

AREX400 AF

 DATALOGIC

EASY MULTI-LEVEL MARKING. FIT THE TIGHTEST SPACES.
AUTOMATE WITHOUT LIMITS.



The AREX400 AF is a new fiber laser marker that defines a significant advancement in Industrial Marking applications in such sectors as Automotive, Industrial Electronics, Machine Tools and Home Appliances.

The AREX400 AF is equipped with an Adjustable Focus (AF) module to allow dynamic focus distance adjustment through an internal optical Z-shifter. The AF module adds an extra z-axis field, enabling the laser to mark Z surfaces within a specified volume (several f-theta options available) with consistent quality and precision.

The AF functionality allows to effortlessly mark multi-tiered components, seamlessly adapt to format changes and easily compensate installation errors and tolerances.



PRODUCT HIGHLIGHTS

- Pulsed fiber laser source with power ranging from 10 W to 100 W.
- 20 W MOPA fiber laser source, 10 selectable pulse durations for extended flexibility on a broad range of materials.
- Internal Z focus shifter (adjustment range up to +/- 60 mm).
- Compact and rugged scanhead IP64.
- Robotic-grade conduit between rack and scanhead.
- 19" control rack includes marking controller and power supply.
- Renewed industrial-grade PC with HDMI video output. Windows 10 IoT LTSC 2021
- Supports MARVIS (*) functionality for code validation and code grading with DATALOGIC's MATRIX code scanners.
- Programmable digital I/O's, up to 4 external stepper axis controllers.
- Built-in industrial protocols TCP/IP, EtherNet/IP, and PROFINET (*).
- Powered by new LIGHTER™ Suite 9.
- Embedded Safe Laser Off (SLO) module for failsafe laser shutdown in EN ISO 13849-1 compliant integrations; fully solid-state circuitry, not subject to wear, unlimited switching operations.

APPLICATION

- Direct Part Marking traceability (1D/2D codes)
- Branding
- Logo marking
- Functional marking

TARGET INDUSTRIES

- Automotive
- Industrial Electronics
- Machine Tools
- Home Appliances
- General Manufacturing

(*) additional SW licenses required for MARVIS or PROFINET.

CUSTOMER BENEFITS

- **Software-controlled focus adjustment:** The new AF feature dramatically simplifies installation and commissioning, compensating for tolerances and possible installation errors of the scanhead. The Smart Focusing function helps triangulate the focus position in the entire adjustment range.
- **Marking on steps, easily:** The new AREX400 AF enables marking on multi-tiered components. The Z-shifter controls precisely a real Z-axis, allowing the laser to mark multiple surfaces within a pre-defined volume.
- **Format change in a flash:** In Lean Manufacturing scenarios, the new AREX400 AF streamlines format changes in lines that process several types of workpieces, ensuring precise Z-position control with minimized changeover times and costs.
- **Autofocus with Distance Sensor:** The AREX400 AF, when paired with an (optional) micrometric Distance Sensor, provides a real autofocus function that compensates positioning errors or deviations in workpieces' height.



MARKING SOFTWARE

LIGHTER™ 9 showcases a new user interface engineered to simplify design, setup, runtime and diagnostic.

The workspace of Laser Editor, the design and configuration application, now offers more space for layout editing. The revised Laser Interface application is designed to manage automatic and dynamic operations, remote fieldbus communication and diagnostic/logging.

LIGHTER™ is designed to offer unmatched efficiency and adaptability stand-alone stations, semiautomatic machines and fully automatic unattended production lines.



TARGET INDUSTRIES AND APPLICATIONS

Industrial Electronics



Electronic enclosure

Automotive



Cast aluminum component

Home Appliances



Dishwasher valve

Machine Tools



Carbide tools

Automotive



Painted-metal motor body

Automotive



Fiberglass-reinforced PA66 part

Machine Tools



Ball bearing

Industrial Electronics



Multi-tiered thermoplastic case

TECHNICAL DATA

PARAMETER	AREX 42M-xAF	AREX410-xAF	AREX420-xAF	AREX430-xAF	AREX450-xAF	AREX40C-xAF
Nominal average power	W	20	10	20	30	100
Source type		MOPA	Pulsed fiber			
Wavelength	nm	1055-1075				
Pulse Energy (max.)	mJ	1				
Peak Power (max.)	kW	10				
PulseWidth (typ.)	ns	1.5 ÷ 350	100			
Pulse Repetition rate	kHz	2 ÷ 950	2 ÷ 500			
Aiming & Focusing Beam		2x 655 nm (class II)				
Scanning head		XY galvanometer + Z focus shifter				
F-theta available		160mm M; 254mm M; 420mm L				
Working distance	mm	Depending on f-theta: 158 ± 20; 261 ± 40; 492.5 ± 60				
Marking Area	mm ³	Depending on f-theta(*): 90 × 90 × 40; 140 × 140 × 80; 285 × 285 × 120				
Operating temperature	°C	5 to 40				5 to 35
IP rating scanhead / rack		IP64 / IP31(**)				
Control rack cooling		Forced air				
Noise	dB(A)	< 65 at 1 meter				
Input voltage	V	100-240 VAC 50/60 Hz				
Max power consumption	W	350				600
Scanhead dimensions (HxWxD)	mm	95.4 × 89.2 × 312.5 (***)				
Control rack dimensions (HxWxD)	mm	111 × 427 × 433.5				157.7 × 427 × 433.5
Umbilical cord length	m	3				
System weight scanhead / rack	kg	3.5 / 17.5 (***)				3.5 / 23.5
Scanhead installation		Any orientation; static or dynamic				
PC and controller		Windows 10 IoT LTSC; Intel embedded computer; embedded marking controller				
PC interface		5x USB, 3x LAN, 1x RS-232, HDMI®				
Marking capabilities		Static, Rotary axis, Extended layer, On-the-fly Up to 4 external axes (stepper motors)				
I/Os		Up to 10 digital inputs and 12 digital outputs (programmable), encoder M12, photocell M12, MATRIX code scanner, analog distance sensor				
Software		LIGHTER™ 9 Suite. Includes Laser Editor, Laser Interface and Project Editor.				
Software capabilities		True Type fonts, Datalogic fonts 1D codes, Datamatrix, QR, micro-QR. More than 100 symbologies and variants. Imported graphics (DXF, DWG, PLT, AI, PDF) and logos (BMP, JPG, TIFF, PNG)				
Max number of layouts		Unlimited				
Communication		Ethernet TCP/IP 10-100 Mbit, Ethernet/IP, Profinet, Digital I/Os				

(*) With AF module enabled. (**) When rack installed horizontally; IP30 when vertical. (***) Without f-theta.

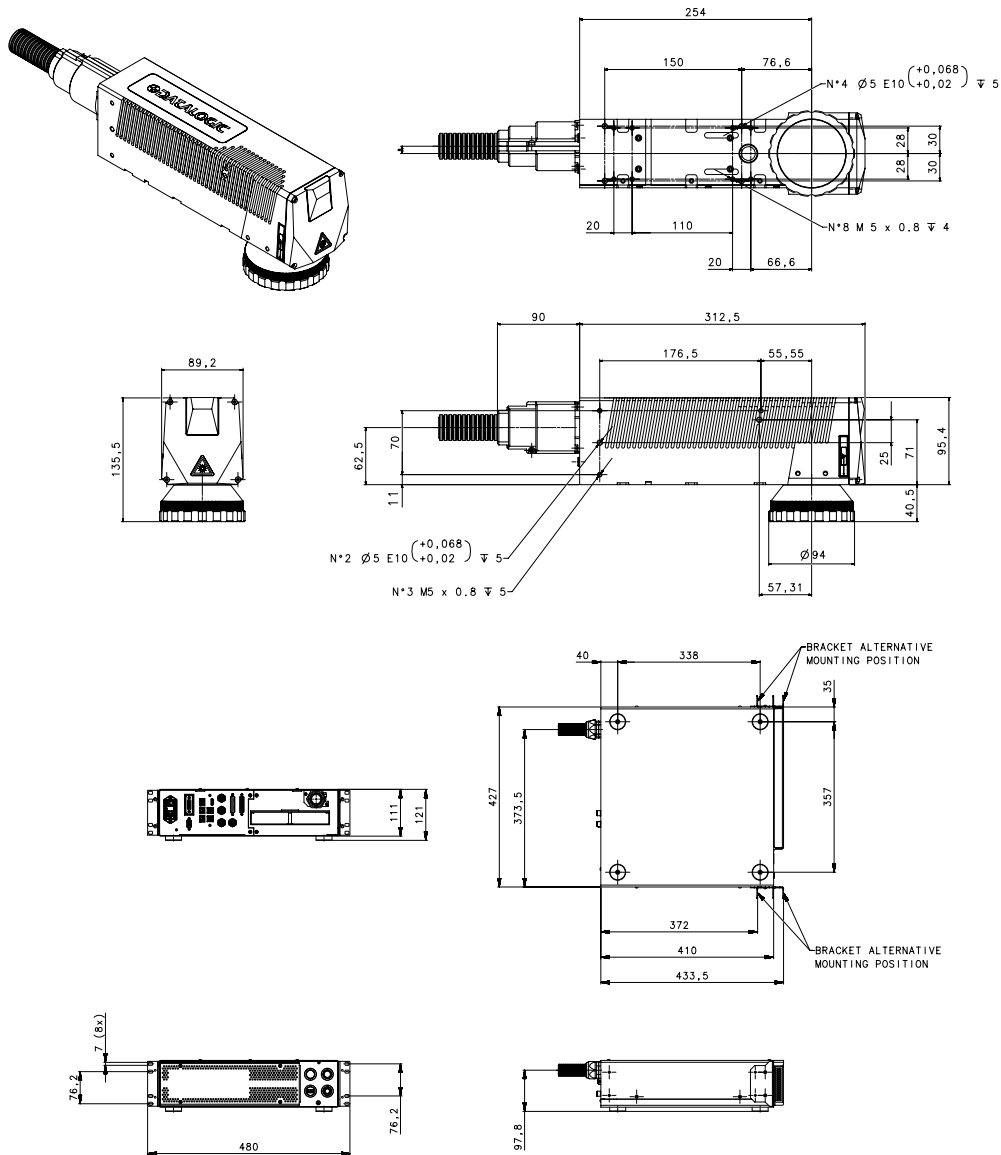
MODELS SELECTION AND ORDER INFORMATION

Important: All AREX400 AF models below are shipped without mains power cable. The desired cable can be ordered according to the destination region; see ACCESSORIES.

ORDER NO.	MODEL	DESCRIPTION
985180149	AREX 410-MAF FIBER MARKER	AREX 410-MAF, 10W FIBER MARKER, IR@1070NM, F160M-M60, WIN10, ADJUSTABLE FOCUS
985180150	AREX 410-NAF FIBER MARKER	AREX 410-NAF, 10W FIBER MARKER, IR@1070NM, F254M-M60, WIN10, ADJUSTABLE FOCUS
985180153	AREX 420-MAF FIBER MARKER	AREX 420-MAF, 20W FIBER MARKER, IR@1070NM, F160M-M60, WIN10, ADJUSTABLE FOCUS
985180154	AREX 420-NAF FIBER MARKER	AREX 420-NAF 20W FIBER MARKER, IR@1070NM, F254M-M60, WIN10, ADJUSTABLE FOCUS
985180156	AREX 420-BAF FIBER MARKER	AREX 420-BAF, 20W FIBER MARKER, IR@1070NM, F420L-M85, WIN10, ADJUSTABLE FOCUS
985190011	AREX 42M-MAF FIBER MARKER	AREX 42M-MAF, 20W MOPA FIBER MARKER, IR@1070NM, F160M-M60, WIN10, ADJUSTABLE FOCUS
985190012	AREX 42M-NAF FIBER MARKER	AREX 42M-NAF, 20W MOPA FIBER MARKER, IR@1070NM, F254M-M60, WIN10, ADJUSTABLE FOCUS
985190014	AREX 42M-BAF FIBER MARKER	AREX 42M-BAF, 20W MOPA FIBER MARKER, IR@1070NM, F420L-M85, WIN10, ADJUSTABLE FOCUS
985180157	AREX 430-MAF FIBER MARKER	AREX 430-MAF, 30W FIBER MARKER, IR@1070NM, F160M-M60, WIN10, ADJUSTABLE FOCUS
985180158	AREX 430-NAF FIBER MARKER	AREX 430-NAF, 30W FIBER MARKER, IR@1070NM, F254M-M60, WIN10, ADJUSTABLE FOCUS
985180160	AREX 430-BAF FIBER MARKER	AREX 430-BAF, 30W FIBER MARKER, IR@1070NM, F420L-M85, WIN10, ADJUSTABLE FOCUS
985180161	AREX 450-MAF FIBER MARKER	AREX 450-MAF, 50W FIBER MARKER, IR@1070NM, F160M-M60, WIN10, ADJUSTABLE FOCUS
985180162	AREX 450-NAF FIBER MARKER	AREX 450-NAF, 50W FIBER MARKER, IR@1070NM, F254M-M60, WIN10, ADJUSTABLE FOCUS
985180164	AREX 450-BAF FIBER MARKER	AREX 450-BAF, 50W FIBER MARKER, IR@1070NM, F420L-M85, WIN10, ADJUSTABLE FOCUS
985180165	AREX 40C-MAF FIBER MARKER	AREX 401-MAF, 100W FIBER MARKER, IR@1070NM, F160M-M60, WIN10, ADJUSTABLE FOCUS
985180166	AREX 40C-NAF FIBER MARKER	AREX 401-NAF, 100W FIBER MARKER, IR@1070NM, F254M-M60, WIN10, ADJUSTABLE FOCUS
985180168	AREX 40C-BAF FIBER MARKER	AREX 401-BAF, 100W FIBER MARKER, IR@1070NM, F420L-M85, WIN10, ADJUSTABLE FOCUS

DIMENSIONS

Example model AREX 420-MAF:



ACCESSORIES

ORDER NO.	MODEL	DESCRIPTION	MODEL
93ACC0444	US POWER CORD 2m w/ V-Lock AREX 400AF	All models	US socket power cable w/ pull out prevention; 2 m
93ACC0445	EU POWER CORD 2m w/ V-Lock AREX 400AF	All models	Europe socket power cable w/ pull out prevention; 2 m
93ACC0446	CN POWER CORD 2m w/ V-Lock AREX 400AF	All models	China socket power cable w/ pull out prevention; 2 m
93ACC0447	STRIPPED POWER CORD 2m w/ V-Lock AREX 400AF	All models	Stripped power cable w/ pull out prevention; 2 m
93ACC0448	ANALOG DISTANCE SENSOR KIT AREX400AF	AREX 4xx-MAF, AREX 4xx-NAF	With mounting bracket, YAG filter, cable
93ACC0371	F-THETA PROTECTIVE CAP FOR MEDIUM LENS	AREX 4xx-MAF, AREX 4xx-NAF	Replaceable lens protection cap
985330031	CONTROL BOX STANDARD	All models	Control box for X1 connector
93ACC0413	EXTERNAL FOCUS FINDER for AREX400	AREX 4xx-BAF	Auxiliary focusing beam
985340038	LAS FUME EXTRACTOR BASIC 230VAC	All models	50-50 mm hose (4 m) + 50 mm nozzle
985340040	LAS FUME EXTRACTOR BASIC 115VAC	All models	50-50 mm hose (4 m) + 50 mm nozzle
985340039	LAS FUME EXTRACTOR PRO 90-257VAC	All models	75-50 mm hose (4 m) + 50 mm nozzle
93ACC1919	PROFINET LICENSE FOR LIGHTER	All models	Profinet license for LIGHTER™
93ACC0372	MARVIS BRACKET FOR MEDIUM AND LARGE LENSES	All models	MATRIX mounting bracket
93ACC1918	MARVIS SW LICENSE	All models	MARVIS license for LIGHTER™

(*) placeholder 'x' indicates an alphanumeric digit



Rev. 1, 02/2026

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