

Soneko Product Spotlight
Rapido™ Infrared Lamp

A new infrared emitter, the Rapido lamp (see Figure 1) has been developed to combine many of the advantages of short wave and medium wave technology. A large filament emitting area, coupled with a lower operating color temperature filament offers high heating rates in the medium wavelength range. This lamp has high heating rates in up to 130 w/in and has instant on and off capabilities similar to a T3 lamp.



Figure 1- Rapido Lamp

The Rapido has approximately 6 times the emitting surface area as compared with a T3 short wave lamp. That allows the filament temperature to operate at lower temperatures while providing 100 watts/inch of infrared heat (see Figure 2). The lower color temperature eliminates most of the visible light (glare), and shifts the wavelength towards the medium wavelength ranges. The Rapido is a sealed construction, like the T3, and hence has a life expectancy of 5000 hours.

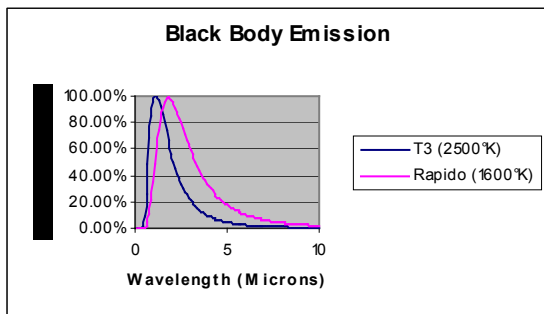


Figure 2 - Emission of Rapido vs. T3

Benefits of Rapido Lamps

The Rapido lamp combines the benefits of fast response and high heating density of the T3 lamp with the absorption characteristics of the medium wave emitters. Table 1 compares the Rapido with the other emitters.

| Infrared Emitter | Advantages |
|-------------------------------------|---|
| Short Wave Quartz Halogen Lamp (T3) | <ul style="list-style-type: none"> ❑ High heating rates (up to 200 w/in) ❑ Instant on/off (seconds) ❑ Penetrating heat in polymers |
| Rapido™ Lamp | <ul style="list-style-type: none"> ❑ High heating rates (up to 130 w/in) ❑ Instant on/off (seconds) ❑ Strong surface absorption by water and polymers ❑ Non-color selective ❑ Orange color emission (no glare) |
| Medium Wave - Tube or Panel | <ul style="list-style-type: none"> ❑ Strong absorption by water and polymers ❑ Non-color selective ❑ Orange to no visible light nor glare |

Table 1 - Benefits of Rapido

In addition, the Rapido overcomes the primary drawbacks of T3 lamps and other medium wave emitters.

The primary drawback of the T3 lamp is the visible light emission (glare). The Rapido lamp has a low amount of emission in this region, and the emission is an orange glow.

The primary drawback of other medium wave emitters is the low heating density. The Rapido provides nearly three times the heat flux density of other medium wave emitters, which increases production throughput.

Rapido IR Lamp

Applications

The Rapido is ideal for a number of applications. The high heat flux compared with a strong medium wave emission makes it ideal for drying water (see Figure 3). This includes applications such as drying water based inks, paints, and other coatings.

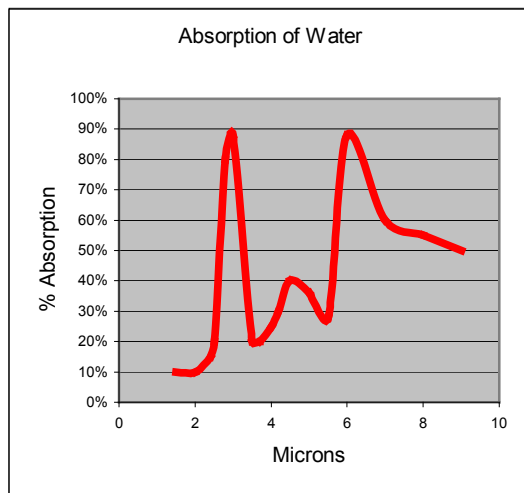


Figure 3 - Spectral Absorption of Water

The strong medium wave emission is also appropriate for heating many plastics, which typically have high absorption in the 2 – 3 micron range. The strong surface absorption makes it ideal for heating very thin plastic film.

Product Availability

The Rapido lamp is produced in many of the same size packages as the T3 lamp, including those shown in Table 2.

| Part Number | Watts | OAL (inches) | Heated Length (inches) | Volts |
|---------------------|-------|--------------|------------------------|-------|
| Rap-5-500-120-M/N | 500 | 8.8 | 5.0 | 120 |
| Rap-10-1000-240-M/N | 1000 | 13.8 | 10.0 | 240 |
| Rap-16-1600-240-M/N | 1600 | 19.8 | 16.0 | 240 |
| Rap-25-2500-480-M/N | 2500 | 28.8 | 25.0 | 480 |
| Rap-38-3800-570-M/N | 3800 | 41.8 | 38.0 | 570 |

Table 2 - Lamp Configurations

Table 3 shows the end configurations for the Rapido. Specify end configuration when ordering. Type M and N are standard.






| | |
|---|---|
|  | Type H – Steel sleeve with lead |
|  | Type G – Ceramic with insulated lead |
|  | Type M – Short Wave R7 (button contact) |
|  | Spring contact for Type M |
|  | Type N – Ceramic with insulated lead |

Table 3 - End Configurations

The Rapido™ is designed for horizontal installation only. Reflectors designed for the T3 can accommodate the Rapido™. Custom configurations are also available.

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Water Absorption Graph – Reconstructed from “Technology Guidebook for Electrical Infrared Process Heating”, Center for Materials Fabrication – Report 93-2 – EPRI and IREA.