Source Four Heat Ratings: How Much Heat Does The Source Four Emit

ATTENTION: The following fixture information is for reference only.

Resolution of any site-specific issues, i.e. HVAC needs, fire safety, or any other heat-related installation questions are the sole responsibility of the customer.

We are happy to provide the following heat information on Source Four luminaires to be used by persons familiar with the luminaire location and qualified to speak to the safety of surrounding materials.

Please note:

The following factors may be used, but are not the sole factors, for determining the suitability of a location for a high-temperature luminaire:

- Composition, color and texture of the surrounding materials
- Ambient air temperature
- Air flow

Temperature measurements taken in ambient air at any distance from a luminaire in a lab situation are not useful as safety guidelines for luminaire mounting in that they cannot accurately factor in the above or any other variables.

It is the SOLE and EXCLUSIVE responsibility of the customer to determine the suitability of any location for luminaire mounting.

How much "Heat" in BTUs does a Source 4 fixture emit?

For each watt of energy consumed, the fixture will emit 3.412 BTUs per hour. Keep in mind that S4 and S4 Jr fixtures absorb more of the infrared light spectrum than most typical fixtures, and therefore transmit less heat to the stage.

https://support.etcconnect.com/ETC/Fixtures/Source_Four/Source_Four_ERS_and_HID/Source_Four_Heat_Ratings%3A_Ho…

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Therefore:

\[
575 \text{ HPL} \times 3.412 = 1961.9 \text{ BTUs per hour}
\]
\[
750 \text{ HPL} \times 3.412 = 2559 \text{ BTUs per hour}
\]

Additionally we periodically get asked about the amount of heat in the beam compared to the amount of heat absorbed by the fixture. Below shows some representative figures.

Note: Regardless of how much heat is projected by the beam or dissipated by the fixture housing, the total BTU per hour measurement is the same as computed by the above equation.

Note also the dramatically lower amount of heat in the beam of fixtures with the cold mirror reflector: Source Four and Source Four PAR MCM, when compared to fixtures with typical reflectors.

### Incandescent ETC Products

**Fixture:** Source Four 750w  
**Projected Light Beam:** 230  
**Fixture Housing Dissipated:** 2330  
**Total:** 2560

**Fixture:** Source Four 575w  
**Projected Light Beam:** 180  
**Fixture Housing Dissipated:** 1780  
**Total:** 1960

**Fixture:** Source 4 375w  
**Projected Light Beam:** (not available)  
**Fixture Housing Dissipated:** (not available)  
**Total:** 1280.4

**Fixture:** Source Four PAR EA 750w  
**Projected Light Beam:** 1150  
**Fixture Housing Dissipated:** 1410  
**Total:** 2560

**Fixture:** Source Four PAR EA 575w  
**Projected Light Beam:** 880  
**Fixture Housing Dissipated:** 1080  
**Total:** 1960
Fixture: Source Four PAR MCM 575w  
Projected Light Beam: 145  
Fixture Housing Dissipated: 1815  
Total: 1960

Fixture: Source Four HID 150w, Source 4 XT  
Projected Light Beam: (not available)  
Fixture Housing Dissipated: (not available)  
Total: 513

Other Incandescent Products (for comparison)

Fixture: PAR 64 1000w  
Projected Light Beam: ~1100  
Fixture Housing Dissipated: ~2314  
Total: 3414

Fixture: Fresnel 2000w  
Projected Light Beam: (not available)  
Fixture Housing Dissipated: (not available)  
Total: 6828

Fixture: Source Four Mini  
Projected Light Beam: (not available)  
Fixture Housing Dissipated: (not available)  
Total: 170.6

ETC LED Products

Fixture: Source 4 LED Lustr+  
Projected Light Beam: (not available)  
Fixture Housing Dissipated: (not available)  
Total: 443.5

Fixture: Source 4 LED Studio Daylight  
Projected Light Beam: (not available)  
Fixture Housing Dissipated: (not available)  
Total: 558.7

Fixture: Source 4 LED Studio Tungsten  
Projected Light Beam: (not available)  
Fixture Housing Dissipated: (not available)  
Total: 537.4
Fixture: Source 4 LED Studio HD
Projected Light Beam: (not available)
Fixture Housing Dissipated: (not available)
Total: 433.8

Fixture: Desire D40, D40XT
Projected Light Beam: (not available)
Fixture Housing Dissipated: (not available)
Total: 375.6

Fixture: Desire D60
Projected Light Beam: (not available)
Fixture Housing Dissipated: (not available)
Total: 549.7

Fixture: Selador Vivid
Projected Light Beam: (not available)
Fixture Housing Dissipated: (not available)
Total: 553.1

Fixture: Selador Vivid-R, Fire, Ice, Lustr, Pearl
Projected Light Beam: (not available)
Fixture Housing Dissipated: (not available)
Total: 426.8

Fixture: Selador Paletta
Projected Light Beam: (not available)
Fixture Housing Dissipated: (not available)
Total: 368.8

What is the Gate Temperature of a Source Four ERS?

In a test condition created by placing one shutter blade into gate covering 1/2 of field, and placing the thermal probe on the backside (shaded) of the shutter, the maximum S4 gate temps (A-size) were recorded as follows:

HPL 575w/115v/300hr = 328°C (622°F)
HPL 750w/115v/300hr = 419°C (786°F)

Note: We have not tested the 150w HID lamp, but would roughly estimate the S4 gate temp between 149°C ~ 232°C (300°F ~ 450°F).
Surface Temperatures

Note: The following temperatures are normalized for the maximum of 45°C (113°F) ambient room temp, with free air convection.

Question:
How much heat do your fixtures emit?

Answer:
For each watt of energy consumed, the fixture will emit 3.412 BTUs per hour. Keep in mind that S4, S4jr, and S4 PAR-MCM fixtures absorb more of the infrared light spectrum than most typical fixtures due to the cold mirror optical coating on the reflector, and therefore transmit significantly less heat to the stage. The S4 PAR-EA does not contain this feature and projects the full infrared spectrum to the stage.

- **S4/S4 Zoom/750w**
  - Lamp Focus Knob: 210°C (410°F) max.
  - Exterior Rear Housing Skin: 217°C (423°F) max.
  - Exterior Front Barrel Skin: 91°C (196°F)
  - Gate temperature of a Source Four ERS:
    - In a test condition created by placing one shutter blade into gate covering 1/2 of field, and placing the thermal probe on the backside (shaded) of the shutter, the maximum S4 gate temps (A-size) were recorded as follows: HPL 750w/115v/300hr=419°C (786°F)
    - Projected Heat: Lighted objects will not exceed a temperature of 90°C (at 45°C ambient) from projected light at a horizontal distance of 0.8m (~2.7 feet) or greater.

- **S4jr/S4jr Zoom/575w**
  - Lamp Focus Knob: 210°C (410°F) max.
  - Exterior Rear Housing Skin: 235°C (455°F) max.
  - Exterior Front Barrel Skin: 110°C (230°F)
  - Gate temperature of a Source Four jr ERS:
    - In a test condition created by placing one shutter blade into gate covering 1/2 of field, and placing the thermal probe on the backside (shaded) of the shutter, the maximum S4 gate temp (A-size) was recorded as follows: HPL 575w/115v/300hr=328°C (622°F)
    - Projected Heat: Lighted objects will not exceed a temperature of 90°C (at 45°C ambient) from projected light at a horizontal distance of 0.6m (~2.0 feet) or greater.

- **S4PAR-MCM/575w**
  - Lamp Cap Handle: 185°C (365°F) max.
  - Reflector Fins: 270°C (518°F) max.
  - Exterior Front Barrel Skin: 175°C (347°F) max.
- Projected Heat: Lighted objects will not exceed a temperature of 90°C (at 45°C ambient) from projected light at a horizontal distance of 0.9m (~2.9 feet) or greater.

- **S4PAR-EA/575w**
  - Lamp Cap Handle: 145°C (293°F) max.
  - Reflector Fins: 175°C (347°F) max.
  - Exterior Front Barrel Skin: 165°C (328°F) max.
  - Projected Heat: Lighted objects will not exceed a temperature of 90°C (at 45°C ambient) from projected light at a horizontal distance of 2.0m (~6.6 feet) or greater.

- **S4jr HID/150w CDM lamp**
  - Jrs tend to run hotter than full-sized fixtures with the same wattage lamp so the jr data represents worst case.

  ![Note: HID temperatures are normalized for 40°C (~104°F) ambient room temperature, with free air convection.](image)

- Exterior Rear Housing Skin: 103°C (218°F) max.
- Exterior Rear Burner Assembly: 100°C (~212°F)
- Gate temperature of a Source Four HID ERS:
  - We have not tested the 150w HID Lamp but estimate for a test condition created by placing one shutter blade into gate covering 1/2 of field that the maximum S4 gate temp (A-size) is between 149°C to 232°C (300°F to 450°F).