Westline Electronic Engineering

Motorized Medical Alignment Lasers

HITM-X, HITM-Y and HITM-XY

The **HITM-X**, **HITM-Y** and **HITM-XY** motorized lasers are precision alignment solutions for patient setup in the field of radiation therapy. The units create one or two remote-controlled adjustable laser planes by projecting high-quality red, green or blue laser lines. When combined with other similar units, this allows the creation of a virtual isocenter in all tree body planes.

The **HITM-XY** crosshair model features two independently adjustable orthogonal laser planes.

Features

- High-accuracy positioning
- Single-plane or crosshair
- Radio or cabled PC remote control
- 3 degrees of freedom per plane: translation, tilt and rotation
- Dual laser: two laser lines modules of any color
- Flexible on-wall, in ceiling or on post mounting

Applications

- Patient setup and marking during CT/PET simulation
- Patient alignment and setup for external beam radiation therapy

Technical specifications

Power supply ..... 100–240 V_{AC} @ 50/60 Hz
Power consumption ..... 49 W max.
Internal voltage ..... 12 V_{DC}
Operating humidity ..... ≤ 80%, non-condensing
Operating temperature ..... 15–30 °C
Dimensions (H×W×D) ..... 205×220×107 mm
Weight (HITM-X, HITM-Y) ..... 4.5 kg
Weight (HITM-XY) ..... 4.7 kg

Laser output *

Laser class 2
Output power ** ..... < 1 mW
Focus range ..... 1.5–7 m
Line width ..... ≤ 1 mm @ 4 m
Line length ..... ≥ 4 m @ 4 m

* with laser modules **WLCxxx-5-LGCP**, not included (see separate datasheet)
** measured on a 7 mm aperture at 100 mm

Mechanical

Adjustment accuracy ..... ±0.1 mm @ 3 m
Translation range ..... 0–20 mm
Translation resolution ..... 2.5 µm/step
Tilt range ..... ±2.2 deg
Tilt resolution ..... 25 µm/m
Rotation range ..... ±3.5 deg
Rotation resolution ..... 40 µm/m

Connectivity

Physical layer ..... RS485 or radio*
Data rate ..... 115200 Baud
Protocol ..... proprietary
5 V_{DC} output ..... 100 mA max.

* with the **RDB9-2.4G** external adapter

External connections

The **HITM** units embed a DB9 male connector for communication and an IEC/EN 60601-1 compliant 100–240 V_{AC} IEC inlet.

DB9 connector	Function
1	5 V_{DC} power supply output, 100 mA max.
5	Ground
8	RS485 L+ (high for logic 1, low for logic 0)
9	RS485 L- (low for logic 1, high for logic 0)

Related products

AXE950IRM	Motorized long-range MR alignment laser
AXE900	Motorized long-range medical alignment laser
HITSD-XY	Manual medical MR alignment crosshair lasers
HITSD-X	Manual medical MR alignment horizontal lasers
HITSD-Y	Manual medical MR alignment vertical lasers
WLC635-5-LGCP	Modulated red laser-line module
WLC532-5-LGCP	Modulated green laser-line module
SF-CT	5-plane CT laser alignment smart-phantom
SF-RTH	5-plane LINAC laser alignment smart-phantom
RDB9-2.4G	Radio to RS485 ATB protocol converter
USBRF-2.4G	Radio to USB ATB protocol converter
ISOUSB485	USB to RS485 isolated serial converter

Ordering codes

HITM-X*	Horizontal-plane model
HITM-Y*	Vertical-plane model
HITM-XY*	Dual-plane model (crosshair)

* laser modules not included (see **WLCxxx-5-LGCP**)