

Tunable Prism Development kit

The tunable prism development kit includes all components required to operate the tunable prism, ensuring a smooth project start. The kit may include any tunable prism from Optotune, enabling direct testing of the desired hardware from the earliest stages of development.

Main features:

- Graphic user interface *Optotune Cockpit* for control via USB
- Communication interfaces:
 - USB
 - UART, I²C
- Software SDKs for Python and C# available
- RoHS, REACH and CE certified

Included in the tunable prism development kit are the following parts

- MR-E-3 Base unit (MR-E-3 with international power supply, USB cable, Adapter board, 8-pin FPC cable)
- TP-17-25 tunable prism



Mechanical specifications – base unit

Dimensions (L x W x H)	64 x 105 x 28.7	mm
Weight	226	g
USB connector	USB C	
Accepted DC barrel plug	2.1 I.D. x 5.5 O.D. x 10.0	mm

Mechanical specifications – tunable prism¹

Module Width	25	mm
Module Diameter (without connector)	30	mm
Module Length (with connector)	35.8	mm
Module height	9.3	mm
Weight	12	g

Electrical specifications of MR-E-3

Number of current output channels	2	
Supply voltage	24 - 48 (± 10%)	V
Current source type	Class - D	
Continuous output current per channel	0.5	A
Peak output current per channel	1	A
Max. peak power consumption	35	W
DAC resolution	16	bit
DAC sampling rate	40	kHz
Digital logic level	3.3 (5 V not tolerant)	V

Electrical specifications of TP-17-25

Control interface	Analog interface for driver coils and digital for feedback, IMU and EEPROM	
Driving voltage (coils)	3.3-9.5	V
Coil resistance, per channel (two coils in series)	19	Ω
Nominal driving current	≤200	mA
Absolute maximum driving current	500	mA
Typical RMS OIS current (optical gain = 1, 25°C) ²	30-70	mA
Typical RMS OIS current (optical gain = 3, 25°C)	110-180	mA
Voltage for Hall sensors, IMU & EEPROM	3.3	V
Output format Hall sensor	digital	16-Bit

Environmental specifications

Operating temperature MR-E-3 controller	0 to +60	°C
Operating temperature Tunable Prism	-10 to +65	°C
Storage temperature	-40 to +85	°C

¹ For more specifications of the TP-17-25, please refer to the corresponding datasheet.

² Optical gain 1 is achieved by placing the tunable prism at the entrance aperture of the device.

Overview of available standard products

Product number	Product name	Components included
187-104-00	TP-17-25-VIS-1D	Tunable prism
183-544-01	MR-E-3 TP Dev.Kit	MR-E-3 with dedicated firmware Adapter board 8-pin FPC + USB cable International power supply

Mechanical layout

The mechanical drawings of the MR-E-3 base unit is shown in Figure 1.

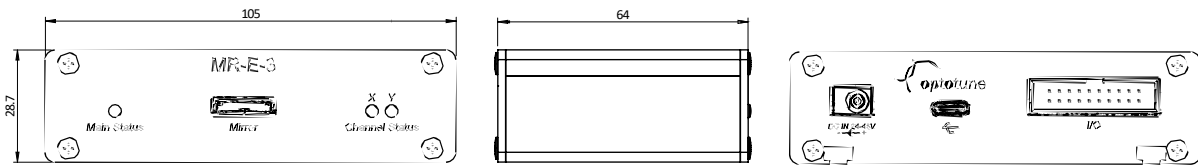


Figure 1: Mechanical drawing of the MR-E-3 base unit (unit: mm).

The mechanical drawings of the TP-17-25 are shown in Figure 2:

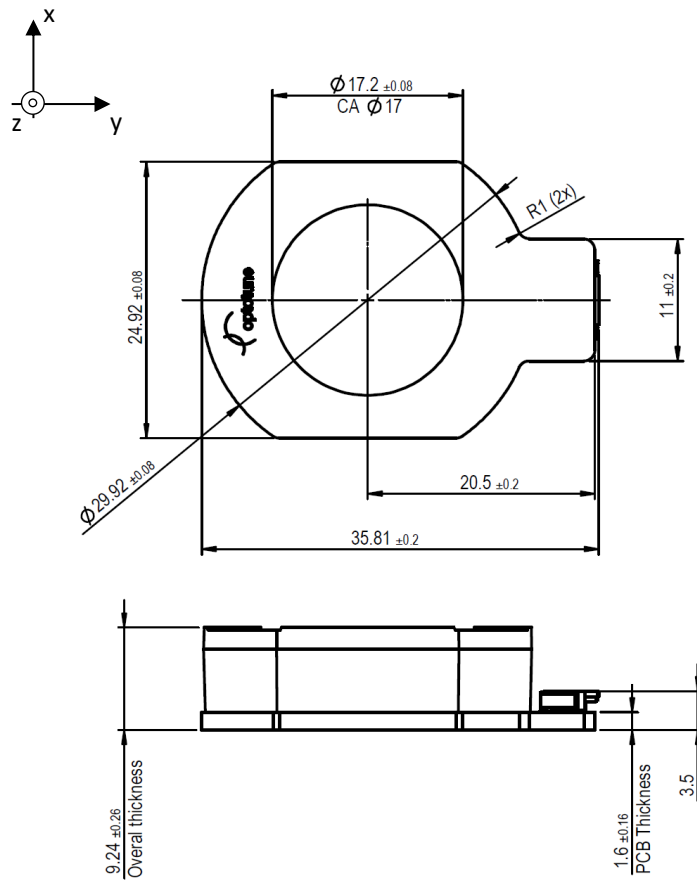


Figure 2: Mechanical drawing of the TP-17-25 (unit: mm).

Electrical layout

Fig. 3 shows the back and front panel of MR-E-3 base unit. The back panel has three connectors. In addition to the power connector, it features a USB Type-C connector for control through Optotune Cockpit software, software development kits, and for simple and pro mode serial communication. The I/O connector offers miscellaneous features and provides connections for communication interfaces such as UART or I²C. The pin-out is given in Table 1. The front panel has only mirror connector. To run a tunable prism, we recommend using the adapter board (included in the kit, Figure 4), which connects directly to the mirror connector and ensures proper pin matching with the connector of the tunable prism.



Figure 3: Back and front panel of MR-E-3 base unit with pin assignment.

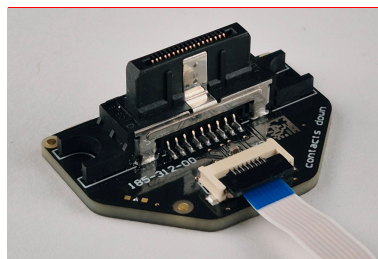


Figure 4: Photograph of the adapter board with the 8-pin FPC cable attached.

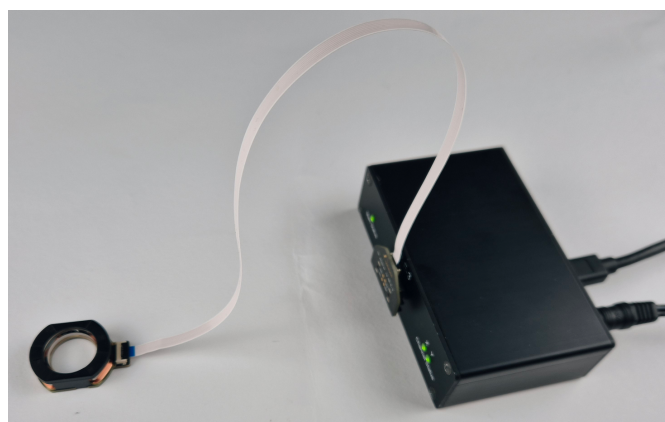


Figure 5: Photograph of the fully assembled development kit.

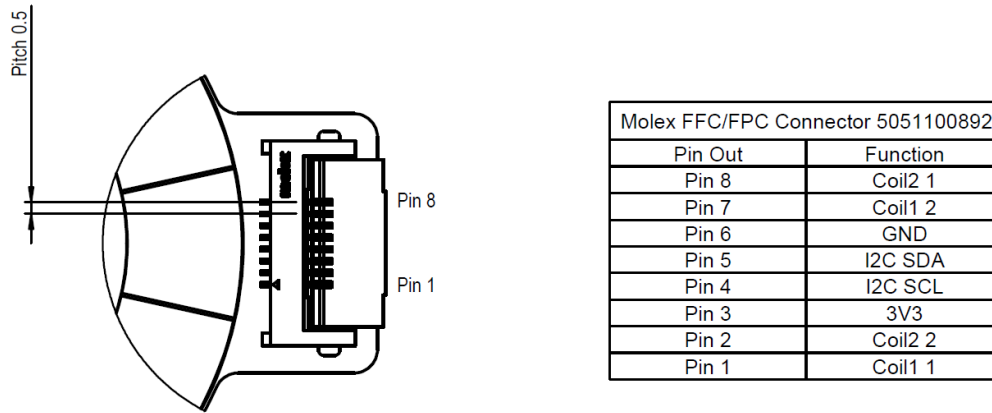


Figure 6: Pin layout of the tunable prism.

Safety and compliance

The product fulfills the RoHS and REACH compliance standards. The customer is solely responsible for complying with all relevant safety regulations for integration and operation.

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