

TCELO50



Lens module specifications

Focus tunable lens (Optotune)	Model	EL-16-40-TC-VIS-5D			
	Focal power	-2	0	+3	dpt
Magnification		0.497	0.500	0.511	X
F/#		12			(Fixed)
Maximum sensor format		2/3			inch
Image circle (Φ)		11			mm
FoV (at max sensor format) H x V		17.7 x 13.3	17.6 x 13.2	17.2 x 12.9	mm
Working distance		146.3	132.3	112.2	mm
Field depth		2.5			mm
Optical leverage		6.8			mm/dpt
Optical Distortion		0.20			%
Telecentricity		0.15	0.08	0.15	°
Pixel size recommended		3.45			µm
MTF @ 50 lp/mm		45			%
Wavelength range		486 – 656			nm
Lifecycles (10-90% sinusoidal)		>1'000'000'000			cycles
Mount		C			
Dimension (Φ x L)		37.7x 130.8			mm
Weight		354			g

Focus tunable lens specifications

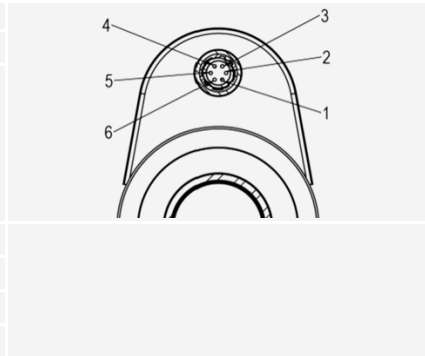
EL-16-40-TC-VIS-5D

Focal power range (@30°C) ³	-2 to +3	dpt
Wavefront error (at 525 nm & 0 mA)	<0.25/<0.5	λRMS
Optical axis vertical / horizontal		
Operating temperature	-20 to +65	°C
Storage temperature	-40 to +85	°C
Temperature sensor & memory	STTS2004	(STMicroelectronics)

Electrical specifications

Control current (typical)	-250 to +250	mA
Absolute max. control current	-500 to 500	mA
Power consumption	0 to 0.7 (nominal) 0 to 2.8 (absolute max.)	W
Motor coil resistance @ 30°C	12	Ω
Absolute maximum voltage (coil)	10	V
Absolute maximum voltage (temp. sensor)	4.3	V

Hirose connector (HR10G-7R-6P)	Function	Sensor pins
Pin 1	Control current +	-
Pin 2	Control current -	-
Pin 3	Ground	1-4
Pin 4	Power (3.3V)	8
Pin 5	I ² C SCL	6
Pin 6	I ² C SDA	5



Controller

The liquid lens is controlled with electrical current and must be operated by a suitable lens controller. Hirose cables and liquid lens controllers are sold separately. The following controllers are considered fully compatible with TCEL050:

- Optotune embedded controller ECC-1C
- Optotune lens driver EL-E-4i
- Optotune industrial controller ICC-4C-500



Additional selection of controllers is available at <https://www.optotune.com/controllers>

Mechanical drawings

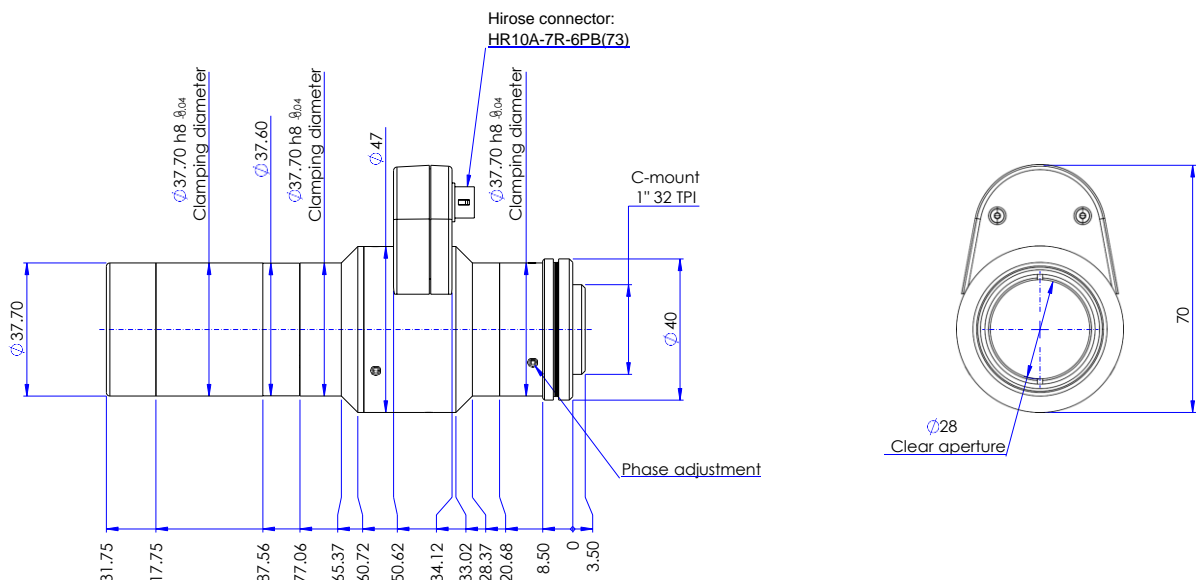


Figure 1: Mechanical drawing of the TCEL050

For more information on optical, mechanical and electrical parameters, please contact sales@optotune.com