BPS2.0
Tungsten Light Source
User Manual

19 Shea Way, Newark, DE 19713 • Tel: (302) 368-7824 • Fax: (302) 368-7830 • Web: www.bwtek.com

1 Introduction

The BPS2.0 includes a light source housing that contains a long-life 20 Watt Tungsten Halogen lamp which emits over the UV-Vis-NIR spectrum. An Auxiliary port is provided on the rear of the BPS2.0 for versatile remote On / Off modulation, operating current monitoring, and external operating current control. Slow ramp start is built into the source to ensure stability and long-life operation.

The BPS2.0 comes with a 12 V DC Power Adapter and includes a miniature fan and cooling fins which controls the thermal stability of the light source.

2 Specifications

See product Datasheet for specifications.

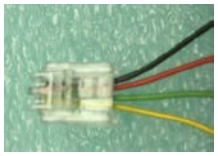
3 Check Contents

Before installation please check the contents of your order. They may include the following:

- One BPS2.0 Tungsten Light Source unit

- Hex Driver L-Keys:
  - One - 0.050” (PN:000024375)
  - One - 1/16” (PN:000024376)

- One RJ11 Connector for Aux Port

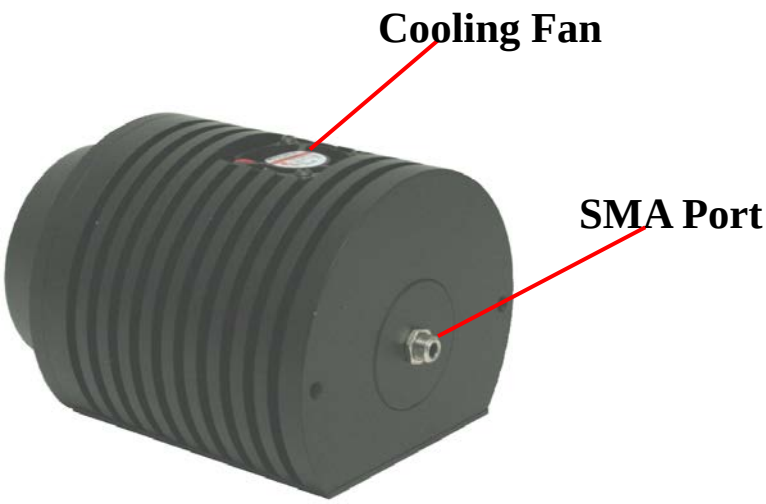


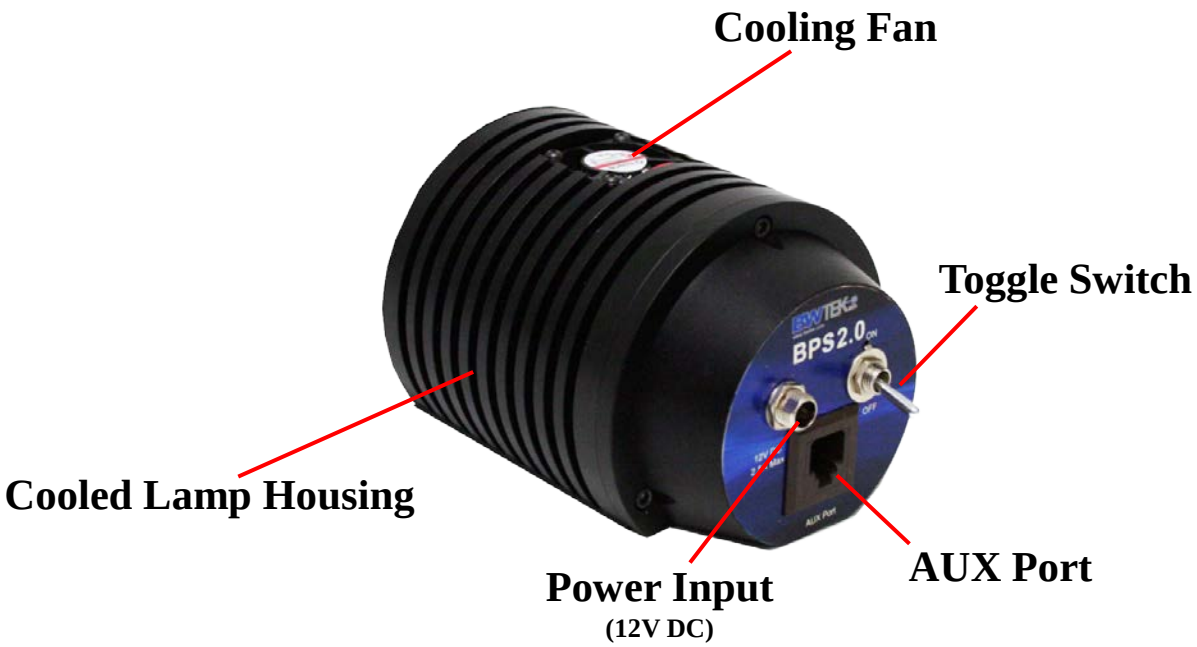
- One 100-240AC. 12V 2A, DC power adaptor

- One AC power cord

4 Setup and Configurations

Front View





4.1 Setup:

a) Tightly connect a fiber patch cord to the SMA Port on the BPS2.0, see above picture.
b) Connect the other end of the fiber patch cord to your Tungsten setup/application.
c) Plug the 12V DC Power Adapter into an AC outlet.
d) Connect the power Adapter to the 12 V DC inlet on the BPS2.0

e) Position the Toggle Switch to the “On” position.
   i. The lamp and cooling fan will turn on
f) After a warm up time of around 10 minutes, the BPS2.0 is ready to use.

5 External Trigger

The supplied RJ11 connector may be used for the remote control purpose (external trigger function). The following table describes the pinouts and color code of the control signals.

Connect RJ11 Connector to AUX Port

Remote Control Port Signals

Pin #	Color	Description
1	Black	Ground
2	Red	Analog control input: 0 V DC: Minimum output power setting 5 V DC: Maximum output power setting
3	Green or Blue	TTL remote On/Off or Modulation Control Input Logic “1” Output enabled (digital mod) Logic “0” Output disabled
4	Yellow	Lamp operating current monitoring output: 1.0 V DC corresponds to approximately 1.0 A

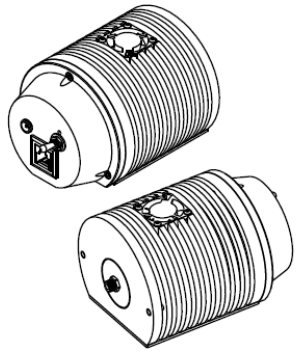
NOTES

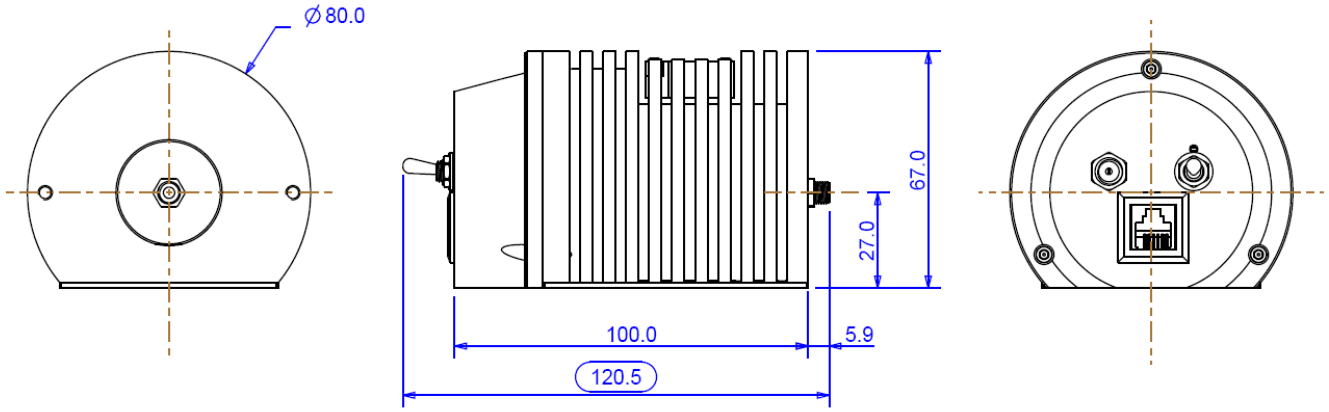
- The BPS2.0 operation is dependent on the On/Off Toggle Switch.
- The unit will function without the RJ11 Connector for the AUX Port.
- An external variable DC voltage (0 ~ 5V) can be applied from PIN 2 (Red wire) to control the lamp current which changes the optical power output. In such application, there is a concept of resistance match between the output resistance from this external DC source and the input resistance in the lamp source. If the resistance match is not proper, a complete I-V curve may not be obtained which will cause the light source intensity controlled by small current to not be realized.

PROJECT: BPS2.0	DRAWING#:362300020	DRAWING GRADE: R

REV	ECO	DESCRIPTION	BY	APPR
-		INITIAL VERSION	GAUSS J 10-Aug-10	10-Aug-10

Appendix A: Dimensions





METRIC	DIMENSIONS ARE IN MILLIMETERS		
UNLESS OTHERWISED SPECIFIED TOLERANCES			
DECIMAL:		ANGLE:	SURFACE
.X	±.2	.X ±.5°	1.6
.XX	±.05	.XX ±.05°	
.XXX	±.005		
.XXXX	±.0005		

FIRST ANGLE PROJECTION

MATERIAL: | FINISH: NA

B&W TEK INC.
19 SHEA WAY SUTIE 301 NEWARK, DE 19713
TEL:302-368-7824 WWW.BWTEK.COM

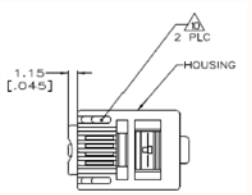
DRAWN BY:	REV	-	DATE	10-Aug-10
GAUSS J	BPS2.0 ASSEMBLY 20W TUNGSTEN			
CHECKED BY: ALEX X				
ENGINEER: GAUSS J	SCALE:	1:2	DRAWING NUMBER:	
	SHEET:	2/2	362300020	

Appendix B: Aux Plug

Revision Record			
LTR	ECO NO	Approved	Date

TABLE 1 AUXILIARY PORT PIN ASSIGNMENTS

Pin ID	Wire Color	IO	Description	Comment
1	Black		Ground return terminal	GND connected to Chassis
2	Red	INPUT	Analog control	Input range: 0-5V Input resistance: >3.5kohm
3	Green or blue	INPUT	TTL control	TTL-compatible I_{IH}: 0.5 mA Max.; I_{IL}: - 0.5 mA Min.
4	Yellow	OUTPUT	Lamp operational current monitoring	1 V is approximate to 1A Output impedance: approx 1kohm
Others			Reserved	No connections allowed



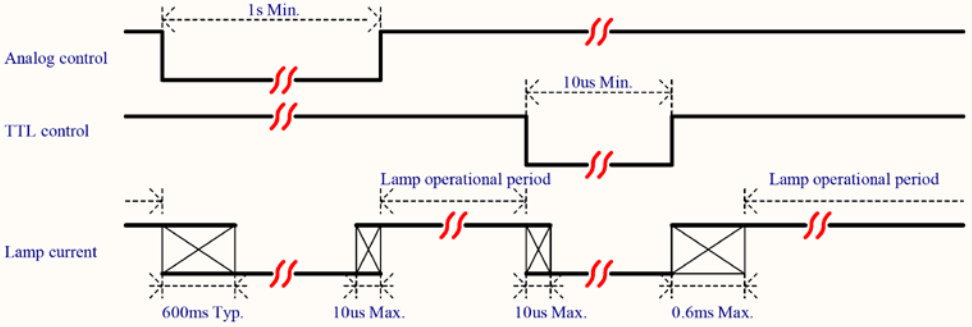
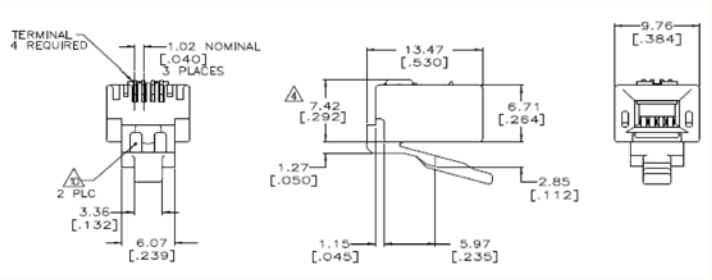


Figure 1 Timing Diagram



Reference Tyco Electronics Drawing No C-641335

mm [inch]

Table 2 Bill Of Material for Reference

BWTEK part number	Manufacturer	Manufacturer part number	Description
R0000818	Tyco Electronics	5-641335-3	Connector Mod plug6-4
020021421	Tyco Electronics	2-231652-8	Hand crimper mod 2,4,6 with Die
000013888	Radioshack	278-0873	Cable 4 conductor

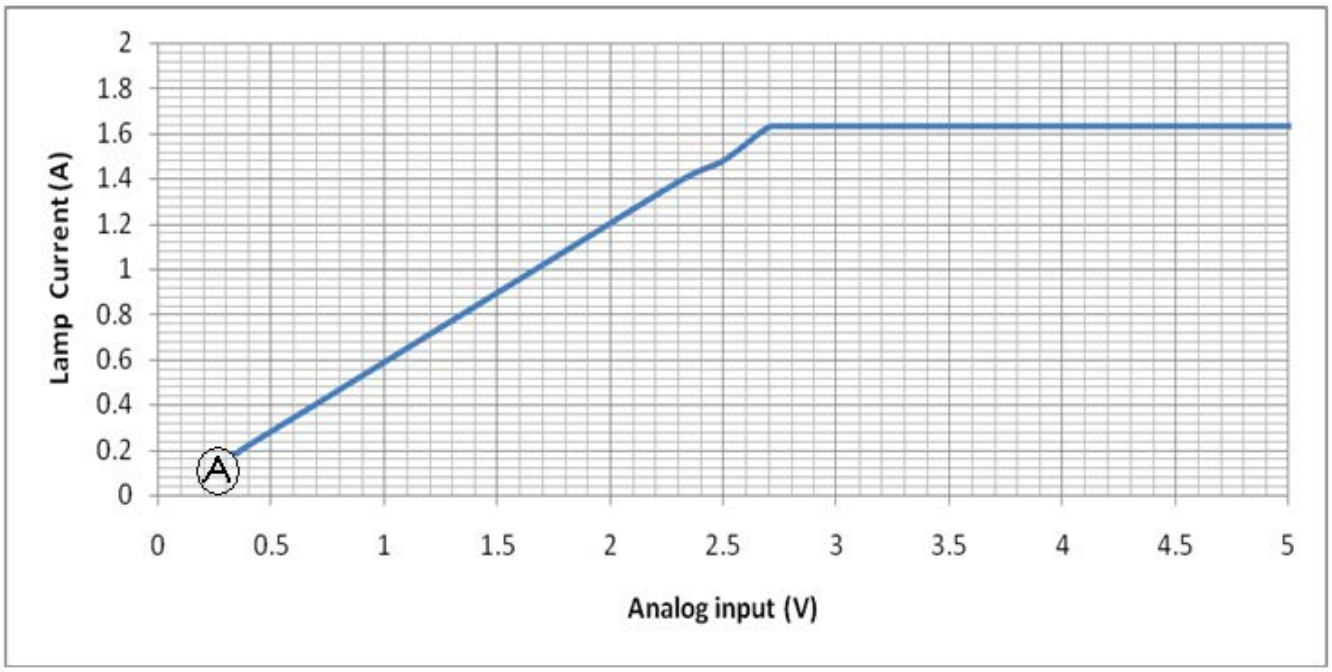
Designed by: John Lu	Date: Sep 10, 2010	B&W TEK INC.	19 Shea Way, Newark, DE 19713, USA Tel: (302) 368-7824 Fax: (302) 368-7830 http://www.bwtek.com Email: info@bwtek.com
Checked by:	Date:	Project: NA	MISCELLANEOUS DOCUMENT
Approved by:	Date:	Product: BPS101/BPS120/BPS2.0 /BIP2.0	AUX. PORT PIN ASSIGNMENTS
QA by:	Date:	Size: B	FCSM No.: NONE
In conjunction with Diagram: Schematic: Mechanical: PCB layout: Bill of materials: Harness: Assembly:		DWG No.: 310000035	Rev: A1B
		Scale: AUTO	Code: NONE
		Sheet: 1 of 2	

Appendix C: Analog Source Supply

When an analog source is applied to the PIN 2 (Red wire) of the RJ11 cable, a typical lamp current versus analog input is shown below.

Lamp Current versus Analog Input

(The output resistance of analog input source: approximately 457 ohms)



Notes:

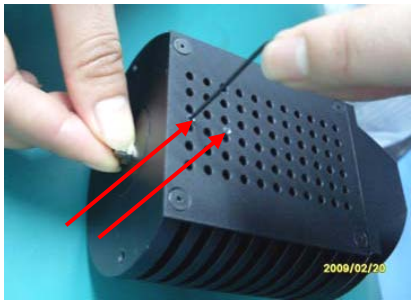
- Ⓐ Threshold is expected to be shifted by analog source impedance
- Analog input range 0-5V
- The lamp current can be calculated by measuring the voltage between the yellow wire and the black wire. Lamp current monitoring accuracy is +/- 10%.

Appendix D: Lamp Module Replacement

Note: The customer cannot replace only the bulb. The whole lamp assembly (362300025) must be replaced.

Follow the steps below to replace the 20W Tungsten light source.

1. Use the 0.050” Hex Driver L-Key to unscrew the 2 set screws on the bottom of the lamp module. This allows the SMA Plate to be removed.



2. Pull out the SMA Plate

3. Using 1/16” L-Key Driver to take the 4 screws off from the housing body.

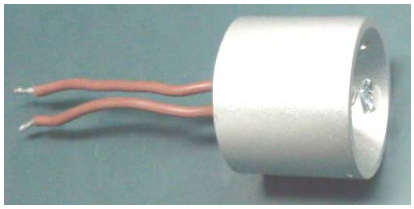
4. Remove the bottom cover. The internal wires and parts are exposed as shown

5. Unscrew the two wire post screws using 0.05” L-key driver. Take the lamp wire off using tweezers and 0.05” L-Key driver.

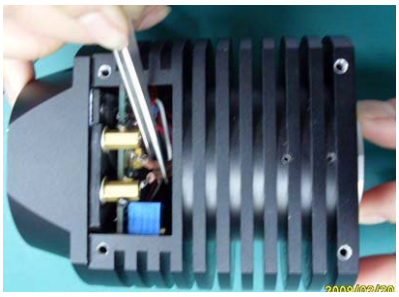
6. Pull the dead lamp module out as shown.

Important:

Do not touch the quartz envelop with fingers.
If touched, use Isopropyl alcohol to clean the quartz envelope.



7. Insert the new lamp module. Use tweezers to guide the lamp wire through the hole and then tighten the two wire post screws.



8. Gently push the lamp module in until it cannot be pushed in any further. The Lamp Module path has a stop point built inside.

9. Insert the SMA Plate.

10. Assemble the bottom cover on the housing body.

11. Tighten the two set screws on bottom surface to lock in the Lamp Module and SMA Plate.