VULQ1-S / FLASH series

MULTIBEAM LASER MARKING SYSTEMS

The fastest laser marking solution in the market.

VULQ1™ product offer overview

BETTER LASER SOLUTIONS FOR A BETTER MANUFACTURING

Laser is the production tool of the future. But the way laser solutions are designed today limits their performance.

Conventional laser processing reaches 3 limits:

- **Throughput limit:** with high power laser available, throughput is limited by the speed of the laser beam onto the sample. This is particularly true for high resolution applications.
- **Economical limit:** adding to the processing time induced by throughput limit, it is frequent to use only part of the available laser power.
- **Environmental limit:** laser processing is intrinsically a green production tool, it will be even greener running at 100% of its capacity.

Multibeam laser processing with VULQ1™ unlocks these three bottlenecks.

Multibeam processing is the combination of dynamic laser beam shaping with **VULQ1™** and traditional laser beam delivery systems.

Powered by our patented programmable multibeam technology, VULQ1™ accelerates laser processing manyfold compared to conventional laser marking.

VULQ1-S SYSTEMS
FLASH series

- Model NS NIR
- Model NS VIS

VULQ1-S SYSTEMS
BEAMS series

- Model NS NIR
- Model NS VIS
- Model FS NIR

VULQ1-M / Modules

- BBD-P010
- NIR-P050
- VIS-P050
- NIR-P100

VULQ1-S / FLASH series
MULTIBEAM LASER MARKING SYSTEMS

VULQ1-S / FLASH series *deliver markings in a single laser pulse, millions of times faster than any other marking solutions.*

VULQ1-S / FLASH is a stand-alone multibeam laser marking system, ready for integration into all production environments, production line or stand-alone machine.

Featured operation mode is FULL-STAMP marking breakthrough innovation, internationally patented, which delivers **markings in one single laser pulse** (2D code, logo, alphanumerics).

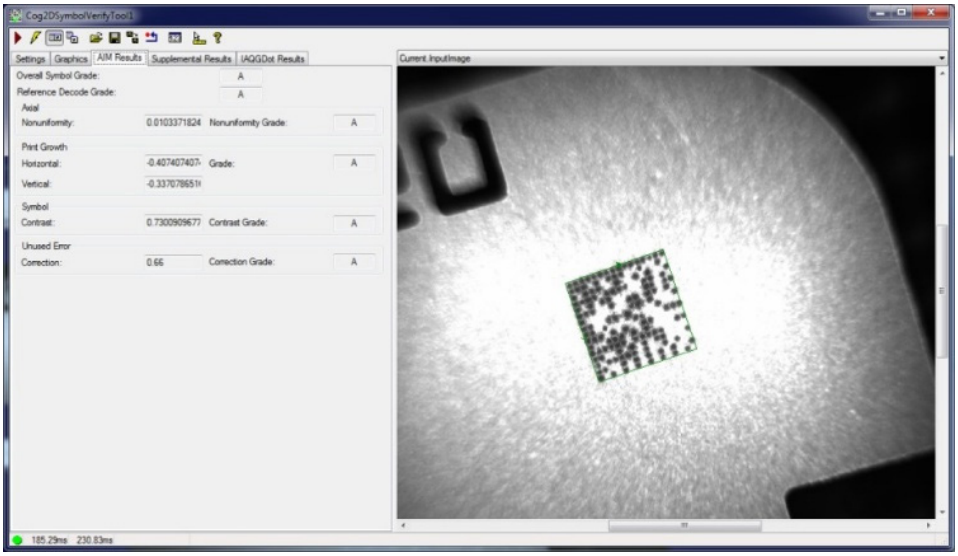
VULQ1-S / FLASH series are available in 1064 nm and 532 nm single wavelength, up to 40 mJ energy at 100 Hz to deliver tens of unique Datamatrix codes per second.

MAIN APPLICATIONS

- In-line product and components serialization
- High-speed micro-codes marking
- Anticounterfeiting

FEATURES

- **Shortest marking time of the market**
- Code size down to 500 µm
- Dynamically configurable beam shape and Z focus



More applications ?

Check our website

www.qiova.com

Figure 1:Grade A microcode marking with VULQ1-S FLASH NIR (IC chip)

Product line	Model	Max energy	Max power	Pulse duration	Wavelength	Materials	Marking time
VULQ1-S FLASH series	NIR	40 mJ	4 W	ns	1064 nm	Metals, coated materials, polymers, molded compound	**< 10 ns**
	VIS	40 mJ	4 W	ns	532 nm	Polymers, films, multilayers, elastomers	**< 10 ns**

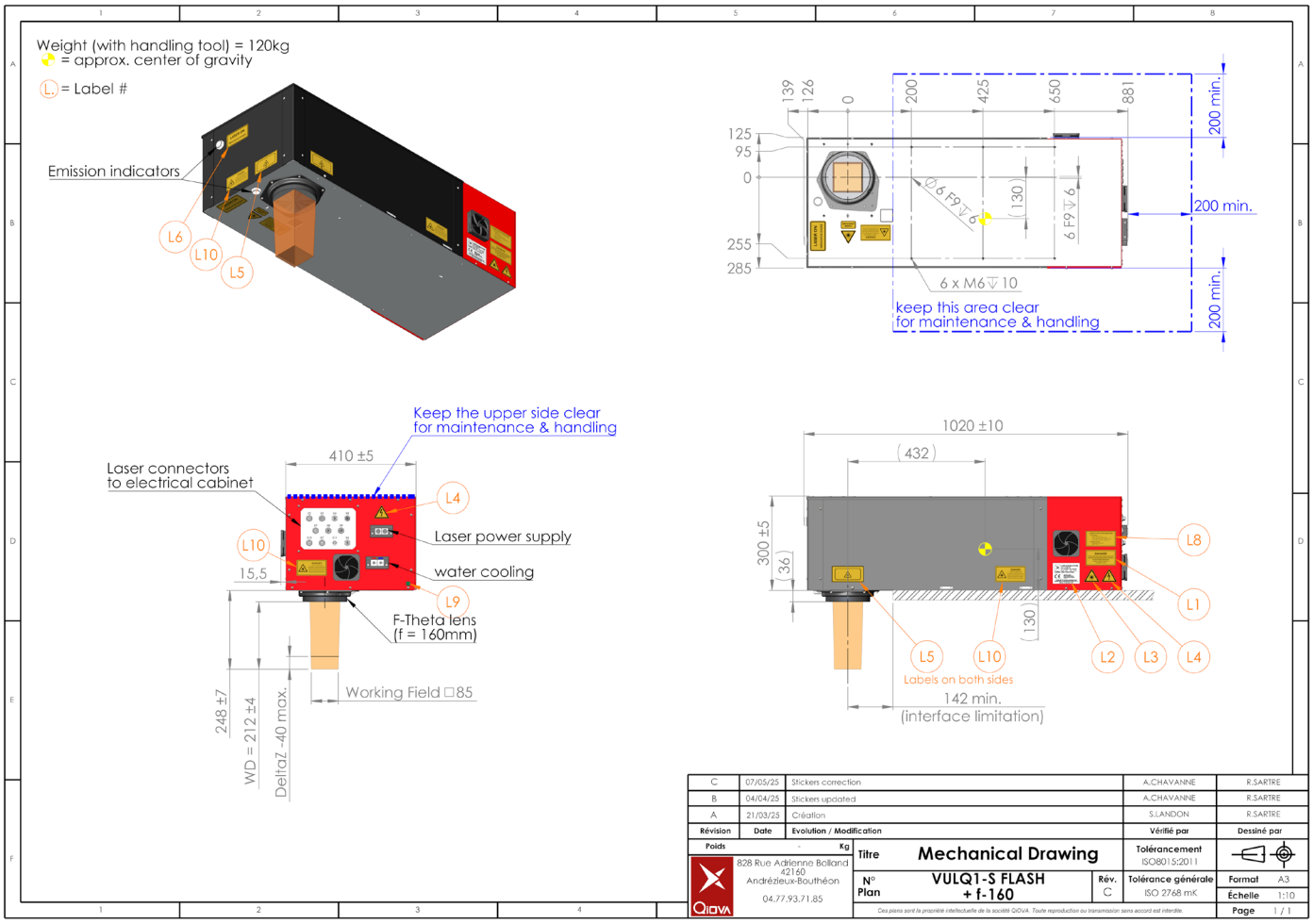
Figure 2: FLASH series overview

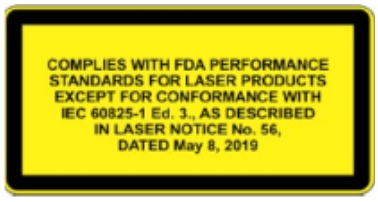
Specifications

MODEL		FLASH NIR	FLASH VIS
Laser processing			
Laser output			
Wavelength		1000-1100 nm	500-550 nm
Max power		4 W	4 W
Pulse duration		< 10 ns	< 10 ns
Max pulse energy[1]		40 mJ	40 mJ
Max Pulse Repetition Rate		100 Hz	
Optical output			
F-theta focal length		F80, F160	F80, F160
Working distance range		80 - 220 mm	80 - 220 mm
Max 3D scanning volume		100 mm x 100 mm x 40 mm	100 mm x 100 mm x 40 mm
Modes of operation			
Single beam processing		NO	NO
Multibeam processing		NO	NO
FULL-STAMP marking		YES	YES
PIXEL-STAMP marking		NO	NO
Dimensions and weight			
Laser head			
Laser head max dimensions	Length	1030 mm	
	Width	431 mm	
	Height	461 mm	
Laser head max weight		120 kg max. without handling tool	
Electrical cabinet			
Max dimensions		0,6 m x 0,6 m x 2 m	
Max weight		200 kg max.	
Cable length to laser head		5 m standard	
Safety and norm			
Laser safety class[2]		4	
Safety level performance[3]		d	
Safety contacts type		Dry contacts	
CE compliance		YES	
Utility & ambiant			
Electrical input	Voltage	230 VAC	
	Frequency	50-60 Hz	
	Supply	3 different lines 14 A / 8,2 A / 6 A	
	Max Power	6,5 kVA	
PLC communication		Ethernet, EthernetIP, ProfiNet	
Electrical outputs	Opto outputs (open collector)	Supply voltage : 5 V (not provided)	
		Commuting level : 5 V	
		Sink current : 35 mA	
	DAC	Max 15 mA	
		Software adjustable Max voltage (2.5 V / 5 V / 10 V)	
		Max frequency 800 kHz	
Environment			
Temperature	Min storage range	10-40°C, non condensing	
	Min operation range	20-30°C, non condensing	
Humidity		< 80%, non condensing	

[1] *Depends on pulse duration and wavelength – contact us for more details capabilities*
[2] *According to IEC 6025-1:2014*
[3] *According to ISO 13849-1:2023*

Laser head drawing with F160 lens





QiOVA follows a policy of continuous product improvement.
Specifications are subject to change without notice.

VULQ1-S / FLASH series
MULTIBEAM LASER MARKING SYSTEMS

QIOVA SAS - ACTIPARC
828, rue Adrienne Bolland
42160 Andrézieux-Bouthéon
France
+33 477 937 185
sales@qiova.fr