

## LP300E X-Y Stage



\* Shown with optional auxiliary cable track

The LP300E is a low profile, 300mm x 300mm travel stage developed for use in where aesthetics and compact size are important. Often used in inspection or optical metrology instruments where the stage is fully visible to the user, care has been taken to make sure the LP300E looks as good as it performs. Considerable attention is paid to the quality of the surface finish on all exposed parts, and the linear encoders, lead screw drives, motors, and cable routing are fully integrated within the body of the stage.

Despite being only 100mm tall, performance has not been compromised. Precision grade, recirculating caged ball bearing guides provide smooth, quiet travel, long life, good load capacity and low angular and straightness errors. Horizontal and vertical straightness of travel errors are less than  $\pm 2.5\mu\text{m}$  per 300mm travel. Non-contact, hysteresis free, linear encoders directly monitor the position of the stage carriage to virtually eliminate the contribution of errors inherent in a mechanical drive such as hysteresis, thermal drift due to friction, and lead screw pitch errors. Bidirectional repeatability is better than  $\pm 0.5\mu\text{m}$ . Linear accuracy with linear error compensation is typically  $\pm 2.0\mu\text{m}$  and is guaranteed to be better than  $\pm 4.0\mu\text{m}$ . Performance of each stage is certified using a laser interferometer.



For simple, cost effective motion control the LP300 uses stepper motors with integral motor drivers and controllers. Communication to the host computer is by RS422/485, typically configured for multi-drop communication to support control of multiple axes using a single port. The RS422/485, power, and one I/O are looped through at the connector plate to simplify the integration of additional axes of motion (e.g. a Z Axis mounted to a bridge). There is also an optional auxiliary cable service loop available to support additional axes of motion or active tooling mounted on top of the LP300.

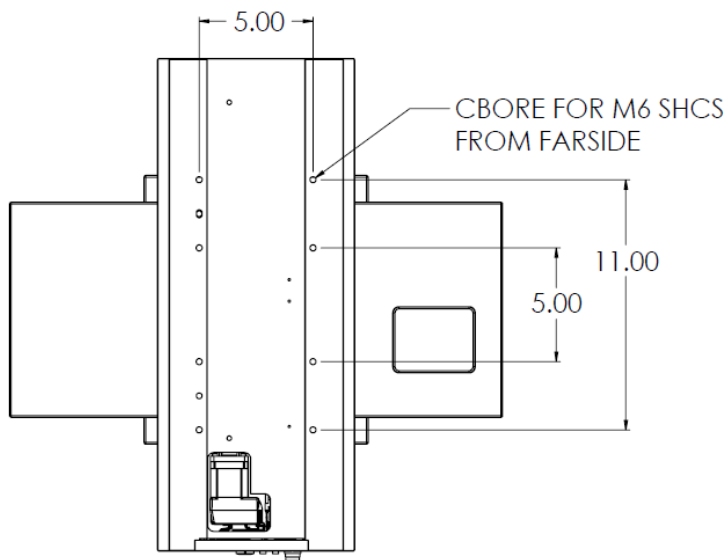
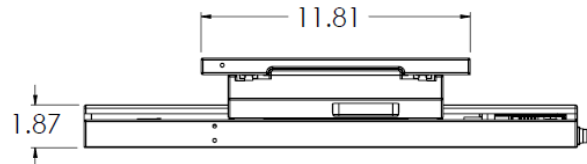
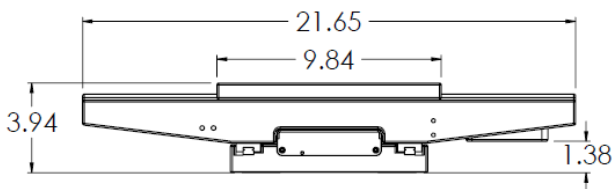
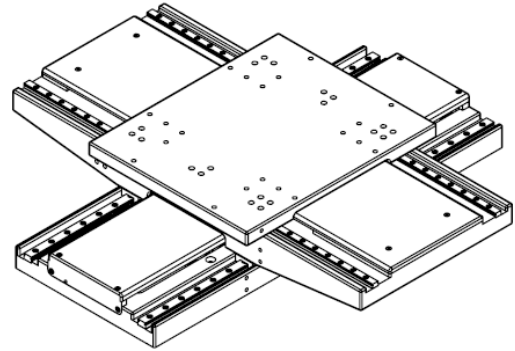
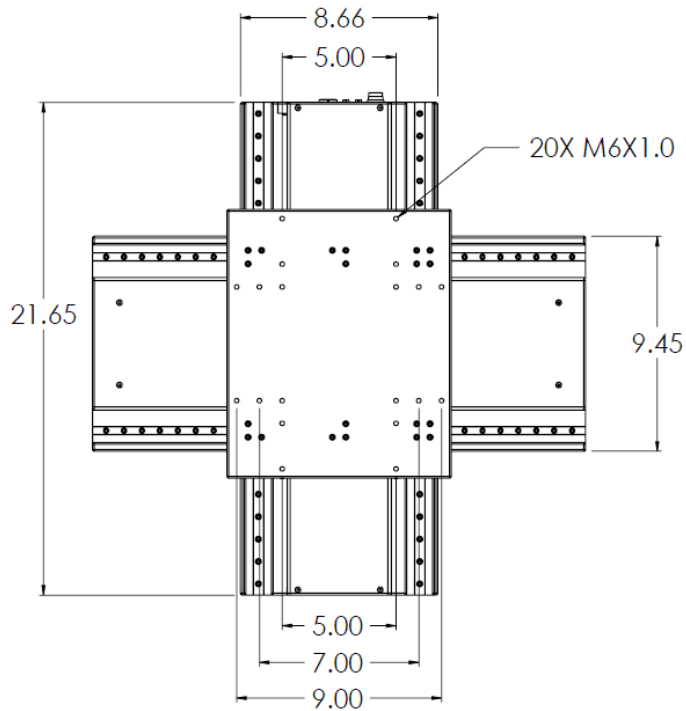
<b>LP300E Specifications</b>	
Stage Travel	304mm x 304mm
Pitch	±15 arc-sec
Yaw	±10 arc-sec
Straightness of Travel	±1.0µm/25mm, ±2.5µm/300mm
Flatness of Travel	±1.0µm/25mm, ±2.5µm/300mm
Position Feedback	0.5µm Linear Encoder
Bidirectional Repeatability	±0.5µm
Linear Accuracy*	±4.0µm
Drive Screw	0.100" Lead Screw
Motor Microstepping Factor	51200 steps / revolution
Input Power	24vdc Standard (12 – 48vdc available)
Maximum Load Capacity	45Kg
Weight of Stage	23Kg

\*After Linear Error Compensation



# RELIANT SYSTEMS INC

Precision Automation Systems



12641 Fremont Avenue / P.O. Box 349, Zimmerman, MN 55398  
Phone: (763) 856-8300 / Fax: (763) 856-8301 / E-mail: [sales@reliantsystemsinc.com](mailto:sales@reliantsystemsinc.com)  
*Reliant Systems Confidential & Proprietary Information*