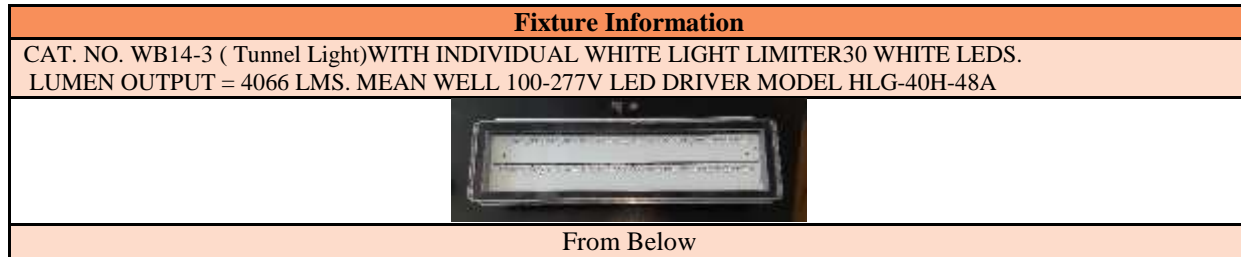


LUMINAIRE PHOTOMETRIC TEST REPORT P041C

MPS COMPANY LED FLOODLIGHT CAT. NO. WB14-3 (Tunnel Light)
 WITH INDIVIDUAL WHITE LIGHT LIMITER
 30 WHITE LEDS. LUMEN OUTPUT = 4066 LMS.
 MEAN WELL 100-277V LED DRIVER MODEL HLG-40H-48A

FLOODLIGHT SUMMARY:

NEMA Type	6 H x 76V
Maximum Candela	5320 CANDELA
Horizontal Beam Angle (50%)	93.9
Vertical Beam Angle (50%)	23.0
Horizontal Field Angle (10%)	108.8
Vertical Field Angle (10%)	108.9
Beam FLUX	1074 Lumens
Field FLUX	3310 Lumens
Total FLUX	4066 Lumens
Total Efficacy	127 Lumens/watt
Power	32.04 Watts



PREPARED FOR:

MPS COMPANY INC.
 TORONTO, ONTARIO

TESTED DATE: May29, 2023

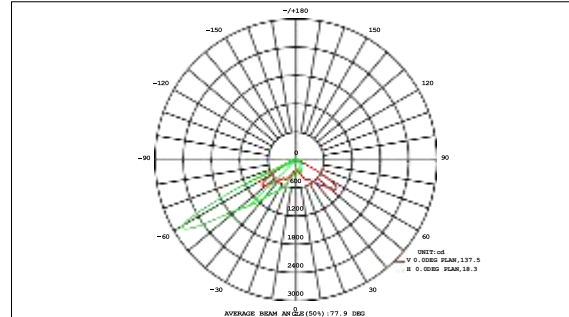
ISSUED DATE: May 31,2023

The above tabulation is computed in accordance with IES publication no. LM-35-2002, and defines the beam from the 50% maximum candlepower points and the field from the 10% maximum candlepower points. LM-35-2002 supersedes the 1970 document which defines the beam from the 10% maximum candlepower points.

Laboratory result may not be representative of field performance.
 ABSOLUTE PHOTOMETRY TAKEN.TESTED IN ACCORDANCE WITH IES LM-79-2019 SEC. 10
 ACCREDITED BY NVLAP (LAB CODE 500084-0) TO ISO/IES 17025:2017

LUMINAIRE PHOTOMETRIC TEST REPORT

Electrical: U:120.00V I:0.2670A P:32.040W PF:0.9940 Freq:60.00Hz	
NAME: WB14-3 (Tunnel Lighting)	TYPE: Flood Light
MFR.: MPS Company Inc	STABILIZATION TIME: 60MIN

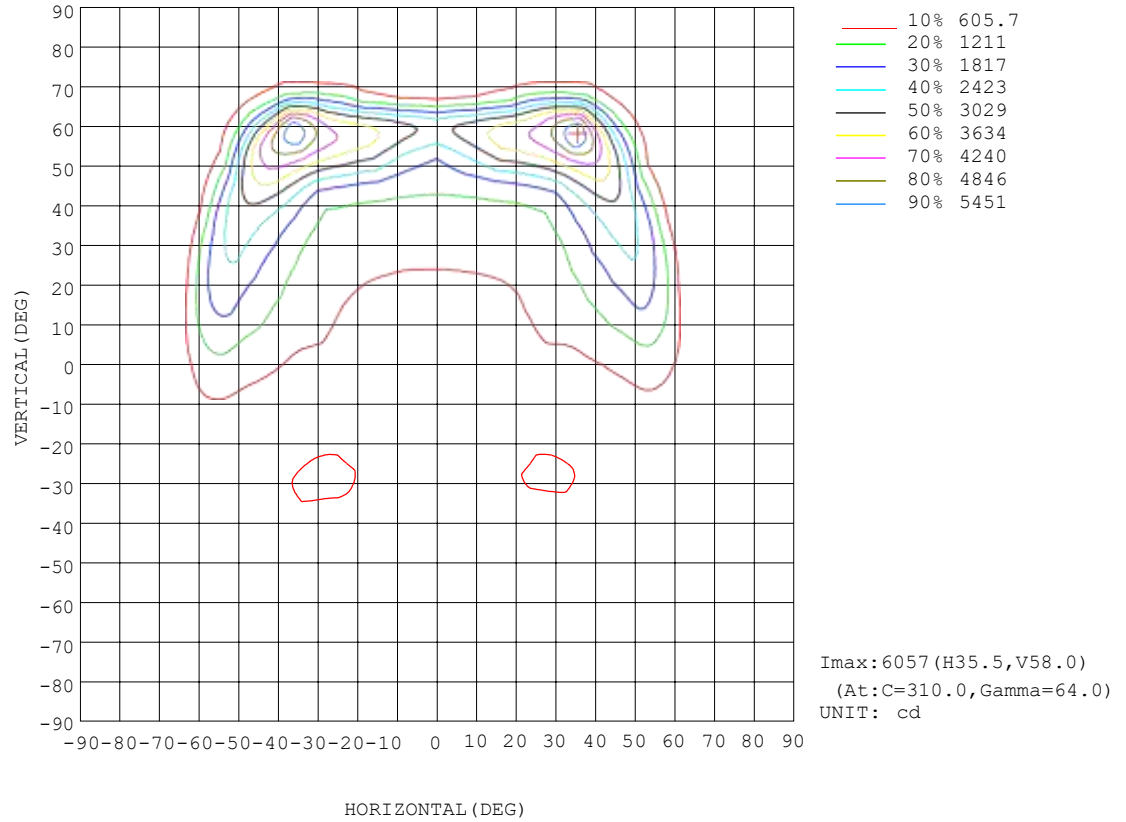


		AREA FLUX DIAGRAM																UNIT: lm		ϕ t	ϕ a	
VERTICAL (DEG)	-90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90	-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	ϕ t	ϕ a
		0.00	0.03	0.09	0.19	0.34	0.54	0.63	0.56	0.47	0.47	0.54	0.59	0.48	0.26	0.09	0.03	0.00	0.00	5.32	0.00	
80		0.01	0.10	0.41	1.26	3.85	7.18	6.94	5.69	4.46	4.69	5.97	7.33	7.21	3.34	0.85	0.22	0.04	0.00	59.6	5.07	
70		0.02	0.21	0.92	4.72	28.1	70.5	61.7	49.9	42.5	43.3	52.6	68.2	68.7	21.7	3.16	0.61	0.11	0.01	517	491	
60		0.02	0.33	1.59	13.0	78.0	123	108	96.8	77.6	79.8	99.9	110	123	60.8	7.89	1.11	0.21	0.01	981	971	
50		0.03	0.44	2.40	25.1	72.9	70.6	55.5	50.6	43.3	44.1	50.6	55.4	71.2	65.6	15.9	1.66	0.31	0.02	626	617	
40		0.04	0.55	3.89	34.2	53.1	40.4	29.2	27.4	26.6	26.6	27.6	29.9	43.3	54.6	26.3	2.55	0.42	0.02	427	419	
30		0.05	0.62	5.85	35.9	41.1	29.8	23.2	20.1	19.2	19.3	20.2	23.8	33.0	44.3	30.5	3.64	0.49	0.03	351	326	
20		0.05	0.65	6.68	31.3	31.3	23.0	17.9	13.5	12.2	12.3	13.8	19.0	24.5	32.8	27.3	4.22	0.52	0.03	271	205	
10		0.05	0.63	5.62	22.1	21.4	16.7	14.2	9.58	8.08	8.14	10.3	14.8	16.4	20.7	19.1	3.92	0.51	0.04	193	117	
0		0.05	0.56	3.69	13.0	12.3	11.5	10.9	7.63	6.72	6.67	7.90	11.0	10.7	11.1	10.7	2.76	0.46	0.04	128	26.5	
-10		0.04	0.48	2.05	5.80	7.56	11.1	12.3	7.92	6.66	6.61	7.85	12.6	10.8	7.02	4.44	1.57	0.39	0.03	105	0.00	
-20		0.04	0.39	1.21	3.30	7.84	14.3	16.9	10.7	7.34	7.19	10.0	16.5	14.3	7.66	2.68	1.00	0.31	0.03	122	27.4	
-30		0.03	0.30	0.92	2.60	8.91	13.8	14.9	10.0	5.58	5.43	8.95	13.5	12.2	8.72	2.38	0.81	0.23	0.02	109	12.6	
-40		0.02	0.22	0.73	2.04	7.28	7.75	6.91	6.37	4.50	4.38	5.62	6.13	6.65	6.49	1.92	0.65	0.17	0.01	67.9	0.00	
-50		0.02	0.16	0.56	1.57	5.75	4.96	4.15	4.14	3.98	3.94	4.02	4.02	4.64	5.23	1.50	0.50	0.12	0.01	49.3	0.00	
-60		0.01	0.11	0.39	1.00	2.35	3.13	3.49	3.66	3.58	3.55	3.55	3.40	3.04	2.30	0.92	0.30	0.07	0.01	34.9	0.00	
-70		0.01	0.05	0.17	0.42	0.83	1.32	1.97	2.27	1.96	1.90	2.10	1.88	1.28	0.75	0.31	0.10	0.02	0.00	17.3	0.00	
-80		0.00	0.01	0.03	0.07	0.12	0.18	0.24	0.28	0.26	0.25	0.25	0.21	0.16	0.10	0.05	0.02	0.01	0.00	2.25	0.00	
		-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90		
ϕ t		0.51	5.83	37.2	198	383	449	389	327	275	279	332	398	452	353	156	25.7	4.40	0.31	4066	---	
ϕ a		0.00	0.00	11.8	168	329	380	309	240	199	203	247	319	382	300	126	2.55	0.00	0.00	---	3217	

one-half-peak spread: U:32.2,D:9.5 , L:14.5,R:12.3

NEMA Beam Type: Type 6

ISOCANDELA DIAGRAM





Lumentra Inc.
 3730 Laird Road, Unit B, Mississauga,
 Ontario, Canada L5L 5Z7
 Tel: (647) 479-8820
<http://lumentra.com>

160 Frobisher Drive, Unit 5, Waterloo,
 Ontario, Canada N2V 2B1
 Tel: (519) 746-3140
 Email: services@lumentra.com



LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

H (DEG) \ V (DEG)	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
-180	0.59	0.24	0.27	0.40	0.67	1.08	1.62	1.58	1.38	1.18	1.01	0.91	0.74	0.61	0.47	0.47	0.47	0.47	0.47
-170	0.59	0.23	0.26	0.34	0.61	1.09	1.64	1.77	1.79	1.57	1.43	1.32	1.22	1.10	0.94	0.83	0.72	0.68	0.64
-160	0.59	0.23	0.25	0.28	0.49	0.99	1.70	2.15	2.33	2.07	1.81	1.59	1.43	1.25	1.08	0.97	0.85	0.73	0.77
-150	0.59	0.23	0.23	0.24	0.33	0.99	1.94	2.63	2.85	2.85	2.49	2.17	1.89	1.65	1.47	1.30	1.17	1.20	1.11
-140	0.59	0.23	0.21	0.20	0.29	0.85	1.81	2.74	3.17	3.36	3.37	2.98	2.51	2.14	1.92	1.84	1.75	1.72	1.68
-130	0.59	0.24	0.21	0.20	0.21	0.58	1.22	2.09	2.92	3.37	3.64	3.72	3.82	3.62	3.29	3.03	2.93	2.87	2.85
-120	0.59	0.27	0.21	0.20	0.20	0.29	0.64	1.18	1.87	2.47	3.08	3.38	3.64	3.87	3.80	3.67	3.49	3.31	3.12
-110	0.59	0.30	0.24	0.20	0.20	0.24	0.29	0.65	1.19	1.75	2.32	2.63	2.81	2.69	2.48	2.20	1.84	1.63	1.41
-100	0.59	0.40	0.36	0.28	0.26	0.28	0.30	0.39	0.51	0.68	0.95	0.90	0.79	0.62	0.41	0.36	0.30	0.25	0.20
-90	0.59	0.72	0.84	0.76	0.67	0.69	0.70	0.69	0.67	0.65	0.64	0.60	0.57	0.54	0.50	0.44	0.37	0.34	0.30
-80	0.59	1.46	2.41	3.32	4.30	5.89	7.40	9.84	12.4	15.0	18.0	20.9	24.7	30.9	43.3	39.1	27.9	26.4	24.6
-70	0.59	2.36	5.13	8.86	14.8	21.3	30.2	39.9	54.2	68.1	81.3	89.6	94.6	101	107	105	101	99.1	96.4
-60	0.59	3.57	8.71	15.5	25.3	35.7	49.6	68.5	109	187	196	151	147	142	139	136	132	130	129
-50	0.59	4.98	12.7	22.2	35.6	47.7	66.6	91.1	184	346	360	235	180	166	161	154	144	135	131
-40	0.59	6.48	17.8	30.7	46.0	62.4	79.1	124	230	382	426	415	391	390	361	285	199	154	152
-30	0.59	7.92	23.6	42.1	56.4	77.8	110	141	242	422	578	627	703	668	571	385	252	209	206
-20	0.59	9.12	29.7	53.2	73.7	101	174	245	272	310	411	495	539	538	418	295	232	233	250
-10	0.59	9.95	35.4	63.5	93.8	163	444	537	451	378	393	423	444	406	319	248	213	213	215
0	0.59	10.3	39.5	71.7	111	226	794	1048	910	761	632	526	499	449	352	282	242	234	236
10	0.59	10.5	39.3	75.0	130	332	1189	1654	1508	1263	1003	768	678	582	436	362	334	312	305
20	0.59	10.2	36.8	74.5	131	341	1312	2082	2049	1682	1347	1027	866	751	634	565	532	512	508
30	0.59	9.24	32.6	69.3	117	279	1011	2184	2541	2161	1758	1334	1062	921	839	791	766	751	748
40	0.59	7.85	27.3	57.7	98.7	187	496	1784	2819	2977	2577	2009	1426	1253	1180	1137	1081	1056	1049
50	0.59	6.18	21.1	44.3	76.2	123	296	813	2490	3976	4335	3949	3410	3083	2832	2633	2162	1859	1662
60	0.59	4.45	14.5	31.1	52.3	86.1	166	362	1090	2646	4483	5592	4622	3968	3727	3494	3197	2990	2798
70	0.59	2.86	8.41	17.8	30.9	46.8	69.4	122	214	366	629	758	734	674	544	424	298	269	249
80	0.59	1.67	3.46	6.35	10.6	15.7	21.4	27.6	37.7	49.7	69.3	76.6	75.0	75.1	73.3	65.5	55.1	55.9	55.9
90	0.59	0.78	0.96	1.28	1.60	2.05	2.51	2.07	1.63	1.56	1.50	1.21	0.93	0.76	0.58	0.51	0.43	0.42	0.41
100	0.59	0.48	0.39	0.41	0.44	0.46	0.40	0.34	0.35	0.32	0.30	0.29	0.27	0.24	0.20	0.22	0.23	0.23	0.23
110	0.59	0.32	0.20	0.22	0.23	0.25	0.26	0.29	0.33	0.32	0.32	0.35	0.31	0.30	0.25	0.25	0.27	0.25	0.24
120	0.59	0.24	0.21	0.21	0.23	0.24	0.28	0.31	0.38	0.40	0.42	0.40	0.41	0.38	0.31	0.29	0.27	0.27	0.27
130	0.59	0.22	0.21	0.21	0.22	0.26	0.29	0.41	0.46	0.54	0.53	0.53	0.52	0.51	0.46	0.40	0.35	0.33	0.30
140	0.59	0.22	0.21	0.20	0.26	0.29	0.37	0.45	0.57	0.59	0.55	0.54	0.54	0.54	0.53	0.46	0.42	0.41	0.44
150	0.59	0.23	0.23	0.24	0.31	0.41	0.52	0.66	0.63	0.62	0.60	0.57	0.54	0.54	0.54	0.52	0.43	0.40	0.40
160	0.59	0.23	0.25	0.32	0.41	0.55	0.81	0.88	0.79	0.68	0.63	0.60	0.57	0.55	0.54	0.54	0.51	0.42	0.40
170	0.59	0.23	0.26	0.36	0.55	0.83	1.23	1.19	1.07	0.94	0.83	0.74	0.68	0.63	0.53	0.54	0.54	0.57	0.50
180	0.59	0.24	0.27	0.40	0.67	1.08	1.62	1.58	1.38	1.18	1.01	0.91	0.74	0.61	0.47	0.47	0.47	0.47	0.54



Lumentra Inc.
 3730 Laird Road, Unit B, Mississauga,
 Ontario, Canada L5L 5Z7
 Tel: (647) 479-8820
<http://lumentra.com>

160 Frobisher Drive, Unit 5, Waterloo,
 Ontario, Canada N2V 2B1
 Tel: (519) 746-3140
 Email: services@lumentra.com



LUMINOUS DISTRIBUTION INTENSITY DATA

Table--2

UNIT: cd

H (DEG) \ V (DEG)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
-180	0.61	0.67	0.71	0.81	0.95	1.18	1.31	1.42	1.65	1.75	1.75	1.68	1.04	0.54	0.24	0.24	0.27	0.51
-170	0.64	0.73	0.79	0.90	1.03	1.18	1.34	1.57	1.81	2.05	2.05	1.88	1.35	0.70	0.32	0.24	0.27	0.51
-160	0.77	0.80	0.95	1.05	1.17	1.35	1.49	1.68	1.93	2.28	2.37	2.08	1.53	0.77	0.33	0.24	0.27	0.51
-150	1.10	1.15	1.31	1.46	1.63	1.79	1.98	2.21	2.58	2.84	2.68	2.32	1.56	0.76	0.29	0.24	0.27	0.51
-140	1.56	1.61	1.73	1.90	2.12	2.48	2.88	3.31	3.43	3.28	2.94	2.25	1.35	0.69	0.24	0.24	0.28	0.51
-130	2.75	2.74	2.78	2.96	3.24	3.48	3.50	3.54	3.32	3.07	2.55	1.75	1.02	0.45	0.24	0.24	0.29	0.51
-120	3.05	3.06	3.25	3.38	3.46	3.40	3.19	2.98	2.63	2.33	1.81	1.24	0.64	0.28	0.25	0.24	0.33	0.51
-110	1.50	1.59	1.85	2.07	2.27	2.39	2.42	2.40	2.11	1.71	1.18	0.68	0.38	0.27	0.25	0.25	0.37	0.51
-100	0.22	0.23	0.29	0.34	0.54	0.70	0.90	1.04	0.92	0.79	0.55	0.40	0.33	0.27	0.27	0.31	0.40	0.51
-90	0.33	0.37	0.40	0.43	0.48	0.54	0.59	0.64	0.64	0.64	0.54	0.44	0.42	0.40	0.40	0.40	0.46	0.51
-80	25.1	25.3	31.6	33.2	26.5	22.8	18.6	15.9	13.1	10.4	6.80	3.98	2.84	1.90	1.34	0.92	0.66	0.51
-70	97.5	98.0	101	103	98.9	92.5	87.0	78.0	65.3	50.0	33.4	20.7	13.8	8.02	4.50	2.33	1.13	0.51
-60	130	132	133	136	139	145	149	186	182	108	64.8	44.9	30.9	19.7	10.4	4.79	1.75	0.51
-50	132	138	146	152	157	168	210	310	307	170	87.7	61.9	42.4	29.4	16.7	8.50	2.48	0.51
-40	153	179	248	327	339	332	346	373	364	220	114	72.4	55.4	38.3	22.8	12.6	3.36	0.51
-30	207	232	343	527	631	662	594	571	420	234	121	91.4	68.0	47.0	33.1	17.4	4.30	0.51
-20	230	225	285	405	544	548	498	405	294	244	178	124	85.3	62.2	43.0	22.4	5.11	0.51
-10	212	211	257	335	425	438	401	365	342	404	422	315	132	78.5	51.7	27.0	5.66	0.51
0	231	240	286	359	437	466	478	568	676	822	873	586	181	92.6	58.6	30.1	5.93	0.51
10	315	340	383	485	619	691	796	1032	1266	1515	1434	838	231	102	61.5	29.1	5.80	0.51
20	514	533	566	644	781	917	1130	1482	1808	2107	1780	818	229	102	60.1	26.2	5.35	0.51
30	753	770	800	847	940	1106	1480	1942	2345	2470	1757	583	187	94.4	52.7	21.8	4.55	0.51
40	1053	1085	1129	1169	1271	1493	2088	2650	2943	2379	1138	308	134	78.8	40.7	16.6	3.52	0.51
50	1950	2268	2681	2837	3046	3416	3966	4148	3281	1617	438	189	91.2	56.5	29.0	11.2	2.47	0.51
60	3019	3253	3588	3856	4191	4895	5582	3885	1825	714	234	109	60.7	35.4	17.8	6.26	1.60	0.51
70	290	337	467	588	736	771	735	579	303	153	82.6	45.6	29.2	17.3	7.39	2.45	0.93	0.51
80	55.9	54.9	63.7	70.4	73.7	73.7	72.6	62.3	37.9	24.8	15.1	8.76	5.62	2.96	1.36	0.48	0.49	0.51
90	0.60	0.78	0.92	1.06	1.09	1.13	1.09	1.05	0.83	0.61	0.44	0.27	0.24	0.20	0.19	0.17	0.34	0.51
100	0.24	0.24	0.25	0.27	0.27	0.27	0.29	0.30	0.30	0.30	0.27	0.23	0.20	0.17	0.17	0.17	0.31	0.51
110	0.24	0.24	0.26	0.27	0.27	0.27	0.29	0.30	0.30	0.30	0.28	0.23	0.21	0.17	0.17	0.18	0.30	0.51
120	0.27	0.27	0.29	0.31	0.33	0.37	0.38	0.37	0.39	0.37	0.35	0.29	0.23	0.22	0.21	0.18	0.28	0.51
130	0.30	0.33	0.40	0.40	0.45	0.49	0.53	0.54	0.49	0.49	0.43	0.34	0.29	0.26	0.20	0.21	0.26	0.51
140	0.42	0.44	0.44	0.44	0.48	0.51	0.53	0.54	0.54	0.57	0.56	0.42	0.35	0.31	0.25	0.23	0.24	0.51
150	0.44	0.44	0.44	0.48	0.51	0.53	0.54	0.54	0.60	0.66	0.74	0.67	0.48	0.38	0.26	0.22	0.24	0.51
160	0.44	0.44	0.49	0.53	0.54	0.54	0.59	0.64	0.69	0.78	0.82	0.85	0.69	0.41	0.27	0.22	0.25	0.51
170	0.51	0.54	0.54	0.52	0.51	0.63	0.67	0.73	0.79	1.01	1.14	1.20	0.87	0.47	0.26	0.23	0.26	0.51
180	0.61	0.67	0.71	0.81	0.95	1.18	1.31	1.42	1.65	1.75	1.75	1.68	1.04	0.54	0.24	0.24	0.27	0.51



Lumentra Inc.
 3730 Laird Road, Unit B, Mississauga,
 Ontario, Canada L5L 5Z7
 Tel: (647) 479-8820
<http://lumentra.com>

160 Frobisher Drive, Unit 5, Waterloo,
 Ontario, Canada N2V 2B1
 Tel: (519) 746-3140
 Email: services@lumentra.com



Photometric Data Table [cd]

G/C	0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0
0.0	235.8	235.6	235.5	235.2	238.7	239.2	239.4	239.8	239.7	239.5
3.0	232.5	230.5	228.9	227.4	228.9	228.5	228.1	227.9	227.6	227.7
6.0	231.4	227.3	224.0	221.4	221.3	219.5	218.4	218.0	217.8	217.9
9.0	236.7	228.0	222.0	216.6	215.2	214.0	213.6	214.1	214.9	215.5
12.0	254.0	238.5	224.7	216.2	212.6	210.8	210.5	212.9	215.9	218.0
15.0	286.4	268.4	250.3	231.5	213.5	209.2	208.0	212.9	223.1	229.0
18.0	324.6	302.4	286.4	269.3	229.6	212.1	208.3	212.7	229.1	238.7
21.0	376.2	338.9	323.9	309.5	267.7	230.9	217.3	220.7	240.2	254.7
24.0	425.0	377.8	373.3	362.6	314.7	278.2	238.6	231.6	247.0	262.8
27.0	453.5	405.3	427.5	448.3	386.1	343.3	280.4	244.2	235.5	240.0
30.0	466.2	410.9	451.2	498.0	512.4	436.1	334.8	241.8	210.2	205.6
33.0	468.7	398.9	450.5	525.6	596.3	567.1	367.4	225.1	185.8	179.2
36.0	489.9	382.7	431.7	544.2	654.8	624.4	386.8	211.4	168.2	164.0
39.0	545.6	367.9	403.2	560.0	685.3	597.8	405.8	205.6	156.7	154.6
42.0	609.9	356.9	376.6	578.6	667.2	521.2	376.7	203.8	149.0	149.9
45.0	676.2	341.9	341.8	588.9	592.9	415.2	307.4	197.0	142.6	140.7
48.0	756.8	325.4	296.4	583.9	486.8	312.7	233.3	175.9	136.2	134.1
51.0	855.3	310.5	245.3	546.2	388.9	231.3	176.3	149.1	131.6	130.1
54.0	894.4	268.6	195.0	482.8	337.1	193.0	153.9	139.6	128.2	129.6
57.0	784.2	201.2	153.8	382.4	334.2	173.4	144.9	136.2	130.7	128.4
60.0	586.4	151.4	120.8	260.2	353.9	162.8	142.0	135.2	131.4	128.5
63.0	307.7	112.1	97.45	163.6	355.4	155.8	140.7	132.8	127.4	124.0
66.0	153.9	83.09	78.34	113.2	295.6	149.7	135.5	126.1	116.9	114.1
69.0	104.1	66.07	64.64	87.68	197.4	131.9	119.6	111.6	103.8	101.0
72.0	74.89	50.73	51.63	68.44	114.7	103.3	97.71	100.1	87.67	84.87
75.0	58.61	36.56	39.53	51.45	74.79	76.44	75.59	86.30	66.34	61.90
78.0	44.73	24.30	28.96	34.98	45.47	44.50	51.77	67.33	41.89	38.17
81.0	23.46	14.36	17.25	15.58	20.77	22.64	25.87	25.51	19.78	19.56
84.0	9.296	6.799	5.766	5.954	9.210	9.846	9.939	9.446	8.867	8.791
87.0	2.435	1.814	1.445	1.478	2.775	2.845	2.809	2.673	2.441	2.412
90.0	0.5114	0.4035	0.4035	0.4362	0.6365	0.6364	0.5355	0.4343	0.3674	0.3013
93.0	0.3380	0.2360	0.2691	0.4030	0.6365	0.6030	0.4352	0.3345	0.2353	0.2017
96.0	0.2360	0.2356	0.2691	0.4030	0.7362	0.7023	0.4352	0.3010	0.2012	0.1677
99.0	0.2356	0.2356	0.2700	0.6089	1.240	1.341	0.7372	0.3014	0.2010	0.1677
102.0	0.2356	0.2356	0.5046	1.075	1.709	1.910	1.273	0.6695	0.4022	0.3022
105.0	0.2356	0.5727	0.9099	1.513	2.179	2.413	1.876	1.173	0.8046	0.7054
108.0	0.3017	0.8440	1.382	1.985	2.411	2.844	2.506	1.802	1.237	1.104
111.0	0.6055	1.283	1.957	2.524	2.613	3.015	3.212	2.640	1.773	1.608
114.0	0.9385	1.683	2.456	3.023	2.948	3.149	3.482	3.278	2.545	2.315
117.0	1.310	1.920	2.725	3.326	3.317	3.317	3.482	3.345	2.946	2.851
120.0	1.682	2.122	2.725	3.392	3.551	3.517	3.482	3.345	3.013	3.117
123.0	1.750	2.188	2.723	3.389	3.551	3.484	3.482	3.345	3.080	3.186
126.0	1.750	2.188	2.456	2.955	3.416	3.383	3.146	3.177	3.080	3.219
129.0	1.750	2.152	2.185	2.517	2.852	2.851	2.650	2.647	2.849	3.056
132.0	1.750	1.949	1.916	2.146	2.447	2.414	2.245	2.176	2.278	2.484
135.0	1.650	1.749	1.681	1.846	2.111	2.077	1.975	1.873	1.875	2.046
138.0	1.483	1.582	1.614	1.679	1.844	1.877	1.776	1.675	1.642	1.779
141.0	1.414	1.480	1.412	1.477	1.609	1.709	1.641	1.539	1.473	1.610
144.0	1.280	1.346	1.312	1.377	1.441	1.474	1.507	1.371	1.305	1.442
147.0	1.245	1.245	1.177	1.175	1.273	1.306	1.305	1.270	1.205	1.240
150.0	1.179	1.144	1.111	1.108	1.140	1.140	1.139	1.071	1.105	1.107
153.0	1.045	1.077	1.043	0.9738	1.005	1.038	1.004	0.9366	0.9705	0.9725
156.0	0.9425	0.9425	0.9748	0.9060	0.9059	0.9059	0.8717	0.8374	0.8703	0.8397
159.0	0.8753	0.8752	0.9066	0.8404	0.8375	0.8044	0.7703	0.7693	0.8031	0.8048
162.0	0.8078	0.7738	0.8404	0.8057	0.7705	0.7705	0.7699	0.7356	0.6695	0.7041
165.0	0.7071	0.7069	0.7401	0.7388	0.7041	0.7370	0.7030	0.6355	0.6364	0.6372
168.0	0.7069	0.7070	0.7401	0.7388	0.7035	0.6700	0.6361	0.6355	0.6025	0.6372
171.0	0.6732	0.6732	0.7069	0.7384	0.7035	0.6700	0.6361	0.6355	0.6025	0.6372
174.0	0.6395	0.6059	0.6728	0.7045	0.7035	0.6700	0.6361	0.6355	0.6025	0.6041
177.0	0.5722	0.6050	0.6052	0.6377	0.6365	0.6362	0.6693	0.6021	0.6025	0.6034
180.0	0.5386	0.5386	0.5719	0.5353	0.5008	0.6709	0.5683	0.6021	0.4669	0.5701
G/C	100.0	110.0	120.0	130.0	140.0	150.0	160.0	170.0	180.0	190.0
0.0	238.9	238.6	238.2	237.9	237.2	236.5	236.2	235.1	235.8	235.6
3.0	227.9	228.6	229.3	230.0	230.6	231.6	233.0	234.4	235.0	237.0
6.0	218.4	218.8	219.6	221.0	223.0	224.9	227.6	230.5	234.5	238.5
9.0	215.5	214.9	214.6	215.2	216.8	219.7	225.0	229.7	238.8	247.0
12.0	216.5	214.0	212.1	212.4	214.2	217.7	225.1	235.2	253.3	268.0
15.0	223.9	215.2	210.9	211.5	216.3	225.6	239.1	254.8	281.6	307.4
18.0	230.0	215.6	212.0	217.0	234.8	254.6	270.5	286.2	317.8	356.0
21.0	241.6	224.8	222.1	239.7	270.6	294.3	307.9	323.9	373.2	430.1
24.0	248.7	238.5	253.0	285.8	317.3	343.1	352.2	365.9	430.8	511.6
27.0	238.5	255.5	302.3	353.9	393.6	422.5	408.8	403.6	474.5	571.9
30.0	212.7	259.2	365.0	461.0	511.2	481.7	444.0	423.1	498.9	615.5

GONIOPHOTOMETER SYSTEM TEST REPORT

Photometric Data Table [cd]

33.0	187.8	248.3	412.4	598.0	595.2	514.6	455.9	424.7	511.7	652.4
36.0	170.1	235.0	450.7	658.6	659.1	534.4	443.8	411.8	540.3	717.8
39.0	158.9	232.8	451.5	648.2	705.8	545.7	419.6	398.9	608.6	860.2
42.0	151.5	241.7	408.7	579.8	710.1	558.0	387.9	388.7	681.5	1038
45.0	146.2	239.3	340.9	479.1	663.7	577.4	354.5	375.8	760.6	1218
48.0	140.6	199.9	265.8	366.9	575.0	582.7	309.6	361.5	838.2	1407
51.0	136.1	160.1	194.7	264.1	472.0	544.9	259.2	349.5	952.1	1650
54.0	132.0	145.4	162.0	208.6	409.5	475.8	206.8	335.1	1048	1897
57.0	131.4	140.6	149.7	185.7	405.0	380.4	168.4	294.8	994.5	1895
60.0	131.7	138.6	144.9	170.9	418.8	267.1	136.7	233.8	793.5	1608
63.0	127.9	137.0	142.8	160.3	405.2	171.7	111.0	155.5	431.4	985.2
66.0	119.4	132.2	138.3	151.5	327.2	118.9	87.79	99.32	187.9	404.6
69.0	106.5	116.5	122.8	135.7	203.9	90.25	70.50	76.94	125.9	218.2
72.0	91.32	104.0	99.29	108.4	114.5	72.12	57.34	60.36	89.82	128.2
75.0	70.01	93.28	74.73	80.37	76.21	56.05	44.42	45.43	71.73	89.74
78.0	45.39	76.67	48.84	49.25	50.29	41.07	33.44	32.50	55.50	62.96
81.0	21.37	32.77	27.50	24.85	24.70	26.50	23.39	19.59	31.09	38.60
84.0	9.273	10.40	11.27	11.42	10.99	10.52	12.48	10.80	14.00	20.18
87.0	2.586	3.192	3.498	3.726	3.654	3.489	3.532	4.280	4.599	7.033
90.0	0.3695	0.5042	0.5711	0.6375	0.6694	0.7033	0.6711	0.8410	0.5950	0.9615
93.0	0.2699	0.3705	0.4712	0.5705	0.5027	0.3699	0.2693	0.2709	0.2356	0.2027
96.0	0.2689	0.3364	0.5038	0.6371	0.5027	0.3022	0.2020	0.2024	0.2356	0.2020
99.0	0.2690	0.3367	0.8417	1.275	0.7711	0.3022	0.2020	0.2024	0.2693	0.2020
102.0	0.4370	0.8078	1.480	1.879	1.240	0.5375	0.2356	0.2024	0.3030	0.2020
105.0	0.9090	1.415	2.154	2.418	1.643	0.8069	0.4395	0.2027	0.4045	0.2693
108.0	1.441	2.181	2.954	2.983	2.008	1.339	0.8390	0.3697	0.5728	0.3357
111.0	2.115	2.958	3.529	3.255	2.445	2.046	1.446	0.6737	0.7406	0.4371
114.0	2.790	3.498	3.832	3.322	2.916	2.821	2.054	1.079	0.9440	0.5383
117.0	3.261	3.734	3.900	3.457	3.386	3.290	2.525	1.451	1.283	0.7404
120.0	3.461	3.767	3.900	3.756	3.651	3.257	2.694	1.751	1.616	0.9761
123.0	3.496	3.800	3.900	3.825	3.619	3.257	2.693	1.855	1.582	1.010
126.0	3.495	3.464	3.529	3.691	3.418	3.190	2.727	1.855	1.582	1.010
129.0	3.030	2.891	2.930	2.992	2.952	2.824	2.427	1.855	1.413	1.010
132.0	2.456	2.357	2.422	2.419	2.548	2.419	2.055	1.721	1.313	0.9759
135.0	2.118	2.018	2.051	2.081	2.212	2.149	1.818	1.484	1.178	0.8753
138.0	1.849	1.850	1.816	1.881	1.913	1.881	1.617	1.384	1.110	0.8415
141.0	1.647	1.615	1.580	1.712	1.710	1.612	1.414	1.350	0.9761	0.8088
144.0	1.479	1.413	1.445	1.544	1.508	1.444	1.347	1.282	0.8762	0.8078
147.0	1.311	1.244	1.310	1.342	1.307	1.309	1.279	1.248	0.8407	0.7411
150.0	1.177	1.110	1.177	1.209	1.174	1.143	1.212	1.147	0.7405	0.7071
153.0	1.041	0.9418	1.008	1.074	1.039	1.074	1.111	1.079	0.6395	0.6397
156.0	0.8752	0.8086	0.9419	0.9404	0.9061	0.9738	0.9769	0.9447	0.6059	0.6059
159.0	0.7396	0.7403	0.8406	0.8729	0.8380	0.9066	0.9093	0.8766	0.4712	0.5068
162.0	0.6051	0.7062	0.7732	0.8054	0.8043	0.8395	0.8081	0.8096	0.4712	0.5049
165.0	0.5714	0.7060	0.7066	0.7055	0.7372	0.7723	0.7747	0.7086	0.4712	0.5049
168.0	0.5714	0.6391	0.7059	0.7047	0.7037	0.7387	0.7406	0.6747	0.4712	0.5049
171.0	0.5714	0.6391	0.7059	0.7047	0.7037	0.7716	0.7070	0.7082	0.4712	0.5049
174.0	0.5714	0.6391	0.7059	0.7047	0.6705	0.6718	0.6738	0.6071	0.4712	0.5049
177.0	0.5717	0.6388	0.7056	0.6710	0.6367	0.6047	0.6394	0.5734	0.4712	0.5049
180.0	0.5370	0.5373	0.6044	0.5698	0.5688	0.5700	0.5378	0.5055	0.4712	0.5049
G/C	200.0	210.0	220.0	230.0	240.0	250.0	260.0	270.0	280.0	290.0
0.0	235.5	235.2	238.7	239.2	239.4	239.8	239.7	239.5	238.9	238.6
3.0	239.0	240.8	243.7	245.3	246.5	248.8	248.9	248.1	247.0	246.3
6.0	242.4	245.0	251.8	255.9	258.9	261.6	264.3	262.8	261.9	261.5
9.0	253.2	257.6	271.6	279.4	285.3	288.3	292.2	291.9	290.8	290.0
12.0	275.1	281.1	301.6	312.8	321.5	326.6	332.4	333.9	332.4	330.4
15.0	309.9	314.7	339.4	354.6	367.6	377.5	386.9	389.6	386.6	380.4
18.0	349.8	354.2	384.0	405.4	426.1	441.5	454.5	458.6	454.4	445.3
21.0	407.8	400.8	439.4	468.4	496.6	513.6	528.9	532.9	528.4	519.0
24.0	498.4	476.6	508.7	540.1	569.1	583.3	601.3	606.9	604.4	592.9
27.0	587.4	583.3	598.0	613.9	640.0	651.3	670.8	677.3	675.0	665.0
30.0	664.9	692.4	700.6	691.5	711.2	730.2	741.8	747.8	744.5	734.1
33.0	736.6	786.3	800.1	768.8	781.7	801.5	810.0	816.0	812.5	805.4
36.0	824.2	880.2	889.6	845.0	860.1	874.9	878.9	882.0	878.4	884.4
39.0	984.3	997.4	980.5	924.7	948.4	972.2	990.0	997.5	980.1	974.7
42.0	1196	1172	1090	1024	1068	1136	1162	1165	1164	1127
45.0	1435	1432	1282	1136	1260	1415	1402	1356	1421	1393
48.0	1683	1722	1606	1321	1627	1880	1697	1530	1788	1859
51.0	1970	2037	2054	1778	2292	2545	2061	1751	2208	2568
54.0	2341	2397	2620	2612	3045	3144	2544	2155	2697	3240
57.0	2494	2785	3380	3622	3768	3679	3045	2663	3162	3813
60.0	2276	2966	4099	4661	4267	3811	3160	2798	3211	3936
63.0	1653	2646	4431	5751	4144	3188	2324	1898	2362	3297
66.0	731.1	1702	4161	5828	3251	1742	982.1	753.6	1042	1875

GONIOPHOTOMETER SYSTEM TEST REPORT

Photometric Data Table [cd]

69.0	321.6	748.2	2699	3980	1856	716.8	349.2	289.3	396.6	833.0
72.0	175.5	379.9	1233	1483	803.6	413.5	224.2	194.4	250.4	438.7
75.0	110.5	218.7	439.2	623.9	325.1	221.0	146.7	132.9	160.1	223.0
78.0	74.49	118.7	190.2	270.8	152.0	126.2	91.69	89.37	93.24	123.9
81.0	48.13	61.46	91.38	116.7	81.67	65.05	41.07	40.10	40.36	62.02
84.0	27.06	30.38	30.35	32.40	33.11	28.65	14.15	13.24	14.14	25.73
87.0	8.389	9.579	8.798	9.831	7.824	6.086	4.859	4.568	5.115	6.222
90.0	1.599	2.508	1.629	1.499	0.9266	0.5846	0.4308	0.4137	0.7847	1.056
93.0	0.5056	0.8406	0.8383	0.7709	0.3016	0.2007	0.2343	0.2347	0.3367	0.6732
96.0	0.2355	0.3022	0.3685	0.3015	0.2678	0.2007	0.2343	0.2347	0.2353	0.2692
99.0	0.2355	0.2687	0.3350	0.3015	0.2678	0.2007	0.2343	0.2347	0.2353	0.2691
102.0	0.2355	0.2687	0.3350	0.3015	0.2681	0.2007	0.2343	0.2347	0.2353	0.2691
105.0	0.2355	0.3022	0.3685	0.3023	0.3018	0.2015	0.2343	0.2347	0.2353	0.2691
108.0	0.2699	0.3022	0.3699	0.3350	0.3348	0.2341	0.3007	0.2347	0.2353	0.2691
111.0	0.3697	0.4027	0.4033	0.3692	0.4011	0.2341	0.2678	0.2683	0.2353	0.2691
114.0	0.4035	0.4366	0.5025	0.4028	0.3683	0.2676	0.2678	0.2683	0.2359	0.2699
117.0	0.4711	0.5354	0.5358	0.4355	0.4017	0.2676	0.2678	0.2683	0.2689	0.3027
120.0	0.6392	0.5710	0.5360	0.5359	0.4352	0.3010	0.2678	0.2683	0.2689	0.3027
123.0	0.6392	0.6045	0.5360	0.5360	0.5020	0.3345	0.2678	0.2683	0.2689	0.3030
126.0	0.6392	0.6045	0.5360	0.5360	0.5026	0.3349	0.3013	0.2683	0.3025	0.3696
129.0	0.6392	0.6045	0.5360	0.5360	0.5356	0.4014	0.3347	0.3349	0.3025	0.4036
132.0	0.6392	0.6045	0.5360	0.5360	0.5356	0.4021	0.3682	0.3024	0.3361	0.4049
135.0	0.6392	0.6045	0.5360	0.5360	0.5356	0.4350	0.4017	0.3354	0.3696	0.4373
138.0	0.6392	0.5719	0.5360	0.5360	0.5356	0.4348	0.4017	0.4023	0.4034	0.4373
141.0	0.6392	0.5709	0.5360	0.5360	0.5356	0.4348	0.4017	0.4024	0.4701	0.4373
144.0	0.6392	0.5709	0.5360	0.5360	0.5356	0.4348	0.4017	0.4024	0.4370	0.4373
147.0	0.6392	0.5709	0.5360	0.5360	0.5356	0.4348	0.4017	0.4024	0.4370	0.4373
150.0	0.6392	0.6043	0.5360	0.5360	0.5356	0.4348	0.4017	0.4024	0.4370	0.4373
153.0	0.6392	0.5373	0.5360	0.5360	0.5356	0.4348	0.4017	0.4024	0.4370	0.4373
156.0	0.6065	0.5373	0.5360	0.5360	0.5356	0.4348	0.4017	0.4024	0.4370	0.4373
159.0	0.5046	0.5373	0.5360	0.5360	0.5356	0.4355	0.4017	0.4024	0.4370	0.4373
162.0	0.5046	0.5373	0.5360	0.5360	0.5689	0.5017	0.4352	0.4024	0.4370	0.4373
165.0	0.5046	0.5373	0.5360	0.5360	0.5691	0.5353	0.4688	0.4024	0.4373	0.4374
168.0	0.5046	0.5373	0.5360	0.5360	0.5691	0.5686	0.5356	0.5030	0.4706	0.4723
171.0	0.5046	0.5373	0.5360	0.5360	0.5691	0.5686	0.5356	0.5030	0.4706	0.5045
174.0	0.5046	0.5373	0.5360	0.5360	0.5691	0.5686	0.5356	0.5366	0.5373	0.5045
177.0	0.5046	0.5373	0.5360	0.5360	0.5691	0.5686	0.5356	0.5366	0.5042	0.5053
180.0	0.5046	0.5373	0.6030	0.5695	0.5691	0.6021	0.5690	0.5366	0.5378	0.5382
G/C	300.0	310.0	320.0	330.0	340.0	350.0				
0.0	238.2	237.9	237.2	236.5	236.2	235.1				
3.0	245.0	243.6	241.9	239.7	237.3	234.4				
6.0	259.0	255.4	251.2	247.7	244.3	238.4				
9.0	286.9	281.0	273.2	266.4	261.5	253.0				
12.0	325.3	316.8	306.7	298.7	295.3	286.8				
15.0	372.0	359.7	347.8	338.6	339.2	334.8				
18.0	429.7	410.0	391.9	380.0	384.2	396.3				
21.0	496.6	470.9	445.3	436.6	459.8	476.7				
24.0	569.1	540.7	513.6	532.1	549.5	548.3				
27.0	644.7	616.3	608.0	642.3	623.2	591.7				
30.0	720.8	694.4	717.0	741.4	688.8	617.8				
33.0	791.9	772.7	819.8	832.8	756.9	647.2				
36.0	869.9	853.1	908.6	936.5	865.5	732.0				
39.0	954.3	947.2	1003	1092	1066	882.5				
42.0	1066	1049	1146	1340	1304	1048				
45.0	1242	1170	1392	1629	1556	1221				
48.0	1597	1370	1740	1911	1816	1424				
51.0	2234	1841	2141	2229	2151	1675				
54.0	2995	2659	2651	2596	2398	1768				
57.0	3754	3631	3352	2776	2295	1579				
60.0	4340	4828	3848	2589	1853	1160				
63.0	4385	5976	3763	1852	1072	539.7				
66.0	3736	5737	3019	914.4	426.4	267.3				
69.0	2138	3713	1783	413.0	210.6	152.0				
72.0	883.4	1402	832.5	233.4	124.7	101.6				
75.0	348.1	595.7	321.2	138.1	82.69	74.36				
78.0	163.5	276.8	139.3	75.45	54.44	45.23				
81.0	81.57	114.9	65.17	38.88	31.57	24.01				
84.0	28.55	27.56	19.38	14.62	13.58	9.682				
87.0	7.656	8.134	5.728	3.299	2.068	1.602				
90.0	1.126	1.052	0.6123	0.2726	0.2027	0.1686				
93.0	0.7066	0.6045	0.3354	0.2350	0.1683	0.1686				
96.0	0.3027	0.3020	0.3016	0.2350	0.1683	0.2023				
99.0	0.2689	0.3020	0.3016	0.2350	0.1685	0.2024				
102.0	0.2689	0.3020	0.3016	0.2686	0.2025	0.2698				

GONIOPHOTOMETER SYSTEM TEST REPORT

Photometric Data Table [cd]

105.0	0.2689	0.3020	0.3016	0.3358	0.2364	0.3373
108.0	0.2689	0.3020	0.3357	0.3370	0.3030	0.4053
111.0	0.3025	0.3356	0.4021	0.4365	0.3717	0.4743
114.0	0.3358	0.3710	0.4364	0.5037	0.4391	0.7090
117.0	0.3362	0.4697	0.4692	0.5370	0.6060	0.9104
120.0	0.4032	0.6033	0.5695	0.5373	0.7405	0.8769
123.0	0.4373	0.5034	0.5362	0.5373	0.7070	0.8769
126.0	0.4370	0.5034	0.5362	0.5373	0.7073	0.9099
129.0	0.4370	0.5034	0.5362	0.5373	0.6733	0.8759
132.0	0.4370	0.5034	0.5362	0.5373	0.6733	0.8088
135.0	0.4370	0.5034	0.5362	0.5373	0.6733	0.7757
138.0	0.4370	0.5034	0.5362	0.5373	0.6733	0.7422
141.0	0.4370	0.5034	0.5362	0.5373	0.6733	0.7079
144.0	0.4370	0.5034	0.5362	0.5373	0.6738	0.6751
147.0	0.4370	0.5034	0.5362	0.5373	0.6730	0.6074
150.0	0.4370	0.5034	0.5362	0.5373	0.6394	0.6071
153.0	0.4370	0.5034	0.5362	0.5373	0.5050	0.5729
156.0	0.4370	0.5034	0.5362	0.5373	0.5050	0.5396
159.0	0.4370	0.5034	0.5362	0.5373	0.5050	0.5396
162.0	0.4370	0.5034	0.5362	0.5373	0.5050	0.5396
165.0	0.4708	0.5704	0.5362	0.5373	0.5050	0.5396
168.0	0.5042	0.5369	0.5362	0.5373	0.5050	0.5396
171.0	0.5042	0.5369	0.5362	0.5373	0.5050	0.5396
174.0	0.5042	0.5369	0.5362	0.5373	0.5050	0.5396
177.0	0.5708	0.5369	0.5362	0.5373	0.5056	0.5396
180.0	0.6051	0.5705	0.6032	0.5708	0.5723	0.5734

Test Methods

Luminous Intensity Distribution were measured using Everfine Goniospectrophotometer (EVERFINE GO-R5000) with a HAAS-2000 spectrometer in the midfield geometry. Tested according to IES LM-79-2019. Test distance exceeds five times the greatest luminous opening of luminaires. The sample was tested in the orientation for its intended use. Determined in accordance with the current IES published procedures. Laboratory result may not be representative of field performance. Absolute photometry taken. All photometric measurement equipment was calibrated using a 530W omni-directional Everfine halogen standard flux lamp (D908S). All measurements are traceable to NIST. The spectral and color angular uniformity measurements were done using the HAAS-2000 spectrometer positioned at the midfield in front of the secondary mirror.

All measurements were performed when the device under test was operated long enough to reach stabilization. Stability is reached when the variation of three readings of the light output and electrical power over a period of 30 min, taken 10 minutes apart, is less than 0.5 %. The maximum uncertainty for gonio measured luminous flux for an indoor luminaire is +/- 3.8% and +/- 0.5% for CCT measurements ($k = 2$) based on the GO-R5000 Measurement Uncertainty Analysis conducted by Everfine.

Applicable Standards and Operating Equipment

- IES LM-79:2019 (Sec. 7) Solid State Lighting Luminaires - Total Flux Measurements (Luminous Efficacy)
- IES LM-79:2019 (Sec. 9) Solid State Lighting Luminaires - Color Characteristic Measurements

Equipment	Manufacturer	Model
Goniospectrophotometer	Everfine Corporation	EVERFINE GO-R5000_V2 SYSTEM V2.00.463
Spectrometer	Everfine	HAAS-2000
Digital Power Meter	Yokogawa	WT230
DC Power Supply (CC and CV)	Everfine Corporation	WY12010
Spectral Luminous Flux Standard	Everfine Corporation	D908S
AC Power Source	Everfine Corporation	PCR 1000WH

Prepared By:



Balakumar.B
Senior Engineer

NOTE: This report must not be used by anyone to claim product certification, approval or endorsement by NVLAP, NIST, or any Agency of the US Federal Government. The duplication of this report or any parts thereof and its use for advertising purposes is only allowed with the express written consent of Lumentra Inc. Reports are issued on the basis of information, documents and/or materials and samples provided by, or on behalf of, the Client. The information in this document is provided in connection with the supplied product only.

END OF REPORT