



## Laser Machining System

# LaserTurn160



### Maximum Throughput, Minimum Error Motion

LaserTurn®160 is the most capable and effective cylindrical laser machining motion platform available. Optimized to provide the most precise motion trajectories with ultra-high dynamic performance, LaserTurn160 can improve your process throughput by 40% or more compared to similar cylindrical machining systems. Rotary axis options meet your exact needs, so you can process tubes up to 7.9 mm diameter with our versatile CCS130DR rotary stage or achieve speeds and accelerations up to 3000 rpm and accelerations up to 8000 rad/s<sup>2</sup> with our high-dynamic ASR1300 rotary stage. Both options are compatible with Type-D collets and an optional front gripper mechanism, so you'll easily process tubes of nearly any length. Ideal for machine builders, system integrators, contract manufacturers and end-users, LaserTurn160's advanced performance capabilities help you to manufacture greater volumes of highly reproducible parts in less time.

### Key Applications

The LaserTurn160 is ideal for these applications:

- ◆ Medical device manufacturing
- ◆ Stent cutting
- ◆ Catheter, guidewire & other hypotube manufacturing
- ◆ Cylindrical laser machining

### KEY FEATURES:

- ◆ Increases **PROCESS THROUGHPUT UP TO 40% OR MORE** with NEW high-dynamic rotary axis option
- ◆ Dead-length, pneumatically actuated collet **MINIMIZES TUBE MOTION** during gripping & regripping
- ◆ Optional alignment gripper enables **REPEATABLE TUBE ADVANCE** for easily processing longer tubes
- ◆ Accommodates tube diameters from 0.1 mm to 7.9 mm
- ◆ Direct-drive motors & crossed-roller bearings deliver **ULTRA-SMOOTH MOTION** for manufacturing highly reproducible parts

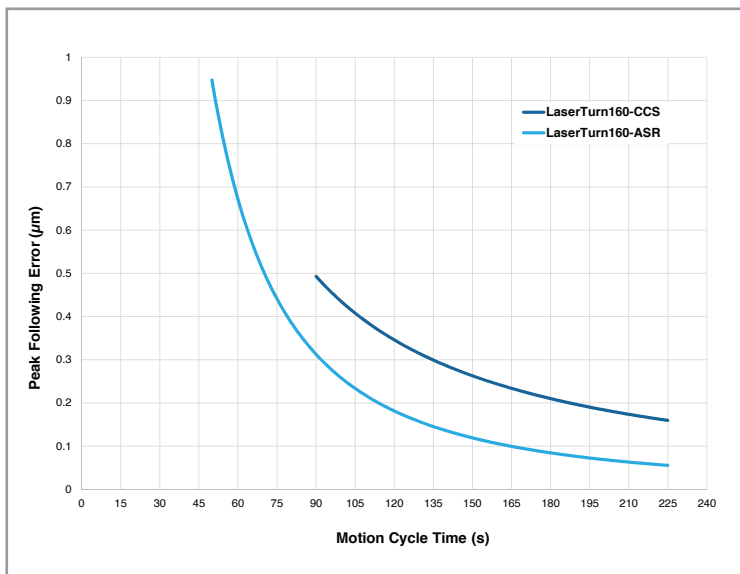
## LASERTURN160 SPECIFICATIONS

Mechanical Specifications	LaserTurn160 <i>LINEAR AXIS</i>	LaserTurn160 <i>CCS ROTARY AXIS</i>	LaserTurn160 <i>ASR ROTARY AXIS</i>
<b>Travel</b>	100 mm	Continuous	Continuous
<b>Accuracy-Calibrated<sup>(1)</sup></b>	±0.5 µm	±2.5 arc sec	± 2.5 arc sec
<b>Bidirectional Repeatability</b>	±0.2 µm	±1 arc sec	±1 arc sec
<b>Horizontal Straightness</b>	±1.5 µm	N/A	N/A
<b>Vertical Straightness</b>	±1.5 µm	N/A	N/A
<b>Pitch</b>	10 arc sec	N/A	N/A
<b>Roll</b>	10 arc sec	N/A	N/A
<b>Yaw</b>	5 arc sec	N/A	N/A
<b>Maximum Speed<sup>(2)</sup></b>	350 mm/s	1000 rpm	3000 rpm (-HS) 1000 rpm (-SS)
<b>Maximum Acceleration</b>	1 g	4600 rad/s <sup>2</sup> peak 1200 rad/s <sup>2</sup> continuous	8000 rad/s <sup>2</sup> peak 3300 rad/s <sup>2</sup> continuous
<b>Tube Capacity</b>	N/A	∅ 7.9 mm (Dry Cut) ∅ 3.0 mm (Wet Cut) (3)	∅ 4.0 mm
<b>Collet Type<sup>(4)</sup></b>	N/A	Levin Type D	Levin Type D
<b>Collet Runout<sup>(5)</sup></b>	N/A	<30 µm	<25 µm

Notes:

- When configured with -PL2 metrology option.
- Maximum speed based on stage capability. Requires selection of appropriate amplifier with sufficient voltage and current.
- Maximum tube diameter is 6.7 mm when dry-cutting with the wet-cut configuration.
- Collet chuck accepts Levin Type D collets.
- Measured TIR of precision gage pin chucked with an ultra-precision Type D collet 3 mm away from collet face at 80 psig applied air pressure and no load.

Peak Following Error vs. Motion Cycle Time



LaserTurn160 is capable of achieving extremely high processing speeds with excellent contouring performance. Characterized by contouring a typical cardiovascular stent profile with a diameter of 1.9 mm and a length of 28.5 mm, and when paired with our powerful Automation1 controller, achieving the ideal balance of throughput and precision has never been easier.



This LaserTurn160 is configured with the highly versatile CCS rotary axis option plus a front tooling platform with left-hand alignment gripper for automated tube advancing and handling.



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