IVC-3D: The First 3D Smart Camera in the World!

The IVC-3D is the first Smart Camera in the world that is designed to inspect and measure in three dimensions. With tools that are designed to measure height, volume, shape and profiles, 3D applications are now easily solved with the IVC-3D Smart Camera.

Calibrated 3D Inspection at Production Speeds:
With the factory-calibrated IVC-3D your glue string inspection is done extremely fast and accurate. With a conveyor speed of 1 meter/ second the verification of the glue string cross-section is done each half millimeter.

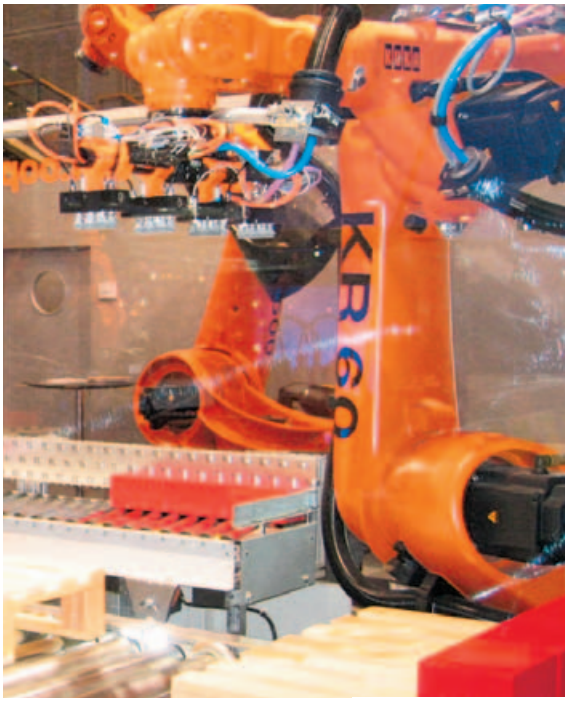
IVC-3D is the Key to True Shape Inspection:
The break pad application is an example of several inspections in one single shot:

- Surface defects
- Height position of the plug
- Angle of the metallic spring

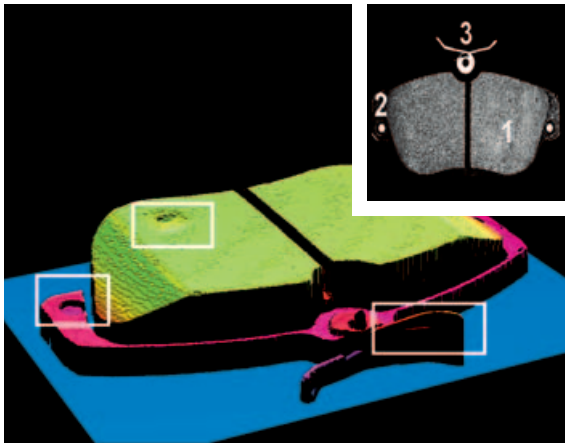
All features are very difficult to detect by 2D cameras, but with IVC-3D the application is quickly developed in the graphical IVC Studio user interface.

Contrast-Independent Inspection by 3D Measurement:
The verification of praline box content requires a system that can check dark objects on a dark background. 3D is superior when there is low contrast. The praline application is an example of:

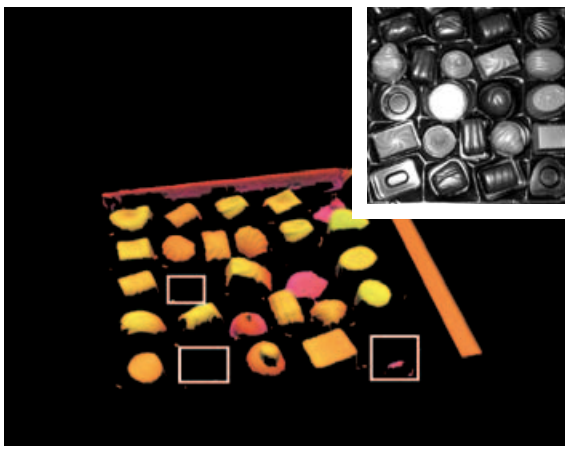
- Correct 3D shape inspection
- Verification of individual praline position
- Missing praline detection by robust height measurement



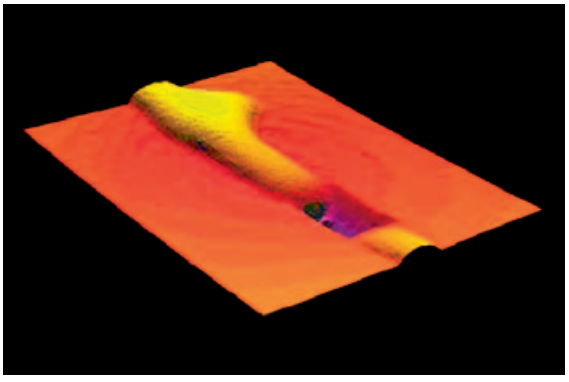
▶ The break pad application



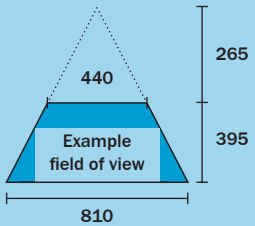
▶ Contrast-Independent Inspection by 3D Measurement



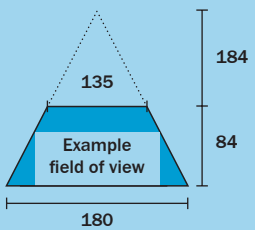
▶ Calibrated 3D Inspection at Production Speeds



Field of view (mm)



IVC-3D 200



IVC-3D 50

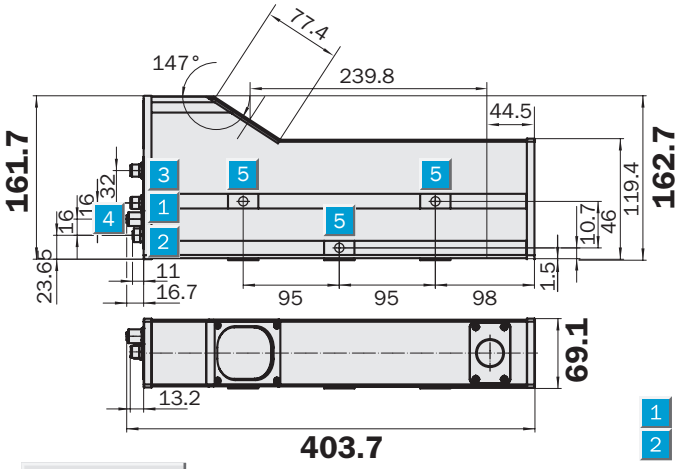
Field of view (HxW)
200x600 mm
50x150 mm

Smart Cameras

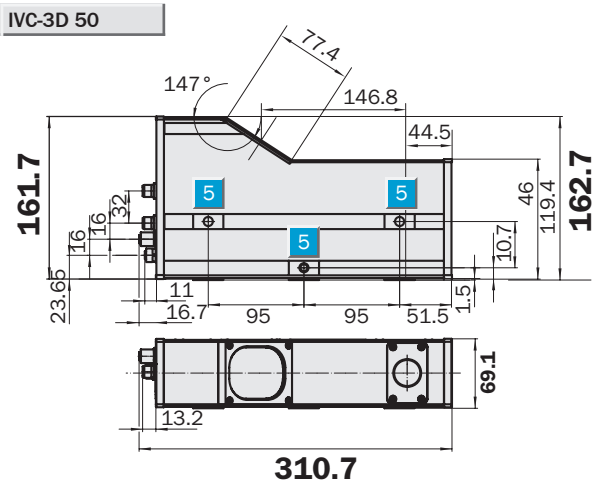
- The first 3D Smart Camera available
- Calibrated 3D inspection at production speed
- Contrast independent inspection
- Robust industrial design

Dimensional drawing

IVC-3D 200



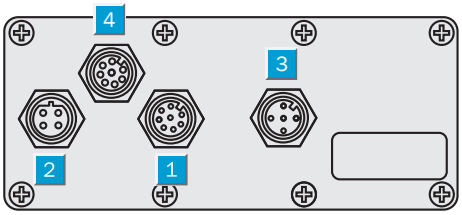
IVC-3D 50



1 Power I/O: M12, 8-pin, male
2 Ethernet: M12, 4-pin, D-coded, female
3 Encoder: M12, 5-pin, male
4 RS 485: M12, 8-pin, female
5 The mounting holes have the same position on the back and the upper side

Connection type

1 Power I/O: M12, 8-pin, male
2 Ethernet: M12, 4-pin, D-coded, female
3 Encoder: M12, 5-pin, male
4 RS 485: M12, 8-pin, female



1

wht	1	Trigger In/In 0
brn	2	DC 24V
grn	3	Out 0
yel	4	Out 1
gra	5	In 1
pnk	6	In 2
blu	7	GND
red	8	Trigger Out

2

1	TX+
2	RX+
3	TX-
4	RX-

3

1	In1⁻
2	In2
3	In2⁻
4	In1
5	GND

4

wht	1	TRA
brn	2	not con.
grn	3	Out 2
yel	4	not con.
gra	5	GND
pnk	6	GND
blu	7	TRB
red	8	In 3

M12, 8-pin, female plug with cable, 2 m, for power and I/O	M12, 4-pin, (D-coded) to RJ45 Ethernet cable, 3 m	M12, 5-pin, female with 2 m cable for Encoder	M12, 8-pin, male with 2 m cable for RS 485 and secondary I/O
Order no. 6020633	**Order no.** 6029630	**Order no.** 6008899	**Order no.** 6029330
M12, 8-pin, female plug with cable, 5 m, for power and I/O		M12, 5-pin, female with 5 m cable for Encoder	M12, 8-pin, male with 5 m cable for RS 485 and secondary I/O
Order no. 6020993		**Order no.** 6009868	**Order no.** 6029331
		M12, 5-pin, female with 10 m cable for Encoder	
		Order no. 6010544	

Technical data	IVC-3D	11111 IVC-3D 200	21111 IVC-3D 50
Performance	5000 profiles/second, 800 MHZ processor and FPGA	■	■
Interface	10/100 MB Fast Ethernet TCP/IP, UDP/IP	■	■
Serial interface	RS 485	■	■
Digital I/O	3 program control inputs (1 trigger input)	■	■
	3 program control output	■	■
	Trigger output	■	■
Encoder interface	RS 422	■	■
Max encoder frequency	2 MHz	■	■
Enclosure rating	IP 65	■	■
Laser class	2M/2	■	■
Example field of view (H x W)	200 x 600 mm	■	
	50 x 150 mm		■
3D height resolution	0.2 mm	■	
	0.04 mm		■
Max profile width	1024 points	■	■
Dimensions (L x H x D)	387 x 163 x 69 mm	■	
	294 x 163 x 69 mm		■
Laser wavelength	Typ 660 nm ± 10 nm	■	■
Power supply	24 V DC 20%	■	■
Current consumption	< 1 A	■	■
Ambient temperature	Operation: 0 °C ... +40 °C	■	■
	Storage: –20 °C ... +70 °C	■	■
Weight	Approx. 4 kg	■	
	Approx. 3.2 kg		■
Housing material	Aluminium, anodized	■	■
	Connectors = Nickel plated brass	■	■
	Front windows = compound glass	■	■

IVC Studio PC application development tool

Min. system req. 550 MHz CPU, 128 MB RAM, CD-ROM or DVD, Fast Ethernet, Win 2000/WinXP. Graphics driver support for OpenGL 1.3 or higher.

IVC Studio in English and in German.

Order information	
Smart Cameras	
Type	**Order no.**
IVC-3D11111 IVC-3D 200	1027539
IVC-3D21111 IVC-3D 50	1027538