ORDERING INFORMATION

EMISSIVITY

MEASUREMENT SERVICES

The Optical Properties Measurements Lab at Surface Optics Corporation (SOC) is the world leader in bidirectional and hemispherical directional reflectance, transmittance, and emittance testing services.

From reflectance measurements we generate emittance data as a function of polarization, wavelength, angle, and temperature.

Hemispherical directional reflectance measures the fraction of the light incident on a sample at a given angle that is reflected back into the hemisphere. Measurements of HDR from less than 0.3 μm to as far out as 100 μm. Typical HDR measurements are made out to 25 μm. We measure HDR as a function of incident elevation, polarization, wavelength, temperature, and provide both the specular and diffuse components.

The measured directional reflectance of a surface may be used to compute directional emissivity, a property valuable for radiative heat transfer analysis, thermal shielding, and temperature measurements.

EMISSIVITY MEASUREMENTS

SOC provides emittance data of four types, depending on the angular coverage present in the reflectance measurements:

- Directional, near-normal emittance, when reflectance has been measured at near normal incidence (θ = 10°)
- Directional angular emittance, when reflectance has been measured at any incidence angle other than near-normal
- Total hemispherical emittance, when reflectance has been measured over a sufficiently wide range of incidence angles to permit integration over the hemisphere.
- Spectral hemispherical emittance, when reflectance has been measured over a sufficiently wide range of incidence angles to permit integration over the hemisphere.

Surface Optics Corporation
11555 Rancho Bernardo Rd.,
San Diego, CA 92127

Email: contact@surfaceoptics.com
Phone: +1 (858) 675-7404

SURFACE OPTICS CORPORATION

SPECTRAL REFLECTANCE - UNPOLARIZED

Standard Lead Time: 2 Weeks
Sample Size: < 4" square, flat

PRODUCT CODE	REGION	TYPE	DESCRIPTION
8888-1111	Full	HDR	0.3 - 25 microns, UnPol, 8° AoI, α and ε
8888-1113	Full	SDR	0.3 - 25 microns, UnPol, 8° AoI, α and ε
8888-1131	IR	HDR	2.0 - 25 microns, UnPol, 8° AoI, ε
8888-1133	IR	SDR	2.0 - 25 microns, UnPol, 8° AoI, ε
8888-1141	Full Extended	HDR	0.3 - 50 microns, UnPol, 8° AoI, α and ε
8888-1143	Full Extended	SDR	0.3 - 50 microns, UnPol, 8° AoI, α and ε
8888-1151	IR Extended	HDR	2.0 - 50 microns, UnPol, 8° AoI, ε
8888-1153	IR Extended	SDR	2.0 - 50 microns, UnPol, 8° AoI, ε
8888-1171	IR - ET	HDR	2.0 - 25 microns, UnPol, 8° AoI, ε, Elevated Temperature (Max 500°C)
8888-1173	IR - ET	SDR	2.0 - 25 microns, UnPol, 8° AoI, ε, Elevated Temperature (Max 500°C)
8888-1181	IR Extended - ET	HDR	2.0 - 50 microns, UnPol, 8° AoI, ε, Elevated Temperature (Max 500°C)
8888-1183	IR Extended - ET	SDR	2.0 - 50 microns, UnPol, 8° AoI, ε, Elevated Temperature (Max 500°C)

SPECTRAL REFLECTANCE - POLARIZED, MULTI ANGLE

Standard Lead Time: 3 Weeks

PRODUCT CODE	REGION	TYPE	DESCRIPTION	SAMPLE SIZE
8888-1311	Full	HDR	0.3 - 25 microns, Polarized, 8 angles, α and ε	1 x 1.5", flat
8888-1312	Full	DDR	0.3 - 25 microns, Polarized, 8 angles	1 x 1.5", flat
8888-1313	Full	SDR	0.3 - 25 microns, Polarized, 8 angles, α and ε	1 x 1.5", flat
8888-1321	Vis	HDR	0.3 - 2.0 microns, Polarized, 8 angles, α	1 x 1.5", flat
8888-1322	Vis	DDR	0.3 - 2.0 microns, Polarized, 8 angles	1 x 1.5", flat
8888-1323	Vis	SDR	0.3 - 2.0 microns, Polarized, 8 angles, α	1 x 1.5", flat
8888-1331	IR	HDR	2.0 - 25 microns, Polarized, 8 angles, ε	< 4" square, flat
8888-1332	IR	DDR	2.0 - 25 microns, Polarized, 8 angles	< 4" square, flat
8888-1333	IR	SDR	2.0 - 25 microns, Polarized, 8 angles, ε	< 4" square, flat
8888-1341	IR - ET	HDR	2.0 - 25 microns, Polarized, 8 angles, ε, Elevated Temperature (Max 500°C)	< 4" square, flat
8888-1342	IR - ET	DDR	2.0 - 25 microns, Polarized, 8 angles, Elevated Temperature (Max 500°C)	< 4" square, flat
8888-1343	IR - ET	SDR	2.0 - 25 microns, Polarized, 8 angles, ε, Elevated Temperature (Max 500°C)	< 4" square, flat

SPECTRAL REFLECTANCE - POLARIZED, SINGLE ANGLE

Standard Lead Time: 2 Weeks

PRODUCT CODE	REGION	TYPE	DESCRIPTION	SAMPLE SIZE
8888-1211	Full	HDR	0.3 - 25 microns, Polarized, 8 angles, α and ε	1 x 1.5", flat
8888-1213	Full	SDR	0.3 - 25 microns, Polarized, 1 angle, α and ε	1 x 1.5", flat
8888-1231	IR	HDR	2.0 - 25 microns, Polarized, 1 angle, ε	< 4" square, flat
8888-1233	IR	SDR	2.0 - 25 microns, Polarized, 1 angle, ε	< 4" square, flat
8888-1241	IR - ET	HDR	2.0 - 25 microns, Polarized, 1 angle, ε, Elevated Temperature(Max 500°C)	< 4" square, flat
8888-1243	IR - ET	SDR	2.0 - 25 microns, Polarized, 1 angle, ε, Elevated Temperature(Max 500°C)	< 4" square, flat