

Table 1 Summary of the results

CRT	Reference spectroradiometer			Difference (Target-Reference)			ASTM R' Matrix Results 8 CRT colors			New minimization technique					
										8 CRT colors			4 CRT colors + 4 filters		
	x	y	Y(cd/m ²)	Δx	Δy	$\Delta Y(\%)$	Δx	Δy	$\Delta Y(\%)$	Δx	Δy	$\Delta Y(\%)$	Δx	Δy	$\Delta Y(\%)$
1 (White)	0.3148	0.3173	129.22	-	-	-	-0.0003	0.0004	0.1	-0.0003	0.0001	0.1	-0.0004	0.0019	-0.1
2 (Red)	0.6322	0.3362	65.25	0.0116	-0.0112	-1.2	0.0021	0.0005	0.0	0.0004	-0.0004	0.1	-0.0015	0.0021	0.0
3 (Green)	0.3078	0.5930	183.45	-0.0103	0.0124	2.0	-0.0004	-0.0027	0.2	0.0001	-0.0002	0.1	0.0006	0.0008	-0.2
4 (Blue)	0.1500	0.0623	22.46	-0.0008	-0.0083	-13.7	-0.0001	-0.0001	0.2	0.0000	-0.0004	-0.1	0.0002	0.0002	0.0
5 (Yellow)	0.4315	0.4965	149.90	-0.0010	0.0026	1.1	-0.0009	-0.0005	0.0	-0.0004	0.0001	0.0	-0.0012	0.0020	-0.2
6 (Cyan)	0.2244	0.3107	142.32	-0.0045	0.0036	-0.2	0.0005	0.0009	-0.4	0.0005	0.0008	-0.5	0.0011	0.0024	-0.7
7 (Magenta)	0.3200	0.1592	58.70	0.0059	-0.0079	-4.5	-0.0003	-0.0003	-0.1	-0.0006	-0.0007	0.0	-0.0011	0.0006	-0.1
8 (Royal blue)	0.1741	0.1238	50.87	-0.0010	-0.0052	-4.6	0.0003	0.0005	0.6	0.0003	0.0001	0.4	0.0006	0.0011	0.3
9	0.5319	0.2936	67.53	0.0102	-0.0090	-1.3	0.0008	0.0002	0.2	-0.0002	-0.0005	0.3	-0.0017	0.0017	0.2
10	0.3251	0.5599	175.02	-0.0083	0.0102	1.4	-0.0006	-0.0019	-0.3	-0.0001	0.0000	-0.4	0.0002	0.0013	-0.6
11	0.3082	0.3138	8.05	0.0004	0.0007	0.8	0.0003	0.0010	0.9	0.0003	0.0008	0.9	0.0003	0.0025	0.7
12	0.3146	0.3170	128.64	0.0002	-0.0005	0.6	-0.0002	-0.0001	0.8	-0.0002	-0.0004	0.7	-0.0003	0.0014	0.5
13	0.2490	0.3155	32.51	-0.0026	0.0016	1.1	0.0008	-0.0003	1.0	0.0008	-0.0004	0.9	0.0012	0.0012	0.7
14	0.3101	0.2014	17.11	0.0056	-0.0052	-2.2	0.0013	0.0004	0.3	0.0011	-0.0001	0.4	0.0008	0.0014	0.3
15	0.3911	0.4436	36.90	-0.0004	0.0023	1.4	-0.0003	-0.0002	0.6	0.0000	0.0002	0.5	-0.0004	0.0020	0.4
RMS of all 15 colors				0.0058	0.0067	4.1	0.0008	0.0010	0.5	0.0005	0.0004	0.5	0.0009	0.0016	0.4
Maximum of all 15 colors				0.0116	0.0124	13.7	0.0021	0.0027	1.0	0.0011	0.0008	0.9	0.0017	0.0025	0.7
RMS of 7 colors (9 – 15)				0.0055	0.0056	1.3	0.0007	0.0008	0.7	0.0005	0.0004	0.6	0.0009	0.0017	0.5
Maximum of 7 colors (9 – 15)				0.0102	0.0102	2.2	0.0013	0.0019	1.0	0.0011	0.0008	0.9	0.0017	0.0025	0.7
FILTER	x	y	Y	Δx	Δy	$\Delta Y(\%)$	Δx	Δy	$\Delta Y(\%)$	Δx	Δy	$\Delta Y(\%)$	Δx	Δy	$\Delta Y(\%)$
Opal only	0.4638	0.414	270.58	0.0042	-0.0044	0.74	0.0004	-0.0021	0.4	0.0004	-0.0022	0.4	-0.0007	-0.0002	0.3
BG-7	0.3076	0.4346	95.14	-0.0041	0.0021	1.05	0.0000	-0.0037	0.0	0.0002	-0.0032	0.0	0.0004	-0.0015	-0.2
GG-455	0.4808	0.4373	255.17	0.0042	-0.0045	0.80	0.0005	-0.0024	0.3	0.0006	-0.0024	0.3	-0.0006	-0.0003	0.2
OG-590	0.669	0.3304	89.19	0.0159	-0.0168	-1.68	0.0060	-0.0034	-0.2	0.0039	-0.0044	0.1	0.0017	-0.0019	0.0
BG-34	0.3113	0.3522	32.28	-0.0019	-0.0011	0.25	-0.0009	-0.0024	0.0	-0.0008	-0.0025	-0.1	-0.0008	-0.0007	-0.3
FG-3	0.3533	0.3595	70.68	0.0005	-0.0032	0.40	-0.0005	-0.0032	0.2	-0.0005	-0.0033	0.2	-0.0008	-0.0014	0.0
KG-1	0.4558	0.4181	240.26	0.0040	-0.0037	1.28	0.0005	-0.0020	0.9	0.0006	-0.0021	0.9	-0.0004	0.0000	0.7
OG-530	0.548	0.4484	223.69	0.0045	-0.0055	1.10	-0.0006	-0.0009	0.7	-0.0008	-0.0011	0.8	-0.0024	0.0012	0.6
VG-6	0.3038	0.5659	66.37	-0.0084	0.0103	1.38	0.0007	-0.0033	-0.4	0.0012	-0.0013	-0.5	0.0017	0.0000	-0.7
RMS of all 9 filter colors				0.0068	0.0074	1.06	0.0021	0.0027	0.4	0.0014	0.0027	0.5	0.0012	0.0010	0.4
Maximum of all 9 filter colors				0.0159	0.0168	1.68	0.0060	0.0037	0.9	0.0039	0.0044	0.9	0.0024	0.0019	0.7