

EM7000S 4 Tesla Electromagnet



www.holmarc.com | +91 920-719-7772
sales@holmarc.com | +91 920-719-7776



About EM7000S

EM7000S is a HOLMARC New Magnet LAB range high magnetic field PC controlled Dipole Electromagnet that can provide fields above 3.5 Tesla @ 5 mm field gap. Designed to meet industrial, educational, and research needs of very high, uniform field strengths in a wide range of air gaps. The HOLMARC Magnet LAB range dipole electromagnet systems are intended to work based on automated PC controlled operations.

The EM7000S comes with a standard set of 125mm diameter poles that tapered into a 25mm. optimize maximum field but several pole options are available. HOLMARC can also design custom poles that achieve a specific performance. Poles are interchangeable and are available with an axial access bore.

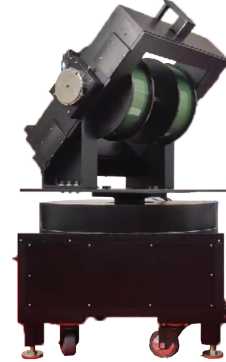
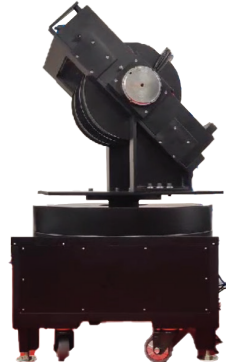
Features

- PC controlled programmable operation
- Water Cooled Coils for excellent field stability
- Fully Adjustable Pole Gap
- Easily removable / replaceable Pole pieces
- Flat, Faraday, & Custom Pole Pieces option
- On-Axis Bores in Magnet Pole Piece for Beam / Target Experiments
- Mount Kits for Magnetometer Probes and Other Probes

Applications

- Hall Effect Measurements
- Magneto-Optical Rotation Measurements
- Magnetic Separation experiments
- Magnetic alignment of Small Components
- Chemical Reaction Rate Studies

Working Images



	HO-EM3000S	HO-EM5000S	EM7000S
POLE GAP (mm)	Magnetic Field (Gauss)	Magnetic Field (Gauss)	Magnetic Field (Gauss)
5	21233	25100	33700
10	10900	16961	28600
15	7380	11482	24020
20	5596	8706	20700
25	4515	7024	17660
30	3788	5894	15300
35	3266	5082	13360
40	2873	4469	11800
45	2565	3990	10320
50	2318	3606	9260
55	2115	3290	8420

Additional accessories required for the electromagnets

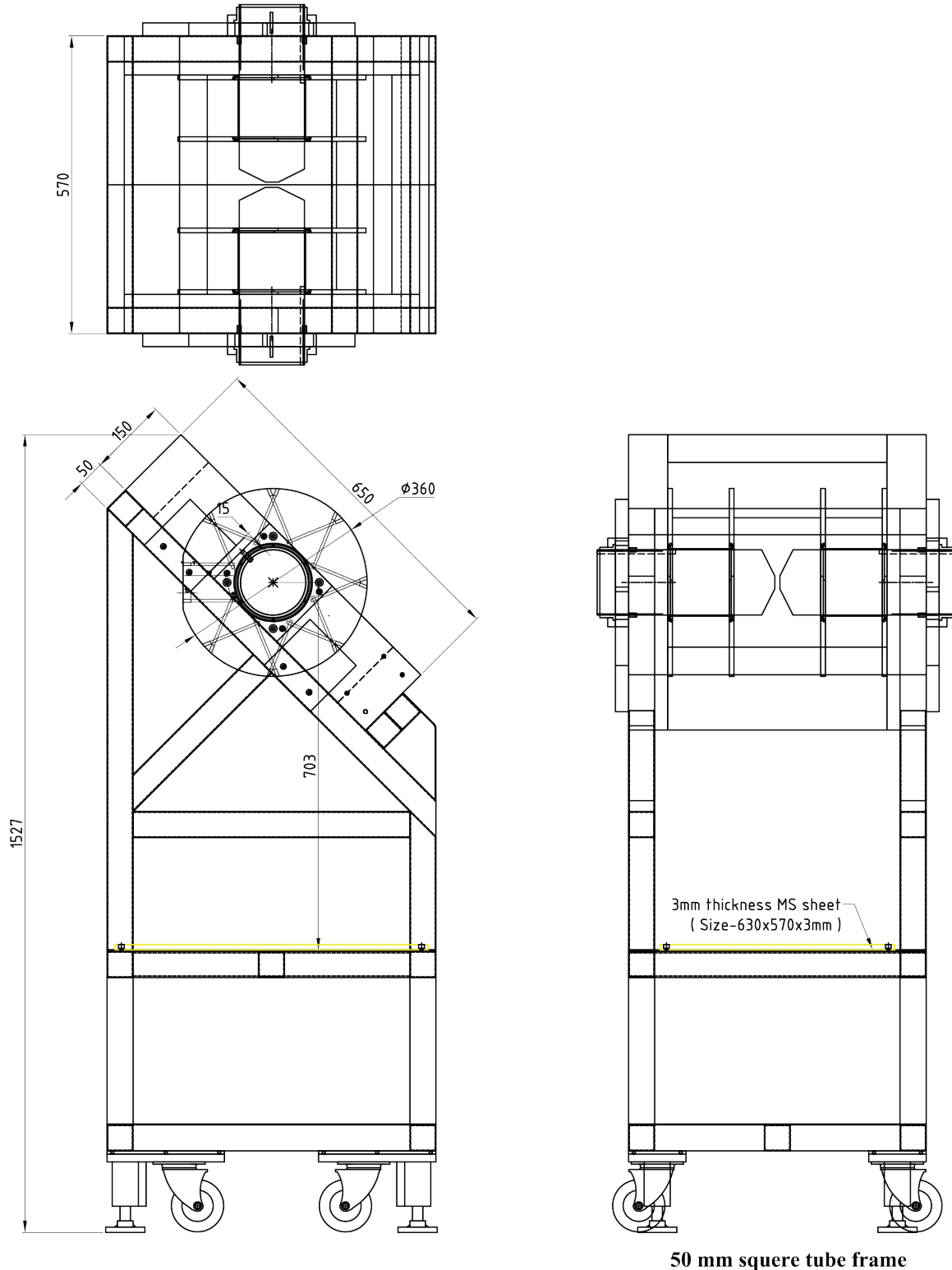
- 8 mm hollow Pole piece
- XYZ manual / motorized translation stage
- Electromagnet Wheels
- Probe holder
- Electromagnet rotary table (Manual /

- Motorized)
- 45 degree bracket for electromagnet (Cryo-stat positioning)
- 4 probe measurement unit
- XYZ sample stage

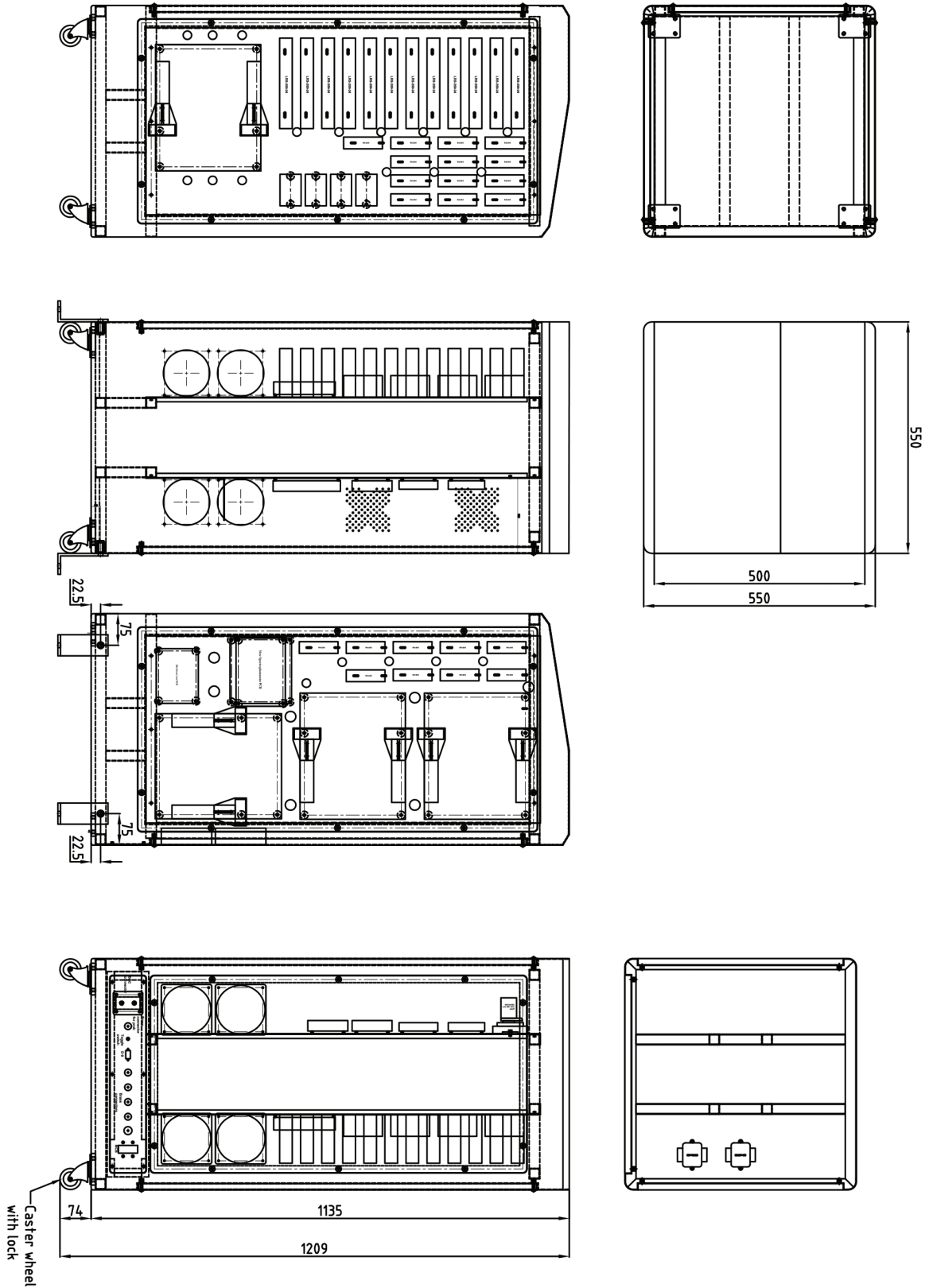
- Theta sample stage
- Cuvette holder
- Thin Film sample holder
- Motorized pole piece adjuster

Specifications	Requirements
Electromagnet	
Magnetic Field	3.3 T @ 5 mm pole gap
Electromagnet Height	: 650 mm
Electromagnet Depth	: 610 mm
Electromagnet Width	: 420 mm
Electromagnet Frame size	: 610 mm x 420 mm x 650 mm
Pole Piece Diameter	125 mm
Pole Gap Adjustments	50 mm Independently Variable Poles
Spool Diameter	430 mm
Frame Material	: Cast Iron Profile
Optical Height	: 325 mm
Total Weight including Frame	: 325 kg
Frame Wheel	: Yes
Frame	: The frame will be compatible for use along with a rotation base. The frame will be attachable (or detachable) with suitable screws on a rotation base.
Pole Pieces	: 2 No, easily removable/replaceable Pole pieces : One Flat pole piece with 120 mm Tapered pole piece
Coil Separation (Coil Gap)	: 160mm
Airgap (Pole gap)	: Continuously adjustable from 0 to 100 mm or higher
Yoke Construction	: Single-yoke electromagnet
Yoke Material	: Soft Iron high permeability alloy
Mounting	: Mounted on a Metal Profile stand.
Cooling	: Water-cooled for continuous operation for more than 4 hours.
Maximum Magnetic Field Intensity	: 5000 Gauss for an air gap (Pole gap) of 55 mm with a flat pole
Uniformity	: Magnetic Field will be uniform over 5 cm ³
Stability of magnetic field	: <0.005%
Bipolar power supply	
Power supply design	Quad system constant current power supply
Input requirement	: 220 VAC, 50 Hz, single phase.
Output	: Constant current Bipolar with continuous variation through zero
Output voltage	: 70V Max.
Output current	: 4 Amps Continuously Variable.
Resolution:	: 0.1 Amps
Stability	: 0.005% up to ≥ 8 hrs
Over temperature protection	: Coil-over temperature protection
Power failure protection	: Sudden power failure protection
Protection	: MCB and fuses in the input
Remote Monitoring	: USB port will be available for remote monitoring
External programming	: The power supply will be able to be controlled and monitored via USB interface. Output Polarity and current value will be controllable remotely via external programming.
Software and interface	: LabVIEW driver or software will be provided for computer control
Cables and Accessories	: All necessary power and interface cables and accessories
Power supply size	: 550mmx550mmx1210mm
Weight	: 125 kg
Rotating base	
Rotating Base	: A detachable rotating base with mounting screws to mount the heavy electromagnet.
Rotation	: 360-degree rotation
Resolution	: 0.1 degree
Control	: Both manual and stepper motor controlled rotation
Stepper motor controller	: A stepper motor controller will be provided for computer control of the rotation stage.
Ports for remote control	: USB port will be available for remote control and monitoring
Software and interface	: LabView drivers and PC software
Cables and Accessories	: Power and interface cables
Hall probe/monitor	
Input requirement	: 220 VAC, 50 Hz, single phase.
Magnetic Field Range	: Up to 4 Tesla
Resolution	: 1.0 gauss
Display	: 6 digits led
Size	: Portable
Hall probe	: Transverse probe rectangular with fixtures
Ports for remote control	: USB port
Software and interface	: LabView drivers and PC software
Water cooling (Chiller)	
Input requirement	: 220 VAC, 50 Hz, single phase.
Water tubing and fitting	: Standard 6mm Tube
Water circulation	: Motor Pump based.
Water flow rate	: 7.6 L/min or higher
Water inlet temperature	10 °C to 15 °C

Assembly Drawings



Power Supply Drawings





Office & Factory Address

Phone Contacts

Mailing Address
B.7., HMT Industrial Estate, H.M.T.P.O,
Kalamassery 683503, Kerala, India

+91 920-719-7771
+91 920-719-7772
+91 920-719-7776

CIN : U33125KL1993PLC006984
GST No: 32AAACH9492C1ZQ
MSME : UDYAM-KL-02-0043524

ISO 9001:2015 Certified

Visit Us @
sales@holmarc.com
Website: www.holmarc.com

Get in touch with our technical experts and discuss your application needs and unique requirements. You can be sure that you will receive rapid response and service.