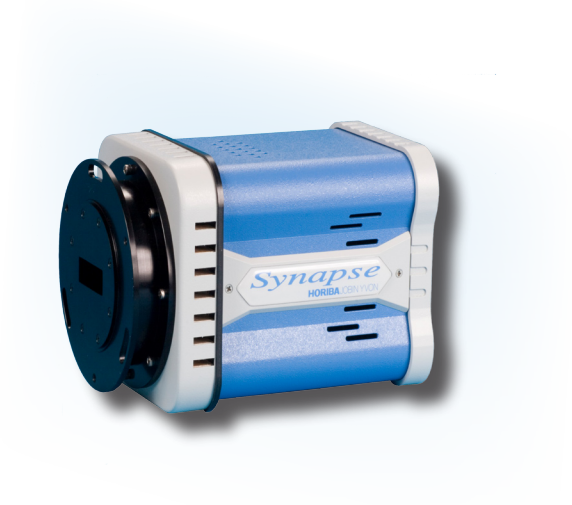
1024 x 256 BIDD

HORIBA JOBIN YVON

Synapse™ CCD



The HORIBA Jobin Yvon Back Illuminated Deep Depletion 1024 x 256 CCD is the best choice for low light level applications in the NIR (500 nm to 1000 nm) including Raman, Photoluminescence, and Fluorescence spectroscopy. It offers the advantages of the high quantum efficiency from back illumination and the Deep Depletion technology for minimizing etaloning effects (oscillations superimposed on the CCD data due to the layer thickness of the classical Back Illuminated chip).

Features	Benefits
Deep Thermoelectric Cooling	Low dark signal operation without the need for liquid nitrogen or auxiliary power
Excellent Linearity	Increased accuracy of data over the full dynamic range
Scientific Grade 1 CCD	Ideally suited for low light level detection in a variety of spectroscopic applications
Auxiliary Signal Input	Provides automatic reference corrections or extends wavelength scanning ranges with NIR detectors
Back Illuminated Deep Depletion Technology	Enhanced NIR response and reduced etaloning
USB 2.0 Interface	Standard connection interfaces to PC notebooks and desktops with 100% data integrity
HORIBA Jobin Yvon's SynerJY® Software	Complete control of a Synapse CCD and HORIBA Jobin Yvon Spectrograph system with full analysis capabilities
LabVIEW VIs and SDK Available	Flexible software to integrate a Synapse CCD into existing apparatus or as an OEM component

P/N: OSD-0062 SYN Rev. C

Specifications

CCD Format		1024 x 256, Back Illuminated Deep Depleted, Scientific Grade 1		
Pixel Size		26 µm x 26 µm		
Image Area		26.6 mm x 6.7 mm, 100% Fill Factor		
Cooling System		4 Stage Thermoelectric Cooling Guaranteed to -70 °C		
		Minimum	Typical	Maximum
System Read Noise	20 kHz		4.5 e- rms	6 e- rms
	1 MHz		15.5 e- rms	20 e- rms
Pixel Well Capacity		400 ke-	700 ke-	
Register Well Capacity			1000 ke-	
Dark Current			2 e-/pixel/s	3 e-/pixel/s
Nonlinearity		< 0.4 % at 20 kHz < 1 % at 1 MHz		
Scan Rates		20 kHz and 1 MHz, Software Selectable		
Software Selectable Gains		3 Software Selectable Gains		
Dynamic Range		16 bits		
Vertical Shift Rates		36 µs, 8 µs[1]		
Maximum Spectral Rate	20 kHz	13 Hz		
	1 MHz	280 Hz[1,2]		

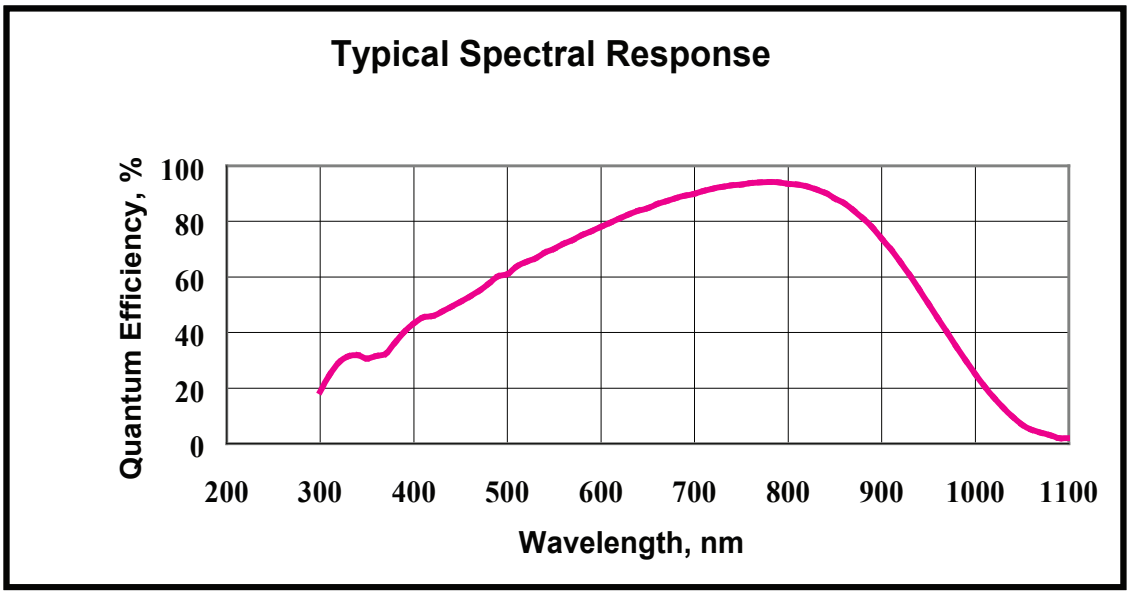
Specifications subject to change without notice.

Notes:

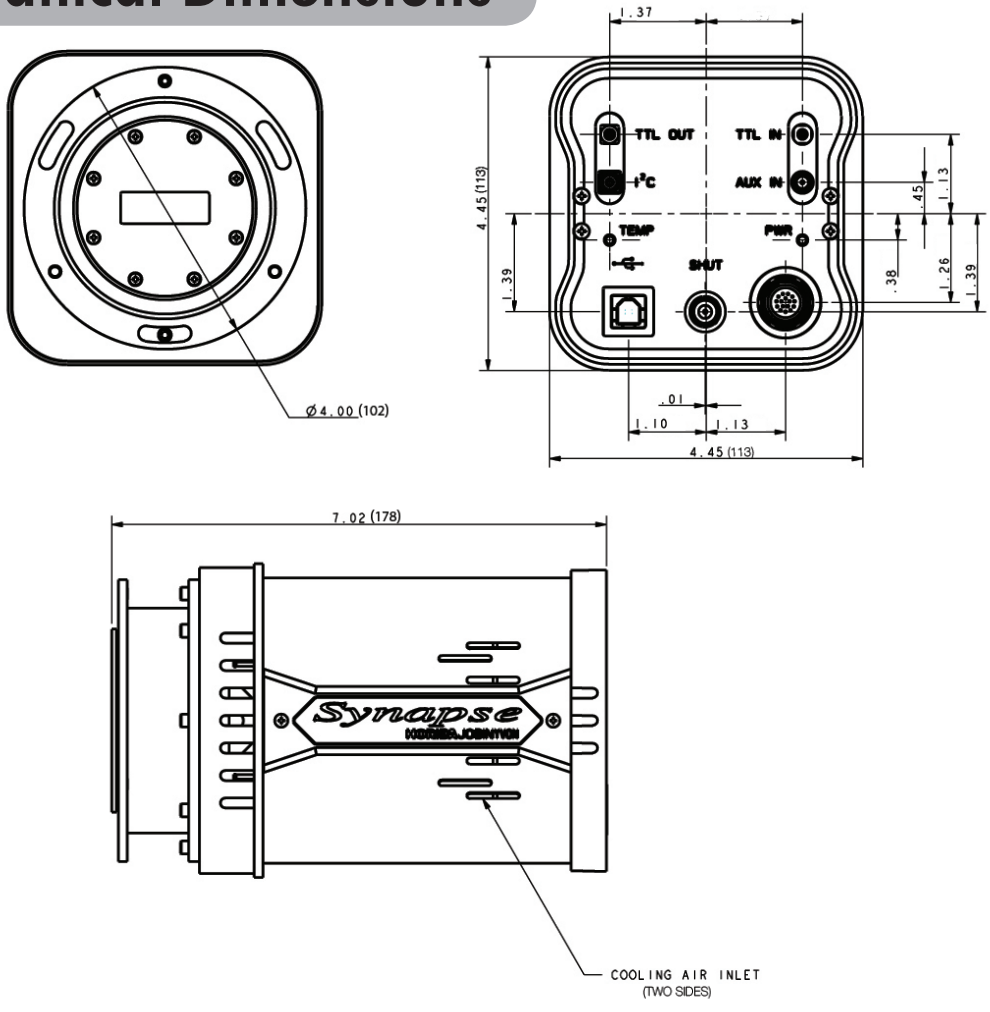
1 CCDs are guaranteed to have full Charge Transfer Efficiency (CTE) at our standard shift rate of 36 µs. At faster shift rates, a decrease in CTE may be observed.

2 Highest Spectral Rates are achieved when using the 1 MHz ADC, a Vertical Transfer Time of 8 µs.

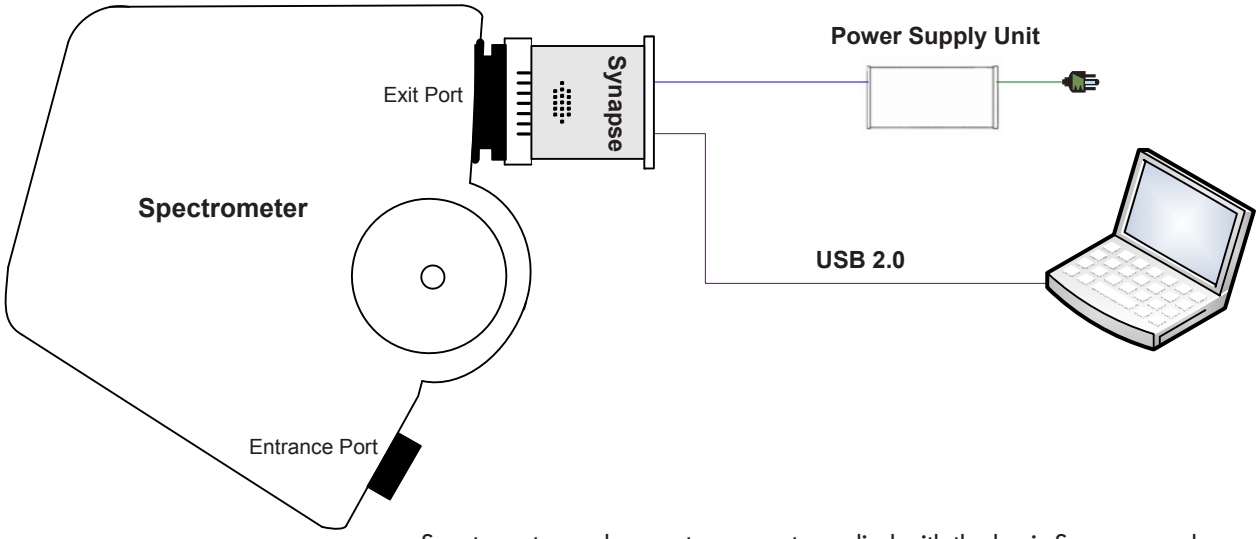
Quantum Efficiency



Mechanical Dimensions



Configuration



Spectrometer and computer are not supplied with the basic Synapse package.

Ordering Information

CCD-1024x256-BIDD-SYN: Synapse Thermoelectric Cooled CCD System

Our CCD packages include a CCD shutter for clean CCD charge transfer and background subtraction.