

## ELM-60-4.0-24-C



### Lens module specifications

Effective focal length	60	mm	
F/#	F/4 ... F/16	(Variable)	
Maximum sensor format	4/3	inch	
Maximum image circle (Φ)	24	mm	
Lifecycles (10-90% sinusoidal)	>1'000'000'000	cycles	
FOV	Diagonal	19	°
	Horizontal		°
	Vertical		°
Back Focal Length		mm	In air
Optical Distortion		%	
Pixel size recommended	5	μm	
Wavelength range	425 to 675	nm	Different coatings available upon request
Relative illumination	-	%	
Max chief ray angle	-	°	
Working distance range	325 - infinity	mm	
Mount	M37 x 0.75		
Total Track Length		mm	In air
Dimension (Φ x L)	47 x 71	mm	

### Focus tunable lens specifications

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

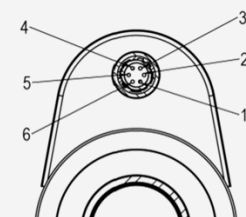
Focal power range (@30°C) <sup>3</sup>	-2 to +3	dpt	
Wavefront error (at 525 nm&0mA)	<0.25/<0.5	λRMS	
Optical axis vertical / horizontal			
Operating temperature	-20 to +65	°C	
Storage temperature	-40 to +85	°C	
Temperature sensor & memory	STTS2004		(STMicroelectronics)

### 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	

### 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 <sup>2</sup> C SCL	6
Pin 6	I <sup>2</sup> 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 ELM-60-4.0-24-C:

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



Additional selection of controllers is available at [www.optotune.com/controllers](http://www.optotune.com/controllers)

## Mechanical drawings

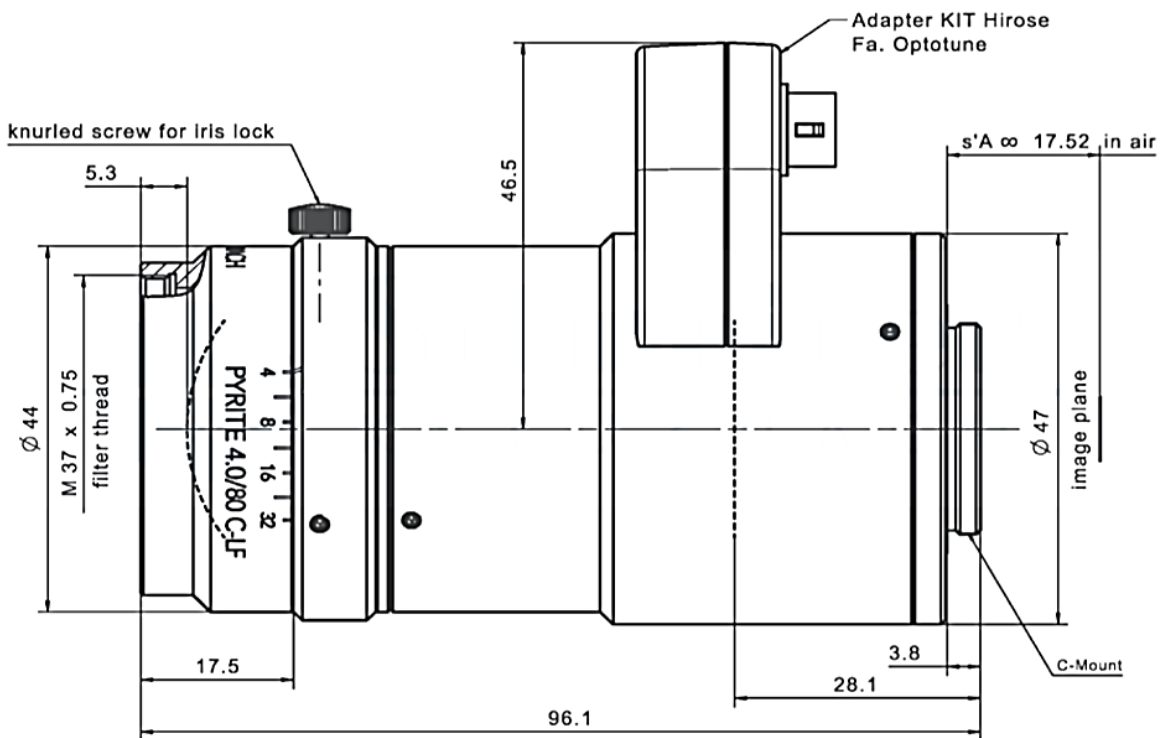


Figure 1: Mechanical drawing of the ELM-60-4.0-24-C

For more information on optical, mechanical and electrical parameters, please contact [sales@optotune.com](mailto:sales@optotune.com).