

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: iO LED

Report Number: P277815

Luminaire Tested: 696-8LED2710-12-BK-LSL

Issue Date: 3/3/2020

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
 Report Number: P277815
 Test Lab: INNOVATION CENTER(G2)
 Issue Date: 3/3/2020
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: iO LED
 Catalog Number: 696-8LED2710-12-BK-LSL
 Description: BOCA 696, 8 WATT, 2700K CCT, 10 DEGREE SPOT OPTIC,
 FLUSH HOOD BLACK, LINEAR SPREAD LENS
 Light Source: (1) SORAA 2700K 90 CRI LED
 SM16-07-10D-927-03
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 282.9 lumens
 Efficiency: N/A
 Efficacy: 35.4 lumens/watt
 N/A
 Luminous Opening: Circular (Dia: 0.17' x H: 0')
 CIE Type: Indirect

Input Watts (W): 8
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 24 FT

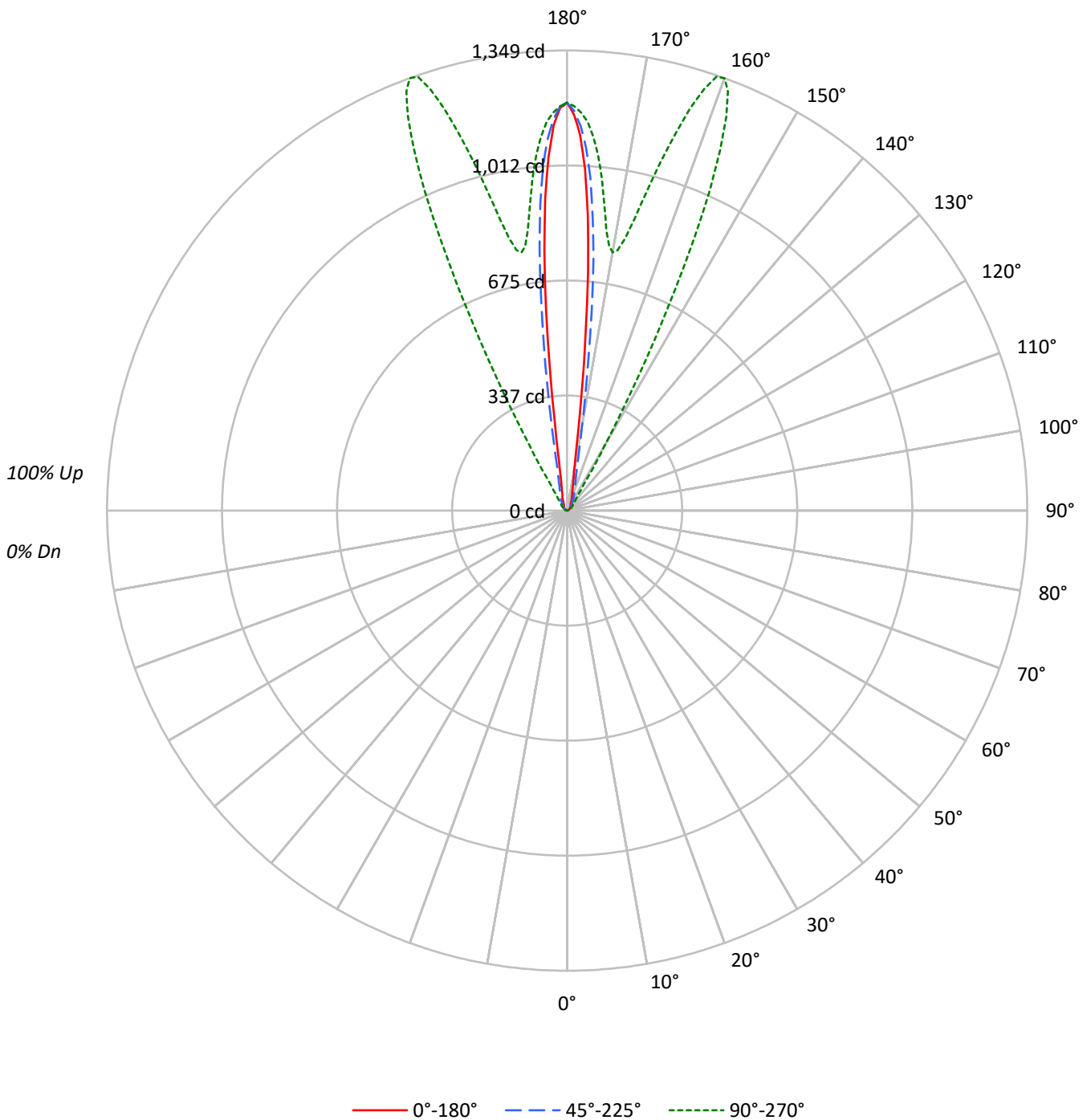


Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20										
RC	80									70									50									30									10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0														
RCR																																						
0	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	10	10	10	10	10	10	0														
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	8	8	8	8	8	8	0														
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	7	7	7	7	7	7	0														
3	72	63	57	51	61	54	49	44	37	34	31	21	20	18	7	6	6	6	6	6	6	6	6	0														
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	5	5	5	5	5	5	0														
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	4	4	4	4	4	4	0														
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	4	4	4	4	4	4	0														
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	3	3	3	3	3	3	0														
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	3	3	3	3	3	3	0														
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	3	3	3	3	3	3	3	0														
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	2	2	2	2	2	2	0														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
95°	0	5085	0	5085	5085
100°	2552	5104	5104	2552	2552
105°	3424	5150	7051	5150	3424
110°	5336	7937	7937	6632	5336
115°	6424	8521	9570	8521	6424
120°	7202	9868	11738	8982	6316
125°	8602	10233	13329	10233	7830
130°	9131	11205	14739	10515	8441
135°	9559	11444	16536	11444	8932
140°	9980	12367	21186	12367	9402
145°	10419	14816	32460	14275	10419
150°	11963	19767	123786	19256	11451
155°	15404	24822	481035	24333	13934
160°	21578	33547	708333	33075	20631
165°	30797	49900	539450	49441	29366
170°	58060	125740	385032	138113	60816
175°	348093	425399	517662	447586	379741

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 0°
 Luminance: 0 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.0	0.0
10°-20°	0.0	0.0
20°-30°	0.0	0.0
30°-40°	0.0	0.0
40°-50°	0.0	0.0
50°-60°	0.0	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	0.0	0.0
90°-100°	0.6	0.2
100°-110°	3.0	1.1
110°-120°	6.8	2.4
120°-130°	10.5	3.7
130°-140°	13.3	4.7
140°-150°	20.0	7.1
150°-160°	77.9	27.5
160°-170°	85.8	30.3
170°-180°	65.0	23.0
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	0.0	0.0
90°-120°	10.4	3.7
90°-150°	54.3	19.2
90°-180°	283.0	100.0
0°-180°	282.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
90°	0	0	0	0	0	
95°	0	1	0	1	1	1
105°	2	3	4	3	2	2
115°	6	7	8	7	6	5
125°	10	12	15	12	9	8
135°	14	16	24	16	13	11
145°	17	25	54	24	17	11
155°	28	46	884	45	26	13
165°	60	98	1056	97	57	18
175°	703	859	1045	904	767	44
180°	1196	1196	1196	1196	1196	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
97.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
100°	0.9	0.9	0.9	0.9	0.9	0.9	1.8	1.8	1.8	1.8	1.8
102.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
105°	1.8	1.8	1.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
107.5°	2.7	2.7	2.7	2.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
110°	3.7	3.7	3.7	3.7	4.6	4.6	4.6	5.5	5.5	5.5	5.5
112.5°	4.6	4.6	4.6	4.6	5.5	5.5	5.5	6.4	6.4	6.4	6.4
115°	5.5	5.5	5.5	5.5	6.4	6.4	7.3	7.3	7.3	7.3	7.3
117.5°	6.4	6.4	6.4	6.4	7.3	8.2	8.2	8.2	8.2	8.2	8.2
120°	7.3	7.3	7.3	7.3	9.1	9.1	9.1	9.1	9.1	10.0	10.0
122.5°	8.2	8.2	8.2	9.1	10.0	10.0	10.0	11.0	11.0	11.0	11.0
125°	10.0	9.1	10.0	10.0	11.0	11.0	11.9	11.9	11.9	11.9	11.9
127.5°	10.0	11.0	11.0	11.0	11.9	12.8	12.8	12.8	12.8	12.8	13.7
130°	11.9	11.9	11.9	12.8	12.8	13.7	13.7	13.7	14.6	13.7	14.6
132.5°	12.8	12.8	12.8	13.7	14.6	14.6	14.6	14.6	15.5	15.5	15.5
135°	13.7	13.7	13.7	14.6	15.5	15.5	15.5	15.5	16.4	16.4	16.4
137.5°	14.6	14.6	15.5	15.5	16.4	16.4	16.4	16.4	17.3	17.3	17.3
140°	15.5	15.5	16.4	16.4	17.3	17.3	17.3	18.3	18.3	18.3	19.2
142.5°	16.4	16.4	16.4	17.3	18.3	18.3	18.3	19.2	19.2	20.1	21.9
145°	17.3	17.3	18.3	18.3	19.2	19.2	19.2	20.1	21.0	22.8	24.6
147.5°	19.2	19.2	19.2	20.1	20.1	21.0	21.0	21.9	23.7	26.5	30.1
150°	21.0	20.1	21.0	21.0	21.9	22.8	23.7	25.6	28.3	31.0	34.7
151°	21.9	21.0	21.9	22.8	23.7	23.7	24.6	27.4	30.1	33.8	36.5
152°	22.8	22.8	22.8	23.7	24.6	25.6	26.5	29.2	32.9	35.6	39.3
153°	23.7	23.7	24.6	25.6	26.5	27.4	29.2	32.0	34.7	38.3	41.1
154°	25.6	25.6	26.5	27.4	29.2	30.1	31.0	34.7	37.4	40.2	43.8
155°	28.3	27.4	28.3	29.2	31.0	32.9	33.8	37.4	40.2	42.9	45.6
156°	30.1	30.1	31.0	32.0	33.8	35.6	36.5	39.3	42.0	44.7	48.4
157°	32.9	32.9	33.8	34.7	36.5	38.3	39.3	42.0	44.7	47.5	52.0
158°	35.6	35.6	36.5	38.3	40.2	41.1	42.0	44.7	47.5	50.2	55.7
159°	38.3	38.3	39.3	41.1	42.9	43.8	44.7	47.5	50.2	53.9	59.3
160°	41.1	41.1	42.0	43.8	45.6	46.6	47.5	50.2	52.9	57.5	63.9
161°	43.8	43.8	44.7	46.6	47.5	49.3	50.2	52.9	56.6	61.2	69.4
162°	46.6	46.6	47.5	49.3	51.1	52.0	53.9	56.6	60.3	66.6	73.9
163°	50.2	50.2	51.1	52.9	54.8	56.6	57.5	60.3	64.8	72.1	80.3
164°	53.9	53.9	55.7	57.5	59.3	61.2	63.0	65.7	71.2	77.6	88.5
165°	60.3	59.3	61.2	63.0	64.8	66.6	68.5	72.1	77.6	84.9	97.7
166°	65.7	65.7	67.6	70.3	72.1	73.9	75.8	80.3	86.7	94.9	108.6
167°	74.9	74.9	75.8	78.5	80.3	83.1	84.0	89.5	97.7	106.8	126.0
168°	85.8	84.9	85.8	89.5	92.2	94.0	95.9	103.2	112.3	126.0	152.5
169°	100.4	98.6	100.4	105.0	107.7	111.4	114.1	121.4	136.0	154.3	191.7
170°	115.9	119.6	122.3	128.7	132.4	137.8	143.3	154.3	175.3	200.8	251.0

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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
171°	152.5	159.8	164.3	173.4	179.8	189.0	196.3	211.8	243.7	274.8	335.0
172°	224.6	238.3	245.6	260.2	266.6	282.1	291.2	312.2	349.6	382.5	447.3
173°	348.7	366.1	375.2	396.2	399.8	421.8	431.8	455.5	496.6	523.1	587.9
174°	518.5	536.8	548.6	572.4	573.3	596.1	604.3	625.3	662.7	700.1	737.5
175°	702.8	718.3	728.4	747.6	745.7	766.7	769.5	786.8	816.9	846.1	858.9
176°	867.1	879.9	889.1	903.7	898.2	915.5	915.5	926.5	947.5	967.6	976.7
177°	1003.2	1026.9	1018.7	1028.7	1024.2	1036.0	1033.3	1039.7	1051.5	1063.4	1065.2
178°	1100.8	1114.5	1109.1	1115.4	1110.9	1119.1	1116.4	1118.2	1123.7	1127.3	1128.2
179°	1161.1	1168.4	1165.7	1168.4	1166.6	1171.1	1168.4	1168.4	1171.1	1173.0	1172.0
180°	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8

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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
97.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
100°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
102.5°	1.8	1.8	1.8	1.8	1.8	1.8	2.7	1.8	2.7	2.7	1.8
105°	2.7	2.7	2.7	2.7	3.7	2.7	2.7	3.7	3.7	3.7	3.7
107.5°	3.7	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
110°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
112.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	7.3	7.3	7.3
115°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	8.2	8.2	8.2	8.2
117.5°	9.1	9.1	9.1	8.2	8.2	8.2	9.1	9.1	9.1	10.0	10.0
120°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	11.0	11.0	11.9	11.0
122.5°	11.0	11.0	11.0	11.0	11.9	11.9	11.9	11.9	12.8	13.7	12.8
125°	12.8	12.8	12.8	12.8	12.8	12.8	12.8	13.7	14.6	15.5	14.6
127.5°	13.7	13.7	13.7	13.7	13.7	13.7	14.6	14.6	16.4	16.4	16.4
130°	14.6	14.6	14.6	15.5	15.5	15.5	15.5	16.4	18.3	19.2	18.3
132.5°	15.5	15.5	16.4	16.4	16.4	17.3	17.3	18.3	20.1	21.0	21.0
135°	16.4	17.3	17.3	18.3	18.3	19.2	20.1	21.0	22.8	23.7	23.7
137.5°	18.3	19.2	20.1	21.0	21.9	21.9	23.7	24.6	25.6	27.4	26.5
140°	20.1	21.0	22.8	24.6	25.6	26.5	28.3	29.2	32.0	32.9	32.0
142.5°	22.8	25.6	27.4	30.1	31.0	32.9	34.7	37.4	40.2	41.1	40.2
145°	27.4	30.1	32.9	35.6	38.3	40.2	42.9	48.4	52.0	53.9	52.9
147.5°	32.9	35.6	38.3	42.9	46.6	51.1	58.4	70.3	80.3	89.5	84.0
150°	37.4	41.1	46.6	54.8	60.3	69.4	89.5	132.4	187.1	217.3	204.5
151°	39.3	43.8	51.1	62.1	68.5	80.3	116.8	191.7	276.6	315.9	299.4
152°	42.0	47.5	55.7	69.4	78.5	95.9	157.9	278.4	388.9	435.4	417.2
153°	44.7	51.1	61.2	77.6	90.4	115.0	214.5	383.4	521.3	574.2	535.9
154°	47.5	54.8	66.6	87.6	105.9	143.3	291.2	503.9	670.0	728.4	687.3
155°	51.1	60.3	74.9	100.4	126.9	180.8	380.7	634.5	821.5	883.6	837.9
156°	54.8	65.7	82.2	115.0	153.4	227.3	479.3	765.8	964.8	1027.8	982.2
157°	59.3	71.2	91.3	134.2	185.3	281.2	578.8	897.3	1085.3	1148.3	1100.8
158°	63.9	77.6	100.4	155.2	222.7	335.9	667.2	994.9	1183.0	1245.1	1210.4
159°	69.4	84.9	110.5	179.8	261.1	387.1	733.9	1062.5	1255.1	1315.4	1276.1
160°	74.9	91.3	122.3	205.4	297.6	430.9	776.8	1095.4	1286.2	1349.1	1305.3
161°	81.2	99.5	135.1	232.8	329.6	464.7	794.1	1095.4	1281.6	1345.5	1297.1
162°	87.6	108.6	149.7	258.3	357.9	487.5	789.5	1065.2	1238.7	1299.8	1257.9
163°	94.9	118.7	168.9	284.8	381.6	502.1	772.2	1018.7	1174.8	1231.4	1193.0
164°	105.0	132.4	187.1	311.3	402.6	509.4	749.4	958.4	1092.6	1146.5	1113.6
165°	115.0	150.6	213.6	339.6	420.8	513.0	715.6	892.7	1005.9	1056.1	1027.8
166°	132.4	176.2	248.3	369.7	440.9	519.4	682.8	826.1	916.4	963.0	938.3
167°	156.1	210.9	288.5	405.3	464.7	530.4	658.2	770.4	840.7	878.1	857.1
168°	190.8	257.4	335.9	443.7	493.9	548.6	648.1	732.9	786.8	814.2	799.6
169°	240.1	313.1	389.8	486.6	529.5	576.0	651.8	717.4	757.6	777.7	768.5
170°	304.9	379.8	449.1	535.9	571.5	611.6	670.0	722.0	753.9	768.5	762.2

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 CATALOG NUMBER: 696-8LED2710-12-BK-LSL

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
171°	388.9	461.0	519.4	596.1	625.3	659.9	704.6	748.5	774.0	785.0	780.4
172°	511.2	561.4	607.1	674.5	697.3	717.4	766.7	796.8	818.8	827.9	823.3
173°	643.5	683.7	730.2	774.9	791.4	817.8	848.9	870.8	890.0	896.4	893.6
174°	782.2	813.3	848.9	882.7	894.5	914.6	939.3	954.8	970.3	975.8	973.0
175°	907.3	928.3	953.0	975.8	984.9	999.5	1015.9	1028.7	1039.7	1045.2	1042.4
176°	1012.3	1024.2	1039.7	1052.5	1059.8	1069.8	1080.8	1089.0	1096.3	1099.0	1096.3
177°	1086.2	1092.6	1102.7	1112.7	1116.4	1121.8	1128.2	1132.8	1137.4	1141.9	1142.8
178°	1140.1	1142.8	1147.4	1151.0	1152.9	1156.5	1158.4	1162.0	1164.7	1167.5	1168.4
179°	1178.4	1177.5	1178.4	1178.4	1179.3	1183.9	1182.1	1182.1	1183.9	1185.7	1186.7
180°	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8

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CATALOG NUMBER: 696-8LED2710-12-BK-LSL

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.9	0.9	0.9	0.0	0.0	0.9	0.9	0.9	0.9
97.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
100°	1.8	1.8	1.8	1.8	0.9	1.8	1.8	1.8	0.9	0.9	0.9
102.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
105°	3.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
107.5°	4.6	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
110°	5.5	5.5	5.5	5.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6
112.5°	6.4	6.4	6.4	6.4	6.4	6.4	5.5	5.5	5.5	5.5	5.5
115°	8.2	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4	6.4
117.5°	9.1	9.1	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
120°	11.0	10.0	10.0	10.0	10.0	9.1	9.1	9.1	9.1	9.1	9.1
122.5°	12.8	11.9	11.0	11.0	11.0	11.0	11.0	11.0	10.0	10.0	10.0
125°	13.7	12.8	12.8	12.8	11.9	11.9	11.9	11.9	11.9	11.0	11.0
127.5°	15.5	14.6	13.7	13.7	13.7	12.8	12.8	12.8	12.8	11.9	11.9
130°	17.3	16.4	15.5	15.5	14.6	14.6	14.6	13.7	13.7	13.7	13.7
132.5°	19.2	18.3	17.3	16.4	16.4	15.5	15.5	15.5	14.6	14.6	14.6
135°	21.9	20.1	19.2	18.3	18.3	17.3	17.3	16.4	16.4	15.5	15.5
137.5°	24.6	23.7	21.9	21.0	21.0	19.2	18.3	17.3	17.3	16.4	16.4
140°	30.1	28.3	26.5	25.6	24.6	22.8	21.0	19.2	19.2	18.3	17.3
142.5°	37.4	34.7	32.0	31.0	29.2	26.5	24.6	21.9	21.0	19.2	19.2
145°	49.3	43.8	39.3	37.4	35.6	32.0	29.2	26.5	23.7	21.9	20.1
147.5°	73.0	60.3	51.1	47.5	43.8	38.3	34.7	32.0	28.3	25.6	22.8
150°	146.1	98.6	71.2	63.0	56.6	47.5	41.1	37.4	33.8	30.1	26.5
151°	213.6	133.3	84.9	72.1	63.9	52.0	44.7	39.3	35.6	32.0	29.2
152°	307.6	178.0	103.2	84.0	71.2	56.6	47.5	42.0	38.3	34.7	31.0
153°	419.0	267.5	128.7	97.7	81.2	62.1	51.1	44.7	40.2	37.4	32.9
154°	545.9	357.9	163.4	116.8	93.1	68.5	56.6	47.5	42.9	39.3	35.6
155°	698.3	462.8	210.0	140.6	106.8	75.8	60.3	51.1	44.7	42.0	38.3
156°	831.5	574.2	269.3	173.4	124.2	83.1	65.7	54.8	47.5	43.8	41.1
157°	947.5	679.2	334.1	214.5	147.0	93.1	71.2	59.3	51.1	46.6	42.9
158°	1040.6	763.1	398.9	259.3	174.4	103.2	77.6	63.9	54.8	49.3	45.6
159°	1106.3	822.4	459.2	308.6	206.3	115.0	84.9	68.5	58.4	52.9	49.3
160°	1138.3	853.4	506.7	350.5	239.2	128.7	92.2	73.9	63.0	56.6	52.0
161°	1135.5	864.4	541.3	390.7	272.0	144.2	101.3	80.3	67.6	61.2	55.7
162°	1102.7	857.1	562.3	418.1	304.0	163.4	111.4	86.7	73.0	65.7	59.3
163°	1057.0	833.4	570.6	441.8	333.2	185.3	124.2	95.9	79.4	71.2	64.8
164°	994.0	798.7	571.5	460.1	362.4	214.5	141.5	105.9	87.6	76.7	70.3
165°	924.7	759.4	567.8	473.8	389.8	246.5	165.2	120.5	96.8	84.9	77.6
166°	854.4	721.1	565.1	487.5	418.1	288.5	197.2	140.6	109.5	94.9	86.7
167°	794.1	691.9	569.6	505.7	449.1	334.1	241.0	171.6	129.6	109.5	98.6
168°	753.9	676.4	580.6	529.5	484.7	383.4	294.9	216.4	160.7	131.5	115.9
169°	733.9	677.3	603.4	561.4	524.0	435.4	356.9	274.8	206.3	167.1	145.1
170°	736.6	694.6	634.5	598.9	570.6	494.8	426.3	348.7	275.7	225.5	195.4

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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
171°	761.2	730.2	688.2	649.9	630.8	566.9	508.5	438.2	367.9	314.9	281.2
172°	809.6	787.7	757.6	722.0	709.2	659.1	615.3	550.5	488.4	454.6	407.1
173°	883.6	869.9	848.9	816.9	811.5	772.2	739.3	684.6	628.1	602.5	564.2
174°	965.7	957.5	943.8	917.3	916.4	887.2	863.5	817.8	774.0	757.6	726.6
175°	1038.8	1032.4	1023.2	1004.1	1004.1	984.0	969.4	934.7	903.7	890.9	866.2
176°	1094.4	1092.6	1089.0	1075.3	1076.2	1065.2	1047.0	1030.5	1010.5	1000.4	985.8
177°	1138.3	1137.4	1135.5	1128.2	1128.2	1121.8	1117.3	1102.7	1091.7	1088.1	1079.8
178°	1166.6	1166.6	1166.6	1162.0	1162.9	1159.3	1159.3	1152.0	1148.3	1148.3	1146.5
179°	1184.8	1184.8	1187.6	1185.7	1186.7	1187.6	1188.5	1185.7	1183.9	1185.7	1185.7
180°	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8

TEST NUMBER: P277815

CATALOG NUMBER: 696-8LED2710-12-BK-LSL

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.9	0.0	0.0	0.0	0.9	0.9	0.0	0.9
97.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
100°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
102.5°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9
105°	2.7	2.7	2.7	1.8	1.8	1.8	1.8	1.8
107.5°	3.7	3.7	3.7	2.7	2.7	2.7	2.7	2.7
110°	4.6	4.6	3.7	3.7	3.7	3.7	3.7	3.7
112.5°	5.5	5.5	4.6	4.6	4.6	4.6	4.6	4.6
115°	6.4	6.4	6.4	5.5	5.5	5.5	4.6	5.5
117.5°	7.3	7.3	7.3	6.4	6.4	5.5	5.5	5.5
120°	8.2	8.2	8.2	8.2	7.3	6.4	6.4	6.4
122.5°	10.0	10.0	9.1	9.1	8.2	8.2	8.2	8.2
125°	11.0	11.0	11.0	10.0	10.0	9.1	9.1	9.1
127.5°	11.9	11.9	11.9	11.0	11.0	10.0	10.0	10.0
130°	12.8	12.8	12.8	12.8	11.9	11.0	11.0	11.0
132.5°	13.7	13.7	13.7	13.7	12.8	12.8	11.9	11.9
135°	15.5	14.6	14.6	14.6	13.7	13.7	12.8	12.8
137.5°	16.4	16.4	15.5	15.5	14.6	14.6	13.7	13.7
140°	17.3	16.4	16.4	16.4	16.4	15.5	14.6	14.6
142.5°	18.3	18.3	17.3	17.3	17.3	16.4	15.5	15.5
145°	20.1	19.2	19.2	19.2	18.3	17.3	17.3	17.3
147.5°	21.9	21.0	20.1	20.1	19.2	18.3	18.3	18.3
150°	23.7	22.8	21.9	21.9	21.0	20.1	19.2	20.1
151°	25.6	23.7	22.8	22.8	21.9	21.0	20.1	20.1
152°	27.4	25.6	24.6	23.7	22.8	21.9	21.0	21.9
153°	29.2	27.4	25.6	25.6	23.7	22.8	22.8	22.8
154°	32.0	29.2	28.3	27.4	25.6	24.6	23.7	23.7
155°	34.7	31.0	30.1	29.2	27.4	26.5	25.6	25.6
156°	37.4	33.8	32.9	32.0	30.1	29.2	28.3	27.4
157°	40.2	37.4	35.6	34.7	32.9	31.0	30.1	30.1
158°	42.9	40.2	38.3	37.4	35.6	34.7	32.9	32.9
159°	45.6	43.8	42.0	41.1	39.3	37.4	36.5	36.5
160°	48.4	46.6	44.7	43.8	42.0	40.2	39.3	39.3
161°	52.0	49.3	47.5	46.6	44.7	42.9	42.0	42.0
162°	55.7	52.9	51.1	49.3	47.5	46.6	45.6	44.7
163°	59.3	56.6	54.8	53.9	51.1	50.2	48.4	47.5
164°	64.8	60.3	59.3	58.4	55.7	53.9	52.9	52.0
165°	71.2	66.6	65.7	63.9	61.2	59.3	58.4	57.5
166°	79.4	73.9	73.0	71.2	68.5	65.7	64.8	63.0
167°	90.4	84.0	82.2	81.2	76.7	73.9	73.0	72.1
168°	104.1	95.9	94.9	91.3	88.5	85.8	84.9	82.2
169°	127.8	115.0	114.1	110.5	104.1	101.3	100.4	97.7
170°	168.0	147.0	141.5	143.3	132.4	127.8	126.0	121.4

TEST NUMBER: P277815

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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
171°	243.7	210.0	201.7	205.4	188.1	179.8	177.1	169.8
172°	364.2	321.3	328.6	316.8	293.0	280.3	275.7	264.7
173°	525.8	476.5	467.4	476.5	471.0	432.7	426.3	411.7
174°	691.9	648.1	663.6	651.8	649.1	615.3	608.0	597.0
175°	839.8	805.1	801.4	808.7	811.5	781.3	775.9	766.7
176°	969.4	957.5	942.0	950.2	952.0	929.2	923.7	918.3
177°	1070.7	1064.3	1054.3	1060.7	1064.3	1047.0	1043.3	1038.8
178°	1142.8	1141.9	1136.4	1140.1	1142.8	1132.8	1131.0	1130.1
179°	1184.8	1183.9	1183.0	1184.8	1186.7	1182.1	1180.3	1180.3
180°	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8	1195.8

(END OF REPORT)