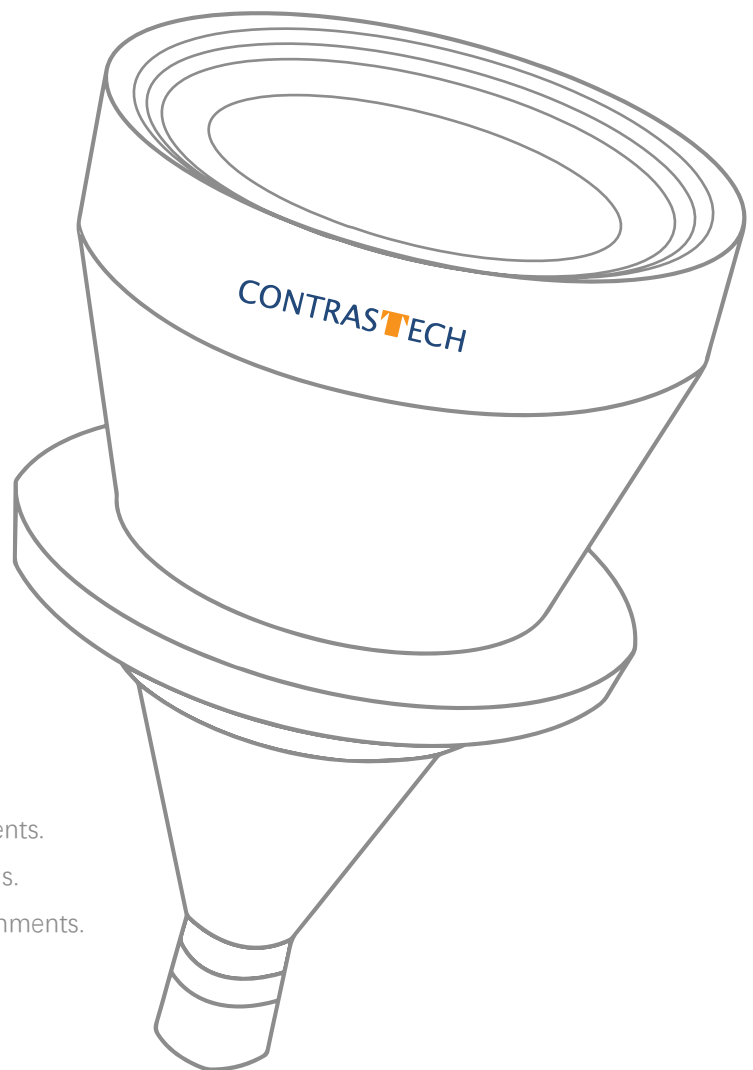


LIQUID SERIES



MAIN FEATURES

- ◆ **High telecentricity** for thick object imaging.
- ◆ **Nearly zero distortion** for accurate measurements.
- ◆ **Excellent resolution** for high resolution cameras.
- ◆ **Simple and robust design** for industrial environments.

ABOUT US

Hangzhou Contrastech Co., Ltd. is a leading imaging technology company with 20+ years of expertise in machine vision, optical imaging, and intelligent data processing.

Our flagship telecentric lenses, together with 360° telecentric lenses and telecentric light sources, deliver distortion-free imaging and precise measurement, with stable illumination for advanced automation and inspection.

Beyond standard products, we provide customized optical solutions—including infrared, ultraviolet, and multispectral designs—to tackle the most demanding applications.

Today, Contrastech telecentric technology powers leading-edge AI vision systems worldwide, enabling high-precision inspection, intelligent recognition, and reliable data acquisition. By combining world-class performance with optimized cost control, we help customers cut costs by 30–50% while achieving top-tier performance and efficiency.

LIQUID SERIES

NEW

LIQUID

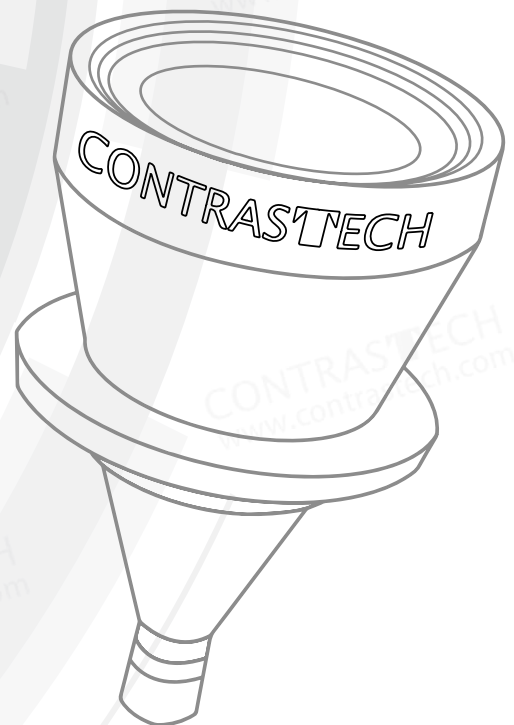
PRODUCT FEATURES

1. Liquid Lens for Extended Depth of Field Telecentric Lens
2. Up to 1.1", C-Mount Telecentric Lens
3. Magnification from 0.3X to 4.0X
4. Electronic focusing enables fast and stable working distance adjustment, while maintaining telecentricity, low distortion, and consistent image performance throughout the entire focus range.



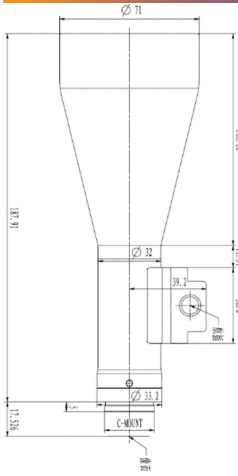
Model	Click to view details/drawings						
	Coaxial	Mag.(x)	WD+Liquid Dof (mm)	DOF (mm)	F/#	Sensor Size (mm)	MTF (lp/mm)
VT-TLL03-11	No	0.3	50-200	3	6.8	1.1"	>0.3@140
VT-TLL04-23	No	0.4	100-120	±1.8	6.5	2/3"	>0.3@100
VT-TLL05-23-A	No	0.5	110-120	±1.8	10	2/3"	>0.3@100
VT-TLL05-23-C	No	0.5	100-120	±1.8	10	2/3"	>0.3@100
VT-TLL05-H1	No	0.5	70-140	/	8	1"	>0.3@125
VT-TLL02-11	No	0.23	/	±45	6.6	1.1"	>0.3@120
VT-TLL17-23	No	1.75	100-120	±0.2	13	2/3"	>0.2@60
VT-TLL10-11	No	1.0	108-120	±6	10	1.1"	>0.3@100
VT-TLL10-11-B	No	1.0	100-120	/	6	1.1"	>0.3@165
VT-TLL30-11	No	3.0	63-67	/	11	1.1"	>0.3@85
VT-TLL40-C-23-A	Yes	4.0	64.7	2	17	2/3"	>0.3@50
VT-TLL40-C-23-C	Yes	4.0	62.778	2	17	2/3"	>0.3@50
VT-TLL40-23	No	4.0	/	2	17	2/3"	>0.3@50

LENS PARAMETER DIAGRAM



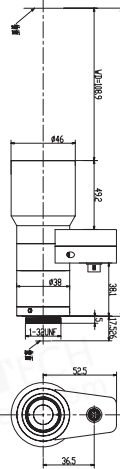
Liquid Series

VT-TLL03-11



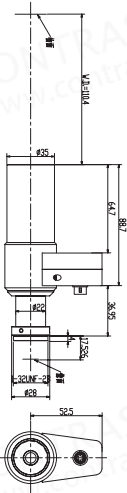
FOV(Φmm)	60
Mag.(x)	0.3
Object Distance (mm)	Effective 50-200
	Optimal 110-180
Sensor Size	1.1" (18.1mm)
F/#	6.8
MTF(lp/mm)	>0.3@140
DoF(mm)	Single 3
	Multi Frame 70
Distortion (Max %)	≦ 0.1
Telecentricity (Max °)	≦ 0.1
Illumination	Blue
Mount	C
Focusing Method	Voltage
Object-Side Resolution	10μm

VT-TLL04-23



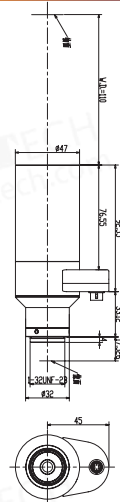
Mag.(x)	0.4
Object Distance (mm)	237.7
WD (mm)	108.9
WD+Liquid	Effective 100-120
DoF(mm)	Optimal 104-116
Sensor Size	2/3" (8.4*7.1mm)
F/#	6.5
Resolution (lp/mm)	>0.3@100
DoF(mm)	±1.8
NA	0.03
FOV(mm)	21x17.7
Distortion (Max%)	≦ 0.02
Telecentricity (Max°)	≦ 0.1
Input Voltage	4.5-5.5V
Input Current	50mA
Mount	C

VT-TLL05-23-A



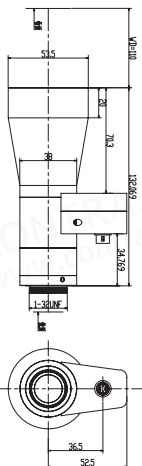
Mag.(x)	0.5
Object Distance (mm)	253
WD (mm)	110.4
WD+Liquid	Effective 110-120
DoF(mm)	Optimal 105-115
Sensor Size	2/3" (8.8*6.4mm)
F/#	10
Resolution (lp/mm)	>0.3@100
DoF(mm)	±1.8
NA	0.0248
FOV(mm)	17.6x12.8
Distortion (Max%)	<0.1
Telecentricity (Max°)	<0.2
Input Voltage	4.5-5.5V
Input Current	50mA
Mount	C

VT-TLL05-23-C



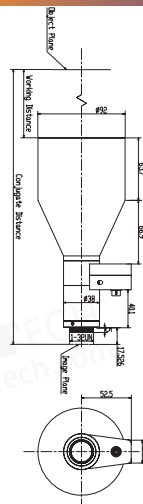
Mag.(x)	0.5
Object Distance (mm)	253.2
WD (mm)	110
WD+Liquid	Effective 100-120
DoF(mm)	Optimal 105-115
Sensor Size	2/3" (8.8*6.4mm)
F/#	10
Resolution (lp/mm)	>0.3@100
DoF(mm)	±1.8
NA	0.0248
FOV(mm)	17.6x12.8
Distortion (Max%)	<0.1
Telecentricity (Max°)	<0.2
Input Voltage	4.5-5.5V
Input Current	50mA
Mount	C

VT-TLL05-H1



Mag.(x)	0.5
Object Distance (mm)	242.304
WD (mm)	110
WD+Liquid	Effective 70-140
DoF(mm)	Optimal 100-120
Sensor Size	1" (14.1*10.4mm)
F/#	8
Resolution (lp/mm)	>0.3@125
NA	0.1347
FOV(mm)	28.2x20.8
Distortion (Max%)	<0.05
Telecentricity (Max°)	<0.01
Input Voltage	4.5-5.5V
Input Current	50mA
Mount	C

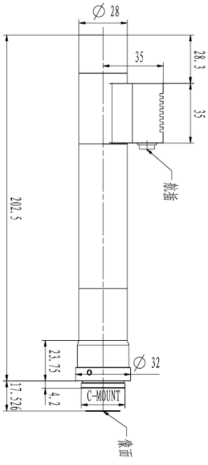
VT-TLL02-11



Mag.(x)	0.23
Object Distance (mm)	382
WD (mm)	165
WD+Liquid	Effective /
DoF(mm)	Optimal /
Sensor Size	1.1"(14.1*10.4mm)
F/#	6.6
Resolution (lp/mm)	>0.3@120
DoF+Liquid(mm)	±45
NA	0.017
FOV(mm)	61.3x45.2
Distortion (Max%)	<0.2
Telecentricity (Max°)	<0.1
Input Voltage	/
Input Current	/
Mount	C

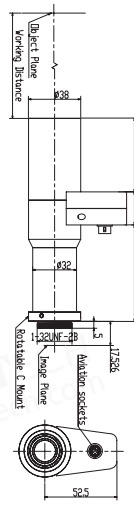
Liquid Series

VT-TLL17-23



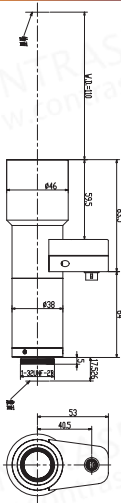
FOV(Φmm)	6.3
Mag.(x)	1.75x
WD(mm)	Effective 100-120 Optimal 105-115
Sensor Size	2/3" (11mm)
F/#	13
MTF(lp/mm)	>0.2@60
DoF(mm)	Single 0.2 Multi Frame 10
Distortion (Max%)	≅ 0.2
Telecentricity (Max°)	≅ 0.2
Illumination	White
Mount	C
Focusing Method	Voltage
Object-Side Resolution	5μm

VT-TLL10-11



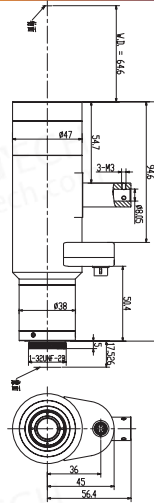
Mag.(x)	1x
Object Distance (mm)	275.3
WD (mm)	/
WD+Liquid	Effective 108-120 Optimal 110-117
Sensor Size	1.1"(14.1*10.4mm)
F/#	10
Resolution (lp/mm)	>0.3@100
DoF+Liquid(mm)	±6
NA	0.05
FOV(mm)	14.1x10.4
Distortion (Max%)	<0.2
Telecentricity (Max°)	<0.2
Input Voltage	/
Input Current	/
Mount	C

VT-TLL10-11-B



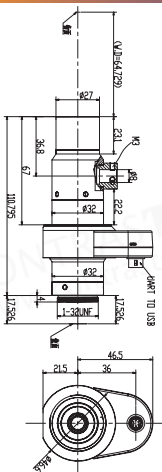
Mag.(x)	1x
Object Distance (mm)	275
WD (mm)	110
WD+Liquid	Effective 100-120 Optimal 105-115
Sensor Size	1.1"(14.1*10.4mm)
F/#	6
Resolution (lp/mm)	>0.3@165
DoF	/
NA	0.083
FOV(mm)	14.1x10.4
Distortion (Max%)	<0.1
Telecentricity (Max°)	<0.1
Input Voltage	4.5-5.5V
Input Current	50mA
Mount	C

VT-TLL30-11



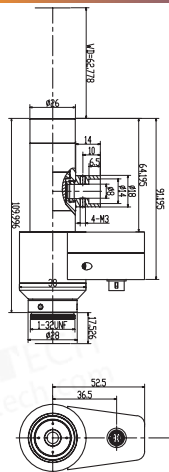
Mag.(x)	3x
Object Distance (mm)	243.1
WD (mm)	64.6
WD+Liquid	Effective 63-67 Optimal 64-66
Sensor Size	1.1"(14.1*10.4mm)
F/#	11
Resolution (lp/mm)	>0.3@85
DoF+Liquid(mm)	/
NA	0.1347
FOV(mm)	4.7x3.5
Distortion (Max%)	<0.05
Telecentricity (Max°)	<0.01
Input Voltage	4.5-5.5V
Input Current	50mA
Mount	C

VT-TLL40-C-23-A



Mag.(x)	4x
Object Distance (mm)	190.3
WD (mm)	64.7
WD+Liquid	Effective / Optimal /
Sensor Size	2/3"(8.8*6.4mm)
F/#	17
Resolution (lp/mm)	>0.3@50
DoF+Liquid(mm)	2
NA	0.117
FOV(mm)	2.2x1.55
Distortion (Max%)	<0.05
Telecentricity (Max°)	<0.1
Coaxial	Yes
Mount	C

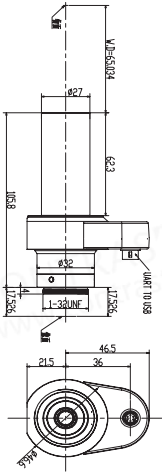
VT-TLL40-C-23-C



Mag.(x)	4x
Object Distance (mm)	190.3
WD (mm)	62.778
WD+Liquid	Effective / Optimal /
Sensor Size	2/3"(8.8*6.4mm)
F/#	17
Resolution (lp/mm)	>0.3@50
DoF+Liquid(mm)	2
NA	0.117
FOV(mm)	2.2x1.55
Distortion (Max%)	<0.05
Telecentricity (Max°)	<0.1
Coaxial	Yes
Mount	C

Liquid Series

VT-TLL40-23



Mag.(x)	4x
Object Distance (mm)	188.3
WD (mm)	65
WD+Liquid	Effective /
DoF(mm)	Optimal /
Sensor Size	2/3"(8.8*6.4mm)
F/#	17
Resolution (lp/mm)	>0.3@50
DoF+Liquid(mm)	2
NA	0.117
FOV(mm)	2.2x1.55
Distortion (Max%)	<0.05
Telecentricity (Max°)	<0.1
Coaxial	No
Mount	C

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