

Reflectivity measurement - reference mirror, CO2 cleaning INT primary mirror

Equipment:	uscan reflectometer		
Mirror:	reference mirror		
Person:	Neil O'Mahony, Tibor Agocs		
Date:	18/01/2007		
Lambda (micron):	0.67		
Incident angle (degree):	25		
BW (Bandwidth) limits:	1	0.1	

Test mirror - before cleaning

No#	BPDF - 0°,0° detector position	BPDF - 50°,180° detector position	reflectivity	rms (Ångstrom)	time	date
1	2.38E-03	1.13E-03	0.95	33.7	14:07:23	01-18-1907
2	1.69E-03	1.45E-03	0.958	27.9	14:07:34	01-18-1907
3	1.26E-03	1.01E-03	0.959	24	14:07:41	01-18-1907
4	1.24E-03	1.14E-03	0.957	24	14:07:48	01-18-1907
5	1.54E-03	1.02E-03	0.955	26.7	14:07:54	01-18-1907
average	1.621E-03	1.148E-03	0.956	27.260		
standard dev	4.645E-04	1.783E-04	0.004	3.983		

Test mirror - investigating head orientation

No#	BPDF - 0°,0° detector position	BPDF - 50°,180° detector position	reflectivity	rms (Ångstrom)	time	date
30	1.35E-02	3.56E-03	0.942	86.2	15:27:35	01-18-1907
31	1.40E-02	4.47E-03	0.939	85.2	15:27:40	01-18-1907
32	1.41E-02	4.76E-03	0.923	85.7	15:27:45	01-18-1907
33	6.44E-03	2.04E-03	0.954	57.5	15:29:08	01-18-1907
34	6.46E-03	2.03E-03	0.953	57.6	15:29:12	01-18-1907
35	6.48E-03	2.06E-03	0.952	57.7	15:29:17	01-18-1907
36	6.59E-03	2.25E-03	0.954	57.6	15:29:23	01-18-1907
37	6.62E-03	2.21E-03	0.953	57.9	15:29:28	01-18-1907
38	6.64E-03	2.09E-03	0.953	58.4	15:29:33	01-18-1907
39	6.41E-03	1.78E-03	0.951	58.7	15:29:41	01-18-1907
40	6.52E-03	1.78E-03	0.95	59.4	15:29:46	01-18-1907
41	6.26E-03	1.77E-03	0.949	57.8	15:29:50	01-18-1907
42	6.19E-03	1.74E-03	0.932	58.1	15:29:57	01-18-1907
43	6.30E-03	1.78E-03	0.95	58	15:30:02	01-18-1907
44	6.40E-03	1.80E-03	0.952	58.4	15:30:06	01-18-1907
45	4.48E-03	2.62E-03	0.952	45.7	15:31:29	01-18-1907
46	4.33E-03	2.44E-03	0.958	44.9	15:31:35	01-18-1907
47	3.77E-03	1.78E-03	0.957	42.2	15:31:42	01-18-1907
48	1.60E-03	1.70E-03	0.956	27.3	15:32:01	01-18-1907
49	1.60E-03	1.70E-03	0.953	27.3	15:32:08	01-18-1907
average	6.733E-03	2.317E-03	0.949	57.080		
standard dev	3.447E-03	9.003E-04	0.009	15.805		

Notes:

RMS - Root Mean Square surface roughness in Angstrom,
 BPDF - Bidirectional scatter distribution function, it is equal to the scattered power per unit solid angle normalized by the incident power and $\cos\theta$