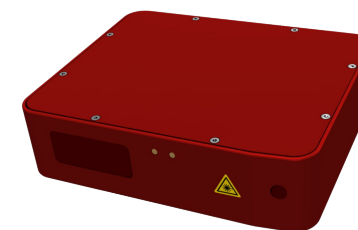


## SPECIFICATIONS ODS RED-LINE SELECT 1 kHz SERIES



### Options for:

- High Target temp. (1000°C) - Very High Target temp. (1300°C) and Very Very High Target temp. (1500 up to 2200°C).
- Ethernet or USB for digital output (not for thickness mode).
- 2 & 10 kHz versions of all Red-Line models
- Customized versions

	ODS 505	ODS 500-1100	ODS 925	ODS 1150	ODS 1950	ODS 1400	ODS 3000
<b>Measurement data:</b>							
Measuring range (FS)	100 mm	200 mm	650 mm	900 mm	900 mm	1400 mm	2000 mm
Measuring range	450-550 mm	center $\pm$ 100 mm	600-1250 mm	700-1600 mm	1500-2400 mm	700-2100 mm	2000-4000 mm
Center distance	500 mm	500,700,950 & 1100 mm	925 mm	1150 mm	1950 mm	1400 mm	3000 mm
Resolution <sup>(1)</sup>	0.01 mm	0.03 mm	0.1 mm	0.1 mm	0.2 mm	0.3 mm	0.5 mm
Linearity <sup>(1)</sup>	$\pm$ 0.03 mm	$\pm$ 0.06 mm	$\pm$ 0.2 mm	$\pm$ 0.3 mm	$\pm$ 0.5 mm	$\pm$ 0.7 mm	$\pm$ 1.0 mm
Updating frequency	1 kHz	1 kHz	1 kHz	1 kHz	1 kHz	1 kHz	1 kHz
Temperature deviation	$\pm$ 0.03% FS/C°	$\pm$ 0.03% FS/C°	$\pm$ 0.03% FS/C°	$\pm$ 0.03% FS/C°	$\pm$ 0.03% FS/C°	$\pm$ 0.03% FS/C°	$\pm$ 0.03% FS/C°
Light source/wave length <sup>(5)</sup>	Red LASER 650 nm	Red LASER 650 nm	Red LASER 650 nm	Red LASER 650 nm	Red LASER 650 nm	Red LASER 650 nm	Red LASER 650 nm
Size of spot	App. Ø 1 mm	Ø 2-3 mm	Ø 4 mm	Ø 4 mm	Ø 5 mm	Ø 5 mm	Ø 5 mm
Laser protection class <sup>(4)</sup>	IEC 2	IEC 2	IEC 2	IEC 2	IEC 2	IEC 2	IEC 2

### Output data:

Analog output (2): 4-20 mA or 1-9 V  
 Digital output (2): RS232 or RS422  
 Baud rate: 38400 kbit/for 1 kHz output freq.

### Electrical data:

Supply voltage: 22 - 36 VDC  
 Power consumption max 4.5 W

### Environment data:

Operating temperature 0 - +45 C°  
 Storage temperature -20 - +70 C°  
 Humidity non condensing: max 90 % RH  
 Degree of protection: IEC IP65

### Physical data:

Dimensions: 255 x 205 x 70 mm  
 Weight excl. cable 4.5 kg  
 M12 connector: 12 pin male code A  
 Housing: Aluminium/Glass

(1) Static measurement on white paper at measuring/sampling frequency, without any averaging of the serial output signal. Sampling and output frequency being equal.

(2) Analog output Resolution: 14 Bit DAC's are used for the conversion.

(3) Serial/Digital and Analog output are updated at the measuring frequency of 1 kHz except if the Simple Average Filter is activated.  
 10 kHz require RS 422, Ethernet or USB interface.

(4) Laser class IEC 3R may be needed for some HT, VHT and VVHT versions.

(5) VVHT versions Blue LASER/405 nm.

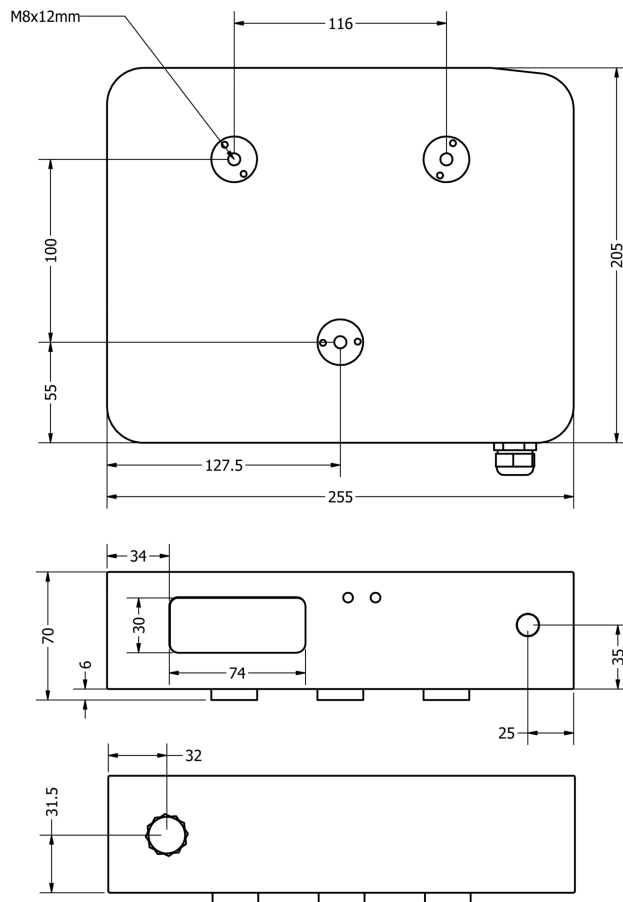
*More information on back page >*

August 2019; Subject to change without

## Measuring frequency 1 kHz

Output rates are user specified, as the sensor can be programmed to make an average of up to 200 measurements (disregarding all zero/missing values) and output it as a single point. In this way the output rate can be lowered from 1000 Hz in steps down to 5 Hz. This is done with the Simple Average Filter.

## Dimensions



## Filter & User Settings available

**All ODS Red-Line sensors have a programming / Select functionality.**

There are 3 kinds of averaging filters, Median Filter, Simple Average and Running Average Filter. These filter settings can be set individually and operate simultaneously (and additive), as can most other user settings.

In Group Mode a running average is calculated over a user specified number of measuring points (group). The user also programs the sensor to disregard a number of bad (zero) / missing measuring points before calculating the average value. It is recommended to suppress the maximum number of "0" values. The running average value is calculated at full measuring frequency and is also used for converting the analog signal, either 4-20 mA or 1-9 V.

The Simple Average Filter compresses a number of measuring points, from 1 to 200, into one single output value by making an average disregarding any "0"/missing values present.

Several Median filters, actually from 3 to 31 is available, as well as Sample Hold Mode, where the last valid measurement value is kept as the output value in case of missing "0" measuring points.

Level Mode inverts the measuring values, in this setting the closer distances will be output as high values whereas distances far away will be output as low values.

## ODS High Temperature models

ODS Red-Line sensors can be specified to measure up to 1000°HT or 1300°C/VHT with a **Red Diode**. When VVHT is specified a **Blue Diode** is used and the target temperature can reach far above 1500°C.

It is important to stress, that the HT specification only concerns the target temperature. Maximum sensor environment temperature is 45 °C. The HT specification can also be necessary when there is a risk of harmful false light as is the case with bright sunlight, both direct and reflected.

## ODS Thickness Measurement

**ODS Red-Line sensors are calibrated for measuring thickness when paired.**

An ODS Red-Line sensor will automatically turn itself into being either the Master or the Slave half part of a thickness measuring system when connected to an identical ODS sensor model.

The Master sensor reads the digital distance data as send from the Slave sensor over their RS232 or RS422 serial interfaces, and after taking its own distance information into account, it will output the change in thickness in its calculated digital form as well as a converted analog signal. The sensors must always be synchronized.

A couple of ODS sensors will thus measure thickness or width without any control box or special calibration from the factory. ODS sensors can also be programmed to operate in Difference Mode instead of measuring thickness. This unique characteristic of the ODS sensors is also available in models of the Grey-Line and Black-line families.

