NIR-Spectral Imaging System

RedEye 17

The NIR-Spectral Imaging System **RedEye17** combines a high-class imaging transmission spectrograph with an InGaAs NIR camera.
The data transfer via Gigabit Ethernet interface enables spectral imaging applications with frame rates of 330Hz at full resolution.
The casing of the sensor and the stabilization of the temperature by Peltier elements guarantee stabile operating conditions of the sensor in industrial environments.
The **RedEye17** works comparable to a line-camera, where for each spatial pixel a complete NIR spectrum is displayed.

Characteristics

- *high light throughput imaging transmission spectrograph with VPH grating technology.*
- *spatial and spectral resolution are adaptable to the application by the ROI-settings of the sensor*
- *Gigabit Ethernet interface*

Field of applications

- *food industry*
- *recycling industry*
- *semiconductor- and solar industry*
- *pharmaceutical industry*
- *chemical industry*

A multi fibre coupling to use the system as a multi-channel spectrometer is also available.

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Technical Data:

RedEye 17	
System	
technology	2D Spectral Imaging System
sensor	InGaAs FPA sensor 320x256 pixel
internal data processing	Xilinx Spartan 3 FPGA
data depth	14 bit internal processing, 12 bit digital output
spectrometer	transmission VPH grating
frame rate (full resolution)	330Hz
spectral range	typ. 950nm - 1700nm
Camera	
pixel size	30µm x 30µm
resolution	318 pixel spatial x 254 pixel spectral (can be inverted)
pixel clock	4 channels with 10MHz pixel clock per each
gain	high / low gain mode
cooling	cased sensor with controlled Peltier temperature stabilization
dead pixel	<1%
Spectrometer	
slit size	80µm (more slit sizes on demand)
spectral resolution	<9,5nm with a 80µm slit
spectral scan	3,2nm/pixel
standard-entrance objective	AR-coated for NIR; c-mount; f = 8 or 6mm;
Electric Attributes	
voltage	+24VDC+/- 15%
power consumption (max)	3.2 A
data interface	Gigabit Ethernet
parameterisation interface	RS485
Mechanic Attributes	
housing	anodised aluminium
dimensions l x w x h	720mm x 180mm x 150mm
weight	7 kg
objective coupling	standard c-mount
Operating Conditions	
temperature (operating)	-5 ℃ - +40 ℃
temperature (transport)	-10℃ - +50℃
relative air humidity	8% - 80%
Additional Equipment	
illumination units and entrance objectives adapted to the spectral range	

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