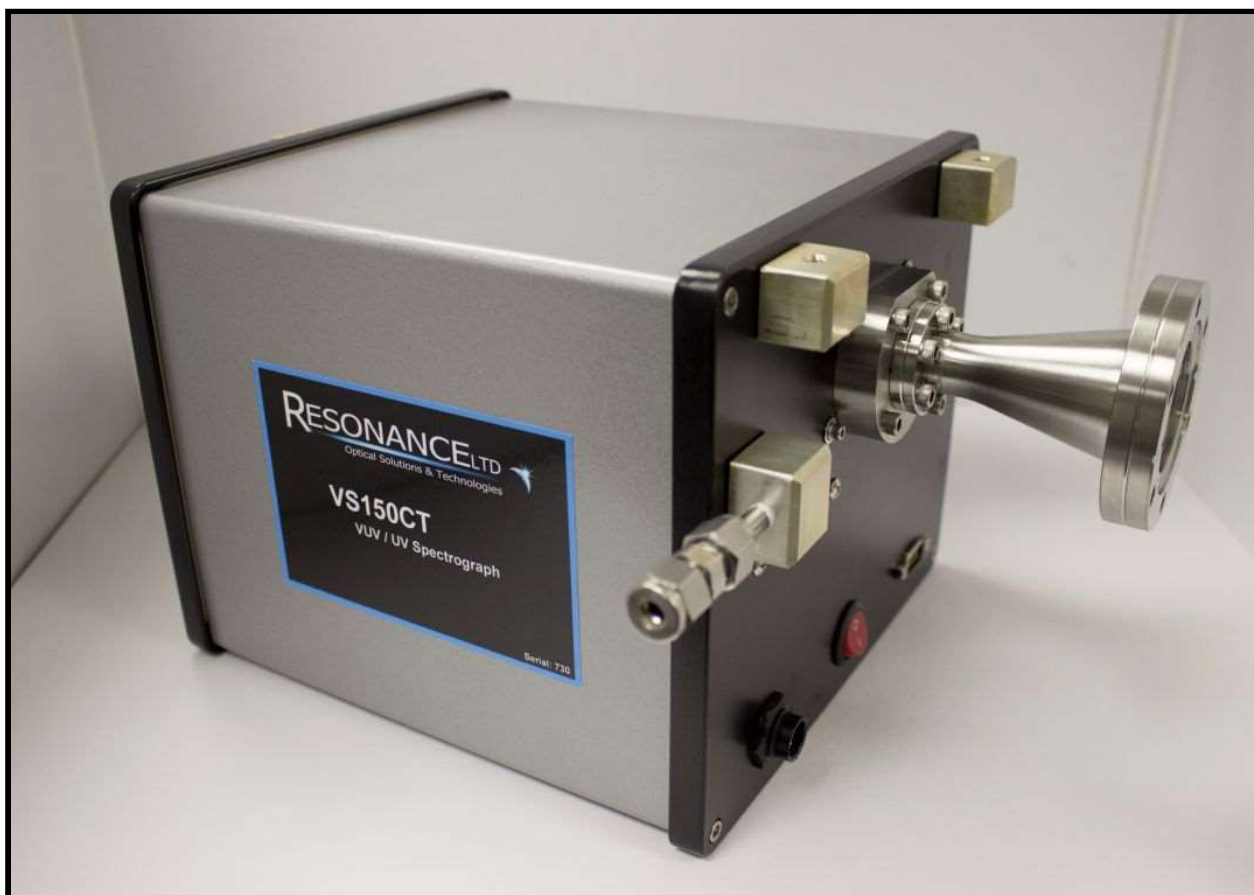


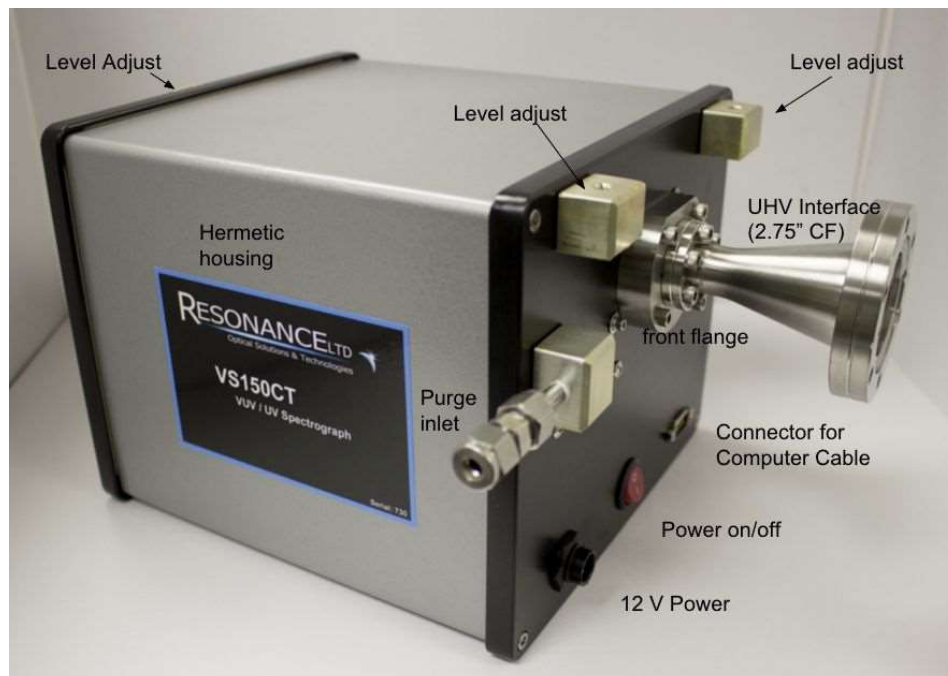
VS150CT VUV to NIR Mini Spectrograph

The VS150CT is a Compact Czerny Turner spectrograph with excellent speed, spectral range and spectral resolution with software control of slit size, input f#, order sorting filters, grating angle and dark exposures. For VUV operation the spectrograph has a UHV window and laminar flow purge system, which allows operation down to the window short wavelength cut-off (112 nm for MgF₂). The spectrograph employs interchangeable gratings and can interface to a UHV chamber or used on a benchtop in any orientation at the end of a 5-meter cable. Accessories include a built-in spectral calibration lamp, a multi-spectral flat-light source and low-cost accessories such as telescopes, vacuum adapters, flow controllers.





Focal Length (input and output) 152.4 MM
Available Gratings 1200 g/mm (110 to 950 NM), 2880 g/mm (110 to 340 NM)
Wavelength Resolution (25 micron slit) 0.25 NM 1200 g/mm 0.9 NM 2880 NM
Software selectable slit size 25, 50, 100, 200 and 400 microns
Software selectable dark shutter to facilitate dark subtraction
Software selectable order masks with short wave cutoffs at 160, 300 and 600 NM
Software selection of spectral range with multi-step cam
Software selection input f # from f/5.2 to f/10.4 for optimizing resolution and controlling exposure
Standard Detector CCD with 2048 pixels with radiation resistant-VUV/UV phosphor
Leveling screws allow alignment to beamline or other light source
Software includes complete Graphical User Interface for control of 4 servos and acquisition/storage/display of spectra.
Laptop cables vacuum interface software provided along with spectrograph so system can be operated in VUV right out of the box
UHV flange with MgF2 window
Laminar flow He purge for VUV operation
Volume/mass with UHV flange <0.3 cubic feet <7 liters





Specifications

Electrical /Optical				
Specification	Minimum	Typical or Median	Maximum	Units
Focal Length	151	152.4	153	mm
Best Spectral Resolution 2880 grating		0.09		nm
Wavelength Range 1200 Grating	110		950	nm
Wavelength Range 2880 Grating	110		340	nm
Wavelength Precision	-	± 0.2	-	nm
CCD QE 110 to 400 nm	10	18	20	%
CCD QE for 400 to 930 nm	15	34	42	%
CCD QE for 930 to 1050	3	12	15	%

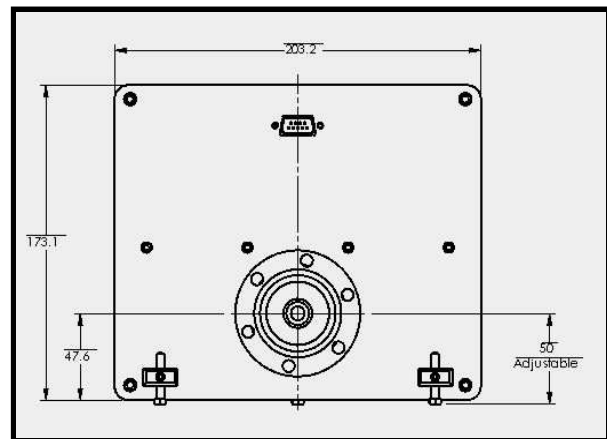
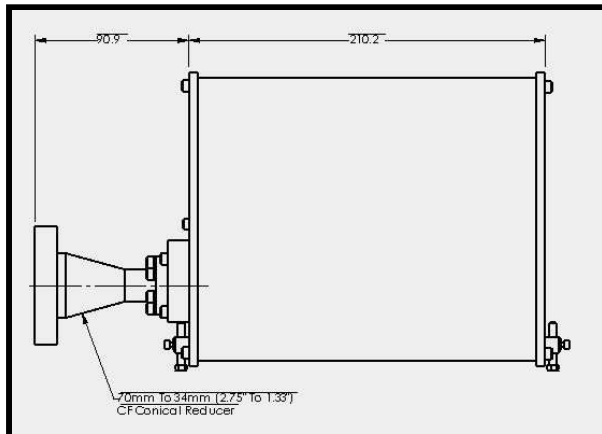
Physical		
Spectrograph H x W x D (see diagram below)	166.7 (6.6) x 195.6 (7.7) x 215.9 (8.5)	mm (Inches)
Vacuum interface H x Dia.	3.75 L x 2.75 dia	Inches
Allowance for purge connections	2	Inches

Thermal				
Non-operational Temp. Range of the Spectrograph	-20	22	70	° C
Temp. Range of the vacuum flange plus window	-50	22	220	° C
Ultimate vacuum of vacuum adapter	1e-14	1e-10	1e-9	mbar

Electrical	Type	Max Power
System Power Source (USB HUB)	USB 2.0	5 V 500 mA
12 V Servo power	100 to 240 V AC/DC	12 V 700 mA



Mechanical Specifications of Spectrograph and Vacuum interface



The front 2.75-in flange can be attached to UHV chamber. Spectrograph is isolated with MgF2 window in vacuum adapter. Purge can be dry N2, Ar, or He.

The Spectrometer can be removed from a vacuum chamber without breaking vacuum. This allows bake out of the UHV chamber above the non-operational limit of the spectrometer.

System Mass	
Spectrograph	2000 Gm.
Vacuum Interface	550 Gm.