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## vicotar® Telecentric Lens - TO88/28.4-130-V-BW

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<b>Short description:</b>	Telecentric Lens, M42, Sensor opt. DX, aperture F10 - F22, blue
<b>Order number:</b>	2-05-815
<b>EAN:</b>	4251692621660
<b>Actual Notice:</b>	<b>Also available with fixed aperture on request.</b> (F-numbers in the range as for adjustable aperture)



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### Characteristics

- telecentric measurement objective with object-sided telecentric beam path
- color corrected for the visible spectral range and near infrared
- color correction extended deep into the blue spectral range
- very well suited for blue LEDs including "Deep Blue" LEDs
- thus especially suitable for white LEDs, as these have a strong blue light component
- high resolution, low lateral chromatic aberration, low distortion, low telecentric error
- adjustable aperture with identification of the aperture numbers, arrestable
- robust industrial design
- with lens adapter (5-00-012), the lens connection M40x0.75 is also possible  
- without restriction of the optical properties (back focal distance = 17.526 mm)

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## Technical data

Image scale	0.322
Spectral range	400 nm - 900 nm
Working distance	130 mm
Camera distance (object-camera flange)	357.8 mm
Object field diagonal (max.)	88 mm
Sensor format (opt.)	Type DX
Image field diagonal (max.)	28.4 mm
Suitable for camera resolution	120.7 MPixel
Recommended pixel size	1.75 µm
Aperture	variable (F10 - F22)
Lens mount	M42x1 (Auflagemaß 45.46 mm)
Filter thread, object-side	M100 x 1
Filter thread, camera-side	M20.5 x 0.5
Weight	1,140 g
Usable object field with:	
• Sensor type DX (23.7 x 15.6 mm <sup>2</sup> )	73.6 mm x 48.4 mm
• Sensor type 4/3 (17.3 x 13.0 mm <sup>2</sup> )	53.7 mm x 40.4 mm
• 1" sensor (12.8 x 9.6 mm <sup>2</sup> )	39.8 mm x 29.8 mm

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## Notices

The lightings combination products shown are a selection. Depending on the application, other colors and light source types can also be used.

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## Can be combined with

Order number	Title	Description
<b><i>TZB95-UDC-a Serie</i></b>		
1-10-951	TZB95-B470/UDC/-a	telecentric light, blue, If diameter: 95 mm, flashable by flash controller
1-10-952	TZB95-W5K7/UDC/-a	telecentric light, white, If diameter: 95 mm, flashable by flash controller
1-10-953	TZB95-IR880/UDC/-a	telecentric light, IR850, If diameter: 95 mm, flashable by flash controller
1-10-950	TZB95-R625/UDC/-a	telecentric light, red, If diameter: 95 mm, flashable by flash controller
1-10-954	TZB95-G525/UDC/-a	telecentric light, green, If diameter: 95 mm, flashable by flash controller
<b><i>TZB95 series</i></b>		
1-10-383	TZB95-B470-24V	telecentric light, blue, If diameter: 95 mm, static, cable open-ended
1-10-382	TZB95-W5K7-24V	telecentric light, white, If diameter: 95 mm, static, cable open-ended
1-10-381	TZB95-IR880-24V	telecentric light, IR850, If diameter: 95 mm, static, cable open-ended
1-10-380	TZB95-R625-24V	telecentric light, red, If diameter: 95 mm, static, cable open-ended
1-10-384	TZB95-G525-24V	telecentric light, green, If diameter: 95 mm, static, cable open-ended
<b><i>R-CLR-100-SL series</i></b>		
1-33-012	R-CLR-100x73-B470-SL	ring light, blue, coaxial, If diameter: 73/100 mm, smart light technology
<b><i>RK3652-24V series</i></b>		
1-29-702	RK3652-B470-24V/C	ring light, blue, coaxial, If diameter: 73/100 mm, controlled, pot.: 0-10V,
<b><i>R-CLR-132-SL series</i></b>		
1-33-017	R-CLR-132x104-B470-SL	ring light, blue, coaxial, If diameter: 104/132 mm, smart light technology
<b><i>RK5268-24V series</i></b>		

Order number	Title	Description
1-29-802	RK5268-B470-24V/C	ring light, blue, coaxial, If diameter: 104/132 mm, controlled, pot.: 0-10V,

## Accessories for Telecentric Lenses - TO88/28.4-130-V-BW

Order number	Title	Description
<b>Adjustment Aids</b>		
5-10-112	Adjustment aid 10	for easy adjustment to 10 mm depth of field, for image scale 0.5 - 0.2
<b>Lens mount</b>		
2-91-331	Mounting angle	Holder for telecentric lenses and lightings with with threaded hole M5
2-91-332	Mounting angle SH	Holder for telecentric lenses and lightings with with slotted hole for M4-M6
2-91-333	Mounting plate SH	Holder for telecentric lenses and lightings with with slotted hole for M4-M6
2-91-330	Lens Holder d45 wide	Holder for telecentric lenses and lightings with d = 45 mm, width = 32 mm
2-91-334	Mounting Bracket TO88	Holder for telecentric lenses of the series TO88 with threaded hole M5
<b>Extension tubes</b>		
2-90-415	Extension ring 0.5 mm	26 x 31 x 0.5 reduces the minimum object distance (MOD)
2-90-416	Extension ring 1.0 mm	26 x 31 x 1.0 reduces the minimum object distance (MOD)
2-90-419	Extension ring 0.1 mm	25.5 x 29 x 0.1 reduces the minimum object distance (MOD)
2-90-420	Extension ring 0.2 mm	25.5 x 29 x 0.2 reduces the minimum object distance (MOD)
<b>Thread adapter M42</b>		
5-00-014	Thread adapter M42x1-M42x1-L29	Adapter for mounting of lenses with M42x1 mount on cameras with M42x1 BFL 16 mm

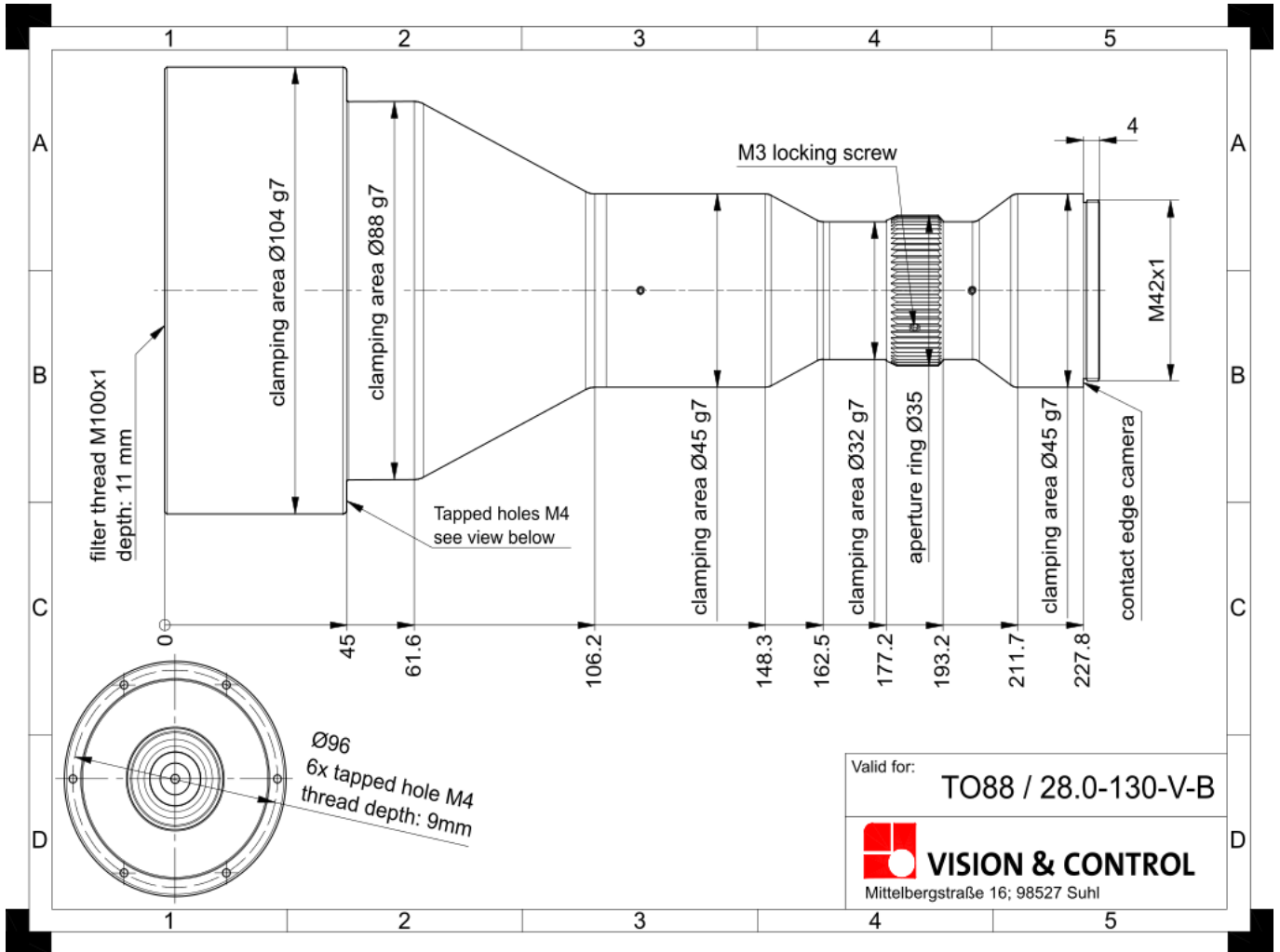
<b>Order number</b>	<b>Title</b>	<b>Description</b>
5-00-013	Thread adapter M42x1-M42x1-L33	Adapter for mounting of lenses with M42x1 mount on cameras with M42x1 BFL 12 mm
5-00-012	Thread adapter M42x1-M40x0.75	Adapter for mounting of lenses with M42x1 mount on cameras with M40x0.75 mount
5-00-010	Thread adapter M42-C-mount	Adapter for mounting of lenses with M42x1 mount on cameras with C-mount
<b><i>Daylight blocking filter</i></b>		
2-91-131	IR filter M20.5x0.5	long-pass filter from 830 nm, daylight absorbing filter, filter thread M20.5x0.5
<b><i>Polarising filters</i></b>		
2-91-148	Pole filter M105x1	linear polarizing filter, range 420 nm - 780 nm, filter thread M105x1
<b><i>Colour filter blue</i></b>		
2-91-292	Colour filter blue M100x1	band-pass filter, range 350 nm - 600 nm, filter thread M100x1
<b><i>UV Cut-Off Filter</i></b>		
2-91-209	UV blocking filter M100x1	long-pass filter from 350 nm, usable as protective glass, filter thread M100x1
<b><i>Colour filter red</i></b>		
2-91-264	Colour filter red M100x1	long-pass filter from 630 nm, red, filter thread M100x1
<b><i>Colour filter green</i></b>		
2-91-305	Colour filter green M100x1	band-pass filter, range 430 nm - 620 nm, filter thread M100x1
<b><i>Colour filter yellow</i></b>		
2-91-281	Colour filter yellow M100x1	long-pass filter from 530 nm, yellow, filter thread M100x1
<b><i>Filter adapter</i></b>		
2-91-338	Filter adapter M100-M105	step-up ring for use of a M105x1 filter on a M100x1 filter thread
<b><i>Adapters for attaching lights to lenses</i></b>		

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<b>Order number</b>	<b>Title</b>	<b>Description</b>
1-29-774	Adapter ring d73 - M100x1	for R-CLR-100x73 und RK3652, for attachment to lenses with filter thread M100x1
1-29-872	Adapter ring d104 - M100x1	for R-CLR-132x104 and RK5268, for attachment to lenses with filter thread M100x1
<b><i>Beam splitter STE60x60</i></b>		
1-20-050	STE60x60-VIS	Beam splitter unit for coaxial light system, optimized for 450-700 nm
1-20-025	Adapter STE60x60 - TZ0104	Attachment of the STE60x60 to telecentric lenses and lightings with d= 104 mm

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**Drawings**



Dimensional drawing in mm