TECHNICAL SPECIFICATIONS

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VULCAN Series

Technical specifications, Vulcan (LMDS 2850) LIBS (Laser Induced Breakdown Spectroscopy) analyser

DC-input voltage range	12.0 – 15.0 V
Operating temperature range	0 °C – 40 °C / 32 – 104 F
Storage temperature range	0 °C – 40 °C / 32 – 104 F It is recommended to store the instrument in room temperature when not in use
Operating humidity range	20 % RH – 95 % RH
Maximum operating altitude	2000 m / 6500 ft.
Ingress protection	IP54 (NEMA 3 equivalent)
MIL-STD-810G tests:	Operating drop (method 516.6, Procedure IV: Pass), Vibration (method 514.6, Procedure I: Pass) and functional shock (method 516.6, Procedure I: Pass)

Laser

Laser type	Passively Q-switched laser
Average power	< 0.45W
Wavelength	1064 nm
Pulse width	2-4 ns
Pulse energy	< 60 uJ
Repetition rate	<7.5 kHz
Beam quality M2	< 1.3
Beam half-divergence	30 mrad
Laser class	3B
Maximal permissible exposure (MPE)	50 W/m^2
Nominal ocular hazard distance (NOHD)	2.6 m

Complies with 21 CFR 1040 with deviations pursuant to Laser Notice 50

Spectrometer

Wavelength range	245 – 505 nm for Vulcan Smart and Expert 245 – 635 nm for Vulcan Optimum

Eye protection

Eye protection recommendation	OD6+ (1064 nm) or, 1064 R LB6 D LB6 (according to EN207)

Battery

Battery part number	OI IA, 54-6000887
Battery type	Li-ION
Battery voltage	7.2 V
Battery capacity	6.2 Ah

Technical specifications, battery charger

Battery charger part number	OI IA, 54-6002586
Operating temperature range	0 °C – 40 °C / 32 – 104 F
Operating humidity range	10 % RH – 90 % RH
DC-input Voltage range	12.0 VDC – 15.0 VDC
Maximum operating altitude	2000 m / 6500 ft

Note: the battery charger is designed for indoor use only

Power supply

Power supply part number	OI IA, 54-6003398
Output voltage	12 VDC
Operating temp range	0 °C – 40 °C / 32 – 104 F
Mains supply voltage range	100 VAC – 240 VAC
Mains supply current	0.35 A, maximum
Mains supply frequency range	50 Hz – 60 Hz
Maximum operating altitude	2000 m / 6500 ft

Note: the power supply is designed for indoor use only

Radio module

LMDS2850 (Vulcan) is handheld material analyser using ‘WIFI, IEEE 802.11b/g module’ made by Texas Instruments (FCC ID: ZYH-WL18SBMOD, IC ID: 9963A-WL18SBMOD) for WLAN.

The device has USB port for transferring data from the device. The EUT uses battery which can be charged when it is connected to the device or via separate charger.

EN 300 328: Maximum TX power for 2.4 GHz Wi-Fi (E.I.R.P): 19.9dBm

The module’s Bluetooth 802.11n, HT40 and MIMO capabilities have been disabled

Standard accessories and consumables

Vulcan Series Quick Guide
Power supply with mains plugs for US/Japan, UK, Europe and Australia
Desktop Battery charger
Two Li-ion battery packs
USB Flash Drive (includes the User Manual and Quick guide)
Cleaning kit (100 pcs cotton buds)
Lanyard
Wrist Strap
Nose Opening Tool
Check Sample for Vulcan Expert+ (Al 7075)
Check Sample for Vulcan Optimum+ (Al 7075)
Check Sample for Vulcan Smart+ (SS 316)
Calibration Folder
Carrying Case set

Calibrations (Vulcan Smart+)

Cobalt (Co), copper (Cu), lead (Pb), low alloy steels, nickel (Ni), stainless steels, tin (Sn), titanium (Ti), tool steels, zinc (Zn)

Calibrations (Vulcan Optimum+)

Aluminium (Al, incl. Li in Al), copper (Cu), magnesium (Mg), titanium (Ti)

Calibrations (Vulcan Expert+)

Aluminium (Al), cobalt (Co), copper (Cu), lead (Pb), low alloy steels, magnesium (Mg), nickel (Ni), stainless steels, tin (Sn), titanium (Ti), tool steels, zinc (Zn)

Dimensions and weight

Dimensions	97 mm (W) x 291 mm (L) x 274 mm (H)
Weight	1.5 kg (with battery)