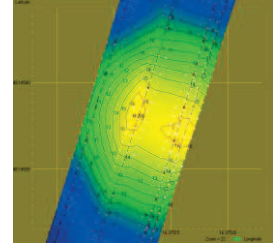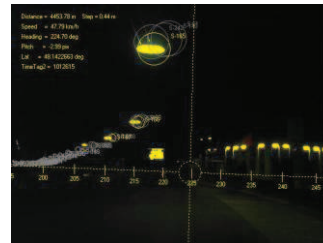# OT Object-Tracker

AIMS - LimeCam
Automatic Illumination Measurement System

LimeCam ….. **Efficient characterization of light-installations**

Informative: 2D-light-distributions, maps, photos, database with all light points, 3D-coordinates, illuminance, analysis of savings potentials

Innovative: State of the art technology (Gps, image processing, sensor-fusion)

Easy: No need to close-off streets, one lane per acquisition, automatic calculation

Save: Technician save in vehicle, not exposed to traffic

Fast: Up to 200 light points / hour

Scalable: Project size of 100 to 10000 light points

OT - LimeCam - Brochure v4.2 En.doc

DESCRIPTION

LimeCam is an innovative solution for the fast and cost-efficient characterization of light installations, such as light installations of illuminated motorways, of parking areas, or residential areas.

LimeCam yields reliable information on which customers can build their plan to qualify, service, upgrade, or renew a light installation: 2D-light-distributions, light maps, photos, and a database with details of all light points like 3D-coordinates and illuminance measures. Customers receive the results of a LimeCam measurement in the form of digital maps, tables, reports, and GIS data sets.

LimeCam consists of a support structure, the LimeCam-Rack, to which GPS-synchronized light-sensor modules and a calibrated camera are attached, each measuring a different aspect of the illumination infrastructure. The LimeCam-Rack is reliably mounted to a vehicle with 3 suction pads, and can be horizontally aligned with lockable joints. Mounting to the vehicle is straight forward and can be performed in less than five minutes.

LimeCam measurements are performed at night with the measurement vehicle moving with velocities of up to 70 km/h with the regular traffic flow. There is no need to close-off streets for the measurement.

The LimeCam measurement performance depends on local circumstances (number and density of light points) and the driving velocity, and may reach several hundred light points per hour in municipal areas. With this performance, LimeCam yields results many times faster than traditional manual measurement methods. And LimeCam is safe, protecting the technician inside a vehicle from the passing traffic.

At the end of the measurement, recorded data are transferred via USB to the LimeCam server and processed with LimeCam software. This software is an integrated package that includes data management, data analysis, image processing, photogrammetry, map handling, and graphical rendering. Data processing is widely automated. The user defines the processing options, the area of data to be exported, and selects the export- and display format.

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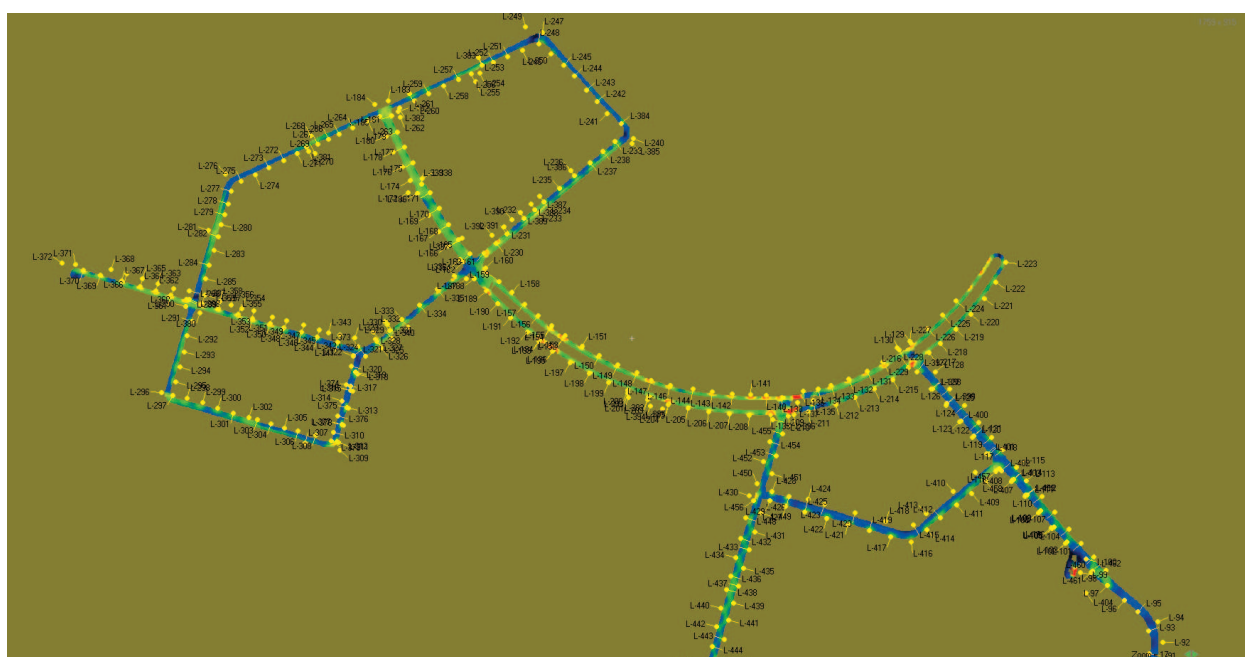
DATA OUTPUT

LimeCam presents and exports measurement results in several formats.

1. **Reports, tables and data sets** with details of each acquired light point, containing:
- the coordinates of the light point,
- the light point mounting height above ground,
- the maximum measured illuminance,
- the 2D-illuminance distribution in the vicinity of the light point,
- a photo of the light point.

2. **Maps** with acquired light point in JPG format, optionally super-imposed on street maps and/or aerial images. The map size may be up to 10000 x 10000 pixels (paper format A0 at 300 dpi).

OT - LimeCam - Brochure v4.2 En.doc
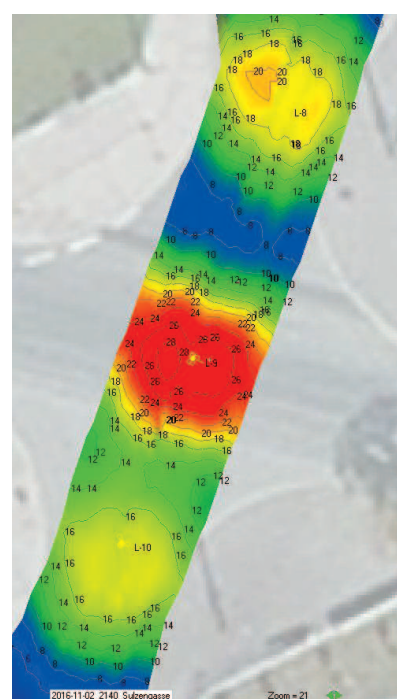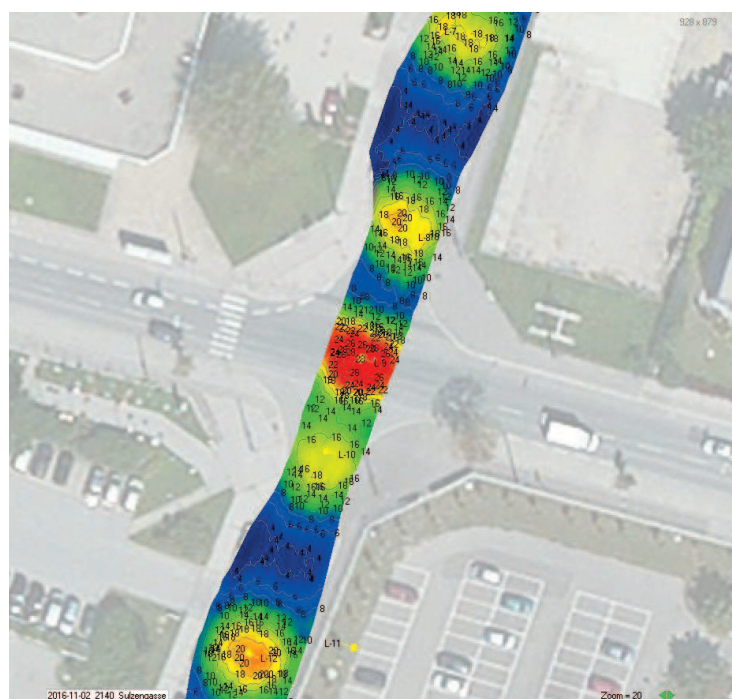
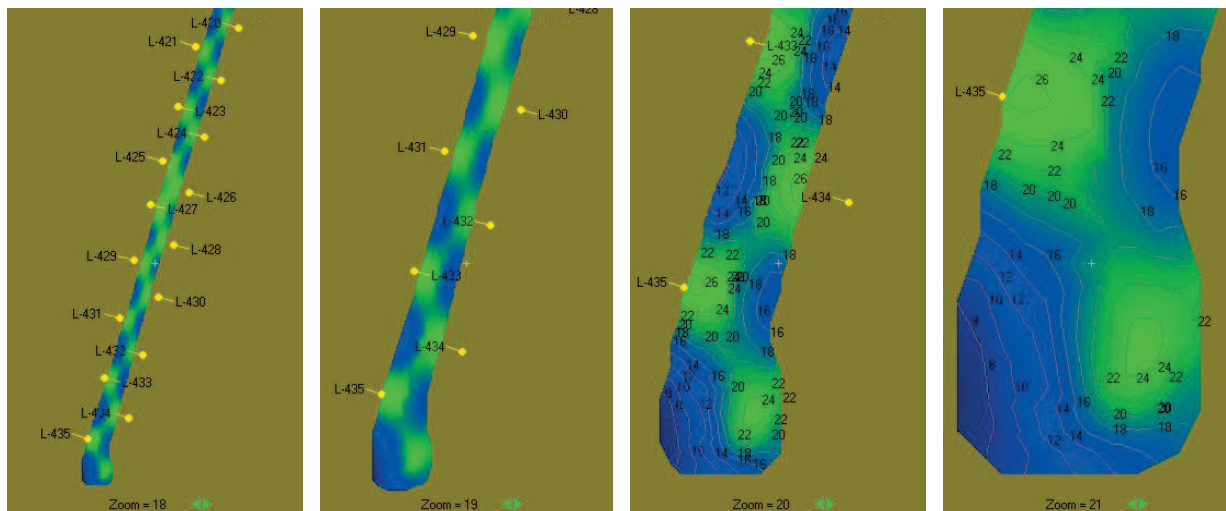3. **2-dimensional renderings of the illuminance distribution (Light maps)** in either gray-level or false color, with contour lines (iso-lux lines). They provide an excellent overview of the lighting situation in the investigated locations, clearly highlighting regions with intensive / low / missing illumination.

4. **Export of data tables** in CSV format (ASCII) or Autocad DXF format, for import in other programs, such as GIS programs, DiaLux, MS-Excel or database programs.

CUSTOMER BENEFITS

LimeCam provides customers with objective information about the light-technical condition of the analyzed light-installation. Typical applications are:

- Counting, localization, and documentation of installed lights,
- Determination of illuminance profiles, -maxima, -uniformity,
- Determination of the energy savings potential,
- Creation of documentation to support in the preparation of maintenance operations, replacements, and new installations,
- Quality assurance after maintenance operations, replacements, and new installations (Comparison actual status – desired status, before – after, simulation – implementation)

LimeCam is actively developed further. Special customer requests, such as dedicated data analysis or data export formats, can be incorporated into the program.

CONTACT

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