

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: P332629-830

Luminaire Tested: **S124DIP-S1020D365U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332629-830  
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-S1020D365U830-4F0-1E-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**

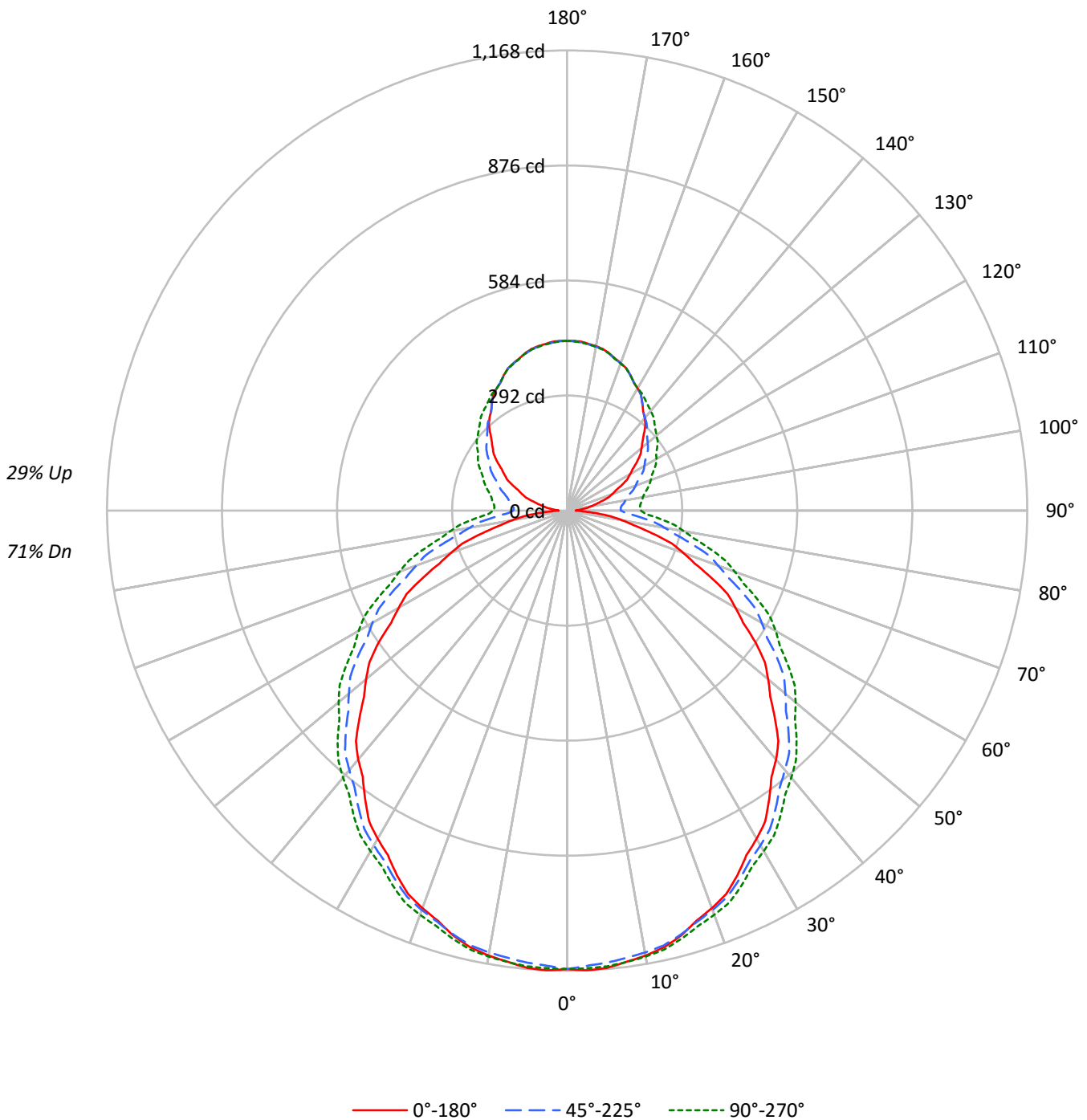
Lumens per Lamp: N/A  
Luminaire Lumens: 5163.1 lumens  
Efficiency: N/A  
Efficacy: 118.7 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 43.5  
Input Voltage (V): 120  
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



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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°	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	6.1
20°-30°	477.4	9.2
30°-40°	577.6	11.2
40°-50°	610.7	11.8
50°-60°	574.7	11.1
60°-70°	476.8	9.2
70°-80°	334.9	6.5
80°-90°	190.7	3.7
90°-100°	140.8	2.7
100°-110°	167.4	3.2
110°-120°	198.7	3.8
120°-130°	219.8	4.3
130°-140°	225.1	4.4
140°-150°	210.6	4.1
150°-160°	174.8	3.4
160°-170°	116.3	2.3
170°-180°	40.7	0.8
0°-30°	903.4	17.5
0°-40°	1481.0	28.7
0°-60°	2666.4	51.6
0°-90°	3668.9	71.1
90°-120°	506.9	9.8
90°-150°	1162.4	22.5
90°-180°	1494.0	28.9
0°-180°	5163.1	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°	37	84	139	174	187	36
105°	89	117	165	198	210	96
115°	153	166	206	233	243	151
125°	217	217	248	271	279	193
135°	275	278	286	306	314	213
145°	333	333	333	340	345	208
155°	380	380	379	380	379	175
165°	413	412	412	413	412	116
175°	430	428	428	430	428	41
180°	431	431	431	431	431	



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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°	27.0	38.3	49.7	61.0	72.4	84.5	97.4	110.2	123.1	135.9	144.4
95°	36.9	47.1	57.4	67.6	77.9	89.2	101.5	113.9	126.3	138.6	146.8
97.5°	50.2	59.0	67.8	76.5	85.3	95.9	108.2	120.6	133.0	145.3	153.2
100°	61.0	68.8	76.6	84.5	92.3	102.2	114.1	126.1	138.1	150.0	158.0
102.5°	73.2	79.9	86.6	93.4	100.1	109.3	120.9	132.6	144.3	156.0	163.8
105°	89.4	95.2	101.0	106.9	112.8	121.2	132.2	143.3	154.3	165.3	172.8
107.5°	108.7	113.6	118.4	123.2	128.1	135.5	145.7	156.0	166.2	176.3	183.6
110°	121.0	125.2	129.4	133.7	137.8	145.0	155.0	165.0	175.1	185.2	191.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	133.8	137.4	141.1	144.7	148.3	154.9	164.4	174.0	183.5	193.0	199.4
115°	153.1	155.6	158.3	160.9	163.4	169.3	178.4	187.6	196.7	205.8	212.1
117.5°	172.4	174.0	175.6	177.2	178.9	183.9	192.5	201.0	209.5	218.0	223.8
120°	184.4	185.5	186.7	187.8	189.1	193.7	201.9	210.1	218.2	226.4	231.9
122.5°	197.9	198.2	198.5	198.9	199.2	203.2	211.0	218.9	226.7	234.5	240.1
125°	216.7	216.4	216.1	215.8	215.6	219.0	226.1	233.3	240.4	247.6	253.0
127.5°	234.6	234.6	234.5	234.4	234.3	237.0	242.5	247.9	253.4	258.8	263.9
130°	246.4	246.3	246.3	246.2	246.1	248.4	253.0	257.7	262.3	266.9	272.0
132.5°	259.5	259.3	259.2	259.0	258.9	260.7	264.3	268.0	271.6	275.3	280.1
135°	275.4	275.8	276.3	276.7	277.2	278.4	280.4	282.5	284.5	286.5	291.0
137.5°	294.2	294.1	294.0	293.9	293.9	294.4	295.5	296.5	297.7	298.8	302.8
140°	306.7	306.5	306.4	306.2	306.1	306.2	306.5	306.8	307.1	307.4	311.0
142.5°	317.1	317.2	317.3	317.4	317.4	317.4	317.2	317.0	316.7	316.5	319.7
145°	332.7	332.7	332.7	332.7	332.7	332.8	332.8	332.9	333.0	333.1	334.7
147.5°	348.5	348.5	348.6	348.6	348.6	348.6	348.6	348.6	348.6	348.5	348.6
150°	358.0	358.0	358.1	358.1	358.1	358.1	358.1	358.1	358.1	358.1	358.1
152.5°	366.0	366.2	366.3	366.4	366.6	366.6	366.6	366.7	366.7	366.8	367.0
155°	379.7	379.7	379.7	379.7	379.7	379.7	379.6	379.5	379.5	379.4	379.7
157.5°	391.4	391.2	391.2	391.1	390.9	390.8	390.8	390.8	390.8	390.8	391.0
160°	398.3	398.2	398.2	398.1	398.0	397.9	397.9	397.8	397.8	397.7	397.9
162.5°	404.7	404.5	404.4	404.2	404.0	403.9	403.8	403.7	403.6	403.5	404.0
165°	413.3	413.1	412.9	412.6	412.5	412.3	412.1	412.0	411.8	411.7	412.1
167.5°	419.9	419.6	419.3	419.0	418.7	418.5	418.6	418.6	418.6	418.6	419.1
170°	423.7	423.3	422.9	422.5	422.2	422.1	422.1	422.2	422.3	422.4	422.7
172.5°	426.3	426.0	425.7	425.4	425.1	424.9	424.9	425.0	425.0	425.0	425.5
175°	430.0	429.6	429.2	428.9	428.5	428.3	428.2	428.1	428.1	428.0	428.5
177.5°	431.2	430.9	430.6	430.3	430.0	429.9	429.9	429.9	429.9	429.9	430.3
180°	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6



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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°	152.8	161.3	169.7	175.1	177.5	179.9	182.3	184.7
95°	154.8	162.8	170.9	176.2	178.8	181.3	184.0	186.6
97.5°	161.1	168.9	176.7	181.9	184.4	186.9	189.4	191.9
100°	165.9	173.9	181.9	186.9	188.9	191.0	192.9	195.0
102.5°	171.5	179.4	187.2	192.2	194.5	196.8	199.2	201.5
105°	180.2	187.7	195.1	200.1	202.6	205.2	207.7	210.3
107.5°	191.0	198.3	205.7	210.4	212.4	214.4	216.5	218.6
110°	198.2	204.7	211.2	215.7	218.3	220.8	223.4	225.9





TEST NUMBER: P332629-830

CATALOG NUMBER: S124DIP-S1020D365U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	205.9	212.3	218.7	223.0	225.4	227.7	230.1	232.4
115°	218.4	224.7	231.0	235.1	237.0	239.0	241.0	242.9
117.5°	229.6	235.4	241.1	245.1	247.2	249.4	251.6	253.7
120°	237.2	242.7	248.1	252.0	254.5	256.9	259.4	261.9
122.5°	245.6	251.1	256.7	260.3	262.2	264.0	265.8	267.6
125°	258.4	263.7	269.1	272.6	274.1	275.7	277.3	278.9
127.5°	268.9	274.0	279.1	282.6	284.4	286.3	288.0	289.9
130°	277.0	282.1	287.2	290.4	291.9	293.3	294.7	296.2
132.5°	284.9	289.7	294.6	297.8	299.4	301.0	302.7	304.3
135°	295.5	299.9	304.4	307.5	309.0	310.5	312.0	313.5
137.5°	306.8	310.9	314.9	317.6	319.1	320.7	322.2	323.7
140°	314.7	318.4	322.2	324.6	326.0	327.4	328.8	330.2
142.5°	323.0	326.3	329.6	331.9	333.1	334.2	335.5	336.7
145°	336.4	338.1	339.7	341.0	342.0	342.9	343.8	344.8
147.5°	348.8	348.9	349.1	349.7	350.5	351.4	352.2	353.1
150°	358.1	358.1	358.1	358.0	358.0	357.9	357.8	357.7
152.5°	367.2	367.4	367.6	367.5	367.3	367.1	366.9	366.7
155°	379.9	380.2	380.5	380.5	380.2	379.9	379.7	379.4
157.5°	391.2	391.4	391.6	391.6	391.3	391.2	390.9	390.6
160°	398.1	398.3	398.6	398.5	398.1	397.8	397.4	397.0
162.5°	404.4	404.7	405.1	405.1	404.8	404.4	404.1	403.7
165°	412.6	413.0	413.4	413.5	413.2	412.9	412.6	412.4
167.5°	419.5	419.9	420.4	420.4	419.9	419.4	419.0	418.5
170°	423.2	423.7	424.1	424.0	423.6	423.0	422.5	422.0
172.5°	426.0	426.5	427.0	427.0	426.5	425.9	425.5	424.9
175°	429.0	429.5	430.1	430.1	429.5	429.0	428.5	428.0
177.5°	430.6	431.1	431.5	431.5	431.0	430.6	430.1	429.6
180°	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6

(END OF REPORT)