

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: io LED

Report Number: P397393

Luminaire Tested: **VRVT4LED-LD5-24-DR-UNV-LR63-CD2-WL-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P397393
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1710-367-11)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: VRVT4LED-LD5-24-DR-UNV-LR63-CD2-WL-U
Description:
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

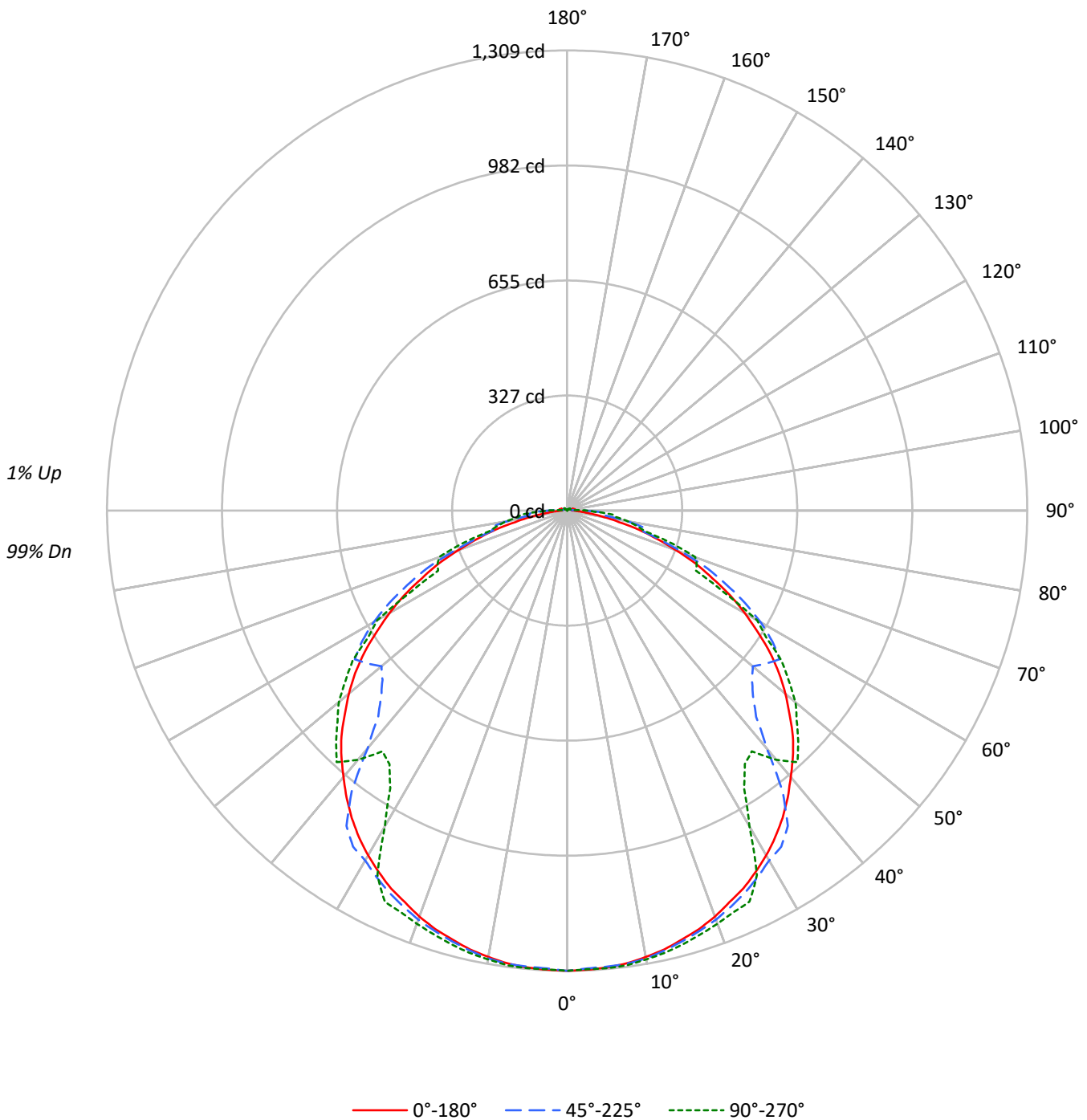
Lumens per Lamp: N/A
Luminaire Lumens: 3842.3 lumens
Efficiency: N/A
Efficacy: 8.3 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.17 / 1.28
Luminous Opening: Rectangular w/ Sides (W: 1.04' x L: 4.12' x H: 0.25')
CIE Type: Direct

Input Watts (W): 464.4
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: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	0
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101	101	101	99
1	108	103	99	95	105	101	97	93	96	93	90		92	89	87		88	86	84	82
2	98	90	83	77	95	88	81	76	84	79	74		80	76	72		77	74	70	68
3	89	79	71	64	87	77	69	63	74	67	62		71	65	61		68	63	59	57
4	82	70	61	54	79	68	60	54	66	58	53		63	57	52		61	55	51	49
5	75	62	53	47	73	61	53	46	59	51	46		57	50	45		55	49	44	42
6	69	56	47	41	67	55	47	40	53	45	40		51	44	39		49	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35		47	40	35		45	39	35	32
8	60	46	38	32	58	46	37	32	44	37	31		43	36	31		41	35	31	29
9	56	43	34	29	54	42	34	29	41	33	28		39	33	28		38	32	28	26
10	52	39	31	26	51	39	31	26	38	31	26		36	30	26		36	30	25	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3280	3280	3280
5°	3264	3215	3218
10°	3245	3172	3163
15°	3223	3111	3111
20°	3206	3063	3066
25°	3188	3014	3052
30°	3165	2961	2635
35°	3133	2914	2306
40°	3079	2451	2519
45°	3034	2184	2655
50°	2947	2144	2570
55°	2833	2471	2423
60°	2646	2329	2207
65°	2394	2042	1584
70°	2068	1630	1710
75°	1676	1174	1175
80°	1162	1119	1074
85°	720	914	1006



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	124.2	3.2
10°-20°	358.8	9.3
20°-30°	551.6	14.4
30°-40°	632.8	16.5
40°-50°	673.3	17.5
50°-60°	629.4	16.4
60°-70°	457.0	11.9
70°-80°	255.9	6.7
80°-90°	102.3	2.7
90°-100°	24.4	0.6
100°-110°	13.2	0.3
110°-120°	8.4	0.2
120°-130°	6.1	0.2
130°-140°	3.2	0.1
140°-150°	1.0	0.0
150°-160°	0.3	0.0
160°-170°	0.2	0.0
170°-180°	0.1	0.0
0°-30°	1034.6	26.9
0°-40°	1667.3	43.4
0°-60°	2970.0	77.3
0°-90°	3785.2	98.5
90°-120°	46.0	1.2
90°-150°	56.4	1.5
90°-180°	57.0	1.5
0°-180°	3842.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1309	1309	1309	1309	1309	
5°	1305	1303	1302	1306	1307	124
15°	1263	1270	1268	1275	1277	357
25°	1186	1190	1199	1214	1228	546
35°	1068	1070	1095	894	881	667
45°	908	918	748	927	929	698
55°	705	685	738	745	745	627
65°	456	391	502	444	405	453
75°	212	231	218	272	230	224
85°	42	64	109	128	131	49
90°	14	38	53	59	55	9
95°	18	19	16	16	16	16
105°	18	15	11	11	10	19
115°	9	9	8	8	8	9
125°	4	4	10	10	10	4
135°	2	1	6	4	7	1
145°	1	1	1	1	2	1
155°	1	1	1	1	0	0
165°	1	1	1	1	0	0
175°	1	1	1	1	1	0
180°	1	1	1	1	1	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3
2.5°	1307.5	1306.9	1306.9	1307.1	1305.9	1305.3	1305.3	1302.4	1301.0	1301.9	1303.4
5°	1304.8	1305.9	1305.3	1305.1	1303.2	1302.7	1302.1	1299.4	1297.9	1300.0	1302.3
7.5°	1299.2	1299.2	1299.1	1299.1	1298.3	1297.8	1298.4	1297.1	1296.2	1297.6	1300.0
10°	1289.3	1290.4	1289.9	1290.7	1289.6	1290.1	1289.8	1288.8	1290.1	1291.9	1293.6
12.5°	1278.6	1278.6	1278.6	1281.0	1281.3	1282.1	1282.9	1280.8	1279.5	1279.2	1281.5
15°	1262.9	1262.7	1266.6	1269.0	1269.5	1270.1	1268.7	1266.6	1266.3	1267.4	1267.9
17.5°	1248.0	1247.9	1249.5	1251.2	1253.1	1252.0	1250.4	1250.6	1250.6	1250.7	1253.8
20°	1229.0	1227.7	1233.5	1233.6	1231.4	1231.1	1231.7	1232.7	1232.7	1235.1	1237.9
22.5°	1205.9	1208.3	1211.4	1211.9	1211.4	1211.4	1209.9	1213.6	1213.5	1214.7	1218.7
25°	1185.9	1186.4	1185.3	1186.3	1188.0	1190.1	1187.2	1190.3	1192.2	1194.3	1198.6
27.5°	1160.0	1160.0	1158.6	1161.9	1162.6	1163.5	1162.7	1166.3	1168.5	1170.4	1174.6
30°	1132.3	1131.5	1131.4	1135.7	1134.1	1138.1	1136.3	1137.5	1141.8	1142.6	1149.1
32.5°	1101.8	1099.5	1100.7	1104.3	1104.7	1106.3	1103.4	1106.3	1111.2	1118.3	1133.5
35°	1067.9	1066.9	1067.9	1068.7	1070.9	1069.9	1069.8	1075.4	1081.1	1099.5	1094.6
37.5°	1030.4	1029.3	1033.0	1033.5	1036.2	1033.9	1035.5	1042.3	1059.7	1059.4	1006.3
40°	989.3	996.2	993.5	995.1	996.7	997.9	1000.0	1012.8	1024.2	973.1	883.2
42.5°	950.7	950.9	953.8	956.0	957.8	959.1	962.9	977.9	949.0	855.4	795.9
45°	908.2	907.9	909.5	910.1	914.7	918.3	931.2	923.7	840.8	767.2	747.5
47.5°	857.9	859.1	864.8	867.7	869.0	882.4	884.7	839.4	741.3	710.4	712.7
50°	810.7	815.5	815.1	818.6	831.2	838.3	825.6	723.9	670.1	674.6	689.6
52.5°	760.0	762.7	760.7	767.5	780.7	774.4	736.3	642.7	630.1	641.6	714.4
55°	704.8	701.6	709.9	716.2	716.8	684.8	628.0	587.2	591.2	630.4	737.5
57.5°	642.4	646.4	650.3	661.8	640.0	585.3	548.0	543.1	552.0	671.5	692.0
60°	583.5	585.8	593.1	601.8	539.4	501.3	489.6	494.6	550.4	650.3	636.0
62.5°	523.4	528.0	532.8	528.8	448.3	442.9	444.0	454.2	568.3	581.1	571.1
65°	456.3	463.2	471.1	444.0	390.2	391.2	392.5	439.7	515.9	508.3	501.6
67.5°	397.6	399.8	404.5	355.4	338.4	339.7	344.0	445.3	453.6	446.6	434.2
70°	329.4	336.3	335.8	285.9	288.6	289.1	306.9	393.4	383.0	375.4	352.5
72.5°	267.5	273.4	256.6	236.0	237.0	246.4	308.2	318.6	306.1	288.2	278.1
75°	212.3	211.8	188.5	183.5	190.1	230.6	261.9	237.1	228.3	229.1	217.6
77.5°	150.9	158.1	138.4	139.4	161.1	192.5	184.8	174.6	183.0	174.7	224.2
80°	108.2	108.3	98.7	101.6	132.3	129.9	129.8	133.9	133.4	169.4	171.0
82.5°	69.4	67.8	67.2	67.4	93.3	92.3	93.1	96.3	126.2	120.0	108.5
85°	42.4	42.2	41.0	53.3	61.0	64.0	65.9	93.9	81.3	94.2	109.1
87.5°	26.2	27.2	26.6	38.9	44.8	55.5	63.2	60.3	78.2	72.6	90.6
90°	14.1	14.9	18.1	26.9	39.7	37.6	43.0	48.8	60.5	59.8	52.8
92.5°	12.8	13.4	17.3	23.7	27.8	29.8	32.2	32.5	32.0	33.1	32.5
95°	17.9	17.6	18.1	19.4	19.2	18.7	19.2	18.6	17.4	16.5	15.8
97.5°	22.6	21.4	19.4	16.2	13.9	13.8	13.8	13.4	12.3	11.8	11.5
100°	22.4	21.8	19.7	17.6	14.7	13.4	12.6	11.8	11.5	11.2	11.0
102.5°	21.0	20.3	18.9	17.4	16.5	15.4	13.9	12.2	11.5	11.4	11.2
105°	18.2	17.9	17.0	15.8	15.2	15.0	14.6	13.3	11.8	11.4	11.2
107.5°	15.7	15.4	14.7	13.9	13.6	13.4	13.3	13.0	12.0	11.0	10.7
110°	13.0	12.6	12.2	11.7	11.8	11.5	11.5	11.4	11.0	10.6	9.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	10.7	10.4	9.9	9.9	10.1	10.2	10.1	9.9	9.8	9.3	9.1
115°	8.6	8.5	8.2	8.2	8.5	9.1	9.6	9.9	9.1	8.3	8.0
117.5°	7.0	7.0	6.7	6.6	7.2	7.8	8.2	9.0	9.8	9.4	8.2
120°	5.8	5.8	5.6	5.3	5.6	6.2	7.0	8.6	8.3	9.1	10.1
122.5°	4.8	4.8	4.5	4.3	4.3	4.8	5.0	6.6	9.6	8.6	8.5
125°	4.0	3.8	3.8	3.5	3.5	3.7	4.2	4.5	5.6	9.6	10.4
127.5°	3.2	3.2	3.0	2.9	2.7	2.7	3.0	4.5	4.3	4.6	7.5
130°	2.7	2.7	2.6	2.4	2.2	2.1	2.1	3.2	5.4	4.8	4.3
132.5°	2.2	2.1	2.1	1.9	1.8	1.8	1.6	1.8	3.2	5.8	5.6
135°	1.8	1.8	1.6	1.6	1.4	1.4	1.3	1.3	1.6	2.7	5.6
137.5°	1.4	1.4	1.4	1.3	1.3	1.3	1.1	1.1	1.1	1.4	2.2
140°	1.3	1.3	1.3	1.1	1.1	1.0	1.0	1.0	0.8	1.0	1.3
142.5°	1.1	1.1	1.1	1.0	1.0	1.0	1.0	0.8	0.8	0.8	1.0
145°	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.8	0.6	0.6	0.8
147.5°	1.0	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
150°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
152.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
155°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
157.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
160°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8	1.0
162.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
165°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
167.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
170°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1
172.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1
175°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.1
177.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.1
180°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3	1309.3
2.5°	1302.4	1303.5	1302.6	1305.3	1305.9	1306.1	1307.4	1307.5	1306.9	1306.1
5°	1301.8	1304.3	1303.1	1305.9	1306.1	1306.6	1307.9	1308.2	1307.5	1306.7
7.5°	1300.0	1302.4	1302.1	1304.0	1305.1	1303.9	1305.6	1306.6	1305.6	1304.5
10°	1291.7	1293.0	1292.3	1295.1	1295.5	1295.2	1297.3	1297.9	1297.8	1296.2
12.5°	1281.5	1283.5	1284.2	1285.3	1285.3	1285.5	1287.4	1288.2	1289.3	1288.3
15°	1269.0	1269.9	1272.2	1274.4	1274.7	1275.7	1275.5	1278.9	1276.8	1276.8
17.5°	1255.2	1256.5	1257.5	1259.9	1261.8	1261.6	1261.8	1263.9	1264.7	1263.4
20°	1239.1	1239.7	1242.4	1245.1	1245.9	1247.2	1249.1	1250.6	1251.4	1250.6
22.5°	1222.7	1225.0	1225.8	1229.0	1229.8	1231.7	1234.7	1237.5	1239.1	1236.5
25°	1201.8	1202.3	1207.7	1210.3	1213.6	1215.7	1223.1	1229.6	1231.2	1227.7
27.5°	1179.2	1182.6	1196.5	1199.7	1196.7	1196.2	1191.9	1187.2	1162.9	1169.6
30°	1162.3	1166.6	1157.1	1129.6	1125.5	1104.2	1081.1	1047.7	1039.1	1037.3
32.5°	1133.6	1104.2	1057.0	1005.1	989.9	970.9	955.5	943.1	935.1	936.2
35°	1050.6	985.9	927.9	902.3	893.5	887.5	878.7	879.5	882.3	880.7
37.5°	934.6	876.5	858.6	850.9	849.1	850.7	852.3	856.2	861.1	863.2
40°	834.1	815.9	819.2	823.4	830.1	840.3	860.2	885.8	912.3	925.3
42.5°	780.8	785.1	800.5	837.8	873.5	905.6	936.2	959.9	968.8	970.4
45°	749.1	773.0	845.0	911.2	927.2	933.5	943.5	941.0	936.7	929.3
47.5°	735.5	828.0	882.9	897.8	889.1	884.0	885.8	880.8	887.4	885.8
50°	788.7	844.0	842.1	836.3	843.2	847.7	855.2	850.6	851.9	848.0
52.5°	795.2	794.6	794.7	808.2	803.5	797.8	798.3	804.7	806.3	794.4
55°	746.7	753.8	749.8	748.5	744.8	735.4	725.5	729.8	742.3	745.0
57.5°	697.8	687.5	690.3	676.2	689.9	704.5	682.6	673.1	668.0	670.9
60°	634.6	620.5	642.7	621.6	617.6	623.4	640.7	650.4	629.5	623.7
62.5°	561.5	578.4	566.4	573.5	554.7	527.2	489.6	489.6	498.1	500.8
65°	505.3	503.7	449.9	434.2	443.5	452.2	449.9	417.9	411.4	404.8
67.5°	422.9	369.9	389.6	366.7	361.1	357.0	364.0	379.4	397.6	399.0
70°	322.2	331.0	310.7	345.6	371.4	397.3	408.8	406.4	396.3	387.4
72.5°	265.9	288.8	351.5	341.9	333.6	335.2	328.3	324.6	319.4	316.2
75°	274.6	280.2	275.4	270.9	272.3	269.6	259.2	245.9	234.4	230.2
77.5°	213.4	223.0	208.0	186.4	185.4	192.2	197.1	205.0	208.5	204.6
80°	150.6	141.4	160.5	175.4	180.5	186.6	177.4	173.9	173.9	175.8
82.5°	128.5	145.3	139.2	130.6	130.7	132.6	132.6	136.8	144.3	139.8
85°	97.3	108.2	129.8	131.2	128.5	131.4	135.5	135.4	132.6	131.0
87.5°	94.7	94.6	92.2	81.0	80.0	82.7	82.7	81.3	81.0	80.0
90°	54.6	54.4	54.2	56.8	58.6	56.6	55.2	54.2	54.6	55.0
92.5°	31.7	32.2	32.2	33.0	31.8	30.4	29.6	28.5	28.0	26.9
95°	15.7	16.0	16.3	16.0	16.2	16.2	16.0	16.2	15.8	16.0
97.5°	11.7	11.8	12.0	12.3	12.6	12.6	13.0	13.0	13.0	13.1
100°	10.9	10.9	10.9	10.9	11.0	11.0	11.2	11.2	11.4	11.4
102.5°	11.2	11.0	10.9	10.7	10.7	10.7	10.7	10.7	10.7	10.7
105°	11.2	11.0	11.0	10.9	10.9	10.7	10.6	10.4	10.4	10.2
107.5°	10.7	11.0	11.2	11.2	11.2	11.0	10.9	10.7	10.6	10.7
110°	9.6	9.6	9.9	9.9	10.1	10.2	10.4	10.4	10.4	10.4



TEST NUMBER: P397393

CATALOG NUMBER: VRVT4LED-LD5-24-DR-UNV-LR63-CD2-WL-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	9.0	8.6	8.6	8.8	9.0	9.0	9.1	9.1	9.1	9.1
115°	7.8	7.5	7.5	7.5	7.7	7.8	7.8	8.0	8.0	8.0
117.5°	7.2	6.7	6.6	6.6	6.6	6.6	6.7	6.7	6.7	6.9
120°	9.8	8.0	6.6	5.9	5.8	5.8	5.8	5.8	5.8	5.8
122.5°	9.3	10.4	10.4	8.6	8.5	7.7	7.0	6.6	5.9	5.9
125°	8.2	8.5	8.6	9.6	10.4	10.6	11.4	10.7	10.2	9.9
127.5°	10.6	11.8	8.2	8.0	8.0	8.2	8.5	8.5	8.8	9.4
130°	5.3	8.5	10.4	10.6	11.4	12.6	9.3	7.7	7.5	7.7
132.5°	4.3	4.0	5.0	7.7	8.8	9.3	10.1	10.7	10.2	10.4
135°	7.2	5.8	4.3	3.8	3.8	3.8	4.6	5.1	6.1	6.9
137.5°	4.2	6.7	7.8	6.6	6.1	5.3	4.5	3.8	3.7	3.7
140°	1.8	2.7	4.3	6.6	7.4	7.7	8.2	7.7	7.4	6.7
142.5°	1.3	1.6	1.8	2.2	2.7	3.2	3.8	5.3	5.8	5.9
145°	1.0	1.3	1.3	1.4	1.4	1.6	1.6	1.6	1.6	1.6
147.5°	0.8	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
150°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
152.5°	0.8	0.8	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.3
155°	0.8	0.8	0.8	0.6	0.6	0.6	0.5	0.3	0.3	0.3
157.5°	0.8	0.8	0.8	0.6	0.6	0.6	0.5	0.3	0.3	0.3
160°	1.0	1.0	0.8	0.6	0.6	0.6	0.5	0.3	0.3	0.3
162.5°	1.0	1.0	0.8	0.8	0.6	0.6	0.5	0.5	0.3	0.3
165°	1.0	1.0	1.0	0.8	0.8	0.6	0.6	0.5	0.5	0.3
167.5°	1.1	1.0	1.0	0.8	0.8	0.8	0.6	0.5	0.5	0.5
170°	1.1	1.1	1.0	1.0	0.8	0.8	0.6	0.6	0.5	0.5
172.5°	1.1	1.1	1.0	1.0	0.8	0.8	0.8	0.6	0.6	0.6
175°	1.1	1.1	1.0	1.0	1.0	1.0	0.8	0.6	0.6	0.6
177.5°	1.1	1.1	1.0	1.0	1.0	1.0	0.8	0.6	0.6	0.6
180°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

(END OF REPORT)