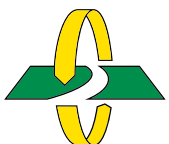


## TETRACAM Multispectral camera system

# The TETRACAM Smart Incident Light Sensor Calibration System



The Tetracam Smart Incident Light Sensor (u-ILS) station is designed as an accessory for all Tetracam ADC and MCA camera lines and can be ordered with the camera, or purchased as an accessory for cameras already in the field. The u-ILS can be used in two different ways. On the one hand as flying system and on the other hand as Ground Station system. These different options make the u-ILS very variable and an important additional and multifunctional tool for the Tetracam multispectral camera systems.



**geo-konzept**

inventarisieren. kartieren. optimieren.

# The ILS Ground Station Calibration system

## Hardware Configuration

The Tetracam Smart Incident Light Sensor (u-ILS) can be set up with up to 15 bands. 12 bands can be configured in the field with narrow band-pass filters to match the characteristics of a measurement instrument or camera. The unit is a smart device, equipped with a Wi-Fi network browser interface which allows live display of the data. The Tetracam u-ILS is designed as an accessory for all Tetracam ADC and MCA camera lines and can be ordered together with the camera or purchased as an accessory for cameras already in the field. An additional option of the Tetracam u-ILS is a GPS and / or integrated IMU unit. The geotagged position data of the flying-u-ILS system is stored in the metadata of each single image.

**The Tetracam Smart Incident Light Sensor (u-ILS) can be used in two different ways:**

- **Flying u-ILS system:** the u-ILS is mounted to the flight system together with the camera and collects the data of the solar radiation during the flight. The calibration values are stored in the metadata of each single image.
- **Ground Station u-ILS system:** the u-ILS collect the data of the incoming solar radiation on the ground, while the camera system is mounted on the flight system in the air. The time stamps for the measurements in the log file allow PixelWrench2 to automatically extract the radiometric data and insert it into the metadata field of images collected with a Tetracam ADC or MCA.

The metadata of both versions is then used in PixelWrench2 and other software packages to adjust the pixel values in the image to represent true reflectance and exact color band ratios for vegetation index calculations.

Specifications			
Power	<ul style="list-style-type: none"> <li>— 120 mA at 12 Volts</li> <li>— 9 to 24 Volts input</li> </ul>	Additional Option	<ul style="list-style-type: none"> <li>— external GPS receiver (pluggable)</li> <li>— internal IMU</li> </ul>
Weight	70 g	Flying u-ILS system	<ul style="list-style-type: none"> <li>— calibration values in the EXIF data of each camera image</li> <li>— IMU data in the EXIF</li> </ul>
Dimensions	73 x 39 x 32 mm		
Temperature Humidity	<ul style="list-style-type: none"> <li>— 0 - 40 Degrees Celsius</li> <li>— less than 85 %</li> </ul>	Ground Station u-ILS system:	<ul style="list-style-type: none"> <li>— LOG file of the calibration values</li> <li>— one second measurement rate</li> <li>— post-processing via PixelWrench2</li> </ul>
Performance	<ul style="list-style-type: none"> <li>— one second measurement rate</li> <li>— up to 12 user selectable narrow band filters</li> <li>— one RGB Bayer filter measurement position</li> <li>— 8 or 16 bit digitizer</li> </ul>	Command/ Control	<ul style="list-style-type: none"> <li>— RS232 I/O for report measurements</li> <li>— auto trigger mode (continuous capture)</li> <li>— GPS offset trigger mode</li> <li>— web browser display and user interface</li> </ul>
Data Storage	micro SD memory card, up to 16 GB	Host Interface	WiFi, USB 2, serial I/O
Included Software	PixelWrench2		