

Certificate

Standard Reference Materials

2005, 2006, 2007, 2008

Gold on Glass

(Standards for Specular Spectral Reflectance)

These Standard Reference Materials are for calibrating equipment used in evaluating the thermal radiation properties of materials. The mirrors were prepared by fast vacuum deposition of gold on fine-annealed borosilicate glass, the surface to be coated being flat to about 27 nm. The mirrors are prepared in four sizes.

<u>SRM No.</u>	<u>Size of blank (cm)</u>	<u>Coated Area (cm)</u>
2005	7.6 × 10.2 × 1.9	5.1 × 7.6
2006	3.8 × 3.8 × 1.3	2.5 × 2.5
2007	disk: 2.9 diameter × 1.0 thick	entire surface
2008	disk: 2.4 diameter × 0.6 thick	entire surface

Each mirror is certified for near-normal (9°) specular reflectance at wavelengths ranging from 0.2537 to 30 micrometers and at corresponding resolved bandwidths from 1.0 to 1800 nanometers. The precision measure (σ_m) is the standard deviation of the mean of six replicate measurements. The certified values are given on the attached sheet. Details of experimental techniques used will be described in an NBS 260 publication.

Measurements of reflectance and other experimental work leading to the certification of these Standard Reference Materials were performed by J. C. Richmond and J. J. Hsia of the Heat Division, Institute for Basic Standards, National Bureau of Standards.

Washington, D. C. 20234
April 16, 1971

J. Paul Cali, Chief
Office of Standard Reference Materials

SRM No. 2005

Specimen material: Gold

Size: 7.6 × 10.2 × 1.6 cm

Specimen no.:

Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	cm	Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	cm
0.2537	1.0		0.0005	3	20	0.0033	
0.2650	1.0		.0004	4	32	.0052	
0.2805	1.1		.0005	5	50	.0040	
0.3023	1.2		.0005	6	72	.0040	
0.3340	1.3		.0005	7	98	.0030	
0.3651	1.4		.0002	8	128	.0030	
0.4048	1.6		.0003	9	162	.0030	
0.4358	1.7		.0002	10	200	.0030	
0.5460	2.5		.0003	11	242	.0030	
0.5770	2.5		.0003	12	288	.0030	
0.600	4.0		.0030	13	338	.0030	
0.650	4.5		.0020	14	392	.0030	
0.700	5.0		.0018	16	512	.0040	
0.800	6.0		.0015	18	648	.0040	
0.825	6.2		.0014	20	800	.0040	
0.850	6.5		.0013	22	968	.0040	
0.900	7.0		.0010	24	1152	.0040	
1.000	7.5		.0009	26	1352	.0040	
1.200	15.0		.0038	28	1568	.0040	
2.000	13.0		.0035	30	1800	.0040	

SRM No. 2006

Specimen material: Gold

Size: 3.8 x 3.8 x 1.3 cm

Specimen no.:

Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	σm	Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	σm
0.2537	1.0		0.0006	3	20		0.0033
0.2650	1.0		.0010	4	32		.0052
0.2805	1.1		.0007	5	50		.0040
0.3023	1.2		.0003	6	72		.0040
0.3340	1.3		.0005	7	98		.0030
0.3651	1.4		.0002	8	128		.0030
0.4048	1.6		.0003	9	162		.0030
0.4358	1.7		.0002	10	200		.0030
0.5460	2.5		.0002	11	242		.0030
0.5770	2.5		.0002	12	288		.0030
0.600	4.0		.0030	13	338		.0030
0.650	4.5		.0020	14	392		.0030
0.700	5.0		.0018	16	512		.0040
0.800	6.0		.0015	18	648		.0040
0.825	6.2		.0014	20	800		.0040
0.850	6.5		.0013	22	968		.0040
0.900	7.0		.0010	24	1152		.0040
1.000	7.5		.0009	26	1352		.0040
1.200	15.0		.0038	28	1568		.0040
2.000	13.0		.0035	30	1800		.0040

SRM No. 2007

Specimen material: Gold

Size: 2.9 cm diameter

Specimen no.:

Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	cm	Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	cm
0.2537	1.0		0.0012	3	20		0.0058
0.2650	1.0		.0020	4	32		.0090
0.2805	1.1		.0014	5	50		.0070
0.3023	1.2		.0006	6	72		.0070
0.3340	1.3		.0010	7	98		.0053
0.3651	1.4		.0004	8	128		.0053
0.4048	1.6		.0006	9	162		.0053
0.4358	1.7		.0004	10	200		.0053
0.5460	2.5		.0004	11	242		.0053
0.5770	2.5		.0004	12	288		.0053
0.600	4.0		.0087	13	338		.0053
0.650	4.5		.0052	14	392		.0053
0.700	5.0		.0040	16	512		.0070
0.800	6.0		.0035	18	648		.0070
0.825	6.2		.0038	20	800		.0070
0.850	6.5		.0035	22	968		.0070
0.900	7.0		.0026	24	1152		.0070
1.000	7.5		.0021	26	1352		.0070
1.200	15.0		.0095	28	1568		.0070
2.000	13.0		.0063	30	1800		.0070

SRM No. 2008

Specimen material: Gold

Size: 2.4 cm diameter

Specimen no.:

Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	cm	Wavelength (micrometer)	Resolved Bandwidth (nm)	Reflectance	cm
0.2537	1.0		0.0012	3	20	0.0058	
0.2650	1.0		.0020	4	32	.0090	
0.2805	1.1		.0014	5	50	.0070	
0.3023	1.2		.0006	6	72	.0070	
0.3340	1.3		.0010	7	98	.0053	
0.3651	1.4		.0004	8	128	.0053	
0.4048	1.6		.0004	9	162	.0053	
0.4358	1.7		.0004	10	200	.0053	
0.5460	2.5		.0004	11	242	.0053	
0.5770	2.5		.0004	12	288	.0053	
0.600	4.0		.0087	13	338	.0053	
0.650	4.5		.0052	14	392	.0053	
0.700	5.0		.0040	16	512	.0070	
0.800	6.0		.0035	18	648	.0070	
0.825	6.2		.0038	20	800	.0070	
0.850	6.5		.0035	22	968	.0070	
0.900	7.0		.0026	24	1152	.0070	
1.000	7.5		.0021	26	1352	.0070	
1.200	15.0		.0095	28	1568	.0070	
2.000	13.0		.0053	30	1800	.0070	