

**X** Non-contact thermometry best done  
with thermal imagers

# ID-Vision Series

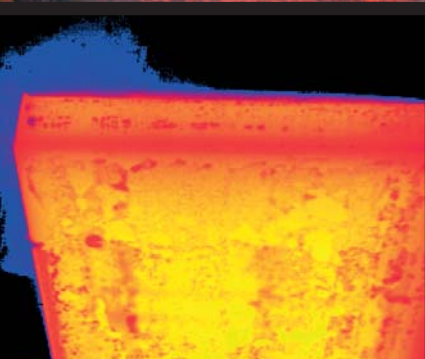
**IndustrialDuty – Substantial industrial  
sensors for the use in harsh, industrial environments**



-40°C



1600°C



## Typical applications





- ◆ Optimisation of production processes
- ◆ Monitoring and control of production processes
- ◆ Quality control of products

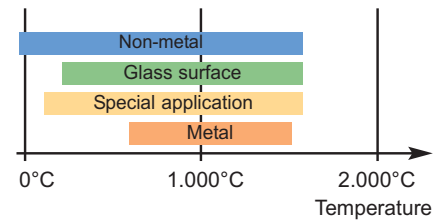


## ID-Vision Series





The fixed installation ID-Vision Series' thermal imagers have been specifically designed for long-term use in industrial plants for process and quality control. The imagers detect temperatures between -40°C and 1600°C at frame rates between 7.5 Hz and 50 Hz.





Depending, e.g. on the material or the temperature range of application, the imagers operate in specific spectral ranges. To help you, different colour bars are used in the product overview.





	8...14 µm	General applications on non-metal surfaces
	4.8...5.2 µm	Glass surface measurement
	3...5 µm	Special applications in the range of 3...5 µm
	0.8...1.1 µm	Measurement on metal surfaces



*Different measurement ranges of thermal imagers of ID-Vision Series*

7.5 Hz, Export licence free				
Type	<b>IVN 3200-ID</b> <b>IVN 3200-ID/HT</b>	<b>IVN 3200/5-ID</b> <b>IVN 3200/5-ID/HT</b>	<b>IVN 3200/3-5-ID</b>	<b>IVN 3200/39-ID</b> <b>IVN 3200/39-ID/HT</b>
Feature	Temperature measurement on non-metal surfaces	Temperature measurement on glass surfaces	Temperature measurement e.g. on metal and ceramics from 150°C	Temperature measurement in flame heated furnaces (through flames and hot gases)
Meas. range	-40...500°C 200...1600°C	200...800°C 400...1600°C	150...800°C	200...800°C 400...1600°C
Spectral range	8...14 µm	4.8...5.2 µm	3...5 µm	3.9 µm
Data points	320 x 240	320 x 240	320 x 240	320 x 240
Field of view	21° x 16° (additional lenses)	21° x 16° (additional lenses)	21° x 16° (additional lenses)	21° x 16° (additional lenses)
Focusing	Motor focus	Motor focus	Motor focus	Motor focus
Frame rate	7.5 Hz	7.5 Hz	7.5 Hz	7.5 Hz
Reference no.	3 824 650 / 3 824 670	3 824 830 / 3 829 500	3 829 250	3 824 770 / 3 829 400

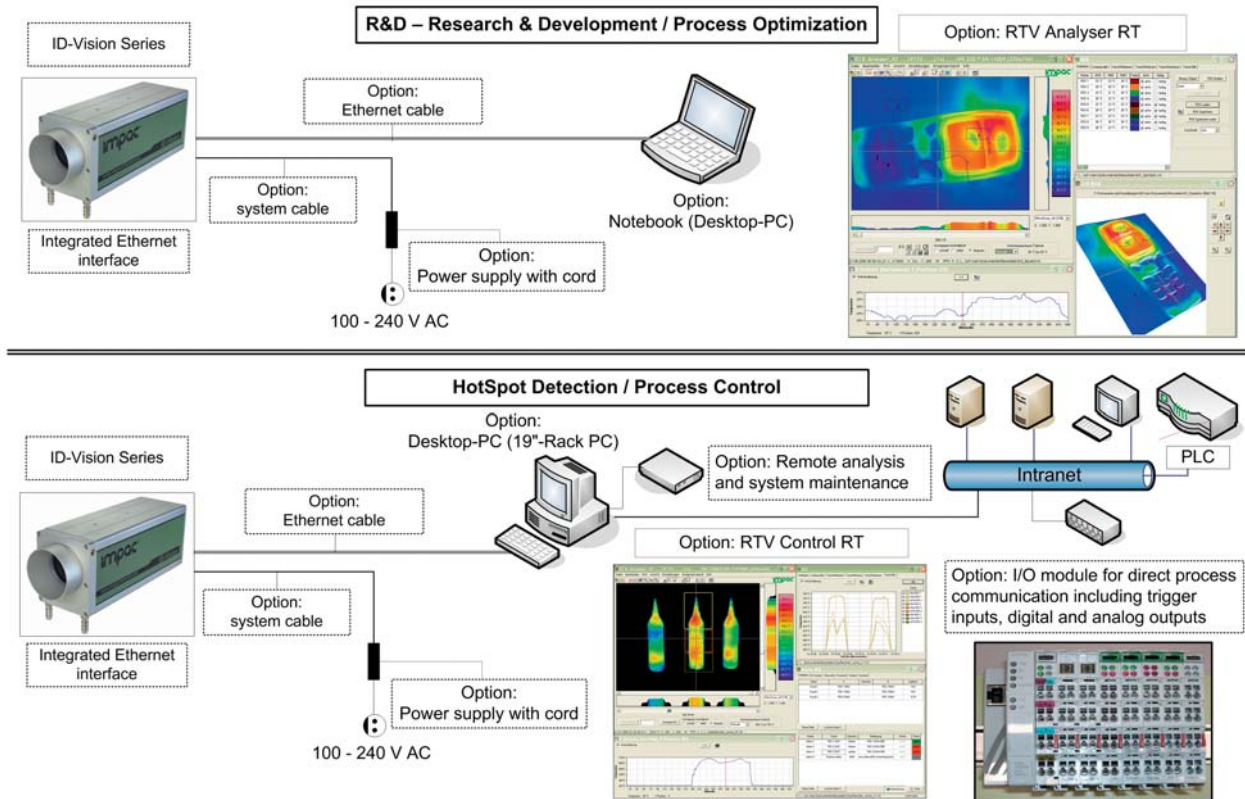
30 Hz, US-Export licence				
Type	<b>IVN 3200-ID</b> <b>IVN 3200-ID/HT</b>	<b>IVN 3200/5-ID</b> <b>IVN 3200/5-ID/HT</b>	<b>IVN 3200/3-5-ID</b>	<b>IVN 3200/39-ID</b> <b>IVN 3200/39-ID/HT</b>
Feature	Temperature measurement on non-metal surfaces	Temperature measurement on glass surfaces	Temperature measurement e.g. on metal and ceramics from 150°C	Temperature measurement in flame heated furnaces (through flames and hot gases)
Meas. range	-40...500°C 200...1600°C	200...800°C 400...1600°C	150...800°C	200...800°C 400...1600°C
Spectral range	8...14 µm	4.8...5.2 µm	3...5 µm	3.9 µm
Data points	320 x 240	320 x 240	320 x 240	320 x 240
Field of view	21° x 16° (further vario optics)	21° x 16° (further vario optics)	21° x 16° (further vario optics)	21° x 16° (further vario optics)
Focusing	Motor focus	Motor focus	Motor focus	Motor focus
Frame rate	30 Hz	30 Hz	30 Hz	30 Hz
Reference no.	3 824 660 / 3 824 680	3 824 840 / 3 829 510	3 829 260	3 824 780 / 3 829 410

50 Hz, EU-Export licence				25 Hz, Export licence free	
Type	<b>IVN 3200-ID</b> <b>IVN 3800-ID</b>	<b>IVN 3200/5-ID</b>	<b>IVN 3200/3-5-ID</b> <b>IVN 3200/39-ID</b>	Type	<b>IVS 6400-ID</b>
Feature	Fast imagers for the measurement on non-metal surfaces	Fast imager for the measurement on glass surfaces	Fast imagers for the measurement in special application	Feature	Temperature measurement on metal surfaces
Meas. range	-20...500°C	200...1250°C	100...500°C 600...1250°C	Meas. range	600...1500°C
Spectral range	8...14 µm	4.8...5.2 µm	3...5 µm / 3.9 µm	Spectral range	0.8...1.1 µm
Data points	320 x 240 / 384 x 288	320 x 240	320 x 240	Data points	640 x 480
Field of view	25° x 19° / 30° x 23° (further vario optics)	32° x 24° (further vario optics)	32° x 24° (further vario optics)	Field of view	32° x 24° (further vario optics)
Focusing	Manual	Manual	Manual	Focusing	Manual
Frame rate	50 Hz	50 Hz	50 Hz	Frame rate	25 Hz
Reference no.	3 823 150 / 3 823 700	3 823 500	3 823 300 / 3 823 400	Reference no.	3 832 850

## System configuration

Due to the robust housings of the imagers the measurement system can be used in harsh environments. Each ID-Vision housing features an air purging system for lens cleaning as well as a special front plate for the air- or water-cooling of the camera. IMPAC systems GmbH integrates and adapts customer specific systems to individual measuring applications. Below there are examples of what a system configuration could look like.

**Scope of delivery:** Camera with internal IP54 infrared module including air purging system and cooling system (front plate), RTV Basic (offline freeware), 1 licence RTV Basic RT (online software), carrying case

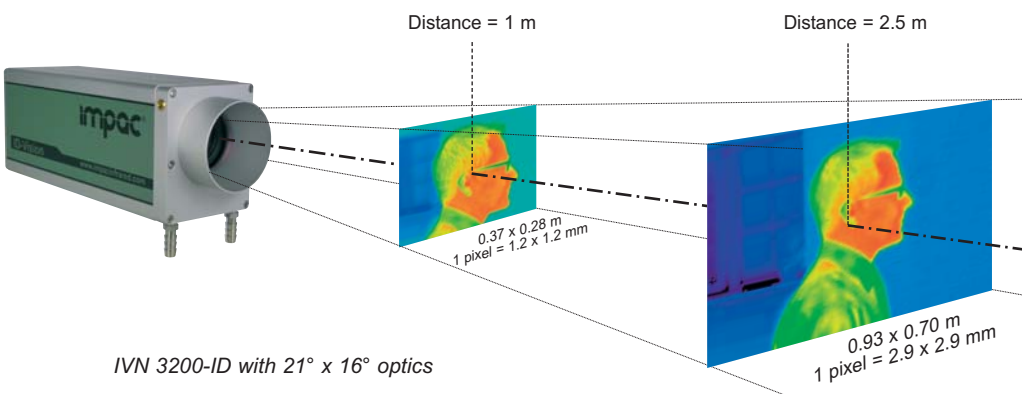


## Measurement field and pixel resolution

The thermal imagers are supplied with vario optics which are suitable for most applications. For specific applications, optional vario optics can be fixed-mounted into the camera.

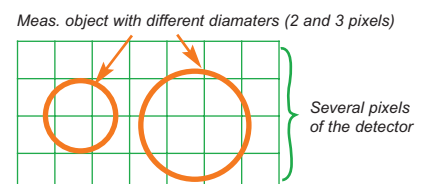
The table and the picture display the correlation between the measurement distance, different optics and the size of the measurement fields:

Distance of object [m]	Measurement field x H [m]		
	21° x 16°	11° x 8°	53° x 40°
0.50	0.19 x 0.14	–	0.50 x 0.36
0.75	0.28 x 0.21	–	0.75 x 0.55
1.00	0.37 x 0.28	–	1.00 x 0.73
2.50	0.93 x 0.70	0.48 x 0.35	2.49 x 1.82
5.00	1.85 x 1.41	0.96 x 0.70	4.99 x 3.64
10.00	3.71 x 2.81	1.93 x 1.40	9.97 x 7.28



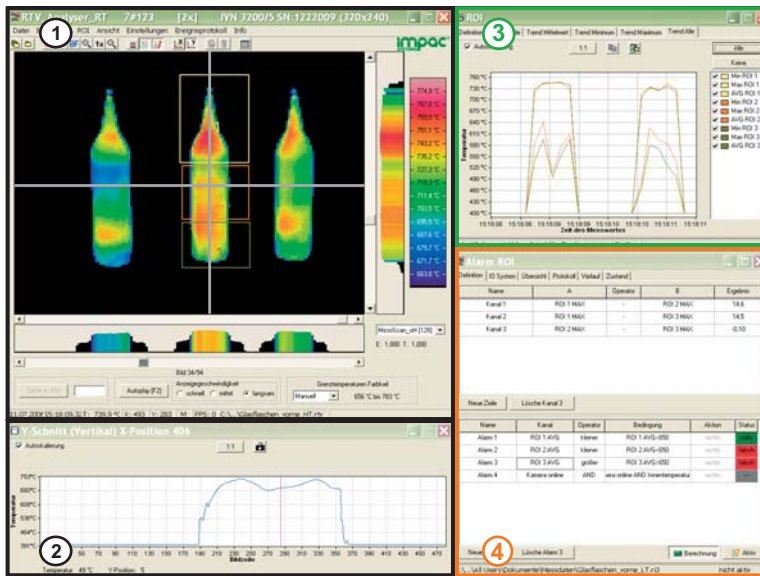
**Please note:**

The size of the measurement object should be as big as 3 x 3 pixels. This guarantees the precise temperature determination, as at least one pixel of the detector is completely covered.



## Software

IMPAC systems GmbH develops software, based on standardised software elements, which is then customised to suit specific applications. The basic software **RTV Basic RT** comprises features for online visualisation and logging of processes. For more detailed analysis tasks IMPAC offers the software **RTV Analyser RT** and for advanced process control the software **RTV Control RT**. Therefore, the measuring system can easily be integrated into your systems – for example to control and monitor production processes. Additionally, it is possible to analyse the temperature data of images and sequences in an offline mode. To achieve this, IMPAC provides the software versions **RTV Analyser** und **RTV Control**. For demonstration purposes, the freeware **RTV Basic** can be ordered from IMPAC.



### 1 Main window

Online monitoring and recording of sequences; thermal images can be loaded and saved

- ◆ Temperature display (°C, °F, K)
- ◆ Replay of sequences at 3 different rates
- ◆ Shorten sequences
- ◆ Export to standard picture formats (.JPG, .BMP) and digital video sequences (.AVI)
- ◆ Multiple isotherms with grey colour wedge
- ◆ Diverse colour palettes for high-contrast visualisation
- ◆ Language version: German, English, French

### 2 Line Profile

Graphical and coloured display of temperatures over time with horizontal X-cuts and vertical Y-cuts

### 3 Image processing tools (ROIs)

Analysis of temperature data in multiple Regions of Interests (ROIs) during or after data recording

- ◆ Diverse tools (e.g. point, line, rectangle, hot spot, polygon, polyline, circle, ellipse)
- ◆ Display of characteristic temperature data within ROIs (minimum, maximum, average)
- ◆ Display of line profiles
- ◆ Trends for all defined ROIs values
- ◆ Export of temperature and ROI data as text file or over Windows DDE Interface (offline/online)

### 4 Process control and network integration

Fast data transfer to PLCs (process control) and optional I/O-module

- ◆ Mathematical operation with single ROIs (operation channels)
- ◆ Trigger- and alarm functions using external contacts (I/O-module or software trigger)
- ◆ Documentation of events (information, warning, error) with time stamp
- ◆ Option: scalable I/O-module with relay and analogue outputs

Software specification	RTV Basic RT	RTV Analyser RT	RTV Control RT
Data recording and visualisation	X	X	X
Shorten sequences	X	X	X
.JPG, .BMP, .AVI export	X	X	X
X- / Y-cuts (horizontal / vertical)	X	X	X
Zoom +/-	X	X	X
Filter	X	X	X
Isotherms	X	X	X
HD memory manager	X	X	X
3D profile		X	X
Report generator		X	X
ROI definition		X	X
Line profile		X	X
ROI trend windows (4x)		X	X
Online/offline data export (DDE)		X	X
Emissivity correction (ROI)		X	X
Access protection (password)			X
Alarm ROI window			X
Overview measurement channels			X
Operation channels (ROIs)			X
Alarm: protocol, trend, current state			X
Export of screen			X
Reference number online version	3 831 670	3 831 680	3 831 690

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