

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: P332628-830

Luminaire Tested: **S124DIP-S1020D365U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332628-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D365U830-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5345.9 lumens  
Efficiency: N/A  
Efficacy: 122.9 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

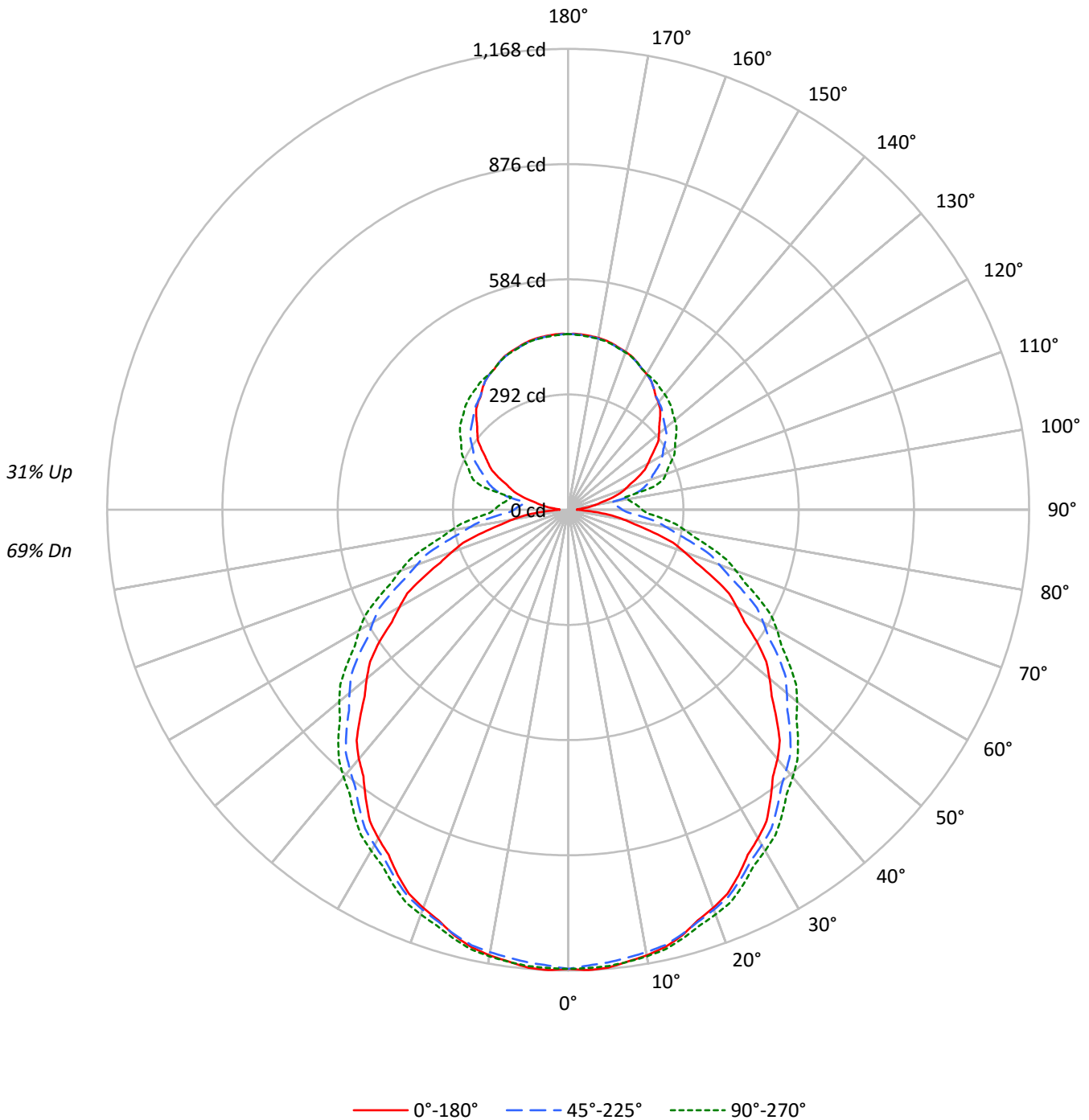
Input Watts (W): 43.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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CATALOG NUMBER: S124DIP-S1020D365U830-4F0-1E-UDD-D

**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	105	105	105	105	94	94	94	83	83	83	73	73	73	69
1	101	96	91	87	95	90	86	83	80	77	74	71	69	66	63	61	59	55
2	91	83	76	70	85	78	72	67	69	65	60	62	58	54	54	51	49	45
3	83	72	64	58	78	68	61	55	61	55	50	54	49	45	48	44	41	37
4	75	64	55	48	71	60	52	46	54	47	42	48	43	39	42	38	35	32
5	69	57	48	41	65	54	46	40	48	41	36	43	37	33	38	34	30	27
6	64	51	42	36	60	48	40	34	43	37	32	39	33	29	34	30	26	24
7	59	46	37	31	55	44	36	30	39	33	28	35	30	26	31	27	23	21
8	55	42	33	28	51	40	32	27	36	29	25	32	27	23	29	24	21	19
9	51	38	30	25	48	36	29	24	33	26	22	30	24	20	26	22	19	17
10	48	35	27	22	45	33	26	21	30	24	20	27	22	18	25	20	17	15

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

	0°	45°	90°
0°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.2	2.1
10°-20°	315.7	5.9
20°-30°	477.4	8.9
30°-40°	577.6	10.8
40°-50°	610.7	11.4
50°-60°	574.7	10.8
60°-70°	476.8	8.9
70°-80°	334.9	6.3
80°-90°	190.7	3.6
90°-100°	127.7	2.4
100°-110°	180.4	3.4
110°-120°	241.6	4.5
120°-130°	267.4	5.0
130°-140°	266.0	5.0
140°-150°	238.7	4.5
150°-160°	190.3	3.6
160°-170°	122.7	2.3
170°-180°	42.3	0.8
0°-30°	903.4	16.9
0°-40°	1481.0	27.7
0°-60°	2666.4	49.9
0°-90°	3668.9	68.6
90°-120°	549.7	10.3
90°-150°	1321.7	24.7
90°-180°	1677.0	31.4
0°-180°	5345.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	73
90°	22	78	136	175	187	15
95°	35	68	121	156	170	37
105°	112	141	190	224	224	118
115°	195	209	249	277	288	192
125°	268	270	300	325	334	240
135°	329	329	339	360	369	254
145°	378	377	377	386	391	236
155°	413	413	412	413	412	190
165°	435	434	434	436	433	123
175°	445	444	444	446	443	42
180°	445	445	445	445	445	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	38.7	50.7	62.8	74.7	86.7	99.1	111.9	124.7	137.5	150.2	158.8
90°	21.9	34.2	46.7	59.0	71.4	84.2	97.2	110.3	123.3	136.4	145.2
92.5°	24.0	34.5	45.0	55.4	65.9	77.7	90.7	103.8	116.8	129.8	138.5
95°	35.3	42.3	49.3	56.4	63.4	73.0	84.8	96.8	108.8	120.7	128.9
97.5°	54.3	64.1	73.9	83.7	93.5	100.1	103.6	107.1	110.6	114.0	121.7
100°	69.0	77.9	86.7	95.6	104.4	109.3	110.5	111.5	112.6	113.7	120.3
102.5°	86.5	94.2	101.7	109.3	116.9	125.5	135.3	145.0	154.7	164.5	158.4
105°	112.0	118.2	124.5	130.7	137.0	145.6	156.7	167.8	178.9	189.9	197.8
107.5°	137.8	142.8	147.7	152.7	157.7	165.5	176.1	186.7	197.4	208.0	215.5
110°	154.3	158.6	162.9	167.1	171.4	178.9	189.5	200.0	210.6	221.2	228.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	170.3	174.4	178.3	182.3	186.3	193.2	203.1	213.0	222.9	232.7	239.1
115°	195.0	197.8	200.7	203.5	206.3	212.4	221.5	230.7	240.0	249.1	255.6
117.5°	218.4	220.3	222.2	223.9	225.8	231.2	240.0	248.7	257.6	266.4	272.3
120°	233.4	234.5	235.7	236.9	238.0	242.8	251.1	259.4	267.8	276.1	282.0
122.5°	248.3	248.6	249.0	249.3	249.7	253.9	261.9	269.9	278.0	286.1	291.9
125°	268.3	268.3	268.3	268.3	268.4	271.9	279.0	286.2	293.2	300.3	306.0
127.5°	288.3	288.1	287.9	287.8	287.5	290.3	296.2	302.2	308.0	314.0	319.1
130°	300.4	300.2	299.9	299.7	299.5	301.8	306.7	311.5	316.4	321.2	326.5
132.5°	312.4	312.2	312.1	311.9	311.7	313.7	317.6	321.6	325.6	329.6	334.7
135°	329.0	328.9	328.9	328.9	328.8	329.9	332.2	334.5	336.9	339.1	343.9
137.5°	345.0	344.7	344.5	344.2	343.9	344.5	345.7	347.0	348.4	349.7	354.1
140°	355.3	355.2	355.1	355.0	354.8	355.0	355.4	355.8	356.3	356.7	360.7
142.5°	363.6	363.8	364.1	364.3	364.5	364.6	364.5	364.4	364.3	364.2	367.7
145°	377.7	377.7	377.6	377.5	377.5	377.4	377.4	377.4	377.4	377.4	379.2
147.5°	389.1	389.3	389.4	389.5	389.6	389.6	389.6	389.5	389.4	389.4	389.6
150°	397.4	397.4	397.4	397.4	397.4	397.4	397.3	397.2	397.1	397.1	397.1
152.5°	403.2	403.4	403.6	403.8	404.0	404.0	403.9	403.7	403.6	403.5	403.6
155°	412.7	412.8	412.8	412.9	413.0	412.9	412.7	412.5	412.3	412.1	412.4
157.5°	420.9	420.8	420.8	420.8	420.8	420.6	420.4	420.1	419.8	419.6	420.0
160°	425.7	425.5	425.3	425.1	424.8	424.7	424.6	424.5	424.4	424.3	424.8
162.5°	430.0	429.7	429.4	429.1	428.9	428.7	428.6	428.5	428.5	428.4	428.9
165°	435.4	435.0	434.6	434.2	433.9	433.7	433.7	433.7	433.7	433.7	434.3
167.5°	439.6	439.2	438.8	438.5	438.1	437.9	437.8	437.8	437.7	437.7	438.4
170°	442.1	441.6	441.1	440.7	440.3	440.1	440.2	440.3	440.3	440.4	440.9
172.5°	443.7	443.2	442.7	442.3	441.9	441.7	441.8	441.9	441.9	442.0	442.5
175°	445.4	444.9	444.5	444.0	443.6	443.4	443.5	443.6	443.7	443.7	444.4
177.5°	446.2	445.7	445.4	444.9	444.5	444.3	444.5	444.6	444.7	444.8	445.4
180°	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	167.3	175.8	184.3	189.7	192.4	194.9	197.5	200.1
90°	154.0	162.9	171.7	177.4	179.8	182.3	184.7	187.2
92.5°	147.0	155.6	164.3	169.8	172.1	174.5	176.8	179.1
95°	137.2	145.5	153.7	159.2	161.9	164.6	167.3	169.9
97.5°	129.3	137.0	144.6	149.7	152.3	154.9	157.4	159.9
100°	126.8	133.4	140.0	144.3	146.4	148.5	150.6	152.7
102.5°	152.5	146.5	140.5	138.6	140.9	143.2	145.4	147.7
105°	205.8	213.7	221.6	225.4	225.0	224.6	224.3	223.9
107.5°	222.9	230.4	237.8	242.7	245.1	247.5	249.9	252.2
110°	234.8	241.6	248.5	253.1	255.6	258.2	260.7	263.3





TEST NUMBER: P332628-830

CATALOG NUMBER: S124DIP-S1020D365U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	245.5	251.9	258.4	262.9	265.4	268.1	270.6	273.2
115°	262.1	268.7	275.2	279.5	281.5	283.5	285.6	287.6
117.5°	278.3	284.4	290.3	294.5	296.7	299.1	301.3	303.6
120°	287.9	293.9	299.8	303.9	306.0	308.2	310.4	312.5
122.5°	297.8	303.7	309.5	313.5	315.4	317.4	319.2	321.2
125°	311.8	317.4	323.2	327.0	328.8	330.6	332.4	334.2
127.5°	324.2	329.4	334.6	338.2	340.1	342.0	343.8	345.8
130°	331.9	337.1	342.4	345.9	347.6	349.4	351.1	352.9
132.5°	339.7	344.8	349.9	353.2	354.9	356.6	358.3	359.9
135°	348.7	353.5	358.3	361.7	363.5	365.4	367.3	369.2
137.5°	358.4	362.9	367.3	370.1	371.6	373.0	374.4	375.8
140°	364.7	368.6	372.7	375.4	376.9	378.4	379.9	381.4
142.5°	371.2	374.6	378.1	380.4	381.6	382.9	384.1	385.3
145°	381.1	382.9	384.7	386.3	387.5	388.8	390.1	391.4
147.5°	389.9	390.2	390.5	391.2	392.2	393.1	394.2	395.1
150°	397.1	397.1	397.1	397.1	397.2	397.3	397.3	397.4
152.5°	403.7	403.8	404.0	404.0	403.9	403.9	403.9	403.8
155°	412.6	412.9	413.2	413.3	413.0	412.8	412.6	412.4
157.5°	420.4	420.8	421.1	421.1	420.8	420.4	420.0	419.6
160°	425.3	425.7	426.1	426.1	425.7	425.3	424.8	424.3
162.5°	429.2	429.7	430.2	430.1	429.6	429.1	428.6	428.1
165°	434.9	435.5	436.1	436.0	435.4	434.7	434.0	433.4
167.5°	439.0	439.7	440.3	440.3	439.5	438.8	438.0	437.3
170°	441.6	442.1	442.7	442.6	442.0	441.2	440.5	439.7
172.5°	443.2	443.7	444.3	444.2	443.5	442.6	441.9	441.0
175°	445.1	445.7	446.4	446.3	445.4	444.5	443.6	442.7
177.5°	445.8	446.3	446.8	446.6	445.9	445.2	444.5	443.7
180°	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4

(END OF REPORT)