

# Summary Specifications

## Some Applications

- Raman
- LIBS
- Emission
- Absorbance
- Reflectance
- Fluorescence
- OEM Integrated Systems
- Photoluminescence
- Electroluminescence



## System Details

<b>CCD Sensor</b>	Industry Proven e2v CCD 30-11 High Performance Sensor
<b>Pixel Size</b>	26 x 26 $\mu\text{m}$
<b>Image Area</b>	26.624 x 6.656 mm
<b>Blemishes</b>	Grade 1 According to CCD Manufacturer's Specifications
<b>Standard ADC speed/bits</b>	250 KHz/16 Bits

## CCD Performance

<b>Spectrometric Well Capacity</b>	<b>Single Pixel Binned</b>	500 Ke- 1000 Ke-
<b>Dark Current</b>	FI @ -50°C	0.015 e/pix/sec
	BI @ -50°C	0.08 e/pix/sec
	OE @ -50°C	0.015 e/pix/sec

**Optional Cooling (Below Ambient Temp)**  
Typical Air Cooling 70°C  
Typical Liquid Chilled Cooling 95°C\*\*

**Other Optional Single ADC Speeds (Factory Set)**  
100KHz, 16 Bits  
500KHz, 16 Bits  
1MHz, 16 Bits

**System Read Out Noise**  
Typical @ 250KHz ~11.5 e-  
\*Optional 100KHz ~9.0 e-\*

**Data Interface**  
USB 2.0  
100 Mb Ethernet

\*100 KHz speed is factory set only\*

## Zion CCD Options

CCD 30-11 1024x256 26x26  $\mu\text{m}$   
**Front Illuminated**  
Standard  
Open Electrode  
Deep Depletion

**Back Illuminated**  
Standard  
UV Coating  
Broadband Coating  
Deep Depletion  
Deep Depletion IR Coating

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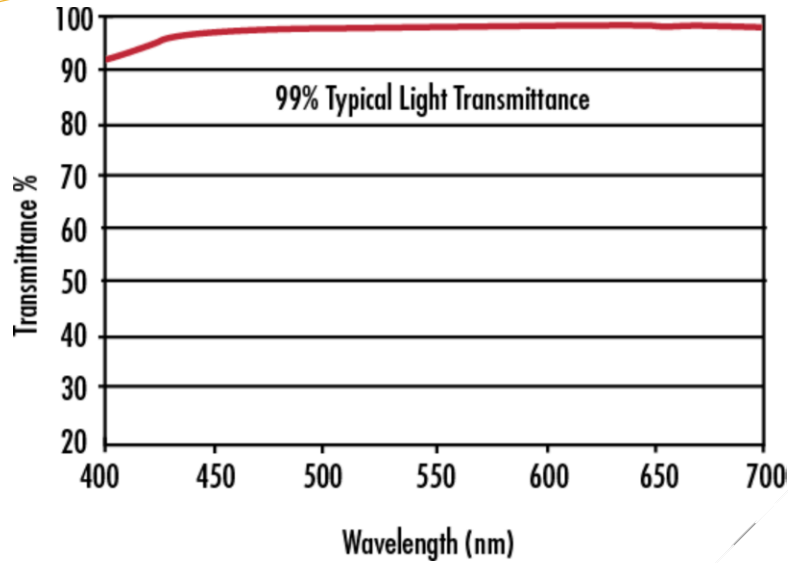
(SPECS ABOVE ARE AVERAGE/TYPICAL AND SUBJECT TO CHANGE)

\*\*Cooling of 95 degrees below ambient with 10°C liquid chiller and with Zion Deep Cooling option\*\*

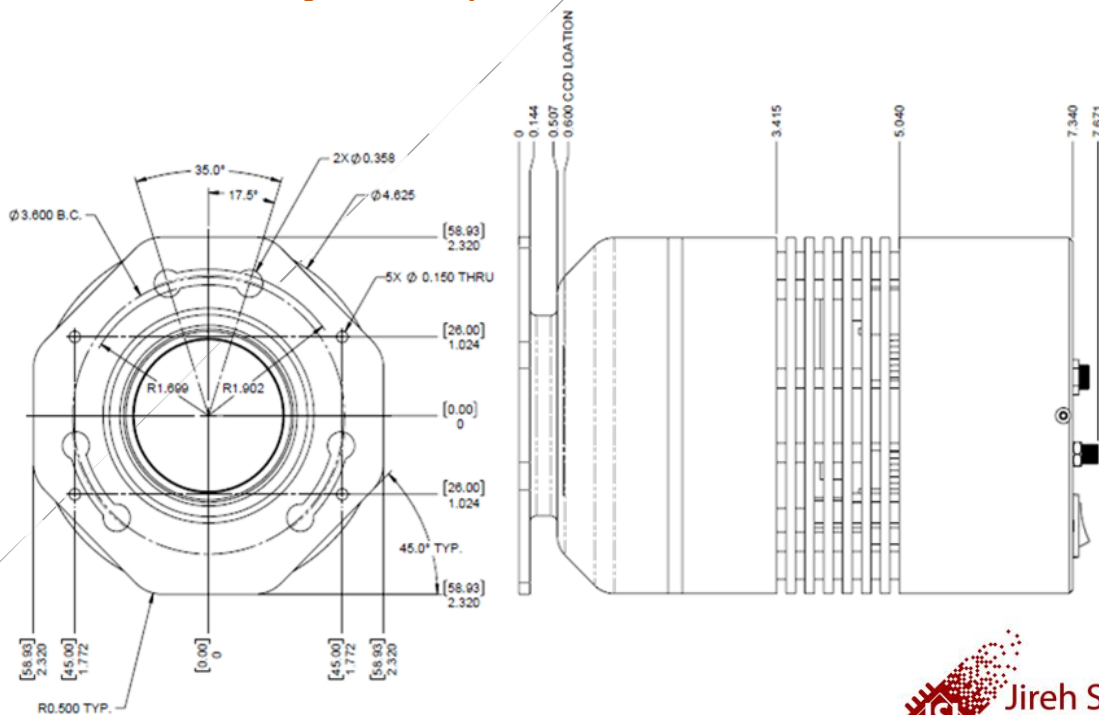


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# Additional Camera Specifications



Anti-Reflection (AR) Coated High Efficiency Window with a Broadband

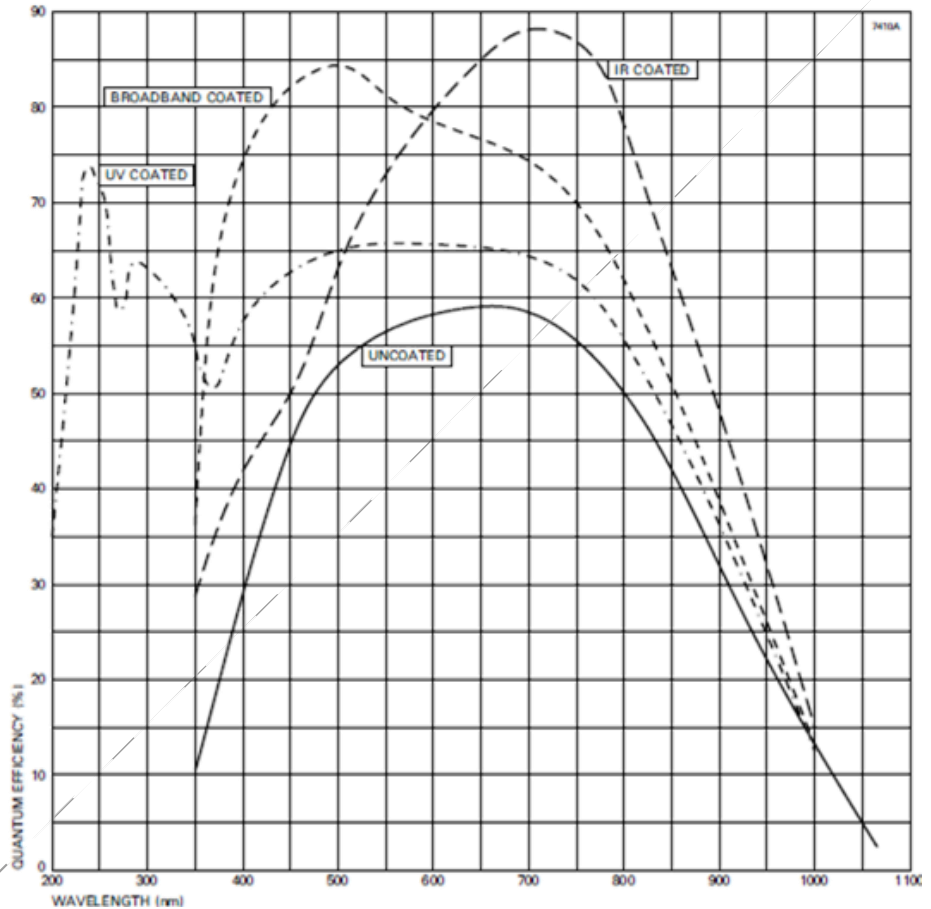


Spectrometer Mount and Camera Detail Drawing

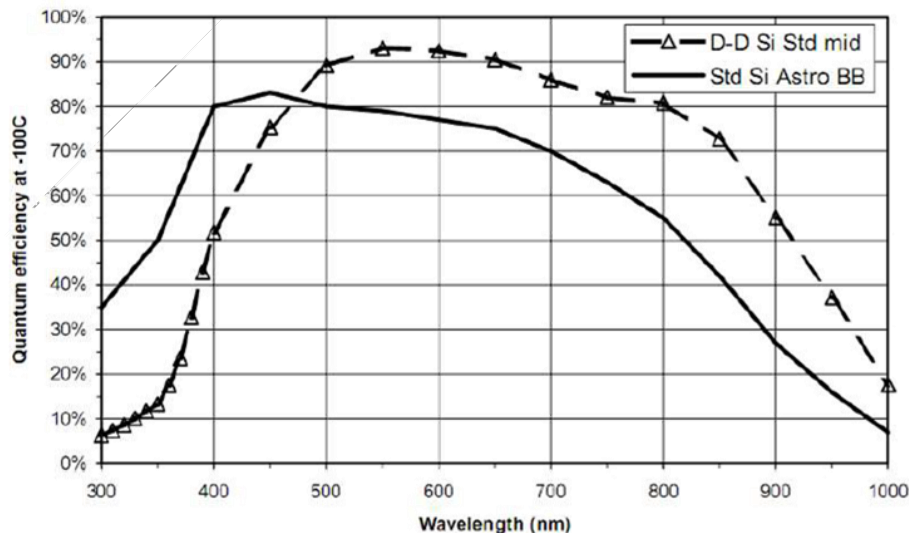


# Additional Camera Specifications

Typical Spectral Response for the JSI's Zion 256 BI camera -20°C, No window (Sensor specifications per the manufacturer).



Typical back illuminated quantum efficiency

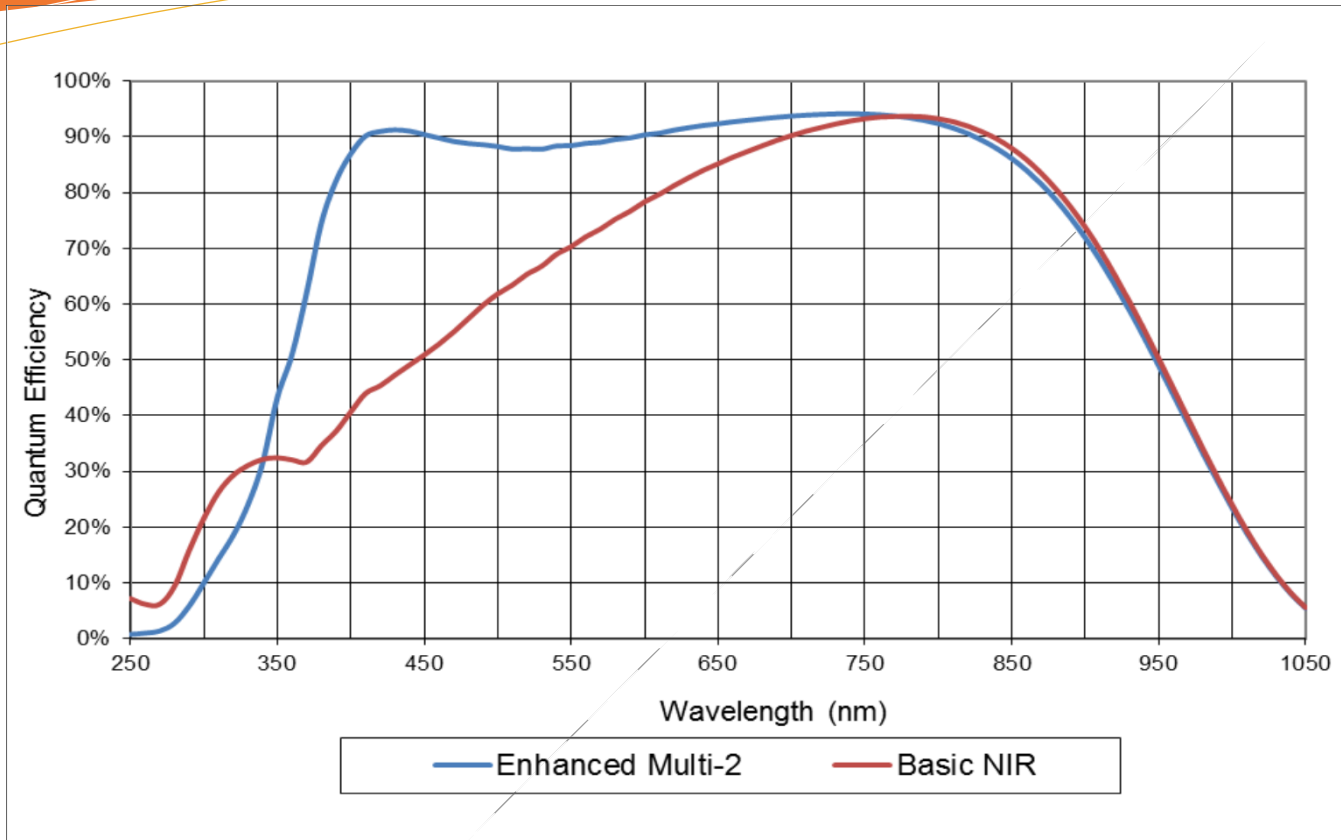


Comparison of the typical spectral response for the JSI's Zion 256 BI and JSI's Zion 256 BI DD (Sensor specifications per the manufacturer).

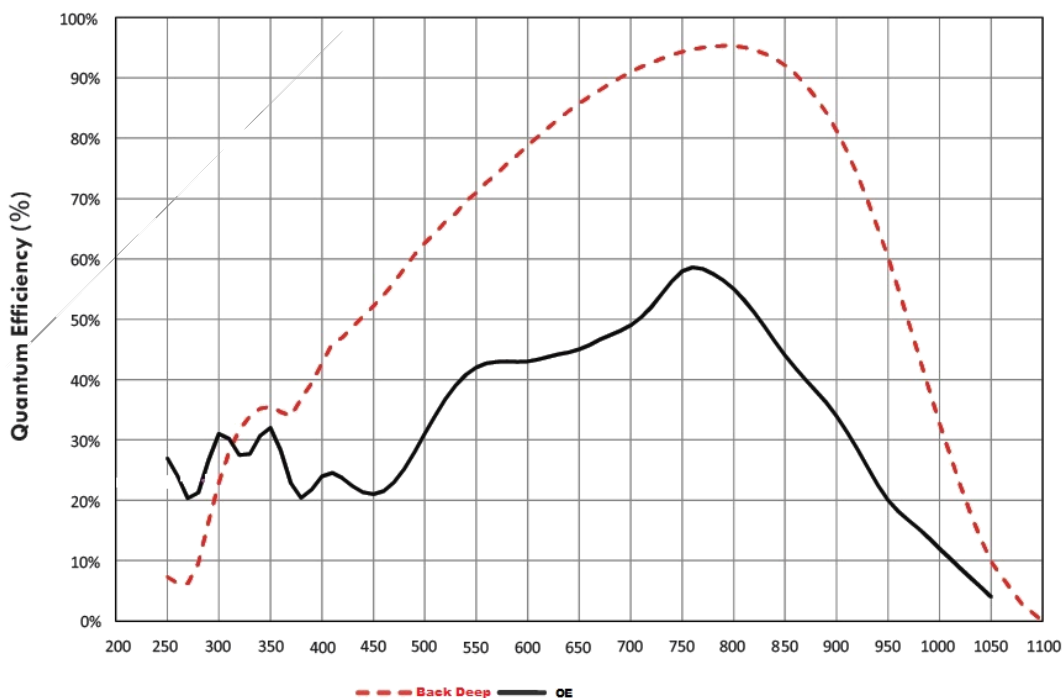


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# Additional Camera Specifications



Typical spectral response for the JSI's Zion 256 BI Deep Depletion for Enhanced NIR vs. Basic NIR coating at -30°C (Sensor specifications per the manufacturer).



Typical spectral response for the JSI's Zion 256 BI Deep Depletion for Enhanced NIR vs. Zion 256 FI Open Electrode (Sensor specifications per the manufacturer).



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