go system configuration and in a license form for your existing platform. Volume pricing discounts support large scale deployment.

SPECIFICATIONS

FORMAT	.ply
MODES	Baseline mapping Add-on mapping for more complex and larger areas Compatible with files produced with Kaarta Contour™
IMU	Internal MEMS-based IMU Six DOF: X, Y, Z, Roll, Pitch, Yaw
PROCESSOR	Intel NUC 7i7 Quad Core
PORTS	2 HDMI 4 USB 3.0 RJ-45 Gigabit Ethernet
STORAGE	50 GB SSD
OS	Ubuntu Linux OS
LASER	Standard adapter fits Velodyne VLP-16 lidar 100m range 360° horizontal FOV 30° vertical FOV Class 1 Eye-safe per IEC 60825-1:2007 & 2014
FEATURE TRACKER	640 x 360 Resolution 50 Hz frame rate Black & white images
WEIGHT	700g (1.54lb)
POWER	12-19 vDC
MOUNTING PLATFORMS	Hand-held Backpack Roadway vehicle Aerial drone

INCLUDED ACCESSORIES	23000 mAh, 85W external LiPo battery (US only) AC power adaptor Base plate for camera or tripod Hard plastic shipping container
OPTIONAL ACCESSORIES	Vehicle Mounting Kit Stencil Accessory Kit
WARRANTY	1 year
MODEL NUMBERS	KRT-TRK-XX-00-010: Base KRT-TRK-XX-99-010: Base, no integration KRT-TRK-FT-16-010: Base + feature tracker + Velodyne VLP-16 KRT-TRK-XX-16-010: Base + Velodyne VLP-16 KRT-TRK-XX-32-010: Base + Velodyne HDL-32E KRT-TRK-IN-32-000: Velodyne HDP-32 with integration KRT-TRK-SW-00-010: 1 yr software service KRT-TRK-HW-01-010: 1 yr ext hardware warranty KRT-TRK-HW-02-010: 2 yr ext hardware warranty KRT-FTC-XX-00-010: Feature Tracking Camera KRT-ACC-VH-00-010: Vehicle Mounting Kit

KAARTAENGINE FEATURES
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 and 2nd place: KITTI Vision Benchmark odometer section 1st place: Microsoft Localization Competition 2016 and 2017

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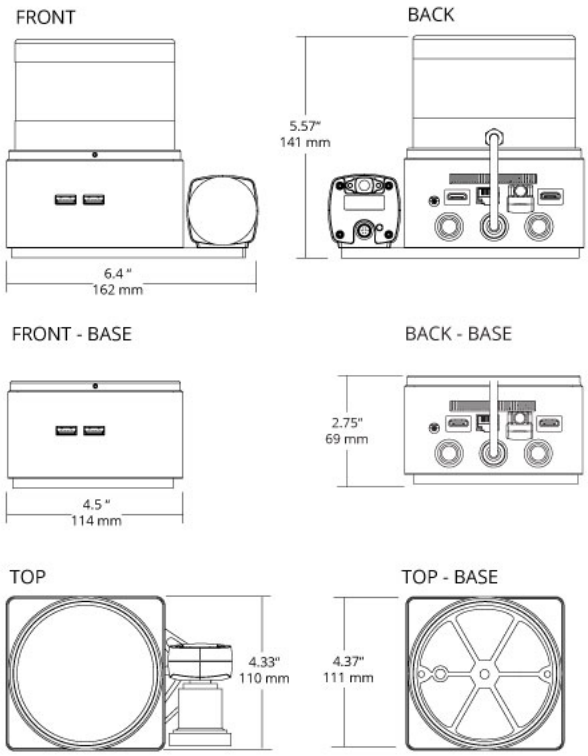
CONFIGURATION

Traak base configuration is an extruded-aluminum enclosure with machined plates for lidar mounting and adapters as well as mounting points for attachment to vehicles, tripods and more.

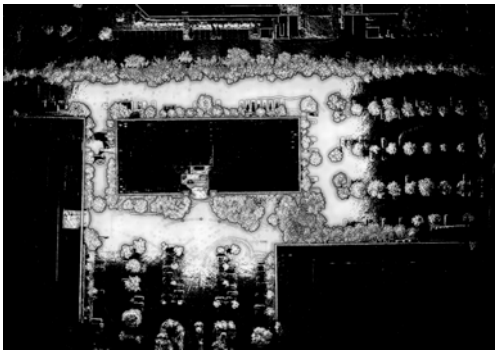
Traak can accept several lidar models including Velodyne VLP-16 and Velodyne HDL-32E. Traak uses only an Allen wrench for lidar attachment.

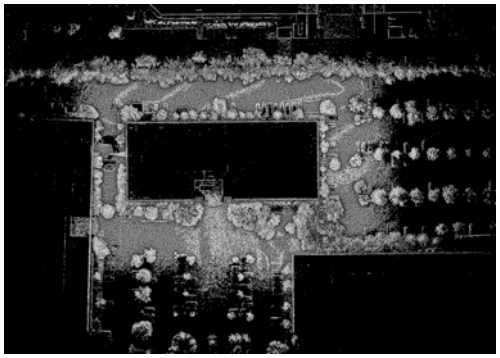
Feature Tracker, a high frame-rate imaging device, is recommended for operation in open, unstructured environments.

DIMENSIONS

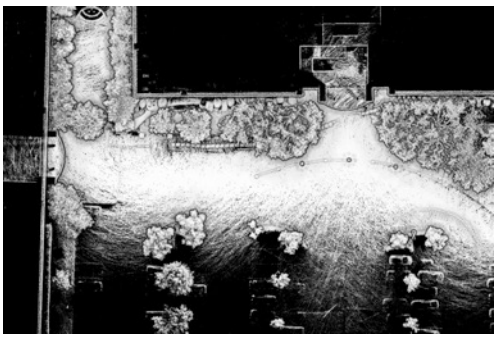


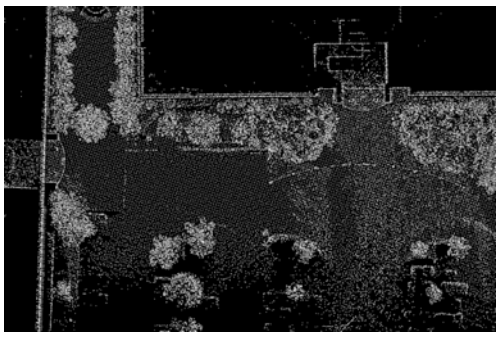
SAMPLE RESULTS





Higher density image on the left is produced by Kaarta Stencil for mapping purposes. The lower density image on the right is produced by Traak for localization purposes.





Enlarged sections of the above images showcasing the difference in data density between Stencil and Traak. Accuracy between the two devices is identical.

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