ELM-50-3.5-18-C

Lens module specifications

Effective focal length		50	mm	
F/#		3.5	(Fixed)	
Maximum sensor format		1.1	inch	
Maximum image circle (Φ)		18	mm	
Lifecycles (10-90% sinusoidal)		>1‘000‘000’000	cycles	
FOV (at max sensor format)	Diagonal	20	°	
	Horizontal	16	°	
	Vertical	12	°	
Back Focal Length		11.557	mm	
Optical Distortion		< 0.1	%	
Pixel size recommended		2.74	µm	
Wavelength range		486-656	nm	
Relative illumination at 100%F		> 90	%	
Max chief ray angle		-	°	
Working distance range[1]		200 - infinity	mm	
Mount		C-mount		
Total Track Length		84.35	mm	
Dimension (Φ x L)		47x81	mm	

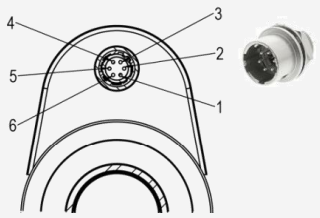
Focus tunable lens specifications

	EL-12-30-TC-VIS-16D		
Focal power range (@30°C)[3]	-6 to +10	dpt	
Wavefront error (at 525 nm & 0 mA) Optical axis vertical / horizontal	<0.15/<0.23	λRMS	
Operating temperature	-20 to +65	°C	
Storage temperature	-40 to +85	°C	
Temperature sensor & memory	MAX31875R2TZS+T		(Maxim Integrated)

Electrical specifications

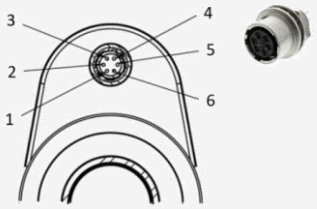
Control current (typical)	-250 to +250	mA	
Absolute max. control current	-300 to 300	mA	
Power consumption	0.55 (+/- 60 mA) 0.940 (max. at 250 mA)	W	
Motor coil resistance @ 30°C	15	Ω	
Absolute maximum voltage (coil)	6	V	
Absolute maximum voltage (temp. sensor)	4	V	

Hirose connector (HR10G-7R-6PB)	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^2C SCL	6
Pin 6	I^2C SDA	5



[1] We recommend the use of a 5mm spacer for working distance of 300mm or less

Hirose connector (HR10G-7R-6SB)	Function	Value
Pin 1	GPIO Trigger	-
Pin 2	Analog In	0-10V
Pin 3	UART Tx / I 2C SCL	TTL
Pin 4	UART Rx / I 2C SDA	TTL
Pin 5	GND	-
Pin 6	Vcc	5-24V



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-50-3.5-18-C:

- Optotune embedded controller ECC-1C
- Optotune industrial controller ICC-4C-500

Mechanical drawings

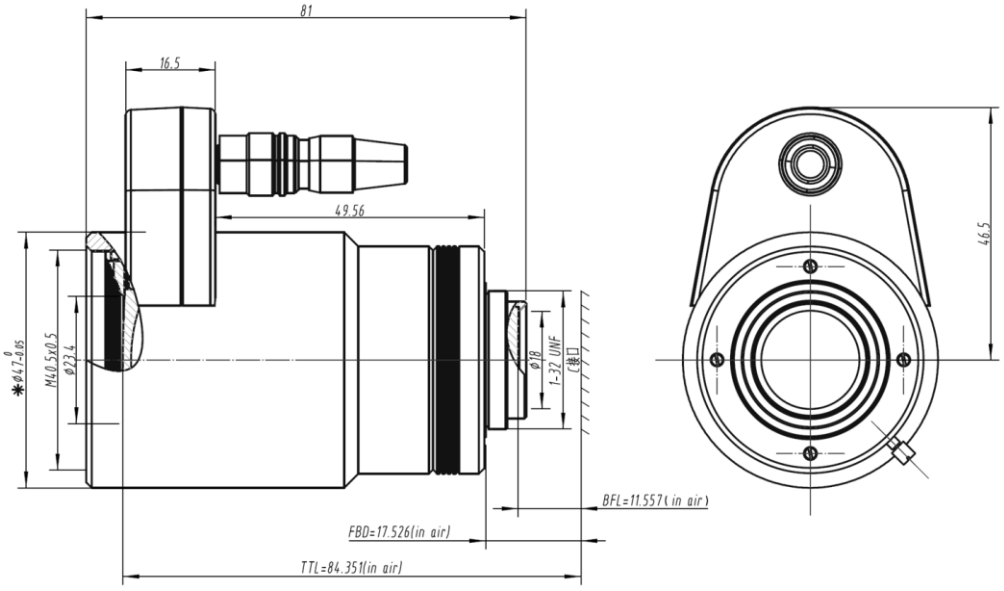


Figure 1: Mechanical drawing of the ELM-50-3.5-18-C

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