HK8
HK8-MINI

NIR- LED– Technology
Continuous In-Line density measurement

HARRER KASSEN

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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

- Sugar
  - Sugar beets
  - Refined sugar
  - Sugar cubes
  - Pellets
- Starch
- breadcrumbs
- Milk powder
- Cheese
- Pasta
- Herbs drying
- Coffee & Tea
- Animal feed
- Pellets

Building material

- Cement
- Gypsum
- Clay (roof tiles)
- Sand
- CaCO3
- Al2(OH)3
- Gravel

Tobacco

- Cut-tobacco
- Fine–cut tobacco
- Cigar tobacco
- Snuff tobacco

Boards / Flooring

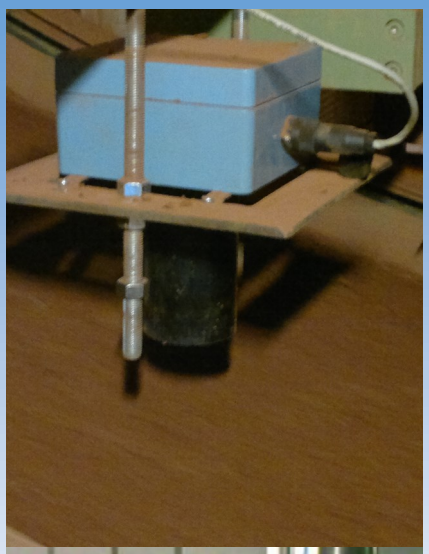
- Mineral board
- acoustic board
- PVC (coating)

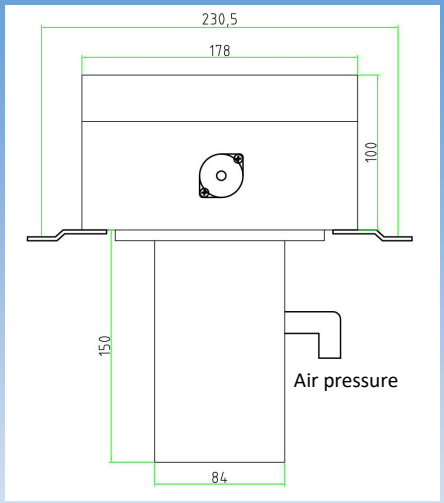
Wood products

- Fibre board (MDF)
- Chipboard (OSB)
- Wood pellets

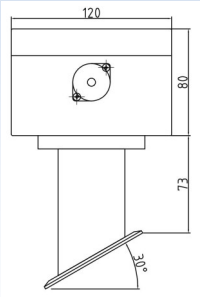
Other

- Coal
- Plastic granulate
- Textile
- Paper
- Biomass





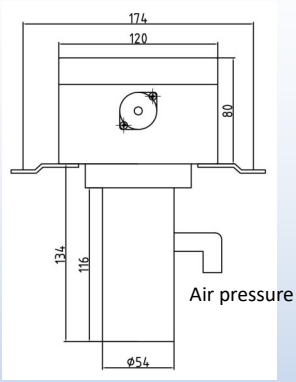
HK8 Standard for applications on conveyor belt



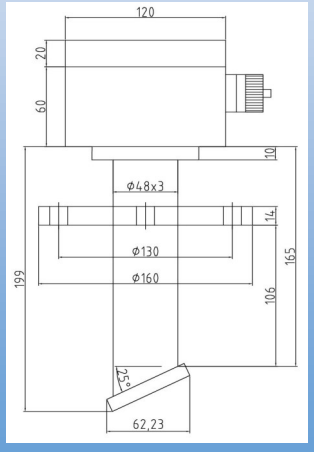
HK8-MINI with connection for flow-through measuring cell

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



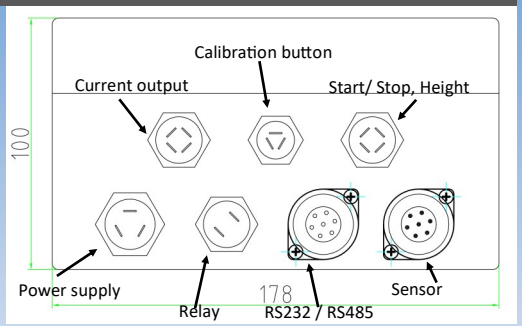
HK8-MINI for applications on conveyor belt



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

SENSORS

Evaluation unit

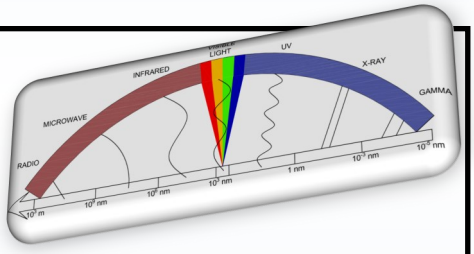


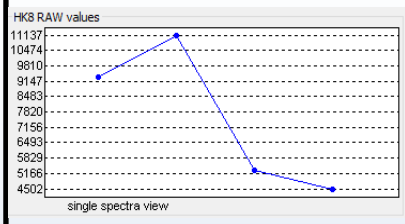
Technical data evaluation unit:

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/ Net/ Modbus TCP:	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.