

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: P332630-830

Luminaire Tested: **S124DIP-S1020D365U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332630-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
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-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5201.1 lumens
Efficiency: N/A
Efficacy: 119.6 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

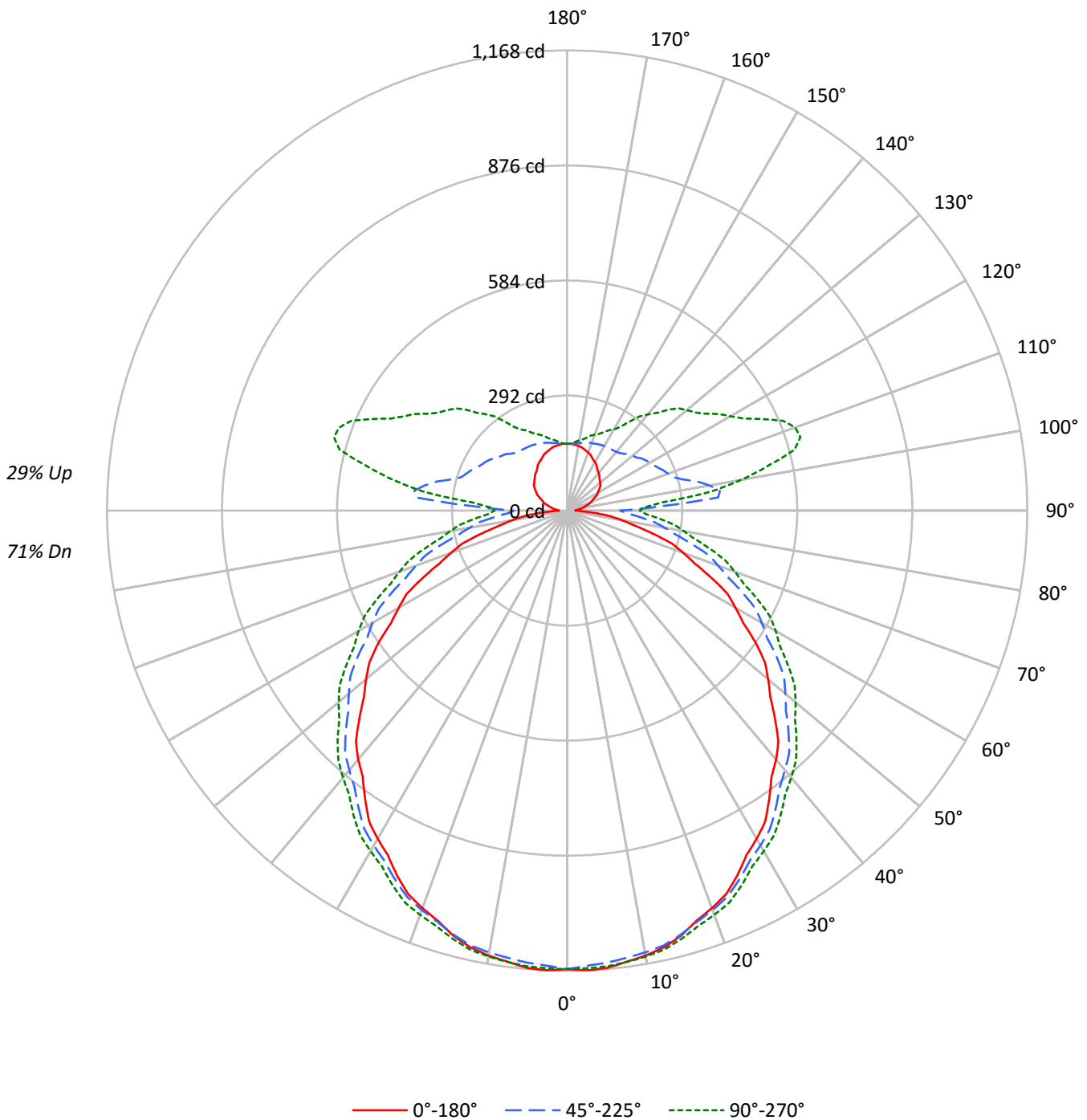
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	84	84	84	75	75	75	71
1	101	96	91	87	95	91	87	83	81	78	75	72	70	68	64	62	61	56
2	91	83	76	70	86	79	72	67	70	65	61	63	59	55	56	53	50	46
3	83	72	64	58	78	69	61	55	61	56	51	55	50	46	49	45	42	38
4	76	64	55	49	71	61	53	47	54	48	43	49	43	39	43	39	36	32
5	69	57	48	41	65	54	46	40	49	42	37	43	38	34	39	34	31	28
6	64	51	42	36	60	48	40	35	44	37	32	39	34	29	35	31	27	24
7	59	46	37	31	56	44	36	30	40	33	28	36	30	26	32	27	24	21
8	55	42	33	28	52	40	32	27	36	30	25	33	27	23	29	25	21	19
9	51	38	30	25	48	36	29	24	33	27	22	30	25	21	27	22	19	17
10	48	35	27	22	45	34	26	22	31	24	20	28	22	19	25	21	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	6.1
20°-30°	477.4	9.2
30°-40°	577.6	11.1
40°-50°	610.7	11.7
50°-60°	574.7	11.1
60°-70°	476.8	9.2
70°-80°	334.9	6.4
80°-90°	190.3	3.7
90°-100°	234.9	4.5
100°-110°	338.1	6.5
110°-120°	284.2	5.5
120°-130°	223.6	4.3
130°-140°	173.7	3.3
140°-150°	125.1	2.4
150°-160°	86.0	1.7
160°-170°	50.6	1.0
170°-180°	16.5	0.3
0°-30°	903.4	17.4
0°-40°	1481.0	28.5
0°-60°	2666.4	51.3
0°-90°	3668.5	70.5
90°-120°	857.2	16.5
90°-150°	1379.5	26.5
90°-180°	1533.0	29.5
0°-180°	5201.1	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°	21	76	135	172	184	14
95°	28	95	385	282	242	26
105°	51	95	304	588	598	55
115°	76	107	256	463	549	76
125°	101	119	230	379	428	90
135°	116	138	204	315	362	90
145°	132	150	191	246	275	83
155°	149	161	186	210	220	69
165°	162	167	178	189	192	46
175°	169	170	171	173	173	16
180°	170	170	170	170	170	



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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°	38.6	50.6	62.6	74.5	86.3	98.6	111.7	124.4	137.2	150.1	158.3
90°	21.2	33.5	46.0	58.0	69.8	81.9	96.3	108.8	121.9	135.0	143.1
92.5°	23.6	35.7	49.3	63.8	79.1	97.5	126.9	165.1	202.7	228.4	219.0
95°	27.9	38.5	51.4	65.2	82.8	107.5	148.4	214.9	306.3	384.8	400.4
97.5°	35.1	43.4	54.4	66.6	81.7	103.4	137.5	194.4	285.3	391.2	463.6
100°	39.7	47.2	57.0	68.5	82.5	102.5	133.5	182.4	261.6	366.8	460.0
102.5°	45.0	52.1	60.8	71.2	83.8	102.7	131.6	175.8	244.7	339.0	434.5
105°	50.7	57.5	64.9	74.7	86.5	104.4	131.1	169.5	226.9	304.5	390.0
107.5°	59.7	65.0	71.4	80.5	91.0	107.9	132.7	168.1	218.0	282.0	353.1
110°	64.8	69.5	75.1	83.2	93.3	109.3	134.1	167.6	214.4	272.9	333.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	69.6	73.8	79.4	86.6	96.2	111.9	135.6	167.3	211.2	265.2	320.1
115°	76.4	80.0	85.0	91.0	99.8	114.8	137.4	166.6	206.9	256.1	304.4
117.5°	85.0	87.5	91.1	96.3	103.9	118.3	139.5	166.5	202.9	248.0	292.8
120°	89.8	91.3	94.5	99.1	105.6	119.5	140.6	166.4	200.4	242.8	285.5
122.5°	95.1	96.0	98.5	102.1	108.4	121.5	142.1	166.4	198.0	237.2	278.1
125°	100.9	101.9	103.6	107.0	113.0	125.8	145.1	167.6	195.8	230.4	267.9
127.5°	106.8	107.5	109.6	113.6	119.9	131.9	149.0	168.6	192.6	221.8	255.1
130°	109.1	110.2	112.6	117.3	123.4	135.2	151.1	168.7	190.4	216.3	246.9
132.5°	112.6	113.4	116.6	121.0	127.6	138.5	153.4	169.9	189.0	211.9	239.8
135°	116.2	117.5	120.8	126.5	133.6	143.2	156.2	170.2	186.0	204.0	227.9
137.5°	121.0	122.1	125.5	130.5	137.5	146.1	157.3	169.6	182.7	197.8	218.0
140°	124.5	125.3	128.7	134.0	140.7	148.7	159.0	169.9	181.5	194.4	212.5
142.5°	127.2	128.2	131.5	136.9	143.5	151.1	160.7	170.3	181.0	192.4	208.4
145°	132.2	132.9	136.0	140.3	146.4	153.5	162.2	171.3	180.9	191.2	203.6
147.5°	138.2	138.2	140.8	145.3	150.3	156.7	164.9	172.8	181.3	190.0	199.6
150°	141.9	141.9	144.3	148.0	152.7	158.9	166.3	173.5	181.3	189.2	197.6
152.5°	144.3	144.3	146.9	150.6	155.0	160.8	167.3	174.1	180.7	187.8	195.4
155°	148.9	149.2	151.3	154.6	158.3	163.2	168.9	174.6	179.9	185.9	192.2
157.5°	153.6	153.6	155.5	158.1	161.3	165.2	170.0	174.6	179.0	183.8	189.0
160°	156.6	156.6	157.9	160.2	162.9	166.5	170.6	174.6	178.2	182.2	186.5
162.5°	159.2	159.0	160.0	162.1	164.5	167.4	171.1	174.6	177.4	180.6	184.5
165°	162.2	162.2	162.9	164.6	166.3	168.2	171.3	173.9	175.9	178.2	180.9
167.5°	165.2	164.9	165.2	166.5	167.4	169.0	171.2	173.1	174.3	175.8	177.7
170°	166.5	166.3	166.5	167.6	168.2	169.2	170.9	172.6	173.2	174.2	175.6
172.5°	167.9	167.6	167.6	168.3	168.7	169.5	170.6	172.0	172.2	172.6	173.7
175°	169.2	168.9	168.9	169.2	169.6	169.6	170.2	171.3	170.9	170.9	171.5
177.5°	169.8	169.6	169.3	169.6	169.6	169.6	169.8	170.3	169.8	169.8	170.1
180°	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6



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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°	166.8	175.3	183.7	189.3	191.8	194.4	196.9	199.4
90°	151.8	160.5	169.3	174.7	177.3	179.9	181.9	184.3
92.5°	204.5	196.5	194.6	193.2	191.5	192.1	193.2	195.6
95°	375.9	332.1	295.2	268.2	254.4	246.7	243.3	241.6
97.5°	485.1	473.5	448.6	418.9	397.4	379.8	372.3	367.9
100°	516.4	530.9	522.4	502.7	475.7	457.4	449.5	448.8
102.5°	508.9	549.5	561.8	556.5	540.9	528.5	520.2	520.4
105°	473.6	538.5	578.6	597.1	600.1	599.7	597.4	597.7
107.5°	427.7	496.2	549.8	584.1	602.7	612.4	617.7	620.7
110°	399.7	464.0	519.0	560.2	586.1	602.4	610.7	616.0



TEST NUMBER: P332630-830

CATALOG NUMBER: S124DIP-S1020D365U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	377.3	434.7	486.7	527.7	556.9	576.2	586.8	594.1
115°	352.5	399.8	445.2	481.4	509.7	531.7	544.4	549.1
117.5°	335.7	375.6	412.3	443.6	468.3	487.5	500.6	504.9
120°	326.3	363.1	395.5	423.2	444.5	461.5	472.5	478.4
122.5°	317.9	353.5	383.6	408.3	426.4	441.0	450.4	456.2
125°	305.3	339.5	368.0	389.9	405.0	416.3	424.4	428.2
127.5°	290.3	322.8	351.0	371.9	387.3	397.9	405.2	409.2
130°	279.7	311.2	339.1	360.2	375.6	385.7	392.8	396.5
132.5°	269.5	299.2	326.3	347.3	362.4	373.5	380.4	384.1
135°	253.5	279.8	304.7	324.6	339.7	350.7	357.8	361.6
137.5°	239.7	262.2	283.6	301.5	315.4	326.0	331.9	335.7
140°	231.7	251.1	269.8	286.4	299.5	308.3	314.4	318.6
142.5°	224.9	242.0	258.2	272.6	284.1	292.1	297.5	300.6
145°	216.0	229.0	240.8	251.6	261.1	267.9	272.4	275.2
147.5°	208.7	217.9	226.1	234.0	241.1	246.9	250.3	251.8
150°	205.6	213.2	219.9	225.8	231.2	235.5	237.5	237.8
152.5°	202.6	209.2	215.4	220.3	224.8	228.3	229.5	229.9
155°	198.2	203.5	208.5	212.5	215.8	218.5	219.5	219.5
157.5°	193.5	197.9	202.2	205.4	207.8	209.9	210.5	210.5
160°	190.6	194.2	197.8	200.6	202.6	204.5	204.9	204.9
162.5°	187.7	190.8	193.6	196.0	197.5	199.4	199.8	199.5
165°	183.5	185.6	187.8	189.5	190.9	192.2	191.9	191.5
167.5°	179.6	181.2	183.0	184.0	184.6	185.6	185.5	185.2
170°	177.2	178.2	179.6	180.6	181.3	181.5	181.3	181.3
172.5°	175.1	175.8	176.6	177.4	177.8	178.0	177.8	177.2
175°	172.2	172.6	173.2	173.2	173.2	173.9	173.2	172.6
177.5°	170.3	170.6	170.6	170.9	170.6	170.9	170.3	169.8
180°	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6

(END OF REPORT)