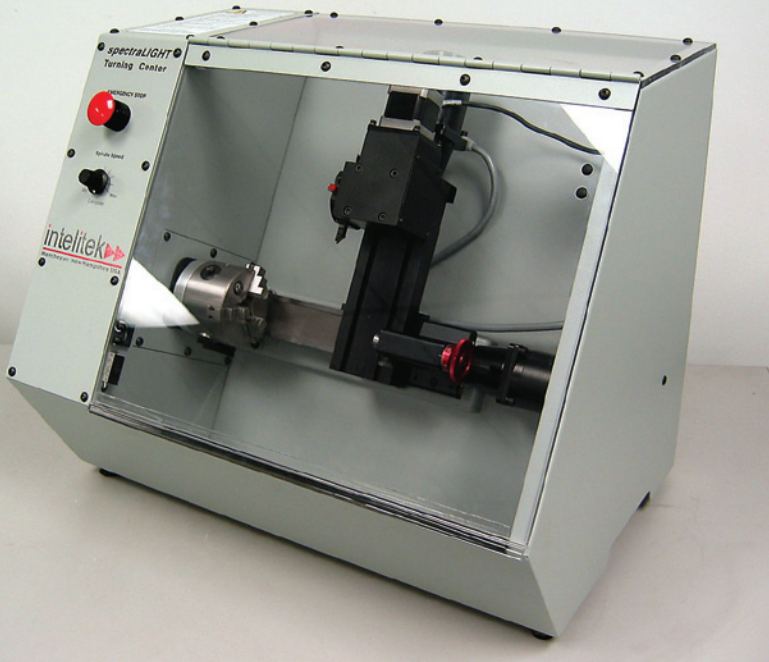


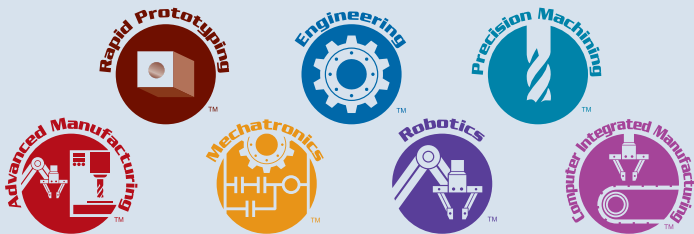
# spectraLIGHT™ 0400 Turning Center



## Make the spectralLIGHT™ 0400 Lathe part of a comprehensive STEM program!

The spectralLIGHT™ 0400 Lathe can be combined with intelitek's dynamic e-learning content as part of a comprehensive engineering program! Customize your program by combining standards-based LearnMate™ E-Learning curriculum for

- Rapid Prototyping
- CAD
- Engineering
- Precision Machining
- Advanced Manufacturing
- and more!



The spectralLIGHT™ 0400 Turning Center is a versatile and affordable desktop CNC lathe that enables you to deliver robust instruction in computer numerical control and advanced manufacturing for your students.

This 2-axis slant-bed desktop CNC system fits comfortably into any classroom, without sacrificing features. Like larger industrial machines, the spectralLIGHT™ Turning Center uses EIA, ISO, and Fanuc-compatible G&M code programs to cut parts in a variety of materials. An optional 8-tool turret is also available.

intelitek's CNCBase® control software is easy to learn. The user-friendly control software supports linear, circular, and helical interpolation, multiple tool programming, and canned cycles.

For thousands of schools worldwide - middle schools, high schools and universities - the spectralLIGHT™ is the system of choice for introducing the fundamentals of manufacturing and preparing students for challenging careers in engineering, manufacturing, and industrial technology.

P O W E R E D B Y



The spectralLIGHT™ Lathe is the perfect classroom solution, with exceptional ease-of-use, safety features and reliability. Combined with intelitek's in-depth course "CNC Technology with the spectralLIGHT™ Lathe", students gain excellent exposure to in-demand skills for tomorrow's workforce.

The spectralLIGHT™ Lathe curriculum features topics tailored to the spectralLIGHT™ Lathe, delivered in an engaging online format with interactive simulations and step-by-step procedures.

# spectraLIGHT™ 0400 Turning Center

## Machine Features

### Standard Features

|   |
|---|
| Cast aluminum machine base  |
| Full enclosure  |
| Aluminum Cross Slide  |
| Linear motion system: <ul style="list-style-type: none"><li>• Dovetail</li><li>• Adjustable gibs</li></ul>  |
| Tooling/Accessories: <ul style="list-style-type: none"><li>• Indexable profiling tool holder</li><li>• Profiling tool carbide insert</li><li>• 3" (76 mm) 3-jaw chuck with two sets of jaws</li></ul> |
| Hex Keys  |
| Spindle Bar   |
| Tailstock   |
| User's Guide/Software   |

### Safety Features

|  |
|--|
| Transparent Lexan® safety shield with interlock switch |
| Emergency Stop switch on front panel                   |
| Emergency Stop on keyboard                             |
| End of travel limit switches and stops on each axis    |
| Keylock on electronic control box                      |

### Factory Installed Options

- Pneumatic Shield Opener
- Air Chuck Robotic Interface

### Accessories

|  |
|--|
| Automatic Tool Turret with Tools   |
| Tool Turret Tools  |
| Turning Center Fixture Kit   |
| Carbide Insert Set   |
| Indexable Tool Holder w/Carbide Insert   |
| Tool Posts and Tools   |
| Portable Air Compressor  |
| Aluminum Turning Stock   |
| Brass Turning Stock  |
| Delrin Turning Stock   |
| Machinable Wax Turning Stock   |
| CAM Software <ul style="list-style-type: none"><li>• spectraCAM™ Turning</li><li>• spectraCAM™ Milling &amp; Turning</li></ul> |
| CAD Software <ul style="list-style-type: none"><li>• spectraCAD Engraver (provided with all spectraCAM packages)</li></ul>     |

### E-learning Curriculum

|   |
|---|
| CNC Turning with spectraLIGHT 0400 (includes): <ul style="list-style-type: none"><li>• spectraLIGHT 0400 Machining Center</li><li>• spectraLIGHT CNCBase Software</li><li>• Turning Center Fixtures and Tools</li><li>• End Lathe Package</li><li>• Safety Glasses</li><li>• Machinable Wax</li></ul> |
|---|

## Machine Specifications

### Axis Travel

|                        |       |          |
|------------------------|-------|----------|
| X Axis                 | 4.6"  | (117 mm) |
| Z Axis                 | 6"    | (152 mm) |
| Swing over bed         | 3.5"  | (89 mm)  |
| Swing over cross slide | 1.25" | (32 mm)  |

### Work Area

|                |              |                  |
|----------------|--------------|------------------|
| Table Size     | 8.5" x 2.75" | (216 mm x 70 mm) |
| No. of T-slots | 2            |                  |

### Spindle

|               |                     |
|---------------|---------------------|
| Drive Motor   | 1/2 hp, 373 W       |
| Motor Type    | DC Permanent Magnet |
| Speed Range   | 200 - 2,500 RPM     |
| Spindle Taper | Morse #1            |

### Tailstock (Optional)

|                 |          |          |
|-----------------|----------|----------|
| Taper           | Morse #0 |          |
| Stroke          | 1.5"     | (38 mm)  |
| Center distance | 8"       | (203 mm) |

### Accuracy

|               |          |             |
|---------------|----------|-------------|
| Repeatability | 0.0005"  | (0.0127 mm) |
| Resolution    | 0.00013" | (0.0032 mm) |

### Axis Drive Motors

|                |                                    |
|----------------|------------------------------------|
| Feed Rate      | 0.1 - 12 ipm (2 - 300 mm/min)      |
| Rapid Traverse | 25 ipm (635 mm/min)                |
| Stepper Motors | 100 oz. in. (70 Ncm), 200 step/rev |

### Power Requirements

|               |                                      |
|---------------|--------------------------------------|
| United States | 115 VAC (+5%/-10%),<br>50-60 Hz, 15A |
| International | 230 VAC (+5%/-10%),<br>50-60 Hz, 8A  |

### Dimensions

|        |       |          |
|--------|-------|----------|
| Width  | 23"   | (584 mm) |
| Depth  | 16"   | (406 mm) |
| Height | 18.5" | (470 mm) |

### Weight (approximate)

|          |          |         |
|----------|----------|---------|
| Machine  | 85 lbs.  | (39 kg) |
| Shipping | 125 lbs. | (57 kg) |

### Electronic Interface

|                             |
|-----------------------------|
| Controller Box              |
| PCI computer interface card |
| Computer interface cable    |
| Control software            |

### Computer System Requirements

|  |
|--|
| Intel / AMD Single Core 1.6GHz           |
| 512MB RAM                                |
| 300MB Available Disk Space               |
| One Full Height PCI Slot                 |
| Windows XP SP3 / Vista / 7 - 32 or 64bit |

## Control Specifications

### Interpolation

|  |
|--|
| Rapid, linear, and helical interpolation                 |
| Circular interpolation with center point or radius input |

### Programming Standards

|                                  |
|----------------------------------|
| EIA RS274-D standard G & M codes |
| Subprograms                      |
| Fanuc®-compatible                |
| CAD/CAM compatible               |

### Programming Modes

|  |
|--|
| Incremental and absolute programming         |
| G & M codes for robotic interfacing          |
| Inch or metric programming                   |
| Supports digitizing with formatted output    |
| Scaling, rotation, mirroring and subprograms |

### Programming Features

|  |
|--|
| Programmed pause, dwell, chain, repeat functions |
| Programmable on/off spindle motor (M codes)      |
| Programmable spindle speed control (S codes)     |
| Canned cycles for drilling and boring            |
| Align/homing command                             |
| Tool length offsets for 199 tools                |
| Cutter compensation                              |
| Multiple coordinate systems                      |

### Operational Modes

|   |
|---|
| Programmed feed rate control                    |
| Feed rate override                              |
| Cycle start and stop                            |
| Program pause and feed hold                     |
| Manual or programmed spindle speed control      |
| Computer-controlled jog, go-to, traverse motion |
| Operational mode: single block / continuous run |
| Optional skip and stop                          |

### System Input

|  |
|--|
| Calculator-style input for numeric data entry    |
| Keyboard- or mouse-operated menus                |
| Full screen editor support with keyboard / mouse |

### System Feedback

|   |
|---|
| Error messages  |
| HELP functions on screen  |
| Instantaneous position readout of X, Y, and Z axes                    |
| Real time or simulated 3-D solid or centerline tool path verification |

Affiliated with:



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