BDS130A

BDS130A UV/Vis/NIR Light Source User Manual

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BDS130A

1) Introduction

The BDS130A UV/Vis/NIR Light Source is a highly stable unit which covers 190 – 2500 nm. This light source combines UV/Vis and Vis/NIR spectra to form a single optical path.

The UV/Vis and Vis/NIR light sources can be individually turned on or off. An electronic shutter is also included to control light output. The shutter can be controlled by a manual switch on the front panel.

Front view of BDS130A Light Source

BDS130A

Highlights:

- Fiber Coupled
- UV/Vis/NIR Single Path
- Shutter Control
- High Stability
- Compact
- Long Life (See Specs.)

Applications:

- Spectrophotometry
- Film Thickness Measurement
- Pharmaceutical Testing
- Reflectance Measurement
- Transmission Measurement
- Many more

2) Specifications

See product datasheet for specifications.

3) Check Contents

Before installation, please check your product contents. This should include:

- One BDS130A Light Source (fiber not included)
- One DB15 connecter
- One AC cord

4) Instructions

1. Warranty Seals

Warranty seals are positioned on the BDS130A light source. Any attempt to open the unit will break these seals. If these seals are found to have been tampered with, any warranty or future repairs on the unit will be void.

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2. *Safety Warnings*

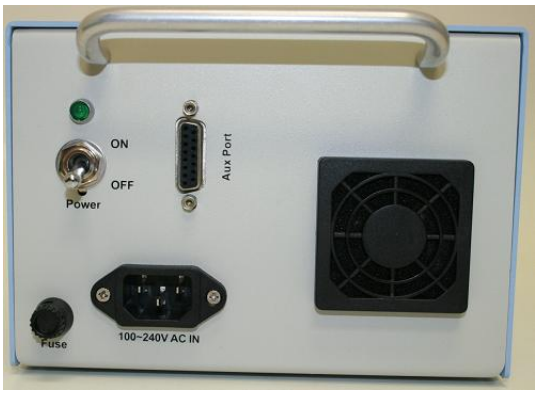
When the UV/Vis light emits from the fiber input port, DO NOT look directly at this light with your eyes. Strong UV light is also harmful to your skin; DO NOT expose your skin to the UV/Vis light, even through a fiber.

3. *Fiber Usage*

We recommend using a 600 micron NA 0.22 Solarization-resistant fiber. B&W Tek, Inc. sells an **FPC-600-0.22-1-SRUV** separately for your applications in the UV-Vis range.

4. *Power on the BDS130A*

Plug the AC cord into the rear of the unit. Toggle the power switch to the ON position. The Power LED on the rear of the unit will illuminate and the cooling fans will activate.



Rear View of the BDS130A Light Source

BDS130A

5. *Turn on the UV-Vis Lamp*

Toggle the UV switch on the front panel to activate this light source. When toggled, the LED to the left of the switch will turn on. The warm up time for this lamp (delayed start) is around 10 seconds, after which the UV-Vis lamp will illuminate.

6. *Turn on the Vis-NIR Lamp*

Toggle the Vis-NIR switch on the front panel to activate this light source. When toggled, the LED to the left of the switch will turn on when the Vis-NIR lamp illuminates. There is NO delayed start time with the Vis-NIR lamp.

7. *Activate OPEN SHUTTER*

By default, the shutter on the BDS130A is CLOSED. This is to protect the user from any harmful UV rays from the system. To open the shutter, toggle the switch to the OPEN position. When the shutter is open, the LED to the left will illuminate.

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8. *How to Use the DB15 Connector*

The BDS130A is packaged with a DB15 male connector with wires attached. This connector is to be used to control the lamps and the shutter and monitor their status.

To enable TTL control for the lamps and shutter, pin 8 should be switched to high. If the TTL control is enabled, the mechanical switch functions are overridden by the TTL control signal.

See the detailed information in Appendix B.

5) Cautions

- Do not put more than a 1.5 kg load on the top cover of the BDS130A.
- Always connect the dust cap on the light output port when the fiber is not in use.
- When replacing the fuse (2.0A), use a fuse with the same specification.

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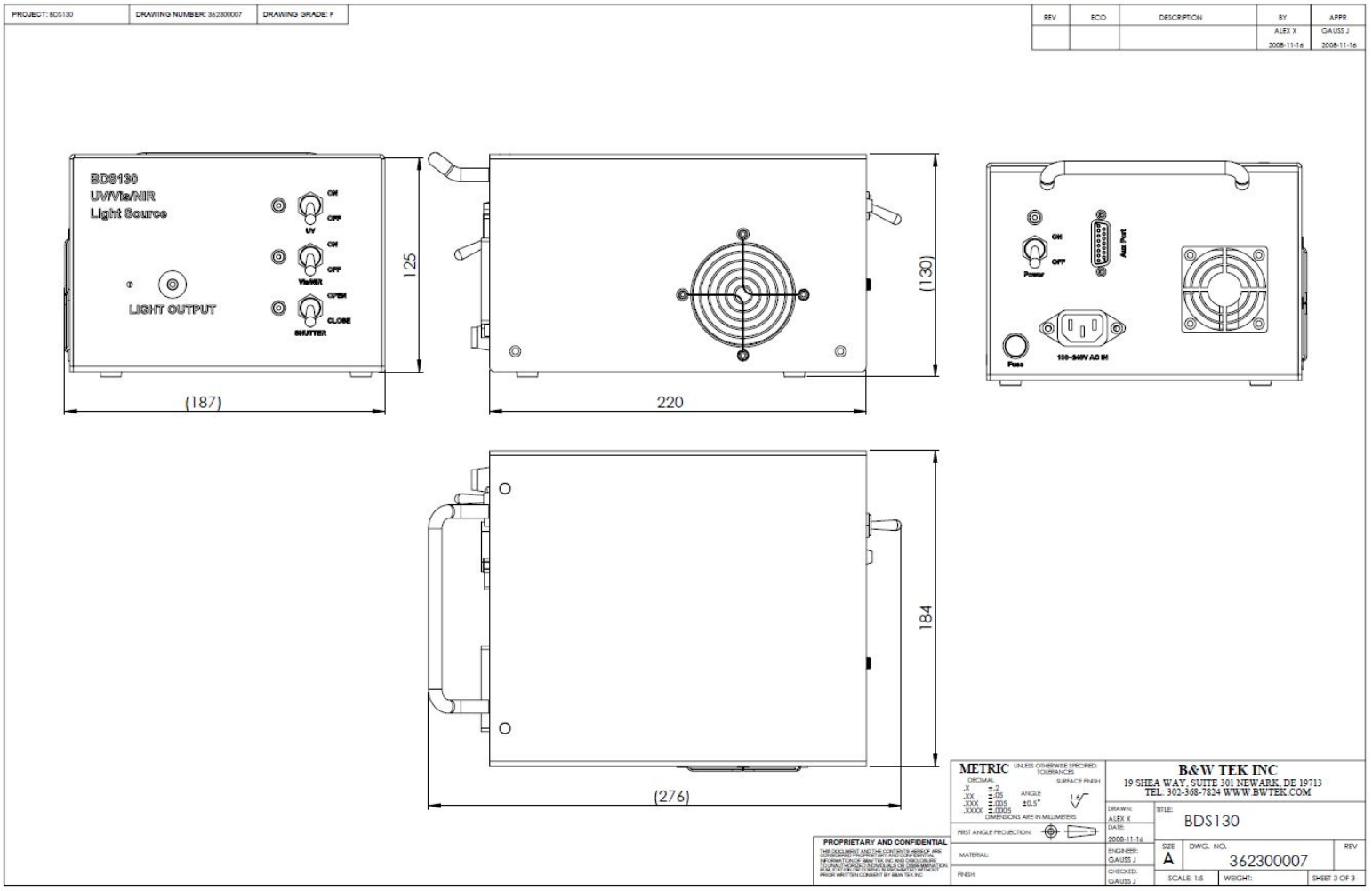
Appendix A: Dimensions

Dimension Drawings (mm)



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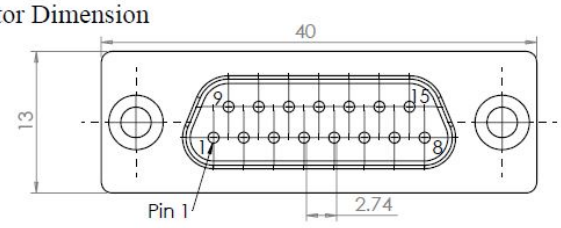
Appendix B: Aux. Port Pin Assignments

Table 1. Auxiliary Port Pin Assignments

Pin	IO	Description	Comment	Suggested Wire Color
1	Output	UV light source monitor	This pin is 5 V TTL compatible. A high indicates UV light on, a low indicates off. Typcal output current is +/- 10 mA.	Purple
3	Output	Shutter monitor	This pin is 5 V TTL compatible. A high indicates shutter on, a low indicates off. Typcal output current is +/- 10 mA.	Blue
4	Output	Vis-NIR light source monitor	This pin is 5 V TTL compatible. A high indicates Vis-NIR light on, a low indicates off. Typcal output current is +/- 10 mA.	Yellow
5	IO	Ground	Ground	Black
6	Output	Power +5V	+5 V power supply . Supplied current can be up to 100 mA.	Red
8	Input	DB15 / switches control select	This pin is 5 V TTL compatible. A high selects DB15 control, a low selects switches control, default is low level. Typcal input current is in the range of -0.1 to 0.1 mA. It is connected to ground with an internal 100 kilohms pull-down resistor.	Pink
9	Input	UV light source control	This pin is 5 V TTL compatible. A high turns UV light on, a lowt turns it off, default is low level. Typcal input current is in the range of -0.1 to 0.1 mA. It is connected to ground with an internal 100 kilohms pull-down resistor.	White
11	Input	Shutter control	This pin is 5 V TTL compatible. A high turns shutter on, a low turns it off, default is low level. Typcal input current is in the range of -0.1 to 0.1 mA. It is connected to ground with an internal 100 kilohms pull-down resistor.	Green
12	Input	Vis-NIR light source control	This pin is 5 V TTL compatible. A high turns Vis-NIR light on, a low truns it off, default is low level. Typcal input current is in the range of -0.1 to 0.1 mA. It is connected to ground with an internal 100 kilohms pull-down resistor.	Grey
13	IO	Ground	This pin is connected to pin 5.	Brown
Others		Reserved	Reserved or no connections	

Figure 1. Port Connector Dimension



Dimensions are in mm[Inch]
Tolerances:
Fractional
Angular: Mach Bend
Two place decimal
Three place decimal
Material
Finish
Next Used on
Application
DO NOT SCALE DRAWING

	Name	Date
Drawn	John Lu	February 11, 2013
Checked		
Eng. appr.		
MFG appr.		
Q.A.		
Comments:		

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Product: BDS130A
Title: Aux. Port Pin Assignments
Size: B | FCSM NO. | DWG. NO.: 310000047 | Rev.: C
Scale: 2:1 | Weight | Code: SW12 | Sheet 1 of 1