HELIOWORKS
"Out Shines All Others"

HelioWorks
1275 4th Street
Santa Rosa, CA 95404
www.helioworks.com
TEL: (707) 578-7200
FAX: (707) 578-7200

Helioworks has developed a new class of infrared emitters or sources and lamps utilizing tungsten filaments in combination with sapphire windows to provide enhanced emission in the near infrared.

Applications include: medical and industrial non-dispersive infrared spectrometers and gas analyzers for CO, $CO_2$, alcohol, hydrocarbons, and other noxious gases, and thermal beacons and markers.

With over 25 years of experience with infrared technology and manufacturing, we pride ourselves in the highest quality and performance standards.

## HIGH AND LOW TEMPERATURE INFRARED EMISSION

Helioworks has developed state-of-the-art sources utilizing tungsten filaments for high temperature, stable, long life operation. Pulsable versions operate with peak temperatures up to 2000° K and feature large temperature modulation at elevated frequency. Steady-state versions utilize both tungsten and Kanthal filaments. These sources or emitters are sealed in industry standard TO-8 packages with gold plated reflectors for enhanced emission in the near IR.

***We have broad capability in the design and manufacture of steady state and pulsable infrared sources utilizing tungsten, Kanthal and other filament materials.***

## FILAMENT TECHNOLOGY

- Pulsed or steady state
- Long term stability
- Desirable signal-to-noise ratio
- Large temperature modulation in pulsed mode
- Latest technology in packaging and window options

We are a leading innovator in IR sources. Our staff is always committed to finding a better way to meet your infrared requirements.

Boston Electronics Corporation is an authorized distributor of Helioworks' IR sources.

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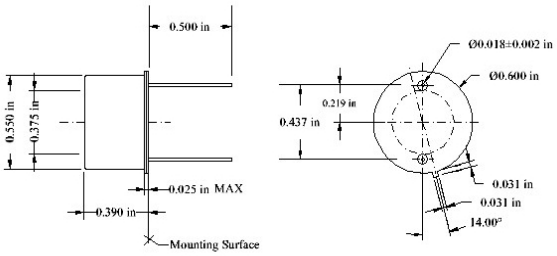
# Pulsable **IR** SOURCE

## Model EP-3872*

HelioWorks offers a unique state-of-art black body infrared emitter with a tungsten filament and sapphire window.
It can operate in pulsed or steady state mode at temperatures in excess of 1900º K in an industry standard TO-8 package. Key features include:

- Tungsten Filament
- Can be operated in pulsed or steady state mode
- Internal Gold Plated Parabolic Reflector
- Sapphire Window
- Standard TO-8 package
- 3 Year Lifetime




Electrical Specifications:
Peak Voltage = 2.2 Volts
Peak Current = 1.1 Amps
Peak Power = 2.4 Watts

*Patent Pending

Distributor: Boston Electronics Corporation, 91 Boylston St., Brookline MA 02445 USA
(800)347-5445 or (617)566-3821, fax (617)731-0935, irsource@boselec.com, www.boselec.com

**Model: EP- 3872**

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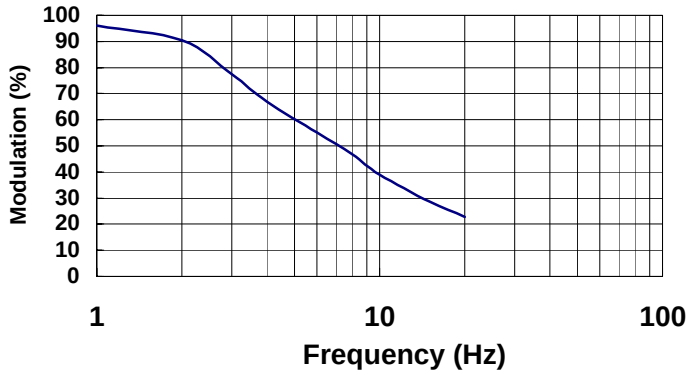
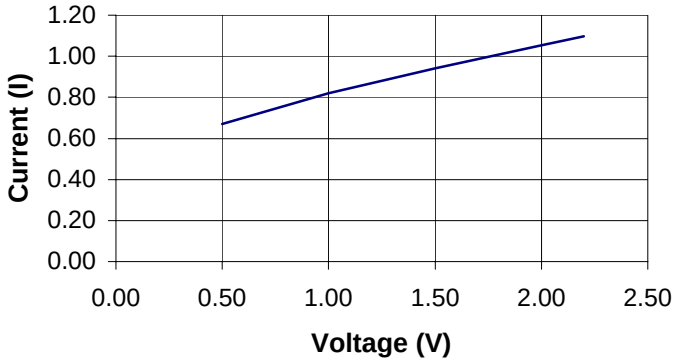
# Pulsable **IR** source

## TUNGSTEN FILAMENT WITH SAPPHIRE WINDOW

**Modulation (%) vs. Frequency (Hz)**
**(50% Duty Cycle)**




**Current vs Voltage**




1. Tungsten filament
2. Can be operated in pulsed or steady state mode (2.4 Watts DC)
3. Operating voltage must not exceed 2.2 Volts MAXIMUN
4. Voltage measured at base of header
5. Package temperature must not exceed 100 degrees C
6. Industry standard TO-8 package with sapphire window (inquire for other window materials)
7. Internal Gold plated parabolic reflector
8. Patent pending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# PULSABLE **IR** SOURCE
# **Model EP-3962***

HelioWorks offers a unique state-of-art black body infrared emitter with a tungsten filament and sapphire window. It can operate in pulsed or steady state mode at temperatures in excess of 1900º K in an industry standard TO-8 package.

**Key features include:**

- Tungsten Filament
- Can be operated in pulsed or steady state mode
- Internal Gold Plated Parabolic Reflector
- Sapphire Window
- Standard TO-8 package
- 3 Year Lifetime

**Electrical Specifications:**

Peak Voltage = 2.6 Volts
Peak Current = 1.05 Amps
Peak Power = 2.7 Watts

1. Tungsten filament

2. Can be operated in pulsed or steady state mode (2.6 Watts DC)

3. Operating voltage must not exceed 2.6 Volts MAXIMUM

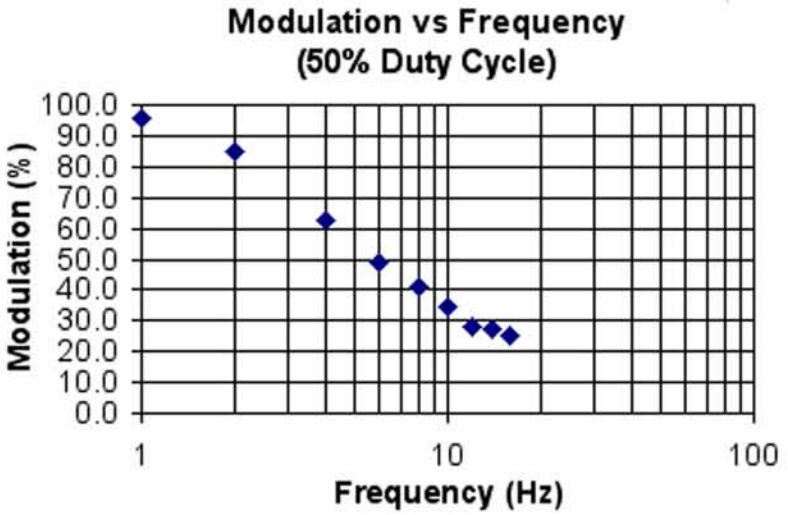
4. Voltage measured at base of header

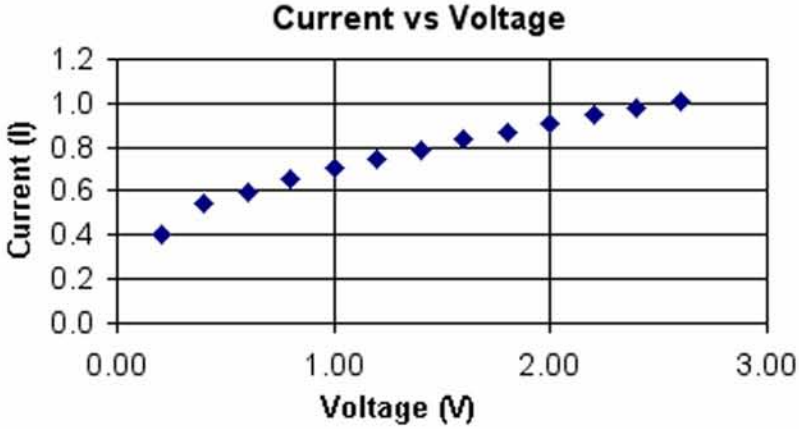
5. Package temperature must not exceed 100 degrees C

6. Industry standard TO-8 package with sapphire window

7. Internal Gold plated parabolic reflector

*Patent Pending

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# STEADY STATE **IR** SOURCE
## Model EK-8521*


HelioWorks offers a unique Steady-state black body infrared emitter that operates at up to 950º Centigrade in an industry standard TO-8 package. Key features include:

- Kanthal Filament with emissivity of ~0.7
- Internal Gold Plated Parabolic Reflector
- Sapphire Window (other windows available)
- TO-8 package
- Inert gas backfill
- 3 Year Lifetime

**Electrical Specifications:**

Peak Voltage = 3.0 Volts
Peak Current = 1.48 Amps
Peak Power = 4.4 Watts

*Patent Pending

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**Model: EK-8521**

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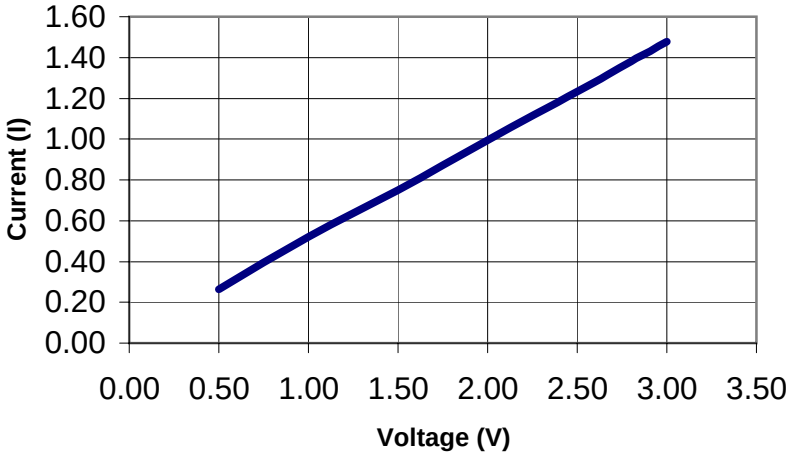
# STEADY STATE INFRARED SOURCE
# TO-8 WITH SAPPHIRE WINDOW

## Current vs Voltage




| V | I | VI = W | V/I = R | |
|---|---|---|---|---|
| 0.50 | 0.26 | 0.13 | 1.90 | |
| 1.00 | 0.52 | 0.52 | 1.92 | |
| 1.50 | 0.75 | 1.13 | 2.00 | |
| 2.00 | 0.99 | 1.99 | 2.01 | |
| 2.50 | 1.23 | 3.08 | 2.03 | |
| 2.80 | 1.38 | 3.87 | 2.03 | |
| 3.00 | 1.48 | 4.43 | 2.03 | Approx. 950 degrees C |

1. Operating voltage must not exceed 3.0 Volts
2. Voltage measured at base of header
3. Package temperature must not exceed 100 degrees C
4. Sapphire window (other windows are available)
5. Gold plated parabolic reflector
6. Inert backfill gas

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**MODEL: EK-5516X**

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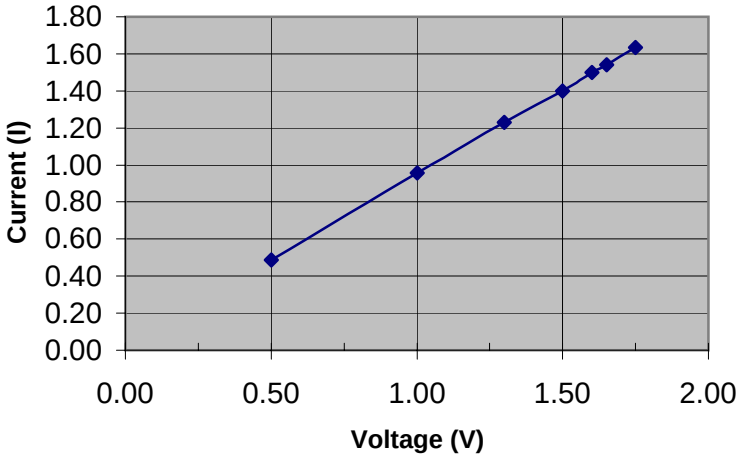
# STEADY STATE INFRARED SOURCE

## TO-5 WITH NO WINDOW

### Current vs Voltage




| V | I | VI=W | V/I=R | Approx. Temp. C |
|---|---|---|---|---|
| 0.50 | 0.49 | 0.24 | 1.03 | |
| 1.00 | 0.96 | 0.96 | 1.05 | |
| 1.30 | 1.23 | 1.60 | 1.06 | 730 |
| 1.50 | 1.40 | 2.10 | 1.07 | 840 |
| 1.60 | 1.50 | 2.40 | 1.07 | 880 |
| 1.65 | 1.54 | 2.54 | 1.07 | 910 |
| 1.75 | 1.63 | 2.86 | 1.07 | 950 |

1. Operating voltage not to exceed 1.75 Volts
2. Voltage measured at base of header

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