



Overview

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| Product name | GEOCAL / GEOCAL XL / GEOCAL IR |
| Principle | DOE-based geometric calibration of digital cameras |

Features

Hardware

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|-----------------------------------|--|
| Diffractive Optical Element (DOE) | Generates a very evenly distributed grid of light points, virtually originating from infinity |
| Output window | GEOCAL / GEOCAL IR: Usable aperture: \varnothing 77 mm GEOCAL XL: Usable aperture: \varnothing 155 mm (camera lens needs to have an equal or smaller diameter) |
| Usable FoV | Approx. 30 – 120° (Larger values possible, depending on the camera. Please contact us for details). |
| Dimensions (L x W x H) | GEOCAL / GEOCAL IR: approx. 575 mm x 144 mm x 170 mm GEOCAL XL: approx. 850 mm x 244 mm x 270 mm |
| Mounting points | GEOCAL / GEOCAL IR: 3 x M5 x 0.8 tapped holes in the base plate GEOCAL XL: 10 x M5 x 0.8 tapped holes in the base plate |

Illumination **(CAUTION: DO NOT LOOK DIRECTLY INTO THE LIGHT SOURCE!)**



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|--------------------------|---|
| Light source | Frequency-stabilized diode laser |
| Wavelength | GEOCAL / GEOCAL XL: 633 nm GEOCAL IR: 935 nm |
| Output power | 5 mW |
| Laser Class (diode only) | 3B |
| Laser Class (GEOCAL) | 1M (preliminary, to be confirmed) |
| Lifetime | >20.000h |
| Warm-up time | Not required |



Software

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|---------------------|--|
| System requirements | PC with Windows 7 operating system (or higher) USB port |
| Functions | <ul style="list-style-type: none"> • Load multiple images • View selected image • Perform calibration • Overlay detected point grid • Various result visualization methods • Export results (CSV and XML) and coordinates of detected points (CSV) |
| Output data | Camera intrinsic and extrinsic data, the orientation of DOE |
| API (C++) | Available as a separate option |

General description hardware

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|--------------------------|---|
| Power supply/consumption | 25 W 5 V / 5 A / Pmax = 2 W |
| Ports | USB type B |
| Weight | GEOCAL / GEOCAL IR: approx. 4.5 kg GEOCAL XL: approx. 9 kg |
| Operating conditions | 15 – 35 °C |

Requirements on the device under test (DUT)

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|-----------------|--|
| Max. dimensions | GEOCAL / GEOCAL IR: max. diameter of the camera lens: 77 mm GEOCAL XL: max. diameter of the camera lens: 155 mm |
| Usable FoV | Approx. 30 – 120° (Larger values possible, depending on the camera. Please contact us) |