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ELM-75-4.0-8-C-NIR

Lens module specifications

Effective focal length		75	mm	EFL changes from 63mm @240mm WD to 76mm @600mm WD resulting in a beneficial zoom effect.
F/#		4.0	(Fixed)	
Maximum sensor format		1/2	inch	
Maximum image circle (Φ)		8	mm	
Lifecycles (10-90% sinusoidal)		>1'000'000'000	cycles	
FOV	Diagonal	5.3	°	
	Horizontal	4.9	°	
	Vertical	3.1	°	
Back Focal Length		10.08	mm	
Optical Distortion		< 1	%	
Pixel size recommended		3.45	µm	
Wavelength range		700 - 980	nm	
Relative illumination		> 90	%	
Max chief ray angle		1.3	°	
Working distance range		240 – 600	mm	
Mount		C-mount		
Total Track Length		76.78	mm	
Dimension (Φ x L)		37.7x59.46	mm	

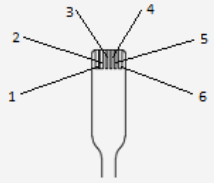
Focus tunable lens specifications

	EL-12-30-TC		
Focal power range (@30°C)[3]	-4.5 to +9.6	dpt	
Wavefront error (at 525 nm & 0 mA) Optical axis vertical / horizontal	<0.15 / 0.25	λRMS	
Operating temperature	-20 to +65	°C	
Storage temperature	-40 to +85	°C	
Temperature sensor & memory	Yes		

Electrical specifications

Control current (typical)	-225 to +225	mA	
Absolute max. control current	-400 to 400	mA	
Power consumption	0 to 0.7 (nominal) 0 to 2.8 (absolute max.)	W	$P = R_{Coil} \times i^2$
Motor coil resistance @ 30°C	16	Ω	
Absolute maximum voltage (coil)	7	V	
Settling time	15 / 25	ms	Low pass filtered / normal step signal

FPC connector	Function
Pin 1	GND
Pin 2	Control current -
Pin 3	Control current +
Pin 4	I²C SDA
Pin 5	I²C SCL
Pin 6	Vcc 3.3V



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Controller

The ELM-75-4.0-8-C-NIR can be controlled by Optotune's EL-E-4 lens driver by simply connecting the FPC cable to the Molex connector of the lens driver. It's important to note that only +/-225 mA is required to tune across the whole optical power range. As the lens driver can output more current, it must be connected to the PC without the lens connected first. Then, in the "Hardware Configurations" tab, the software limit must be set to +/-225 mA. Afterwards the driver can be disconnected, the lens connected to the driver and the driver connected back to the PC. The current will now only be adjustable from +/-225 mA, hence an overdriving of the lens can be prevented.

Note that with the current revision of the EL-E-4 lens driver the ELM-75-4.0-8-C-NIR can only be controlled in current mode.

ICC-4C-500 industrial controller with extension kit offers control of the lens in Focal Power mode.

An additional selection of controllers is available at https://www.optotune.com/controllers

Mechanical drawings

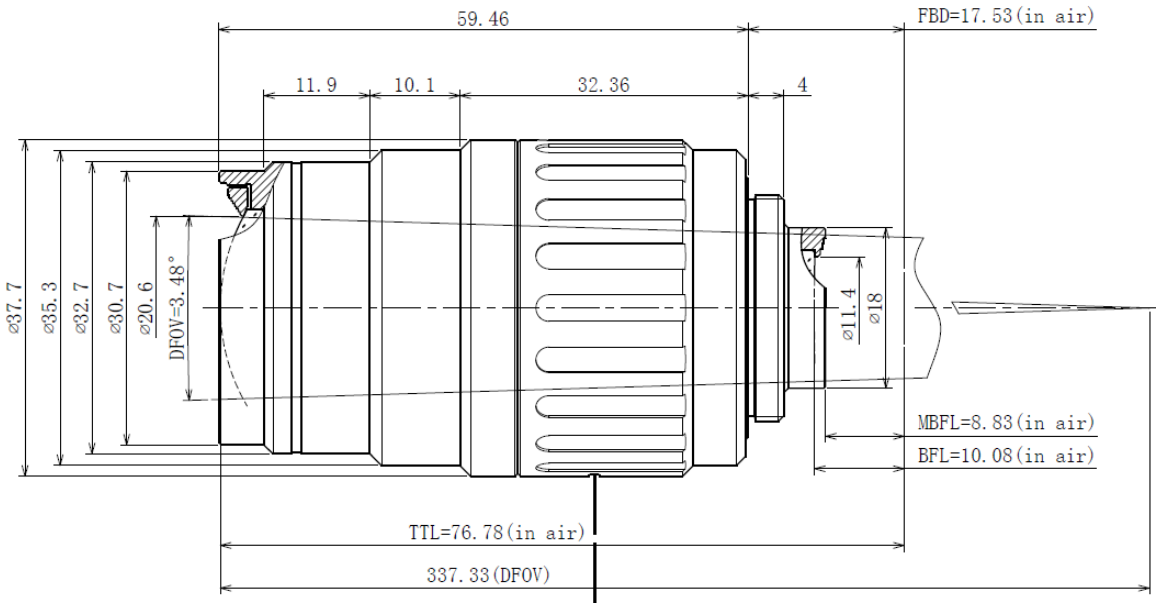

Figure 1: Mechanical drawing of the ELM-75-4.0-8-C-NIR

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

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