Standard Products

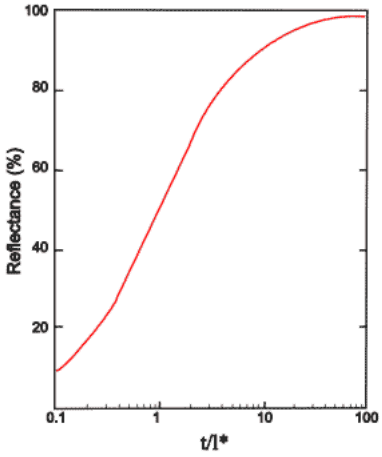
Accuflect®
>Laser Reflectors
>Infrared Reflectors
>Infrared Basics
Macor
Ceramic Rod & Tube

Accuflect® IR Infrared Reflectors

Accuflect® IR is a highly diffuse and low loss reflector of near infrared and mid infrared radiation. The diffuse reflecting Accuflect® IR offers alternatives to the metallic specular reflectors and their shortcomings often found in infrared heating applications. Some notable characteristics of the Accuflect® IR ceramic reflector material include:

- Diffuse reflectance creates a uniformly illuminated area
- Accuflect® IR can be applied as flat panels to act as a planar source or it can be shaped to provide a more concentrated area of illumination
- Accuflect® IR is a refractory material capable of long term use at 1200°C--well above the use temperature of metal reflectors
- The refractoriness eliminates the need to actively cool the reflector surfaces
- Radiosity from the warm reflector surfaces improves heating efficiency and has a recuperator effect on the high temperature emitters
- Accuflect® IR has optimal reflectance in the .76 micron to 2 micron NIR wavelengths characteristic of high energy and high watt density emitters operating above 1000°C
- Accuflect® IR is an electrical insulator

Accuflect® has a fine particle size. Its microstructure results in a short mean free path length for the infrared photons refracting and reflecting within the material so sections as thin as 3 mm are fully effective reflectors.

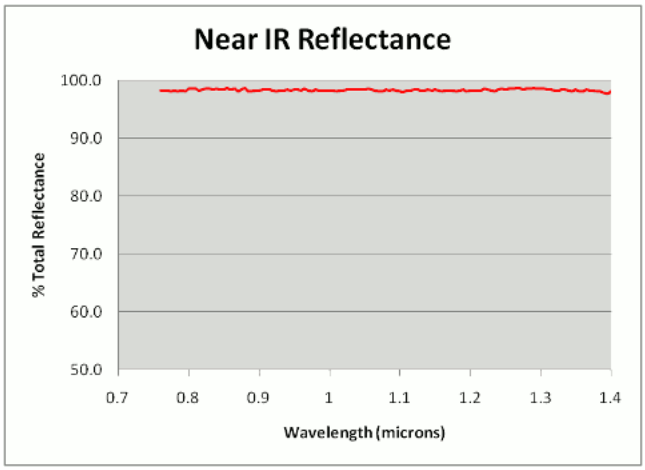


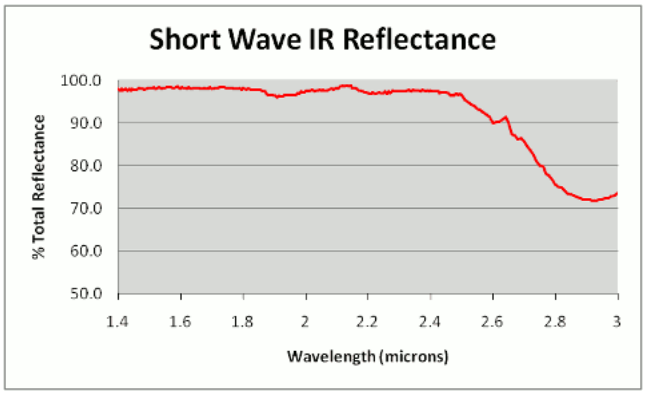
Source: Heraeus

where:
t=thickness (or total path length)
l*=photon mean free path length

The curve shows the percent reflectance versus the ration of thickness to mean free path length for non absorbing media. This is typical of Accuflect® IR in the shortwave infrared spectrum. (Notice how the % reflectance becomes asymptotic to 100% as the total path length to mean free path length approaches 100:1).

The excellent low loss, diffuse reflectance of Accuflect® IR is shown in the following diffuse reflectance and specular reflectance curves. Total reflectance can be obtained by summing the diffuse and specular components at any wavelength of interest.





Accuflect®: IR is available in sheets as thin as 3 mm and as shaped components as large as 75 mm square by 450 mm long.

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