

# spectraLIGHT™ 0200 Machining Center



The spectraLIGHT™ Mill is a versatile and affordable desktop CNC machining center that enables you to deliver robust instruction in computer numerical control and advanced manufacturing for your students.

This portable desktop CNC system fits comfortably into any classroom, without sacrificing features. Like larger industrial machines, the spectraLIGHT™ Machining Center uses EIA, ISO, and Fanuc-compatible G&M code programs to cut parts in a variety of materials.

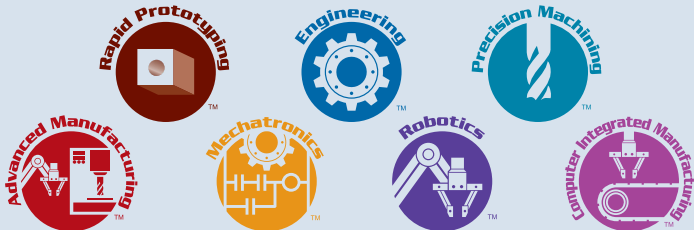
intelitek's CNCBase® control software is easy to learn. The user-friendly control software supports linear, circular, and helical interpolation, multiple tool programming, and canned cycles.

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

## Make the spectraLIGHT™ 0200 Mill part of a comprehensive STEM program!

The spectraLIGHT™ 0200 Mill 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!



POWERED BY  
**LearnMate®**

The spectraLIGHT™ Mill 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 spectraLIGHT™ Mill", students gain excellent exposure to in-demand skills for tomorrow's workforce.

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

# spectraLIGHT™ 0200 Machining Center

## Machine Features

### Standard Features

- Cast aluminum machine base
- Built-in chip tray
- Aluminum cross slide
- Linear motion system:
  - Dovetail
  - Adjustable gibs
- Tooling/Accessories:
  - 3/8" tool holder
  - 1/8" high-speed steel, 4-flute, center-cutting end mill
  - Spindle locking pin
  - Hex keys
  - Set of hold-down clamps
- User's Guide/Software

### Safety Features

- Transparent Lexan® safety shield with interlock switch
- Emergency Stop switch on front panel
- Emergency Stop on keyboard
- Limit switch on Z axis
- Keylock on electronic control box

### Accessories

- Machining Center Fixture and Tooling Kit
- End Mill Set
- Long Flute End Mill Set
- Engraver Tool and Accessories
- Multiple Tool Change Kit
- Engraver Tool Set
- Machinable Wax Milling Stock
- Aluminum Milling Stock
- Name Badge Stock
- Name Plate Stock
- Air Vise Robotic Interface
- CAM Software
  - spectraCAM™ Milling and Turning
  - spectraCAM™ Milling
- CAD Software
  - spectraCAD™ Engraver (provided with all spectraCAM packages)

### Curriculum

- LearnMate Content: CNC Milling with spectraLIGHT 0200
  - spectraLIGHT 0200 Machining Center
  - spectraLIGHT CNCBase Software
  - Machining Center Fixtures and Tools
  - End Mill Package
  - Safety Glasses (2 ea)
  - Machinable Wax

## Machine Specifications

### Axis Travel

X Axis	8.5"	(216 mm)
Y Axis	4.5"	(114 mm)
Z Axis	5.5"	(140 mm)
Open Height	7.62"	(194 mm)

### Work Area

Table Size	13" x 2.75"	(330 mm x 70 mm)
No. of T-Slots	2	

### Spindle

Drive Motor	1/3 hp, 249 W
Motor Type	DC Permanent Magnet
Speed Range	200 - 2,500 RPM
Spindle Bore	0.375" (9.52 mm)
Throat	3.5" (89 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%), 50-60 Hz, 15A
International	230 VAC (+5%/-10%), 50-60 Hz, 8A

### Dimensions

Width	22"	(559 mm)
Depth	22"	(559 mm)
Height	25"	(635 mm)

### Weight (approximate)

Machine	80 lbs.	(36 kg)
Shipping	120 lbs.	(55 kg)

### System Interfaces

- PCI bus to host computer
- Robotic interface with TTL I/O
- Optically isolated AC outputs

### 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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