Specifications of Micro Raman Detection System

Microscope

Microscope model	XSP-9C
Z-axis focusing system	Coarse and fine Coaxial focus Minimum graduation:2μm, Limit stopper device
X/Y Mobile stages size	180mm*150mm
Stage moving range	50mm*75mm
Camera	MUC-500 USB high definition micro Camera (Optical)

Microobjective

Model	Magnification (X)	Numerical aperture （NA）	Working distance （mm）	Spot diameter （μm）
PL-101	10	0.1	19.8	120
PL-102	20	0.25	5.0	75
PL-103	40	0.65	0.66	50
PL-104	100	0.76	2.7	15

Camera

Chip	CMOS，colorized，progressive scanning
Chip size	1/2.5inch(4:3)
Imaging scope	5.70mm(H) x 4.28mm(V)
Effective Pixels	2592H x 1944V
Pixels size	2.2μm x 2.2μm
Picture Resolution (Optical)	2592x1944/1920x1080/1280x720/640x480
Video Resolution	720P/15fps
Bit depth	12-bit
Noise of amplitude	38.1dB
Operating temperature(℃)	-10-50
Data interface	High speed USB 2.0
Lens mount	Standard C-mount

Laser

Wavelength （nm）	785±0.3	532±0.5
Mode	Single	Single
Spectral line width (cm^{-1})	<2	<0.5
Output power (mW)	>350， >450	1-1000
Power stability (pk-pk,4 hours)	<2%	<1%,<3%,<5%

Output fiber	100μm @0.22NA	100μm @0.22NA
Noise of amplitude (rms)	<0.5%，<1%	<0.5%
Operating mode	CW	CW
Warm-up time(minutes)	<5	<10
Operating temperature (℃)	-10-40	15-35
Expected lifetime (hours)	10000	10000
Warranty	1 year	1 year

Spectrometer

Wavelength range	785-1100nm(785nm 激发)	532-700nm(532nm 激发)
Optical resolution	5-8cm^{-1}(785nm 激发)	8-12cm^{-1}(532nm 激发)
Pixels	2048 pixels	
Pixels size	14μm*14μm	
Dimensions (mm)	149*109*50	
Weight (g)	1000	
Signal-to-noise ratio	10000:1	
Integration time	17ms-10s	
Power consumption	450mA@5VDC	
Data transfer speed	Full scans into memory every 4 milliseconds with USB 2.0; every 18 milliseconds with USB 1.1	
Inputs/outputs	5inputs and 5 outputs (opto-isolator inputs/outputs)	
Analog channels	One 12 analog input one 12 analog output	
Connector	30pin connector	

Software

Optical spectrum analysis	Raman Analysis 2.0
Camera imaging	Imaging
Operating system	Windows XP/Win7（32 bits or 64 bits）