

Technical Data

LSA Standard/UV & LSA VIS/IR-I

		Unit	
Measurement Range	Standard (330 – 1180 nm)		■
	UV-I (248 – 1180 nm)		■
	UV-II (192 – 800 nm)		■
	UV-II-VIS (192 – 1180 nm)		■
	VIS / IR-I (330 – 1750 nm)		■
Absolute Accuracy LSA Standard/UV ¹⁾	192 – 330 nm ²⁾	pm	6
	330 – 420 nm		3
	420 – 1180 nm	GHz	6
Absolute Accuracy LSA VIS/IR-I	VIS: 330 – 420 nm	pm	6
	VIS: 420 – 1060 nm	GHz	6
	IR-I: 1060 – 1750 nm		25
Quick Coupling Accuracy (with multi mode fiber)		GHz	20 ³⁾
Wavelength Deviation Sensitivity/ Measurement Resolution LSA Standard/UV	192 – 330 nm ²⁾	pm	5
	330 – 420 nm		3
	420 – 1180 nm	GHz	3
Wavelength Deviation Sensitivity/ Measurement Resolution LSA VIS/IR-I	VIS: 330 – 420 nm	pm	3
	VIS: 420 – 1060 nm	GHz	6
	IR-I: 1060 – 1750 nm		12
Resolving Power ($\lambda/\Delta\lambda$) ⁴⁾ LSA Standard/UV		Singlemode Multimode fiber ¹⁰⁾	20000 10000
Resolving Power ($\lambda/\Delta\lambda$) ⁴⁾ LSA VIS/IR-I	VIS: 330 – 1060 nm IR-I: 1060 – 1750 nm		20000 10000 4000 2000
Linewidth Measurement Accuracy ⁶⁾ LSA Standard/UV		GHz	7
Linewidth Measurement Accuracy ⁶⁾ LSA VIS/IR-I	VIS: 330 – 420 nm	pm	3
	VIS: 420 – 1060 nm	GHz	7
	IR-I: 1060 – 1750 nm		40
Required Input Energy and Power ⁷⁾	Standard	μJ (or μW)	0.0001 – 0.04
	UV-I, UV-II		0.0001 – 0.1
	IR-I		0.02 – 2
Measurement Speed	Data Acquisition		500
	Wavelength and spectrum calculation	Hz	300
	Wavelength and spectrum calculation with live display		100
Maximal Linewidth		THz	1.5
Diffraction Grating ⁹⁾	FSR		~5.4
Coupling Fiber Diameter			Single mode fiber set, 50 μm MM fiber, use of single mode fiber recommended
Calibration			Built-in calibration ⁸⁾
Calibration Period			≤ 1 month
Warm-up Time			No warm-up time under constant ambient conditions. Otherwise until thermal and air pressure equilibrium is reached
Dimensions L × W × H		mm	325 × 180 × 77
Weight		kg	2.8
Interface			High-speed USB 2.0 connection
Power Supply			Power consumption < 2.3 W, supply directly via USB cable; IR-II & IR-III: external power supply included

Technical Data

LSA IR-II

	Unit	
Measurement Range	nm	IR: 1000 – 2250 + VIS: 500 – 1000
Absolute Accuracy ²⁾		IR-II: 25, VIS: 60
Wavelength Deviation Sensitivity/ Measurement Resolution	GHz	IR-II: 12, VIS:30
Resolving Power ($\lambda/\Delta\lambda$) ⁴⁾	Singlemode	IR-II: 2800, VIS: 2000
	Multimode fiber ¹⁰⁾	IR-II: 2000, VIS: 1000
Linewidth Measurement Accuracy ⁶⁾	GHz	IR-II: 60, VIS: 70
Required Input Energy and Power ⁷⁾	μJ (or μW)	0.02 – 2
Calibration		SLR-1532 or 3.39 μm HeNe calibration laser (not included)
Calibration Period		≤ 15 days

Technical data Measurement Speed, Maximal Linewidth, Diffraction Grating, Coupling Fiber Diameter, Warm-up Time, Dimensions, Weight, Interface and Power Supply: see technical data of LSA Standard/UV & LSA VIS/IR-I (identical)

LSA IR-III

	Unit	LSA IR-III TYPE 2 – 3	LSA IR-III TYPE 2 – 6	LSA IR-III TYPE 2 – 11
Measurement Range	nm	1400 – 3000	1400 – 6000	1400 – 11000
Absolute Accuracy ¹⁾	nm	1	2	5
Relative Accuracy		1.25×10^{-4}	3×10^{-4}	5×10^{-4}
Wavelength Deviation Sensitivity/Measurement Resolution		0.7×10^{-4}	1.5×10^{-4}	2.5×10^{-4}
Spectral Resolution ($\Delta\lambda$)	nm	15	20	30
Linewidth Measurement Accuracy ⁵⁾			15%	
Maximal Linewidth	THz		1	
Measurement Speed ⁶⁾	Wavelength and spectrum calculation		100	
	Wavelength and spectrum calculation with live display		100	
Required Input Energy and Power ⁷⁾	Pulsed		10	
	cw		1	
Diffraction Grating	FSR		~ 2.7	
Coupling Fiber			PIR-550/600 or CIR-550/600	
Calibration			SLR-1532 or 3.39 μm HeNe calibration laser (not included)	
Calibration Period			≤ 15 days	
Warm-up Time			No warm-up time under constant ambient conditions. Otherwise until thermal and air pressure equilibrium is reached	
Dimensions L x W x H	mm		325 × 180 × 77	
Weight	kg		3.0	
Interface			High-speed USB 2.0 connection	
Power Supply			External power supply included	

1) According to 3σ criterion.

2) With multi mode fiber.

3) Use of multi mode fibers only for standard range.

4) Spectral resolution $\Delta\lambda = \lambda / R$; R = resolving power. According to Rayleigh criterion.

5) But not better than 5% of the linewidth.

6) Depending on PC hardware and settings. Without autocalibration usage.

7) The required cw power P can be calculated based on the exposure time t (1-10000 ms) and the pulse energy E using the equation $P=E/t$.

8) IR-II and IR-III: external calibration sources required, e.g. SLR-1532.

9) Each instrument in each mode can measure lasers with a linewidth up to 30% of the corresponding FSR.

10) Please use 50 μm MM fibers.

Please do not use fibers > 50 μm.