QuellTech Laser Scanner

Solutions for Industry

Laser Scanner

Q4 Series:

Scanner type	5	20	40	60	80	120	240	400	1000
Range Z [mm]	5,9	20	40	60	80	120	240	400	1000
Range X [mm]	4,5	12	24	35	48	70	140	240	650
Standoff [mm]	38	53	50	53	60	84	220	330	700
Resolution [mm]	0,0039	0,0133	0,0266	0,0399	0,0532	0,0798	0,1596	0,2660	0,6649
Range begin X [mm]	3,9	10	20	30	40	60	120	200	500
Range end X [mm]	5	13	27	40	55	80	160	280	800
Length [mm]	86	84	96	96	134	186	350	550	1150
Width [mm]	32	32	32	32	32	32	32	32	32
Height [mm]	85	77	79	79	77	84	89	89	72
Weight [g]	295	273	290	290	348	430	710	1100	2000

Laser Scanner

Q5 Series:

	Q5								
Scanner Type	5	10	20	30	45	75	240	570	880
Range Z [mm]	5	10	20	30	45	75	240	572	879
Range X Begin [mm]	9,1	13,8	24,1	34,0	47,0	70,0	153,0	275,0	336,0
Range X Middle (nominal) [mm]	10,4	16,1	28,7	38,0	54,0	89,0	186,0	436,0	684,0
Range X End [mm]	11,6	18,4	33,2	42,0	62,0	108,0	219,0	609,0	1022,0
Standoff z-Range Begin [mm]	28,9	33,1	42,5	91,0	85,0	75,0	409,0	330,0	302,0
Working Distance z-Range (nominal) [mm]	31,4	38,1	52,5	106,0	107,5	112,5	529,0	616,0	741,5
Resolution in x [µm]	5,1	7,9	14,0	18,6	26,4	43,5	90,8	212,9	334,0
Resolution in z [µm]*(numerical best case)	0,3	0,6	1,2	1,7	2,6	4,4	13,8	32,6	51,3
Resolution in z [µm](real example: Steel)	1,6	2,9	5,8	8,7	13,0	21,8	69,2	162,8	256,3

* numerical resolution with 4 subpixel

Laser Scanner

Q6 Series:

Scanner Type	Q6-D45	Q6- D90	Q6-D185	Q6-D250	Q6-D410	Q6-D700	Q6-D1100
Total (possible) Range Z [mm]	**30**	**80**	**80**	**150**	**250**	**832**	**1215**
Range Z to NEAR [mm]	15	30	40	75	125	251	516
Range Z to FAR [mm]	15	50	40	75	125	581	699
Range X Begin [mm]	40	71	128	152	221	357	473
Range X Middle [mm]	**45**	**82**	**148**	**182**	**290**	**492**	**847**
Range X End [mm]	50	98	168	210	361	621	1.363
Standoff z-Range Begin [mm]	97,5	142,5	132,5	325	275	149	228
Working Distance z-Range Middle [mm]	112,5	172,5	172,5	400	400	400	744
Resolution in x [µm]	10,99	20,02	36,13	44,43	70,80	120,12	206,79
Resolution in z [µm] numerical	0,24	0,47	0,88	1,37	2,19	3,74	9,42
Resolution in z [µm] (real example steel)	3,07	6,15	11,49	17,78	28,48	48,68	122,51

Product Overview: 3D Vision Software
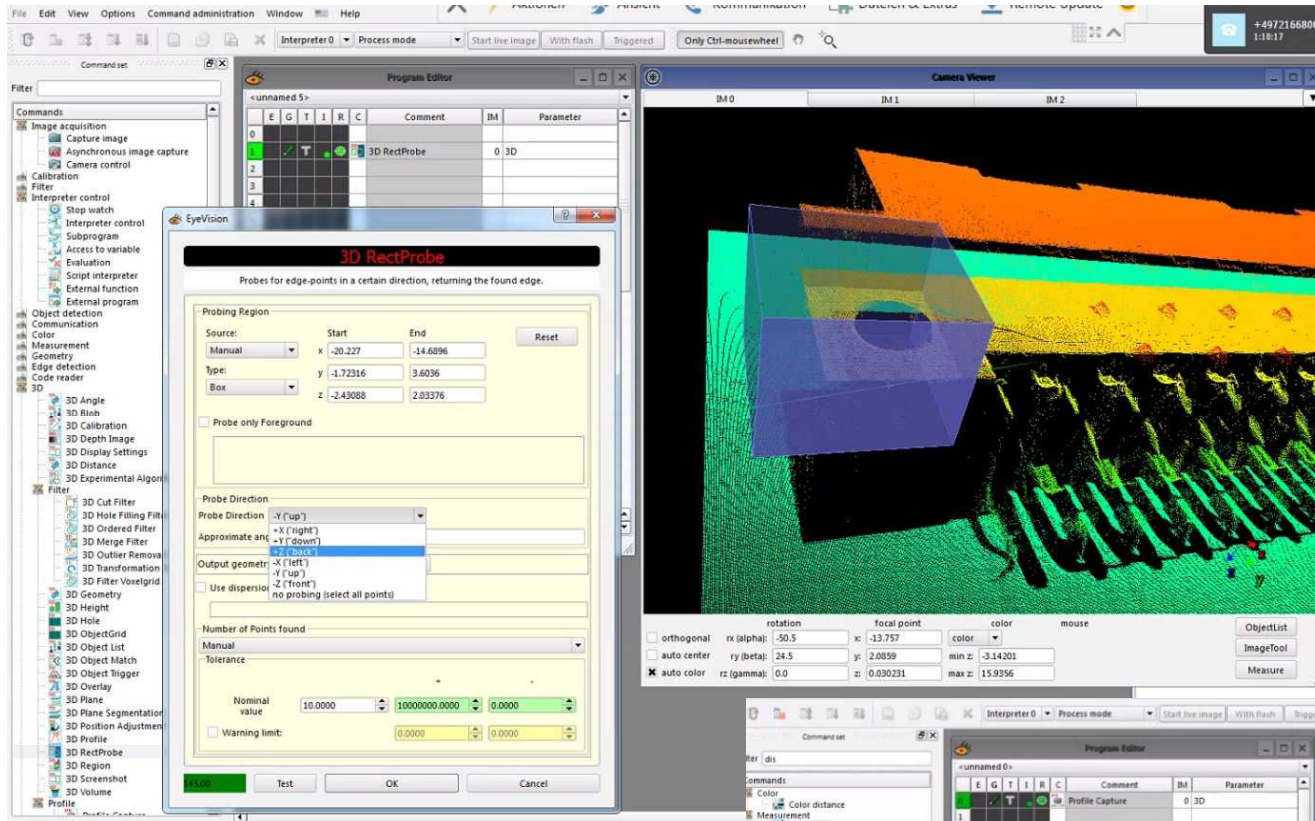
Software Features

- **Make measurement tasks without programming**

- **Has many measurement modules for tasks like angle, step-height, length, area, volume, radius, gap-width, etc**

- **Interfaces are available for application Software for PLC, Robots and analog outputs**

- **3D display mode can move measured objects freely in 3 axis**

- **Record and replay mode allows offline evaluation of 2D/3D data**

- **Customized measurement modules can be easily added**

- **Multi Scanner pointcloud merge possible**

SDK

- **For software developers who want to design their own software there are dlls for easy integration available.**
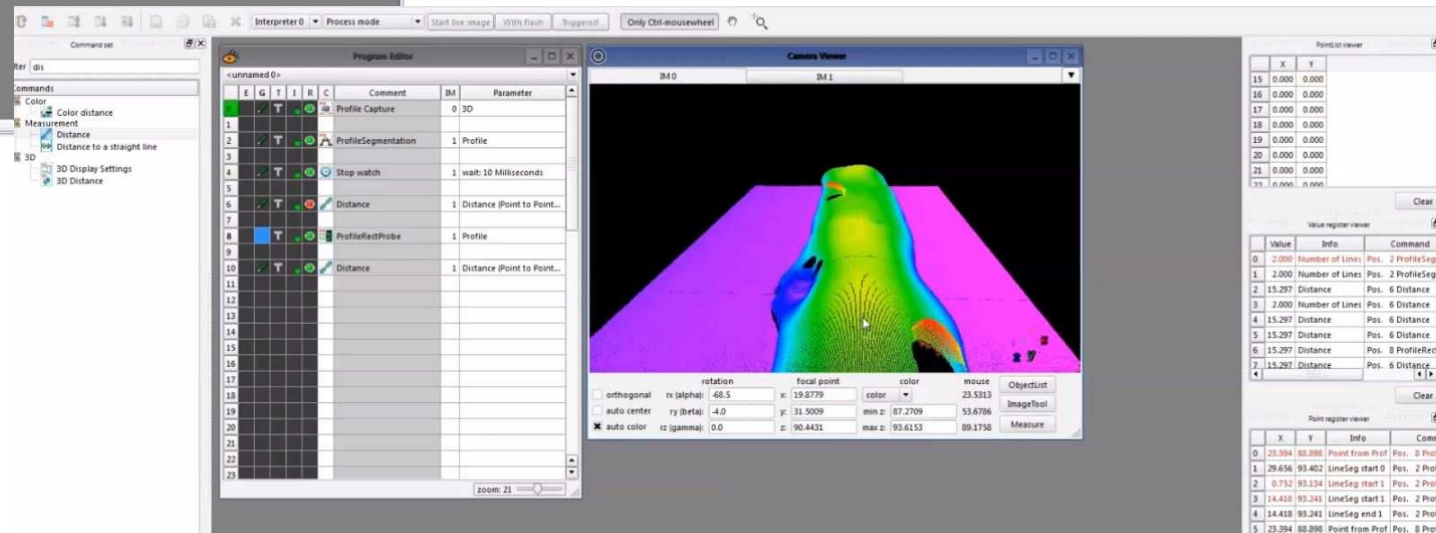
Product Overview: QuellTech Software QS-View
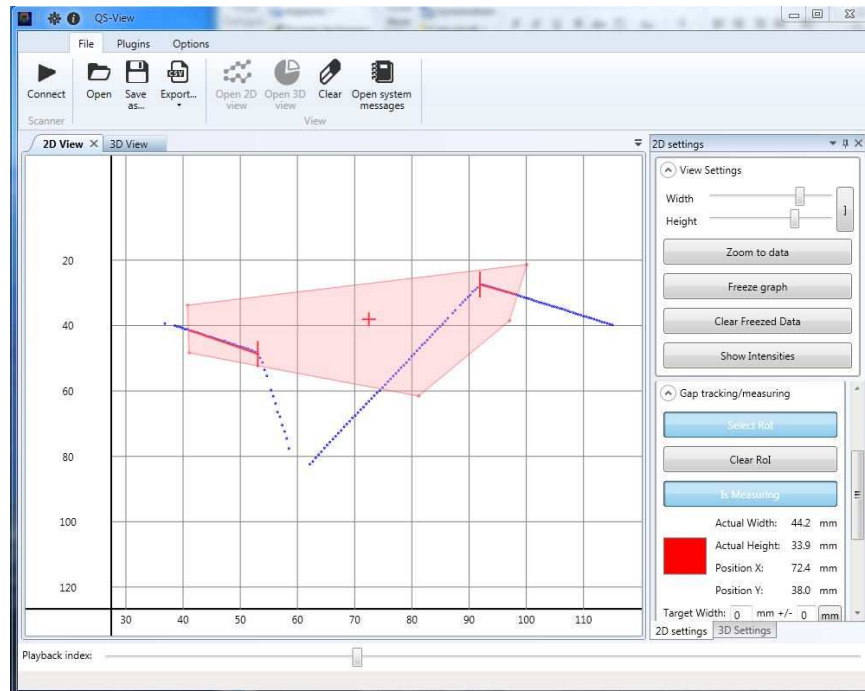
QuellTech SDK

- For software developers who want to design their own software there are dlls for easy integration available.
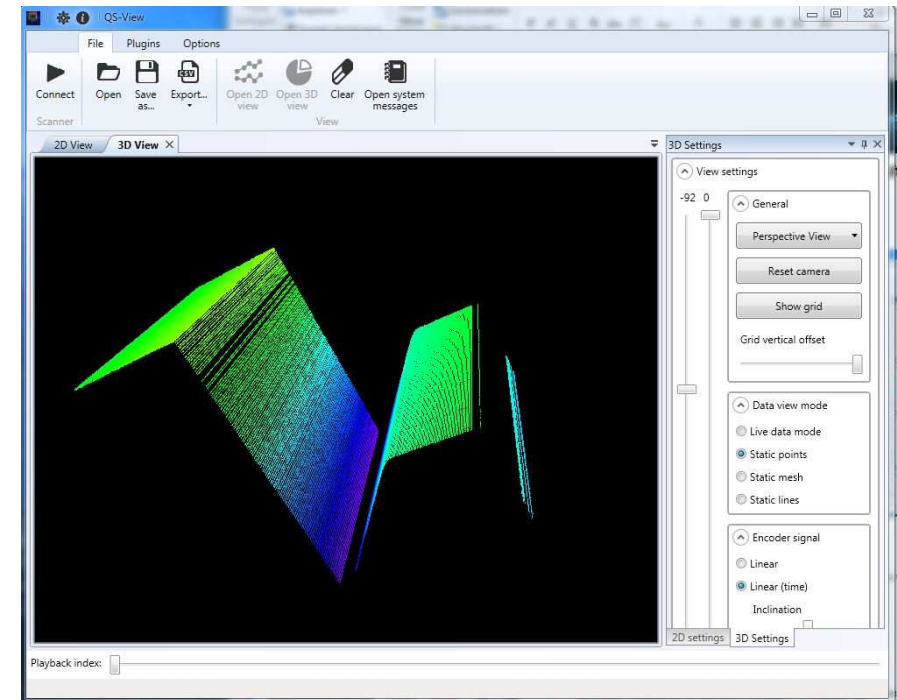
QS-View Software Features

- Displays scanner data in 2D and 3D

- Has standard measurement modules for simple tasks like angle, step-height, length, area, volume, radius, gap-width a.s.o.

- Interfaces are available for application Software for PLC, Robots and analog outputs

- 3D display mode can move measured objects freely in 3 axis

- Record and replay mode allows offline evaluation of 2D/3D data

- Customized measurement modules can be easily added

Applications: Automotive
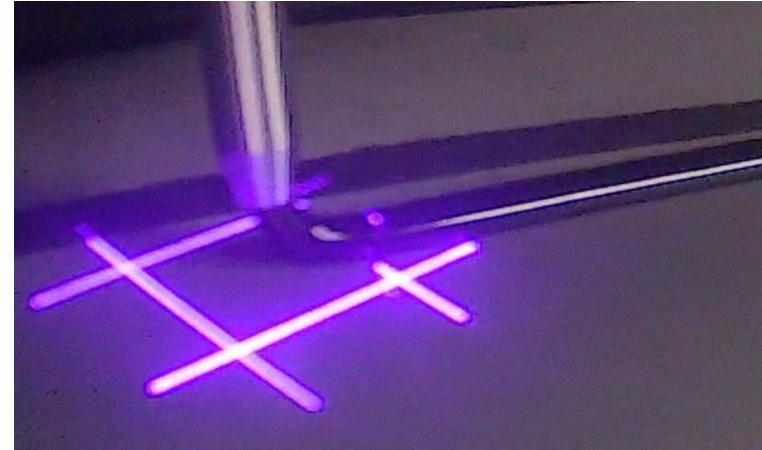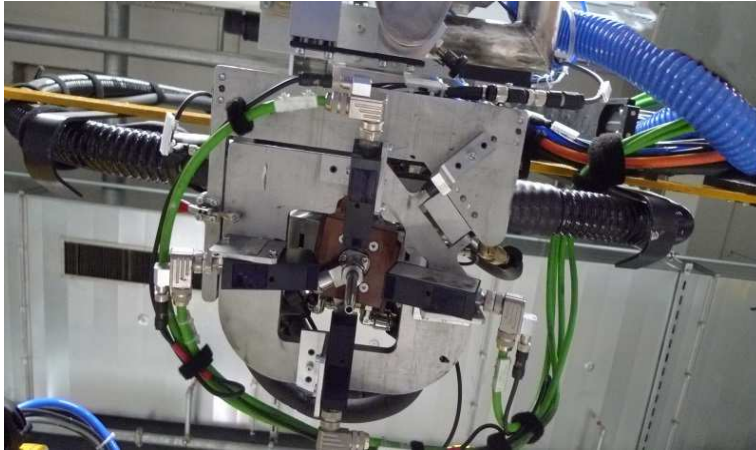
Applications: Aluminum and Titanium Manufacturing

Applications: Weld Bead Inspection
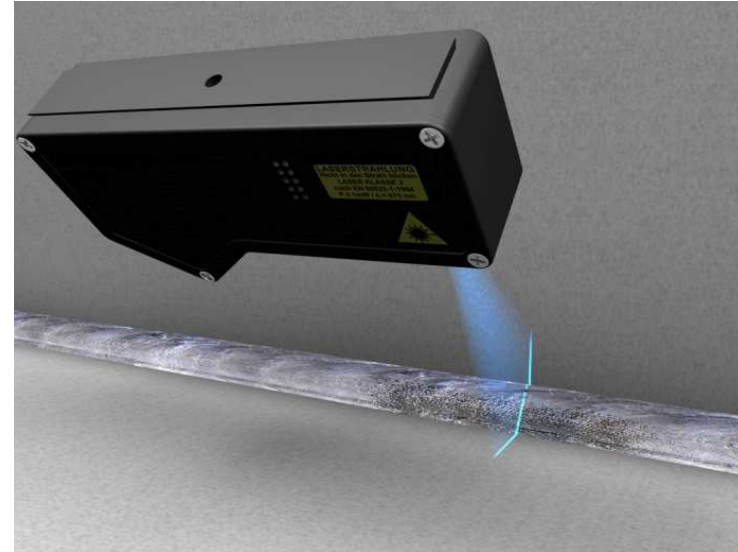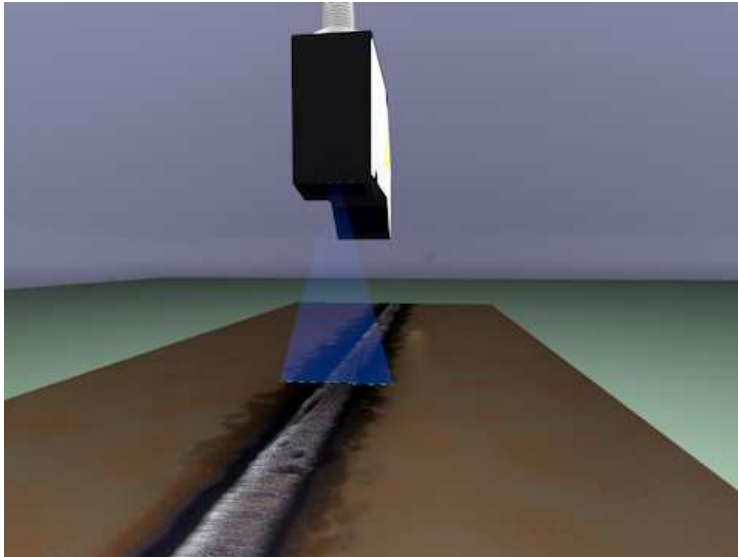
Weld Bead inspection

All visible weld beads can be inspected contactless with QuellTech Laser Scanners. Especially if the weld inspection is trailing the welding process errors like pores, undercutting, sputter can trigger timely alarms and prevent costly scrap.

Applications: Electronics Manufacturing

- **Rivets**
- **Screws**
- **PCBs**
- **Batteries**
- **Contacts**
- **Displays**
- **Bump Inspection**
- **Assembly Verification**
- **Flatness Inspection**
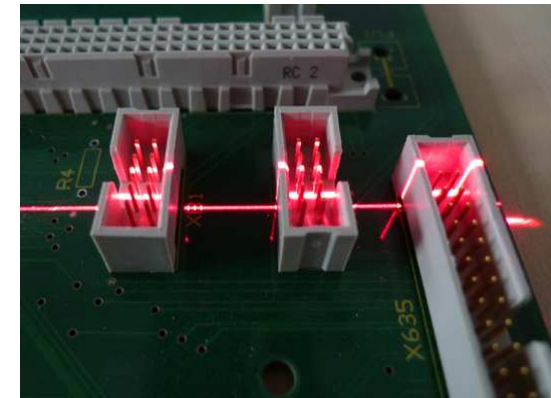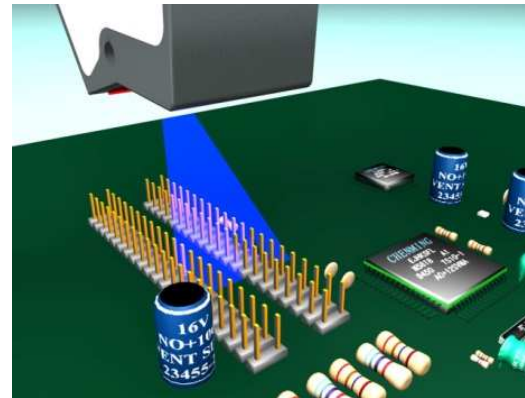- **Geometry Inspection**

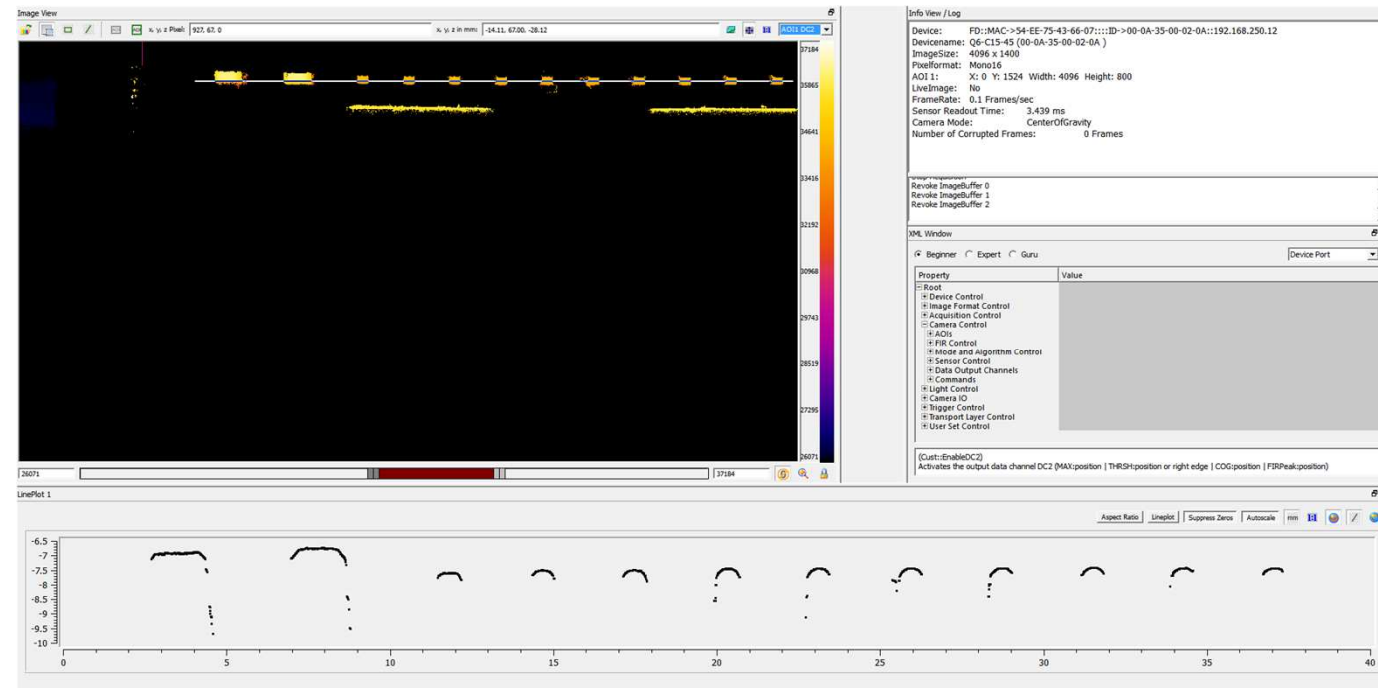- **Glue Beads**
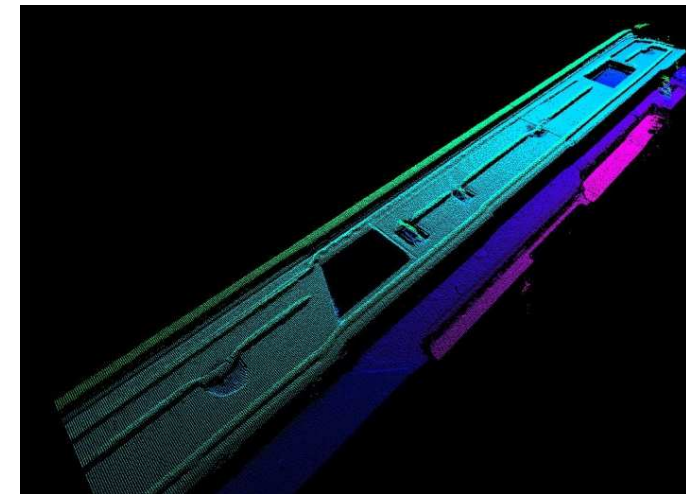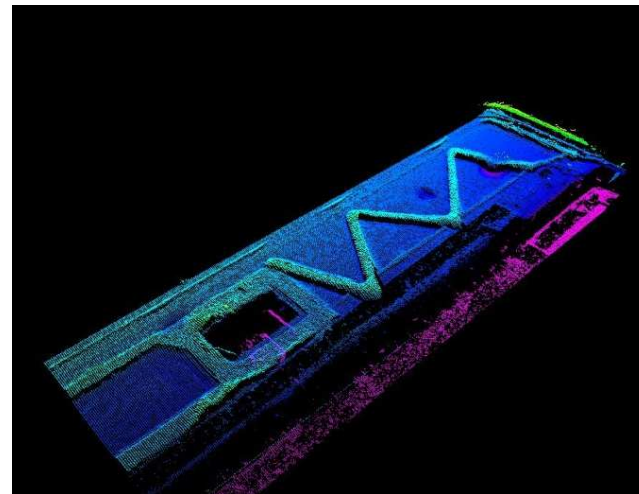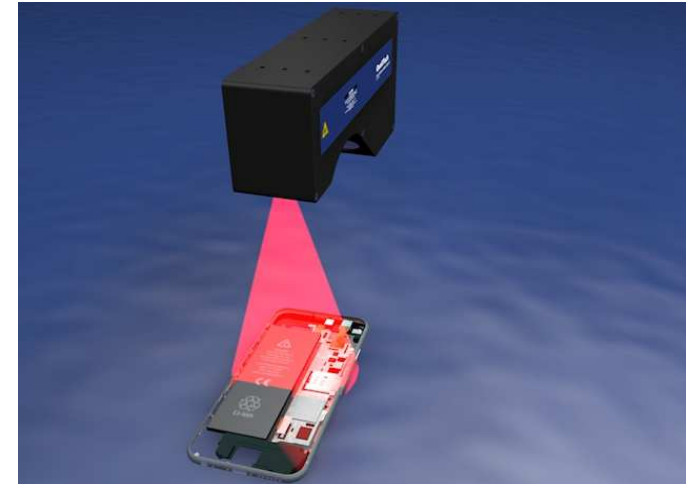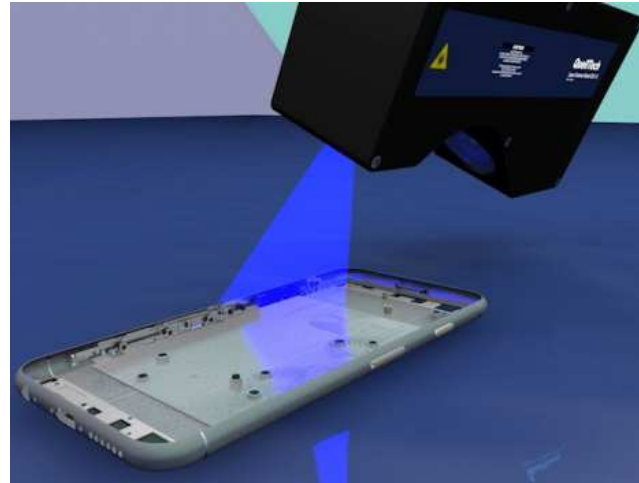
Applications: Electronics Manufacturing

Pin alignmet of connectors:

- Small pins can be detected

- Recessed pins can be connected

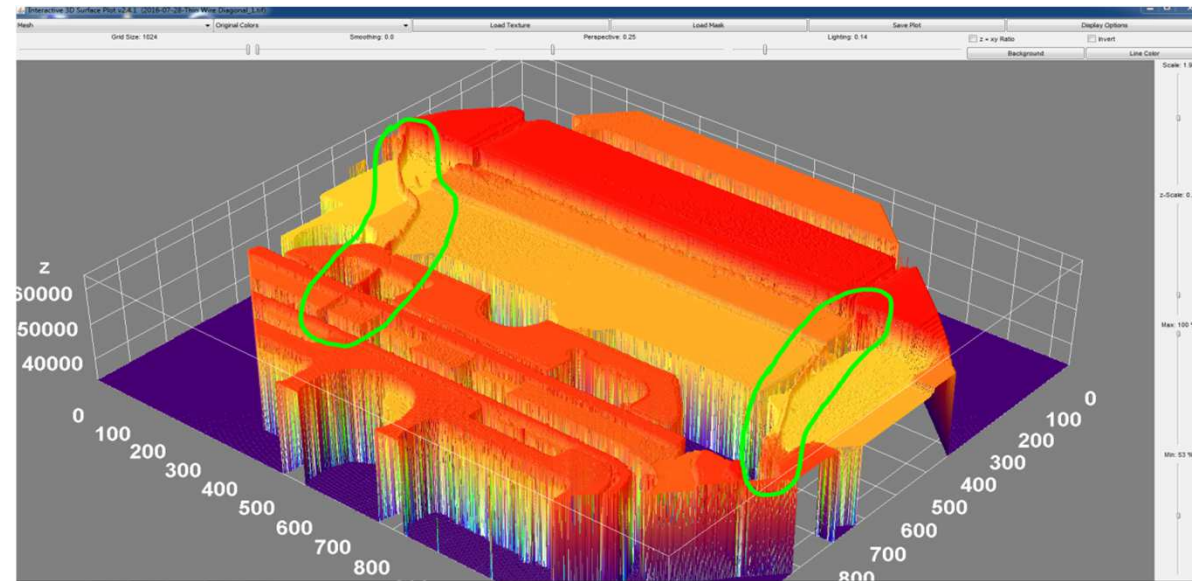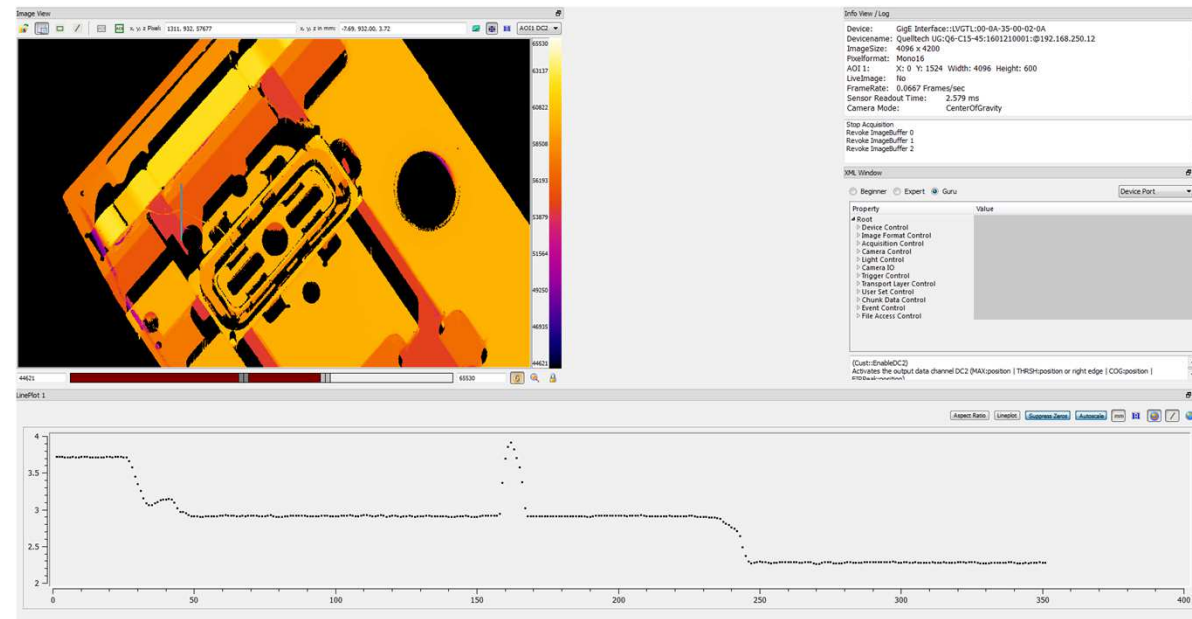**Measurement of:**

- Height alignment

- Tolerance circle

Applications: Electronics Manufacturing

- **Wire for Mobile phone speaker**

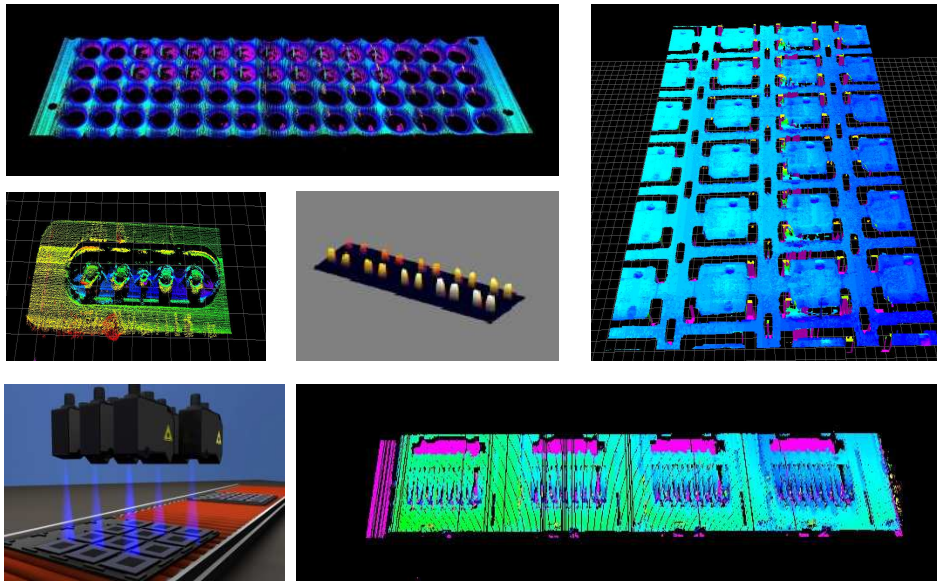- **Wire is 10µm thick**

- **Wire must not touch other surfaces**

Measurement with:

- high resolution QuellTech scanner Q6-C15-45 makes areas of contact of wire with other surfaces detectable

Applications: Electronic Components Inspection


Electronic parts inspection

The measurement of electronic parts is possible with QuellTech Laser Scanners like LED position, BGA flushness, Pin flush and position and many more.

Electronic Components Inspection

The measurement of electronic parts like LED position, BGA flushness, Pin flush and position and many more, is possible with QuellTech Laser Scanners.
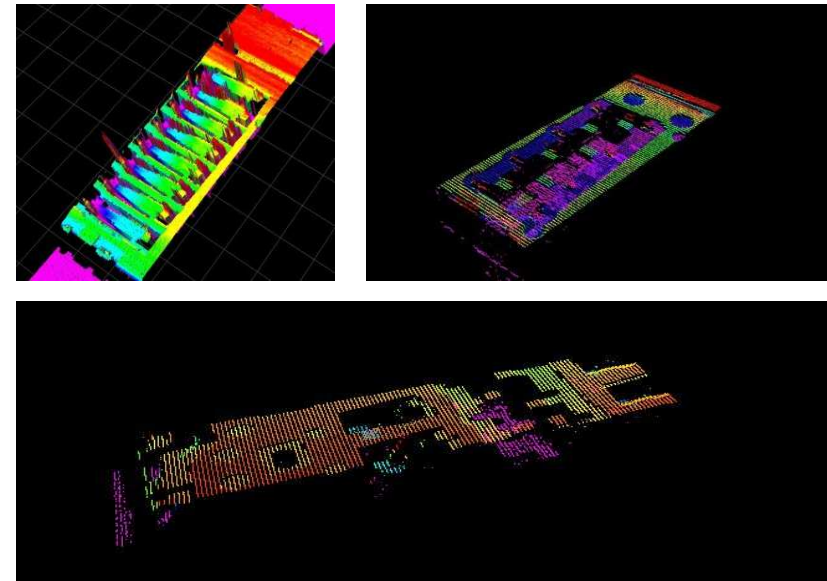
Card holder pin position checking

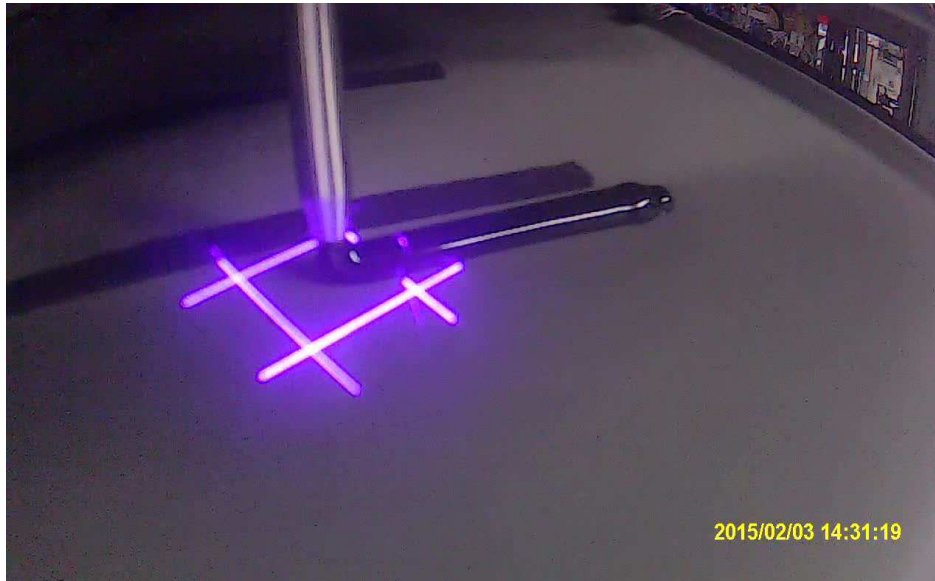Inline checking of pins of card holder for mobile phones.

The pins have to be tested for alignment and flush to the reference surface.

Challenge is the highly reflective material, which can be measured with QuellTech Laser Scanners.
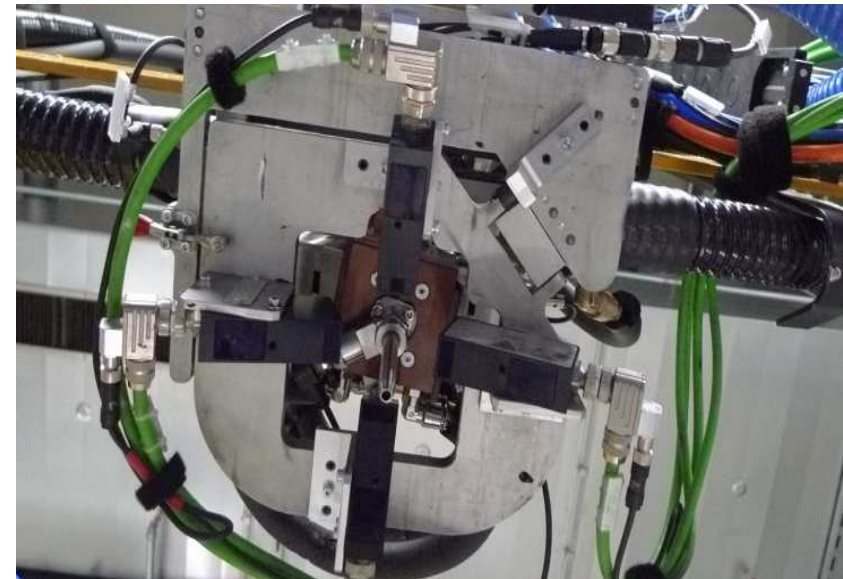
Applications: Made By Our Automotive Integrator

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Gluebead Check for Car Roof

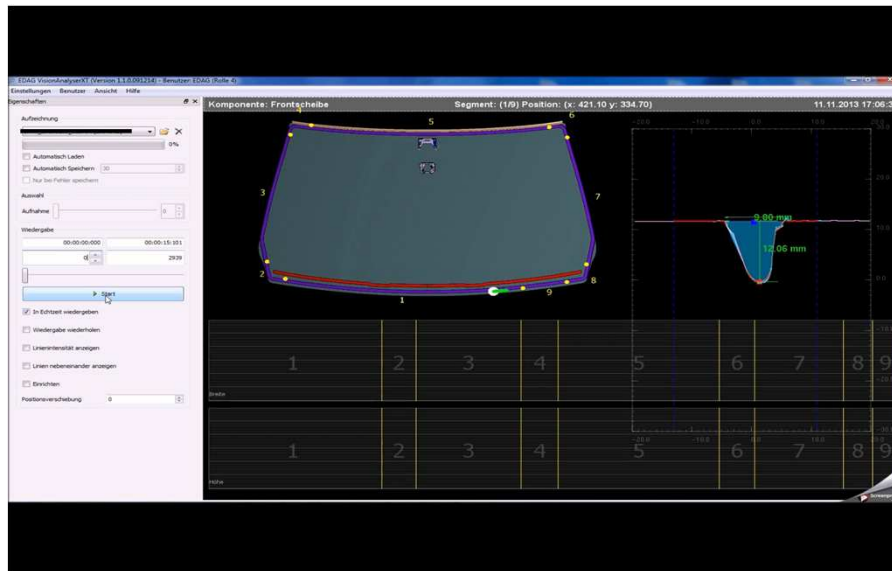With the gluebead check the quality of the gluebead application is measured.

Four Laser Scanners with blue laser lines scan the position of the gluebead ín 360° position as well as the width and height
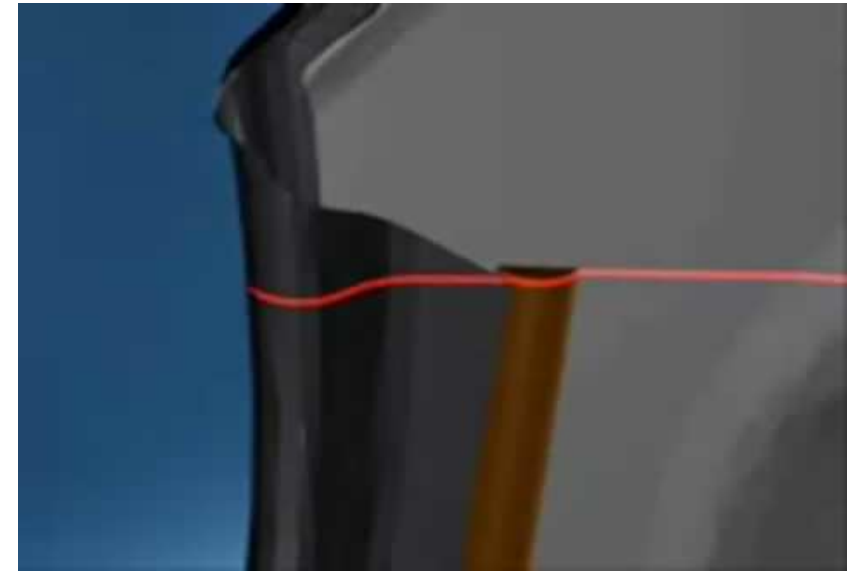
Applications: Made By Our Automotive Integrators

Window Pane Glue Bead

The glue bead on the car windshield is measured and checked for quantity and position.


HemQC = Hemming Quality Check

With the HemQC the quality of the hemming process is measured

A laser scanner scans the position of glue, as well as the and height of glue and the hemmed shape

Applications made by our Automotive Integrators:

The BestFit

- the part to be mounted will be positioned to a taught and later self-learned position, e.g. by robot
- a number of sensors measure the gap and the flushness in the same picture at relevant spots
- pictures are transferred to the Inspection Controller
- a mathematic algorithm calculates the BestFit-position by the geometric data of the parts
- one command with the BestFit-position is sent to the BestFit-robot, repositioning with backlash-compensation
- the ideal mounting of the component is possible
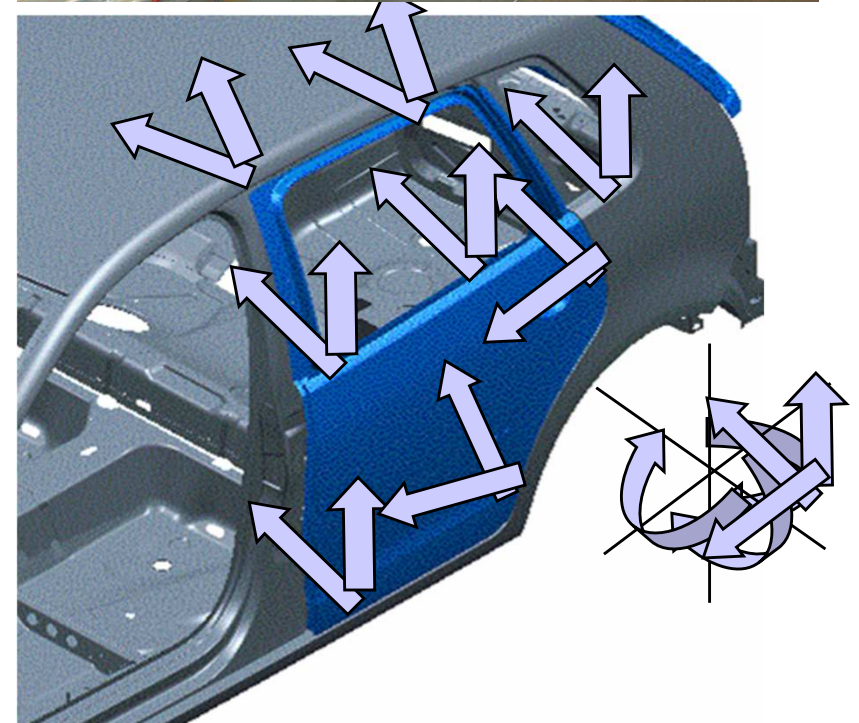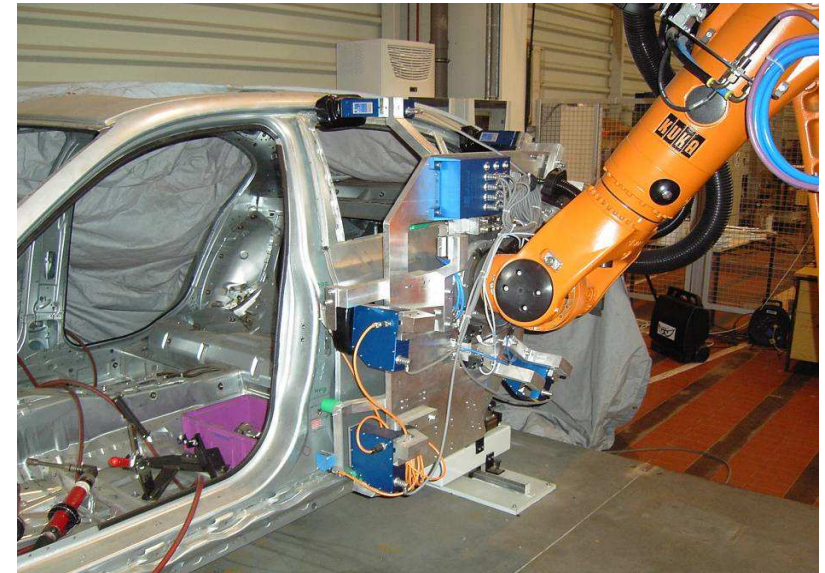
Summary

Advantages of QuellTech Laser technology:

- **Contactless**
- **Precise 3D-measurement**
- **Flexible connection via Ethernet**
- **Integration in a complete systems or standalone**
- **Long life-span, no wearing parts**
- **Fast**
- **Robust against ambient light**
- **Indifferent for color**
- **No moving parts inside**
- **High process stability**

Advantages of QuellTech as a producer:

- **Single unit customization to OEM series production**
- **Substantial experience on vertical integration in manufacturing**
- **Flexibility in customization of Hard- and Software**
- **Kow how of typical processes in manufacturing**
- **Constant innovative inputs into the product features**

3D LASER SENSOR TECHNOLOGY

Optimized for your application needs

❯ Maximum precision
❯ High speed
❯ Very compact and flexible

QuellTech
PRECISION IS OUR MISSION

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