

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: NEO-RAY

Report Number: P332629-840

Luminaire Tested: **S124DIP-S1020D365U840-4F0-1E-UDD-D1**

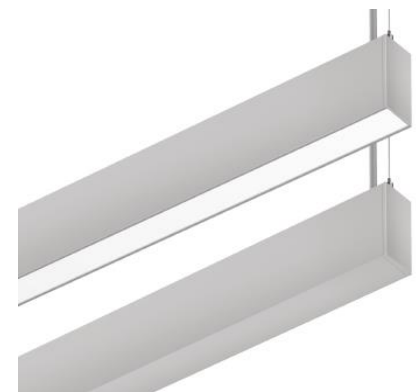
Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332629-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D365U840-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

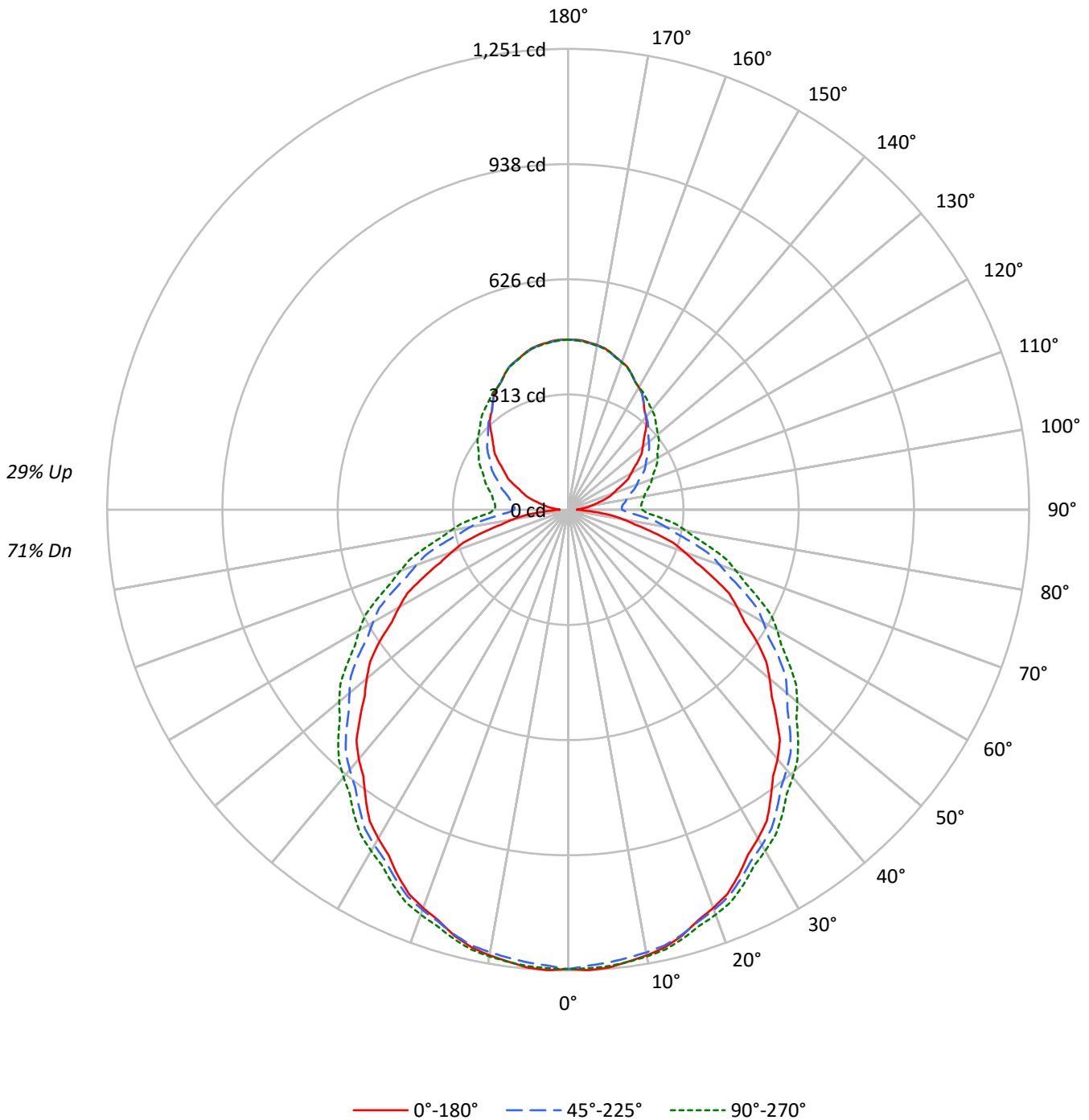
Lumens per Lamp: N/A  
Luminaire Lumens: 5531.9 lumens  
Efficiency: N/A  
Efficacy: 127.2 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 43.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P332629-840

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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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75	71
1	101	96	91	87	95	91	87	83	81	78	75	73	70	68	64	63	61	57
2	91	83	76	70	86	79	72	67	70	65	61	63	59	56	56	53	50	46
3	83	73	64	58	78	69	61	55	62	56	51	55	50	46	49	45	42	39
4	76	64	55	49	71	61	53	47	55	48	43	49	44	39	44	39	36	33
5	70	57	48	41	65	54	46	40	49	42	37	44	38	34	39	35	31	28
6	64	51	42	36	60	49	40	35	44	37	32	39	34	30	35	31	27	24
7	59	46	37	31	56	44	36	30	40	33	28	36	30	26	32	28	24	22
8	55	42	34	28	52	40	32	27	36	30	25	33	27	23	30	25	21	19
9	51	38	30	25	48	37	29	24	33	27	22	30	25	21	27	23	19	17
10	48	35	27	22	45	34	26	22	31	24	20	28	23	19	25	21	17	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10066	10066	10066
5°	10097	9838	9866
10°	10035	9677	9669
15°	9945	9490	9439
20°	9810	9285	9213
25°	9657	9054	8967
30°	9492	8825	8712
35°	9305	8591	8490
40°	9154	8367	8259
45°	8931	8161	8059
50°	8744	7924	7849
55°	8549	7700	7603
60°	8247	7415	7378
65°	7914	7109	7102
70°	7513	6760	6779
75°	6949	6374	6488
80°	6328	6004	6203
85°	5536	5679	6037



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.1	2.1
10°-20°	338.3	6.1
20°-30°	511.5	9.2
30°-40°	618.9	11.2
40°-50°	654.3	11.8
50°-60°	615.8	11.1
60°-70°	510.9	9.2
70°-80°	358.9	6.5
80°-90°	204.3	3.7
90°-100°	150.9	2.7
100°-110°	179.3	3.2
110°-120°	212.9	3.8
120°-130°	235.5	4.3
130°-140°	241.2	4.4
140°-150°	225.6	4.1
150°-160°	187.3	3.4
160°-170°	124.6	2.3
170°-180°	43.6	0.8
0°-30°	967.9	17.5
0°-40°	1586.8	28.7
0°-60°	2856.9	51.6
0°-90°	3930.9	71.1
90°-120°	543.1	9.8
90°-150°	1245.4	22.5
90°-180°	1601.0	28.9
0°-180°	5531.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1247	1247	1247	1247	1247	
5°	1248	1244	1234	1245	1244	118
15°	1197	1198	1194	1206	1205	337
25°	1095	1103	1107	1122	1124	504
35°	958	974	989	1007	1012	600
45°	799	825	852	875	882	617
55°	626	656	697	724	733	557
65°	433	478	525	559	571	429
75°	240	292	350	388	402	255
85°	74	133	196	236	251	79
90°	23	83	146	187	201	16
95°	40	89	149	186	200	38
105°	96	125	177	212	225	102
115°	164	178	220	250	260	162
125°	232	233	265	290	299	207
135°	295	298	307	328	336	229
145°	356	357	357	365	369	223
155°	407	407	406	408	406	187
165°	443	442	441	443	442	125
175°	461	459	459	461	459	44
180°	461	461	461	461	461	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1251.3	1250.6	1249.8	1249.1	1248.3	1247.0	1245.0	1243.0	1241.0	1239.0	1240.7
5°	1248.2	1247.3	1246.4	1245.5	1244.6	1242.9	1240.8	1238.6	1236.5	1234.3	1236.8
7.5°	1237.6	1237.1	1236.5	1236.0	1235.4	1234.3	1232.4	1230.6	1228.8	1227.0	1229.8
10°	1228.7	1228.4	1228.1	1227.8	1227.5	1226.5	1225.0	1223.5	1221.8	1220.3	1223.1
12.5°	1216.4	1216.4	1216.3	1216.2	1216.2	1215.6	1214.6	1213.5	1212.4	1211.3	1214.0
15°	1196.6	1196.9	1197.2	1197.5	1197.8	1197.5	1196.6	1195.7	1194.7	1193.8	1196.6
17.5°	1169.5	1170.4	1171.3	1172.3	1173.3	1173.6	1173.4	1173.3	1173.1	1172.9	1175.7
20°	1150.5	1151.4	1152.4	1153.3	1154.3	1154.9	1155.2	1155.5	1155.8	1156.1	1159.2
22.5°	1129.2	1130.4	1131.7	1132.9	1134.0	1134.9	1135.4	1136.0	1136.5	1137.1	1140.2
25°	1094.7	1096.5	1098.3	1100.2	1102.1	1103.5	1104.4	1105.4	1106.3	1107.2	1110.6
27.5°	1056.1	1058.8	1061.6	1064.3	1067.0	1069.1	1070.6	1072.0	1073.4	1074.8	1078.0
30°	1030.5	1032.9	1035.4	1037.8	1040.4	1042.7	1044.8	1047.0	1049.1	1051.4	1054.8
32.5°	1002.5	1005.5	1008.5	1011.5	1014.4	1017.1	1019.6	1022.0	1024.4	1026.8	1030.7
35°	957.9	961.6	965.2	969.0	972.7	976.1	979.3	982.3	985.4	988.6	992.9
37.5°	912.8	917.2	921.4	925.7	930.0	934.0	937.9	941.7	945.6	949.5	953.8
40°	883.8	887.9	891.9	896.0	900.0	904.1	908.5	912.8	917.2	921.5	926.1
42.5°	850.3	854.9	859.4	863.9	868.4	873.2	878.3	883.4	888.5	893.6	898.8
45°	798.6	804.6	810.4	816.4	822.2	828.1	834.0	839.9	845.8	851.7	857.0
47.5°	749.2	755.3	761.3	767.5	773.6	780.0	786.8	793.7	800.5	807.3	812.7
50°	713.5	720.3	727.1	734.0	740.7	747.6	754.5	761.2	768.1	774.9	781.1
52.5°	677.7	684.6	691.4	698.2	705.1	712.4	720.1	728.0	735.8	743.7	749.8
55°	625.5	632.1	638.5	645.1	651.6	659.4	668.8	678.1	687.4	696.7	703.0
57.5°	567.1	575.2	583.3	591.4	599.5	608.0	617.3	626.6	635.8	645.1	652.5
60°	529.2	537.2	545.3	553.4	561.5	570.6	580.9	591.1	601.3	611.6	618.6
62.5°	492.3	501.1	510.0	518.8	527.6	537.0	547.3	557.5	567.8	578.0	585.2
65°	432.8	442.7	452.7	462.6	472.5	482.8	493.3	503.9	514.4	525.0	532.7
67.5°	375.6	386.2	396.7	407.3	417.8	428.7	440.0	451.3	462.6	473.9	481.8
70°	336.5	347.1	357.6	368.1	378.7	389.9	401.6	413.4	425.3	437.1	445.5
72.5°	298.5	309.3	320.1	330.9	341.7	353.4	365.9	378.4	391.0	403.5	411.6
75°	240.1	251.7	263.1	274.6	286.1	298.3	311.3	324.4	337.4	350.4	359.1
77.5°	185.7	197.8	210.1	222.2	234.4	247.2	260.9	274.6	288.2	301.8	310.6
80°	152.2	164.6	177.0	189.5	201.9	214.9	228.5	242.2	255.8	269.4	278.8
82.5°	118.7	131.6	144.5	157.4	170.3	183.6	197.2	210.9	224.6	238.2	247.7
85°	74.0	87.1	100.1	113.1	126.1	139.7	153.6	167.5	181.5	195.5	204.8
87.5°	41.5	54.3	67.3	80.1	92.9	106.1	119.9	133.6	147.3	161.0	170.2
90°	23.4	36.7	50.0	63.2	76.5	90.2	104.1	118.2	132.1	146.1	155.5
92.5°	28.9	41.0	53.2	65.3	77.6	90.5	104.3	118.1	131.9	145.6	154.7
95°	39.6	50.5	61.5	72.4	83.4	95.5	108.8	122.0	135.3	148.6	157.2
97.5°	53.8	63.2	72.6	82.0	91.4	102.7	115.9	129.3	142.5	155.7	164.1
100°	65.3	73.7	82.1	90.5	98.9	109.5	122.3	135.1	147.9	160.7	169.3
102.5°	78.5	85.6	92.8	100.1	107.2	117.1	129.6	142.1	154.6	167.1	175.5
105°	95.7	102.0	108.3	114.5	120.9	129.9	141.7	153.5	165.3	177.1	185.1
107.5°	116.4	121.7	126.8	132.0	137.2	145.2	156.1	167.1	178.0	188.9	196.7
110°	129.7	134.1	138.7	143.2	147.6	155.3	166.1	176.8	187.6	198.4	205.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	143.4	147.2	151.2	155.0	158.9	165.9	176.1	186.4	196.6	206.8	213.7
115°	164.0	166.7	169.6	172.4	175.1	181.4	191.2	201.0	210.8	220.5	227.2
117.5°	184.7	186.4	188.1	189.9	191.7	197.0	206.2	215.3	224.5	233.6	239.7
120°	197.5	198.7	200.1	201.3	202.6	207.5	216.3	225.1	233.8	242.6	248.4
122.5°	212.1	212.4	212.7	213.1	213.4	217.7	226.1	234.5	242.9	251.3	257.2
125°	232.2	231.9	231.6	231.3	231.0	234.6	242.3	249.9	257.6	265.3	271.0
127.5°	251.4	251.4	251.3	251.2	251.1	254.0	259.8	265.6	271.5	277.3	282.8
130°	264.0	263.9	263.9	263.8	263.7	266.1	271.0	276.1	281.0	286.0	291.4
132.5°	278.0	277.8	277.7	277.5	277.4	279.3	283.2	287.1	291.0	295.0	300.1
135°	295.1	295.5	296.0	296.5	297.0	298.3	300.4	302.7	304.8	307.0	311.7
137.5°	315.2	315.1	315.0	314.9	314.9	315.4	316.6	317.7	318.9	320.1	324.5
140°	328.6	328.4	328.3	328.1	328.0	328.1	328.4	328.7	329.0	329.3	333.3
142.5°	339.7	339.8	339.9	340.0	340.1	340.0	339.8	339.6	339.3	339.1	342.5
145°	356.5	356.5	356.5	356.5	356.5	356.6	356.6	356.7	356.8	356.9	358.6
147.5°	373.3	373.3	373.4	373.5	373.5	373.5	373.5	373.4	373.4	373.3	373.5
150°	383.5	383.5	383.6	383.6	383.6	383.6	383.6	383.6	383.6	383.6	383.6
152.5°	392.1	392.3	392.4	392.5	392.7	392.7	392.8	392.9	392.9	393.0	393.2
155°	406.8	406.8	406.8	406.8	406.8	406.8	406.7	406.6	406.6	406.5	406.8
157.5°	419.4	419.2	419.1	419.0	418.8	418.7	418.7	418.7	418.7	418.7	418.9
160°	426.8	426.7	426.7	426.6	426.5	426.4	426.4	426.3	426.2	426.1	426.4
162.5°	433.6	433.4	433.2	433.0	432.8	432.7	432.6	432.5	432.4	432.3	432.8
165°	442.8	442.6	442.4	442.1	441.9	441.7	441.5	441.4	441.2	441.1	441.5
167.5°	449.9	449.6	449.3	448.9	448.6	448.4	448.5	448.5	448.5	448.5	449.0
170°	453.9	453.5	453.1	452.7	452.3	452.2	452.2	452.3	452.4	452.5	452.9
172.5°	456.8	456.5	456.1	455.8	455.4	455.2	455.2	455.3	455.3	455.3	455.9
175°	460.7	460.3	459.9	459.5	459.1	458.9	458.8	458.7	458.7	458.6	459.1
177.5°	462.0	461.7	461.3	461.0	460.7	460.6	460.6	460.6	460.6	460.6	461.0
180°	461.4	461.4	461.4	461.4	461.4	461.4	461.4	461.4	461.4	461.4	461.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1242.5	1244.3	1246.0	1246.7	1246.5	1246.2	1246.0	1245.8
5°	1239.2	1241.7	1244.3	1245.3	1245.0	1244.7	1244.4	1244.1
7.5°	1232.6	1235.4	1238.2	1239.4	1239.1	1238.8	1238.5	1238.2
10°	1225.9	1228.7	1231.5	1232.7	1232.4	1232.1	1231.8	1231.5
12.5°	1216.5	1219.0	1221.5	1222.8	1222.7	1222.6	1222.6	1222.5
15°	1199.4	1202.1	1205.0	1206.2	1205.9	1205.6	1205.3	1205.0
17.5°	1178.5	1181.4	1184.3	1185.6	1185.3	1185.1	1184.8	1184.6
20°	1162.3	1165.4	1168.5	1170.0	1170.0	1170.0	1170.0	1170.0
22.5°	1143.3	1146.4	1149.5	1151.3	1151.9	1152.3	1152.8	1153.3
25°	1114.1	1117.4	1120.8	1122.8	1123.1	1123.4	1123.7	1124.0
27.5°	1081.2	1084.3	1087.5	1089.2	1089.6	1090.0	1090.4	1090.8
30°	1058.2	1061.6	1065.0	1067.0	1067.6	1068.2	1068.9	1069.5
32.5°	1034.6	1038.5	1042.5	1044.7	1045.3	1045.9	1046.5	1047.2
35°	997.2	1001.6	1005.9	1008.6	1009.5	1010.4	1011.4	1012.3
37.5°	958.3	962.7	967.0	969.8	970.8	971.8	972.7	973.7
40°	930.8	935.4	940.2	943.1	944.3	945.5	946.8	948.1
42.5°	903.9	909.1	914.2	917.3	918.3	919.3	920.3	921.2
45°	862.2	867.6	872.8	876.3	877.8	879.3	880.9	882.4
47.5°	818.2	823.6	829.2	832.8	834.7	836.6	838.4	840.3
50°	787.3	793.6	799.7	803.8	805.7	807.5	809.3	811.2
52.5°	756.1	762.2	768.5	772.4	774.4	776.2	778.1	779.9
55°	709.1	715.4	721.5	725.6	727.4	729.3	731.1	733.1
57.5°	659.8	667.2	674.6	679.1	680.9	682.7	684.4	686.1
60°	625.8	633.0	640.1	644.9	647.4	649.8	652.4	654.8
62.5°	592.3	599.5	606.6	611.4	613.9	616.3	618.8	621.4
65°	540.5	548.3	556.0	561.2	563.6	566.1	568.6	571.1
67.5°	489.7	497.6	505.4	510.6	513.0	515.4	517.9	520.3
70°	453.7	462.1	470.5	475.8	478.0	480.2	482.3	484.5
72.5°	419.8	427.9	436.1	441.3	443.7	446.2	448.6	451.0
75°	367.8	376.5	385.2	390.9	393.7	396.6	399.3	402.1
77.5°	319.5	328.3	337.1	343.1	346.0	349.0	351.9	355.0
80°	288.1	297.4	306.7	312.6	315.1	317.6	320.0	322.6
82.5°	257.3	266.9	276.4	282.6	285.3	288.0	290.7	293.5
85°	214.1	223.4	232.7	238.9	242.1	245.1	248.2	251.4
87.5°	179.3	188.3	197.4	203.3	206.1	208.8	211.6	214.4
90°	165.0	174.5	184.0	190.1	192.7	195.3	197.9	200.6
92.5°	163.7	172.8	181.8	187.6	190.2	192.8	195.3	197.9
95°	165.8	174.4	183.1	188.7	191.6	194.3	197.1	200.0
97.5°	172.6	181.0	189.3	194.9	197.5	200.3	202.9	205.6
100°	177.7	186.3	194.9	200.3	202.4	204.6	206.7	208.9
102.5°	183.8	192.2	200.6	205.9	208.4	210.9	213.4	215.9
105°	193.1	201.1	209.0	214.4	217.1	219.8	222.6	225.3
107.5°	204.6	212.5	220.4	225.4	227.5	229.7	232.0	234.2
110°	212.4	219.3	226.3	231.2	233.9	236.6	239.3	242.1





TEST NUMBER: P332629-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	220.6	227.4	234.3	238.9	241.5	244.0	246.5	249.0
115°	234.0	240.8	247.5	251.9	254.0	256.1	258.2	260.2
117.5°	246.0	252.2	258.3	262.6	264.9	267.2	269.5	271.9
120°	254.2	260.0	265.8	270.0	272.7	275.3	277.9	280.6
122.5°	263.2	269.0	275.0	278.9	280.9	282.9	284.8	286.7
125°	276.8	282.6	288.3	292.1	293.7	295.4	297.1	298.8
127.5°	288.1	293.6	299.0	302.8	304.7	306.7	308.6	310.6
130°	296.8	302.3	307.7	311.1	312.8	314.3	315.8	317.4
132.5°	305.3	310.4	315.7	319.1	320.8	322.6	324.3	326.1
135°	316.6	321.3	326.2	329.4	331.0	332.6	334.3	335.9
137.5°	328.7	333.1	337.4	340.3	341.9	343.6	345.2	346.8
140°	337.2	341.1	345.2	347.8	349.3	350.8	352.2	353.8
142.5°	346.1	349.6	353.1	355.6	356.9	358.1	359.4	360.7
145°	360.4	362.2	364.0	365.4	366.4	367.4	368.4	369.4
147.5°	373.8	373.9	374.1	374.7	375.6	376.5	377.4	378.3
150°	383.6	383.6	383.6	383.5	383.5	383.4	383.3	383.2
152.5°	393.4	393.6	393.8	393.7	393.5	393.3	393.1	392.9
155°	407.1	407.4	407.7	407.7	407.4	407.1	406.8	406.5
157.5°	419.1	419.4	419.6	419.6	419.3	419.1	418.8	418.5
160°	426.6	426.8	427.1	427.0	426.6	426.2	425.8	425.4
162.5°	433.2	433.6	434.0	434.0	433.7	433.3	432.9	432.5
165°	442.0	442.5	442.9	443.0	442.7	442.4	442.1	441.8
167.5°	449.5	449.9	450.4	450.4	449.9	449.4	448.9	448.4
170°	453.4	453.9	454.4	454.3	453.8	453.2	452.7	452.1
172.5°	456.5	457.0	457.5	457.5	457.0	456.4	455.9	455.2
175°	459.7	460.2	460.8	460.8	460.2	459.7	459.1	458.6
177.5°	461.4	461.9	462.3	462.3	461.8	461.3	460.8	460.3
180°	461.4	461.4	461.4	461.4	461.4	461.4	461.4	461.4

(END OF REPORT)