



## F-SERIES FIBER LASERS FQ10 and FQ20

Innovative, compact and flexible F-SERIES Fiber Lasers are perfectly suited for marking applications that require 24/7 “set and forget”, unattended operation.

Select the **FQ10** for low to medium speed applications and the **FQ20** when higher power/faster process speeds are required. The FQ20 features upgraded power. Both lasers offer the additional long-term safeguard of built-in, polarization/optical isolators.



Example — Laser marking on Coated Label Stock



## Zenith® FQ10 and FQ20 Laser Systems

### LASER SPECIFICATIONS

Compliance ..... CDRH, CE, UID  
 Wavelength ..... 1,060nm  
 Laser Type ..... Ytterbium Fiber Laser, Galvo Steered  
 Laser Source ..... Diode-pumped, Fiber to Fiber, Pulsed  
 Pulse Repetition..... 20 KHz to 125KHz  
 Average Power FQ10..... 10 Watts  
 Average Power FQ20 ..... 20 Watts  
 Long term Output Power ..... <5% Instability  
 Peak Power FQ10..... >4KW  
 Peak Power FQ20..... >8KW  
 Beam Quality .....  $M^2 < 2$   
 Fiber Length FQ10..... 5 Meters (16 ft) Std.  
 Fiber Length FQ20..... 3 Meters (9.8 ft) Std.  
 Optical Isolator FQ10..... Standard  
 Optical Isolator FQ20..... Standard  
 Positioning..... Visible Red Diode Light. 636nm

Marking Speed ..... Raster = 300 CPS; Vector > 500 CPS  
 (application dependent)  
 Input Power ..... Selectable 115VAC / 230VAC, 50/60HZ  
 Cooling ..... Air Cooled, Fan/Filter  
 (no water cooling required)  
 Operating Temperature Range..... 10° to 42° C Non-Condensing  
 (50° F to 107° F)  
 Expected MTTF (Diode)..... Greater than 100,000 hours



Customized Part Handling Options Available



Features DATA MATRIX™ 2-D Code Marking Capability — Meets all Department of Defense UID Requirements

28181 River Drive • Circleville, Ohio 43113, USA  
 Tel.: 740-477-5000 • 800-654-5696 • Fax: 740-477-5001

[www.telesis.com](http://www.telesis.com)

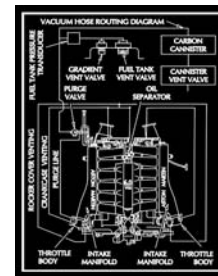


## F-SERIES FIBER LASERS FQ10 and FQ20

Powered by 110/230VAC with no water-cooling requirements, these units are extremely dependable over a long life, and are backed by a full TWO-YEAR factory warranty.

*"All of your employees seem to be willing and able to give that "little bit extra" to make everything go right. The laser marking equipment you have supplied to us thus far has been totally reliable and continues to perform flawlessly, helping Federal-Mogul Corporation reduce costs as it continues to improve product quality. I look forward to a continued relationship with the people I consider my "friends" at Telesis Technologies."*

**Best Regards,**  
Ed Reinemeyer  
Process Engineer,  
Federal-Mogul Corporation



**Example**  
Laser marking  
on Coated Label  
Stock



Features DATA MATRIX™ 2-D Code Marking Capability —  
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## Zenith® FQ10 and FQ20 Laser Systems

### DIMENSIONS

- FQ10 Marking Head... 51.0 (L) x 12.7 (W) x 14.0 (H) cm 20.1" (L) x 5.0" (W) x 5.5" (H)  
Weight 6.82 kg (15 lbs.)
- FQ10 Laser Controller ..... Standard Rack Mount  
42.5 (W) x 13.7 (H) x 50.8 (D) cm  
(16.7" (W) x 5.4" (H) x 20.0" (D))  
Weight 15 kg (33 lbs.)
- FQ20 Marking Head... 51.0 (L) x 12.7 (W) x 14.0 (H) cm 20.1" (L) x 5.0" (W) x 5.5" (H)  
Weight 6.82 kg (15 lbs.)
- FQ20 Laser Controller ..... Standard Rack Mount  
42.5 (W) x 13.7 (H) x 50.8 (D) cm  
(16.7" (W) x 5.4" (H) x 20.0" (D))  
Weight 15 kg (33 lbs.)

### SOFTWARE

- Software..... Merlin® II LS
- Operating System ..... Windows® 2000, Windows XP, or Windows Vista™
- Font Generation ..... True Type Fonts
- Barcodes and Matrix..... 2D Data Matrix TM, PDF417, BC 39, Interleaved 2 of 5, UPCA/UPCE BC 128, Maxi Code, Code 93, QR Code and Others
- Graphic Formats ..... Raster and Vector, BMP, .GIF, .JPG, .WMF, .EMF, .PLT, .DXF
- Serialization ..... Automatic and Manual Input Host Interface Capable
- Linear Marking..... Scalable with Letter Spacing Control
- Arc Text Marking ..... Scalable and Adjustable
- Drawing Tools ..... Line, Rectangle, Arc, Circle
- Interface..... Serial , I/O and Host capable
- Power Monitoring ..... Self-Calibrating, Output Power Feedback and Auto Adjustment

### LENS CONFIGURATIONS AVAILABLE

Focal Length	Marking Field	Work Clearance
100mm	45mm x 45mm (1.8" x 1.8")	97mm (3.82")
160mm	90mm x 90mm (3.5" x 3.5")	176mm (6.93")
163mm	110mm x 110mm (4.3" x 4.3")	185mm (7.28")
254mm	155mm x 155mm (6.1" x 6.1")	296mm (11.65")
* 330mm	215mm x 215mm (8.4" x 8.4")	387mm (15.23")
* 420mm	275mm x 275mm (10.8" x 10.8")	493mm (19.40")

\* Application dependent