Portable Hyperspectral Camera IQ

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Data Sheet -- IQ

IQ is a portable hyperspectral camera with built-in functions that meet the needs of hyperspectral data capture, data processing, and result visualization.

Main Features

- Spectrometer camera
- Viewfinder camera
- Scanning platform and motor
- Embedded data processing unit
- Dara acquisition and processing through software operation
- Replaceable data storage
- Touchscreen display and physical buttons
- Rechargeable battery

Main functions

Working modes	Default Recording Mode Auto-filtering Mode Application Mode (User-defined) Time-lapse Mode Remote use
User adjustment	Exposure time adjustment Focus adjustment (manual) Metadata and tag addition
Data format	Dataset containing ENVI compatible data files
Data export	Use SD card, connect via USB or WiFi
Working time	Approximately 100 measurements can be performed when powered by battery and using one SD card

Hardware technical specifications

Device Operation

User interface software	Provided

Device Hardware

Viewfinder Camera	5 Megapixels (Resized to 1280*960 pixels)
Focus Camera	1.3 Megapixels
Spectrometer camera	Offer
SD card reader	UHS-1 SD （up to 32 GB SD memory card)
Processor	NVIDIA Tegra K1
CPU	Kepler Mobile
Memory	2GB DDR3L RAM & 8GB Emmc
GPS Module	U-BLOX GPS/GNSS MAX-M8Q-0
Operating Voltage	3.7 V
Battery	5200mAh Lithium-ion Battery (26650 Type)
WiFi	IEEE standard 802.11 b/g/n

User interface

Buttons	12+1 physical buttons
Display and keyboard	4.3" touchscreen
Buzzer	Indication sound to the user
USB interface	USB Type-C

Size

Size	207 x 91 x 74 mm (lens depth including 125.5 mm)
Weight	1.3 kg

Spectrometer camera specifications

Optical

Spectral Range	400 – 1000 nm
Sensor aperture value	F/1.7
Slit aperture value	F/2.2
Magnification (Sensor/Slit)	1/1.3
Keystone	Aleady corrected
Smile	Aleady corrected
Spectral resolution	7 nm
Slot length	11.70 mm
Slot height	42 µm

Sensor

Sensor type	CMOS
Sensor pixel count	512 pix
Number of spectral bands	204（Bining of 2: 102, Bining of 3: 68）
Image resolution	512 x 512 pix
Pixel size	17.58 µm x 17.58 µm
Data output	12-bit
QE peak	>45 %
Well Capacity	>32000 e-
Peak Signal-to-Noise Ratio	>400:1

Front lens

Object distance	150 - ∞ mm
Focal length	21 mm
Slit aperture value	F/2.2
Full Field of View (FOV)	31 x 31°
Full Field of View (FOV) at 1 m	0.55 x 0.55 m
Filter thread	M40.5 x 0.5

Environmental specifications

Device Operation

IP classification	IP5x
Operating Temperature	+5°C - +40°C
Storage Temperature	-20°C - +50°C
Operating Humidity	95% No Condensation

Standard

Vibration	STD-810G Method 516.6 Procedure VI
EU Directive	Radio Equipment Directive 2014/53/EU
Certification	CE、FCC、RoHS