

# HK8

## HK8-MINI

NIR- LED- Technology  
Continuous In-Line density measurement



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## Description:

The HK8 Series are NIR- (Near Infrared) LED In-Line measurement devices with state-of-the-art technology.

The devices are used on conveyor belt, in pipelines (connection via flow-through measuring cell or flange) and in tanks / vessel.

Through the modular construction (Sensor and evaluation unit are separate), the sensor can be installed at a difficult accessible places and the evaluation unit can be installed at a well accessible place. This ensure the easy handling.

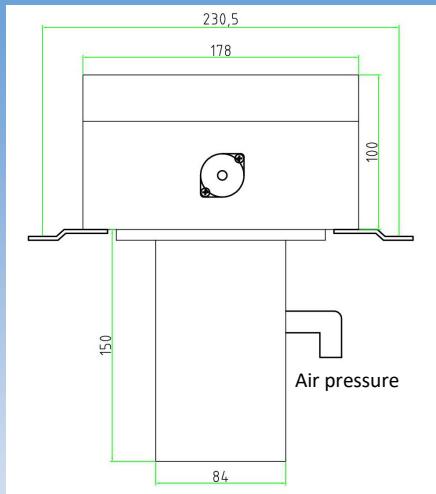
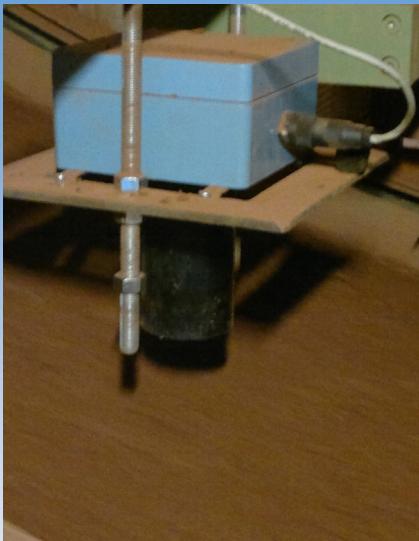
The modular construction makes the operation of the HK8- Series very easy.

## Advantage:

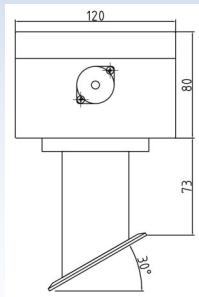
- Stat-of-the-art NIR- Technology
- Real time measurement
- Continuous monitoring of the whole production
- No moving parts in the optic, like filter wheel
- Easy to use software
- Open system:
  - existing calibration can be expanded
  - new calibrations can be created independent
- 10 Spectra's are evaluated per sec.
- Life time of the LED's approx. 10 Years
- No drift of the measured values through lamp aging
- Color and distance independent measurement
- Early detection of fail production
- Maintenance free

## Applications:

Food	Building material	Boards / Flooring
Sugar	Cement	Mineral board
Sugar beets	Gypsum	acoustic board
Refined sugar	Clay (roof tiles)	PVC (coating)
Sugar cubes	Sand	
Pellets	CaCO <sub>3</sub>	Wood products
Starch	Al <sub>2</sub> (OH) <sub>3</sub>	Fibre board (MDF)
breadcrumbs	Gravel	Chipboard (OSB)
Milk powder		Wood pellets
Cheese	Tobacco	Other
Pasta	Cut-tobacco	Coal
Herbs drying	Fine-cut tobacco	Plastic granulate
Coffee & Tea	Cigar tobacco	Textile
Animal feed	Snuff tobacco	Paper
Pellets		Biomass



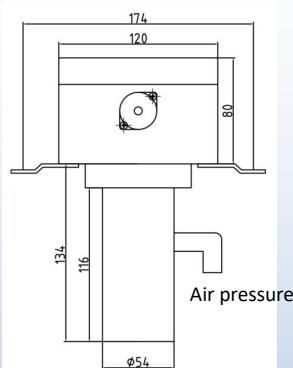
HK8 Standard for applications on conveyor belt



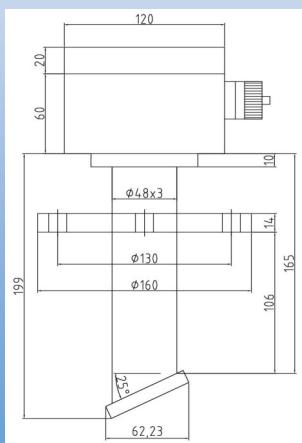
HK8-MINI with connection for flow-through measuring cell

#### Technical sensor data:

Housing:	Aluminum die casting
Size H x W x D:	180 x 180 x 100mm 122 x 120 x 80mm
Protection Type:	IP65 / NEMA 4
Environmental temperature:	-20°C - +70°C
Product temperature:	>0°C - +100°C



HK8-MINI for applications on conveyor belt



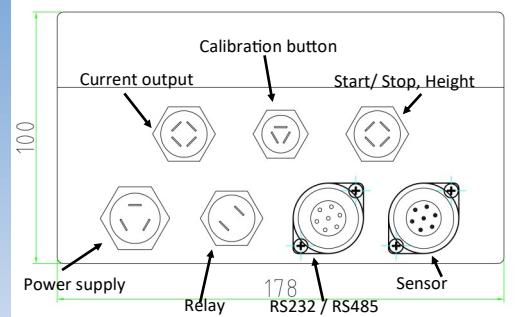
HK8-MINI with flange for measuring in pipelines, tanks and vessels

SENSORS

# Evaluation unit

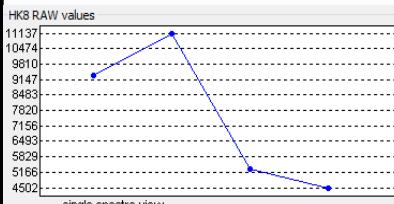
## Technical data evaluation unit:

Housing:	Aluminum die casting
Size H x W x D:	180 x 180 x 100 mm
Weight:	2,5 kg
Protection Type:	IP65 / NEMA 4
Power supply:	100 - 240 V/AC optional 24V/DC – 50/60 Hz – max. 200mA
2 Analog outputs:	0/4 - 20mA / isolated 1500V
PROFI-BUS-DP:	optional
Environmental temperature:	-20°C - +70°C
Operation:	6 in membrane keypad integrated soft keys
Display:	2x24 sign LCD, LED- backlight
PC-interface:	RS232



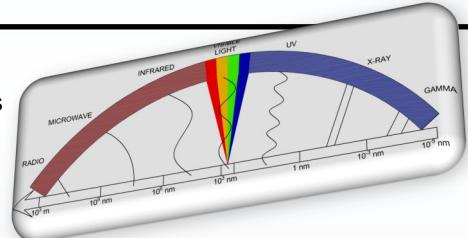
## No moving parts in the optic:

The Harrer & Kassen GmbH use in his HK8- Series NIR (Near-Infrared) LEDs with specific wavelength and no filter wheel, like conventional measuring devices.



The product will be irradiated with LEDs of different wavelength.

The resulting diffuse reflection (the diffuse reflection contains the necessary information of the constituents) is received by a photodiode and a MINI-Spectra is generated. Out of the received MINI- Spectra we can create a calibration with our SPECTER8 software.



Due to the open software system, it is possible that our customers can create their own calibration or expand an existing calibration.

## PC- requirement:

- 300 MHz clock speed (at least) recommended Pentium III- Processor (or faster)
- Windows 7 (32 und 64 Bit) or higher
- 512 MB RAM (or higher)
- USB interface

## Directives:

The HK8 and HK8- MINI is CE- conform, according to the followings directives:

- EMC directives 2014/30/EU:
  - generic standards EN 61000-6-2
  - generic standards EN 61000-6-4
- Low- voltage directives 2014/35/EU
- RoHS directives 2011/65/EU

## Scope of supply:

All HK8 are supplied with sensor, evaluation unit, calibration button and software.

At the commissioning, the operating personal gets a device instruction / training.