

PACTO SPECTROMETER



TECHNICAL DATA

SPECIFICATIONS

	Pacto 2K	Pacto 4K
Optical Bench	Symmetrical Czerny-Turner design, 75 mm focal length; Pacto bench	
Wavelength range	200 - 1100 nm	
Stray light	0.1 - 1% (typical value 300l/mm, blaze 250nm < 0.3%)	
Sensitivity	365.000	261.000
Detector	HAM S11639, CMOS linear array, 2048 pixels (14x200 µm)	HAM S13496, CMOS linear array, 4096 pixels (7x200µm)
Signal/Noise	375:1	365:1
Dynamic Range	4500	
Dark noise	15 cnts	
AD converter	16-bit, 6 MHz	
Integration time	9 µs – 30 s	
Interface	USB 2.0 (480Mbps) / pigtailed (38cm) USB-A	
Sample speed on-board averaging	1.15 ms /scan	1.19 ms/scan
Data transfer speed	1.15 ms /scan	1.19 ms/scan
Digital I/O	5 bidirectional programmable I/O; 1 Analog out, 1 Analog in, 1x5V	
Dimensions, weight	105 x 80 x 20 mm, 277,5 grams	
Power supply	Default USB power, 500 mA	
Temperature range	5-55 °C	

GRATINGS

Use	Useable range (nm)	Spectral range (nm)	Lines/mm	Blaze (nm)	Order code
UV/VIS/NIR	200-1100**	891**	300	300	MN0300-0.30
UV/VIS	200-850	515	600	300	MN0600-0.30
UV	200-750	247-218*	1200	250	MN1200-0.25
UV	200-650	163-143*	1800	UV	MN1800-0.25
UV	200-580	113-69*	2400	UV	MN2400-0.25
UV	200-400	69-45*	3600	UV	MN3600-0.25
UV/VIS	250-850	515	600	400	MN0600-0.40
VIS/NIR	300-1100**	792**	300	500	MN0300-0.50
VIS	360-1000	495	600	500	MN0600-0.50
VIS	300-800	247-218*	1200	500	MN1200-0.50
VIS	350-750	142-89*	1800	500	MN1800-0.50
VIS	350-640	74-49*	2400	VIS	MN2400-0.50
NIR	500-1050	495	600	750	MN0600-0.75
NIR	500-1050	218-148*	1200	750	MN1200-0.75
NIR	600-1160	346-297*	830	800	MN0830-0.80
NIR	600-1100**	495**	300	1000	MN0300-1.00
NIR	600-1100	495	600	1000	MN0600-1.00

* Depends on the starting wavelength of the grating; the higher the wavelength, the bigger the dispersion and smaller the range to select

** Please note that not all pixels will be used for the useable range

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RESOLUTION PACTO 2K

Slit size (μm)	10	25	50	100	200	500
300 lines/mm grating	1.0	1.4	2.5	4.8	9.2	21.3
600 lines/mm grating	0.40-0.53*	0.7	1.2	2.4	4.6	10.8
830 lines/mm grating	0.32	0.48	0.93	1.7	3.4	8.5
1200 lines/mm grating	0.20-0.28*	0.27-0.38*	0.52-0.66*	1.1	2.3	5.4
1800 lines/mm grating	0.10-0.18*	0.20-0.29*	0.34-0.42*	0.8	1.6	3.6
2400 lines/mm grating	0.09-0.13*	0.09-0.13*	0.26-0.34*	0.44-0.64*	1.1	2.7
3600 lines/mm grating	0.06-0.08*	0.10	0.19	0.4	0.8	1.8

*Depends on the starting wavelength of the grating; the higher the wavelength, the bigger the dispersion and the higher the resolution.

RESOLUTION PACTO 4K

Slit size (μm)	10	25	50	100	200	500
300 lines/mm grating	0.50-0.70	1.20-1.30*	2.17	4.6	9.0	20.0
600 lines/mm grating	0.30-0.36*	0.58-0.60	1.17	2.20	4.5	10.0
830 lines/mm grating	0.25	0.48	0.93	1.7	3.4	8.0
1200 lines/mm grating	0.14-0.18*	0.30	0.62	1.08	2.2	5.0
1800 lines/mm grating	0.09-0.11*	0.18	0.36-0.40*	0.78	1.5	3.7
2400 lines/mm grating	0.07-0.09*	0.13-0.15*	0.26-0.32*	0.40-0.64*	1.1	2.7
3600 lines/mm grating	0.05-0.06*	0.10	0.19	0.4	0.8	2.0

*Depends on the starting wavelength of the grating; the higher the wavelength, the bigger the dispersion and the higher the resolution.

ORDERING INFORMATION

Order code	Ordering information
AvaSpec-PCT2048CL	Pacto compact fiber-optic spectrometer, 75 mm focal length, 2048 pixel CMOS detector, USB 2 powered interface, needs DCL, second order suppressing, replaceable slit
AvaSpec-PCT4096CL	Pacto compact fiber-optic spectrometer, 75 mm focal length, 4096 pixel CMOS detector, USB 2 powered interface, needs DCL, second order suppressing, replaceable slit
*OEM AvaSpec-PCT2048CL	OEM Pacto compact fiber-optic spectrometer, 75 mm focal length, 2048 pixel CMOS detector, USB 2 powered interface, needs DCL, second order suppressing, fixed slit
*OEM AvaSpec-PCT4096CL	OEM Pacto compact fiber-optic spectrometer, 75 mm focal length, 4096 pixel CMOS detector, USB 2 powered interface, needs DCL, second order suppressing, fixed slit

* Only for OEM customers

OPTIONS

Order code	Options information
SLIT-XX-PRS	Replaceable Slit for Pacto for non OSF configurations. Slit size, please specify XX = 10, 25, 50, 100, 200, 500 μm
SLIT-XX-PRSF	Replaceable Slit for Pacto for OSF configurations. Slit size, please specify XX = 10, 25, 50, 100, 200, 500 μm
*SLIT-XX-P	Fixed Slit for Pacto. Slit size, please specify XX = 10, 25, 50, 100, 200, 500 μm
OSC	Order sorting coating for grating MN 600-0.50
OSC-UA	Order sorting coating for grating MN 300-0.30
OSC-VA	Order sorting coating for grating MN 300-0.50
OSF-YYY-3	Order sorting filter for reduction of second-order effects, possible: YYY = 305, 395, 457, 515, 550, or 600 nm, depending on range
DCL	Detector Collection Lens. To be included

* Only for OEM customers

Avantes will select needed second order suppression based on desired configuration.