Fiber Laser Technology

The SmartLase F500 fiber laser delivers a reliable turnkey coding solution for high-speed beverage can lines and other high throughput applications. The SmartLase F500 produces crisp permanent codes and meets your financial and sustainability goals.

Lower OpEx, fewer stoppages, clean and green

- **Eliminate the cost of consumables**
  With the F500 there is no need for ink and consumables, so the impact to your operating expenses (OpEx) is immediate.

- **Increase efficiency, reduce maintenance**
  The F500 improves production efficiency by maximizing the Overall Equipment Effectiveness (OEE) and minimizing losses caused by line stoppages. With the ES500i+, extraction and cooling are achieved with one unit; no additional cooling costs.

- **Clean, sustainable and compliant**
  The SmartLase F500 helps achieve your sustainability compliance goals by eliminating chemical components. The F500 helps you make your beverage production truly environmentally friendly.

Crisp, high quality, permanent codes

- **Clean, readable, traceable**
  Even at the highest line speeds and product throughput, the SmartLase F500 provides reliable traceability that minimizes rework and recall costs.

- **Permanent**
  Indelible marking produced by the fiber laser reduces counterfeiting - no rubbing, smudging, fading or faking.

- **Ultrafast**
  High-performance digital galvanometers with lightweight mirrors are driven by a proprietary lasing algorithm. This unique scribing method enables high quality consistent codes much faster than conventional vector lasers in both static and dynamic applications.

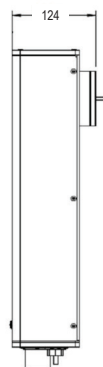## Proven reliability, global service

- **Designed for most challenging environments**
  Complete IP 55* controller and printhead ingress protection enables long and reliable operation in humid and sugar-infused beverage environments.

- **Install it and forget it**
  With the F500 and its excess of 100,000 hours meantime between failure (MTBF), you can count on laser source reliability of 98% in the first few years of service. This maximizes your total return on investment and delivers maintenance-free peace of mind.

- **Easy to operate**
  Intuitive touchscreen interface simplifies and automates code updates, minimizing user errors.

- **Markem-Imaje reliability and service support**
  Wherever you are, a Markem-Imaje representative is just a phone call away. 24 or 48 hour on-site repair service level agreement (SLA) available in most geographic locations.
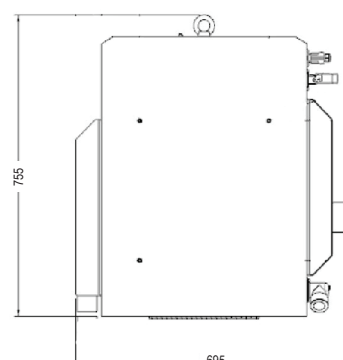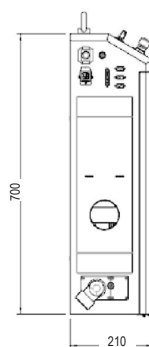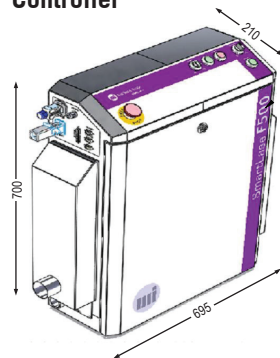
*Ingress protection

SmartLase F500 - Specifications

Laser printhead

490
110
124

Controller

210
700
695
700
210
755
695

Model name	SmartLase F500
Laser type and properties	• 50 W 1064 nm Ytterbium pulsed fiber laser • Digital galvanometers, pulse frequency 50 kHz and higher
Applications/substrates	• Aluminum and steel beverage cans, flexible film, bare metals, some plastics and polymers (e.g. HDPE, PP, PVC, PS, etc.) * • Coding in stationary or moving "on the fly" applications
Beverage can line speed (max.) in cans per hour	• Up to 120 m/m or 1750 cans per minute (18 alpha-numeric characters 2.6 mm high in two lines, on 66 mm diameter cans) *
Marking speed (max.)	• Up to 640 m/m or 2400 characters/s *
Print features	• Number of text lines: limited only by character height and allowable print area • Character height: from 1 mm to allowable print area • Fonts: English/Latin character/numerals; Unicode: Katakana/Hiragana/Kanji (JIS Level 1 and Level 2); Chinese (GB2312 No.1 and No.2)/Symbols; Laser Font: arabic, arialpro, crossfree, haspalver, hspal, newmod, newpal rus, newpal, ocr-a, ocr-b, ocr-b2; CrystallFont: cryst5x5 RUS, cryst5x5, cryst7x5 RUS, cryst7x5 • 1D and 2D barcodes (static or dynamic) NW-7, JAN (EAN)/UPC , GS1 DataMatrix , JAN(EAN)/UPC CC-A, CC-B GS1 DataBar: Standard, truncated, stacked, stacked omnidirectional, limited, expanded, expanded stacked: CC-A, CC-B GS1-128 CC-A, CC-B, CC-C – with message design software. • Logos, graphics in DXF, BMP, JPG, GIF, PNG, ICO, VGF, PLT, PCX, TIFF, TGA formats • Sequence and serial numbering, automatic date, shift and time coding, real-time clock; online coding of individual data (weight, contents, etc.), timestamps • Linear, circular, angular text marking; rotation, reflection, expansion, compression of marking contents, etc.
Interface and control	• Standard I/O: Ethernet, RS-232/422, encoder, photocell/sensor, extractor controls, alarms, remote interlocks (dual channel) • Direct laser control with TCP/IP or RS232 • Event-handler allows flexible integration by configuring the laser to send or receive data via TCP/IP, extract data from files or write to files in response to printing or operator events • Standard pointing diode (635 nm red) • Message storage capacity: 512 MB for resident jobs
Options and accessories	• All stainless steel variable height laser stand, ES500i+ cooler/extractor, contactless encoder for beverage can lines, custom guarding tunnel, conventional photocell/sensor, conventional encoder, alarm beacon, touch screen interface, handheld terminal, optional lenses (see below) • 6" touchscreen interface in English (Default); Chinese; Czech; Deutsch; Finnish; French; Greek; Italian; Japanese; Korean; Polish; Portuguese; Russian; Spanish; Turkish.
Coding area and focal distance (mm)	• Lens 55 x 55 mm / FD 100 mm • Lens 100 x 100 mm / FD 162 mm (standard) • Lens 160 x 160 mm / FD 254 mm • Lens 212 x 212 mm / FD 346 mm • Lens 242 x 242 mm /FD 420 mm
PC software	• Software available for message editing in Arabic; Chinese; Czech; Danish; Deutsch; Dutch; English (Default); Spanish; French; Hebrew; Hungarian; Indonesian; Italian; Japanese; Korean; Malaysian; Polish; Portuguese (Brazil); Russian; Serbian; Thai; Turkish; Vietnamese; Swedish. • CoLOS support upon request
Physical characteristics	• Ingress protection: Controller: IP55, Printhead: IP55 • EN ISO 13849-1 and -2 safety performance level: PLd • Operating temperature range: +5°C (41°F) to +40°C (104°F) at 100% duty cycle • Operating humidity: 10 to 95% non-condensing • Electrical power supply: 1 phase 115/230 V 50/60 Hz, 700VA • Dimensions: Controller: 210 x 700 x 695 mm; Printhead: 490 x 110 x 124 mm; Interconnecting cable length: 3 m • Weight: Controller 35 kg, Printhead: 7 kg • Outer material: Controller: stainless steel, Printhead: stainless steel and anodized aluminum • Laser source MTBF: 100,000 hours • Cooling: air cooled. No plant air required for cooling; ES500i+ cooling/extractor

*Depends on the substrate and size/complexity of printed message. Please consult with Markem-Imaje representative for your application.

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