

The NIR-Spectral Imaging System **RedEye22** 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 stable operating conditions of the sensor in industrial environments.

The **RedEye22** 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.



NIR-Spectral Imaging System



RedEye 22 - preliminary

Technical Data:

RedEye 22	
System characteristics	
technology	2D Spectral Imaging System
sensor	InGaAs FPA sensor 320x256 pixel
internal data processing	Xilinx Spartan 3 FPGA
AD resolution	14 bit / Effective number of bits: 12
spectrometer	transmission VPH grating
frame rate (full resolution)	330Hz
spectral range	typ. 1200nm - 2200nm
Sensor	
pixel size	30µm x 30µm
resolution	254 pixel spatial x 318 pixel spectral (can be inverted)
pixel clock	4 channels with 10MHz pixel clock
gain	high / low gain mode
cooling	Embedded thermoelectric cooler
pixel operability	> 98%
Spectrometer	
slit size	80µm (other slit sizes on request)
spectral resolution	< 25 nm with a 80µm slit
spectral scan	4 nm / pixel
entrance lens	AR-coated for NIR (1.7µm); c-mount; f = 8 or 6mm;
Electrical characteristics	
voltage	+24VDC +/- 15%
power consumption (max)	3.2 A
data interface	Gigabit Ethernet
parameterisation interface	RS485
Mechanical characteristics	
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 °C - +40 °C
temperature (transport)	-10 °C - +50 °C
relative air humidity	8% - 80% non-condensing
Additional equipment	
illumination units and entrance objectives adapted to the spectral range	