

Z+F IMAGER® 5010C

The Z+F IMAGER® 5010C is a compact high-speed phase-based laser scanner with integrated HDR-camera, great precision, range and spherical field of view. The unique stand-alone concept with integrated battery and color display with touch screen, as well as a digital dynamic compensator and a laser plummet enable very flexible use in real environments.

| Laser system | | | |
|-------------------------------------|--------------------------------|------------|------------|
| Laser class | 1 | | |
| Beam divergence | < 0.3 mrad | | |
| Beam diameter | approx. 3.5 mm @ 0,1 m | | |
| Range | 187.3 m (unambiguity interval) | | |
| Minimum distance | 0.3 m | | |
| Resolution range | 0.1 mm | | |
| Data acquisition rate | Max. 1.016 million pixel/sec. | | |
| Linearity error ¹ | ≤ 1 mm | | |
| Range noise | black 14 % | grey 37 % | white 80 % |
| Range noise, 10 m ^{1,2} | 0.4 mm rms | 0.3 mm rms | 0.2 mm rms |
| Range noise, 25 m ^{1,2} | 0.6mm rms | 0.4 mm rms | 0.3 mm rms |
| Range noise, 50 m ^{1,2} | 2.2 mm rms | 0.8 mm rms | 0.5 mm rms |
| Range noise, 100 m ^{1,2,3} | 10 mm rms | 3.3 mm rms | 1.6 mm rms |
| Temperature drift | negligible | | |

| Deflection unit | |
|----------------------------------|---|
| Vertical system | completely encapsulated rotating mirror |
| Horizontal system | device rotates about its vertical axis |
| Vertical field of view | 320° |
| Horizontal field of view | 360° |
| Vertical resolution | 0.0004° |
| Horizontal resolution | 0.0002° |
| Vertical accuracy ¹ | 0.007° rms |
| Horizontal accuracy ¹ | 0.007° rms |
| Rotation speed | max. 50 rps (3,000 rpm) |

| Deflection unit | pixel/360° horizontal & vertical | Scan duration | | | |
|-------------------------------|-------------------------------------|---------------------------|-----------------------------|---------------------------|------------------------------|
| | | less quality ⁶ | normal quality ⁶ | high quality ⁶ | premium quality ⁶ |
| "preview" ⁴ | 1,250 | --- | 0:26 min | --- | --- |
| "low" | 2,500 | 0:26 min | 0:52 min | 1:44 min | --- |
| "middle" | 5,000 | 0:52 min | 1:44 min | 3:22 min | 6:44 min |
| "high" | 10,000 | 1:44 min | 3:22 min | 6:44 min | 13:28 min |
| "super high" | 20,000 | 3:28 min | 6:44 min | 13:28 min | 26:56 min |
| "ultra high" ⁵ | 40,000 | --- | 13:28 min | 26:56 min | 53:20 min |
| "extremely high" ⁵ | 100,000 | --- | 81:00 min | 162:00 min | |

1. Detailed explanation on request – please contact info@zf-laser.com

2. Data rate 127,000 pixel/sec (equivalent to "High Resolution / high quality" setting), 1 Sigma range noise, unfiltered raw data

3. Not tested during production

4. Not intended for surveying purposes! To be used only for preview / selection scan definition.

5. Huge amounts of data will be generated! Recommended for high resolution, small area selection scans only.

6. Choosing the next higher quality setting will double scanning time and reduce range noise by a factor of 1.4.



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| Miscellaneous | | |
|--------------------------|--|---|
| Dynamic Compensator | resolution: 0.001° measurement range: +/- 0.5° accuracy: < 0.007° selectable on/off | The Dynamic Compensator will correct angular tilt for each pixel during scan acquisition. |
| Laser plummet | laser class: 2 accuracy of plummet: 0.5 mm/1m laser point diameter: < 1.5 mm at 1.5 m | |
| Levelling display | electronic level in onboard display and Z+F LaserControl® Scout | |
| Data storage | internal 64 GB flash card, 2 x 32 GB USB external flash drive | |
| Data transmission | Ethernet or USB 2.0 | |
| Integrated control panel | touch screen with 5.7" colour display | |
| Interfaces | 2 x USB, LEMO 9-pin und LEMO 7-pin connections for external sensors (GPS, odometer, etc.) | |

| Power supply | |
|-------------------|---|
| Input voltage | 24 V DC (scanner) ; 100 – 240 V AC (power unit) |
| Power consumption | < 65 W (on average) |
| Operating time | > 3 h (internal battery) |

| Ambient conditions | |
|-----------------------|-------------------------------|
| Operating temperature | -10 °C ... +45 °C |
| Lighting conditions | operational in all conditions |
| Humidity | non-condensing |
| Protection class | IP 53 |

| Dimensions and weights | |
|------------------------|--------------------|
| Scanner | |
| Dimensions (w x d x h) | 170 x 286 x 395 mm |
| Weight | 9.8 kg |
| Battery | |
| Dimensions (w x d x h) | 170 x 88 x 61 mm |
| Weight | 1.2 kg |
| AC power unit | |
| Dimensions | 35 x 67 x 167 mm |
| Weight | 0.54 kg |

| HDR camera | |
|--|---------------|
| focus area | 1 m - ∞ |
| panorama compilation | |
| image count for panorama | 42 |
| recording time (depends on light conditions) | ca. 3:30 min. |
| panorama resolution | ca. 80 MPixel |