

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: P332639-830

Luminaire Tested: **S124DIP-S1020D590U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332639-830
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-S1020D590U830-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5958.9 lumens
Efficiency: N/A
Efficacy: 122.1 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

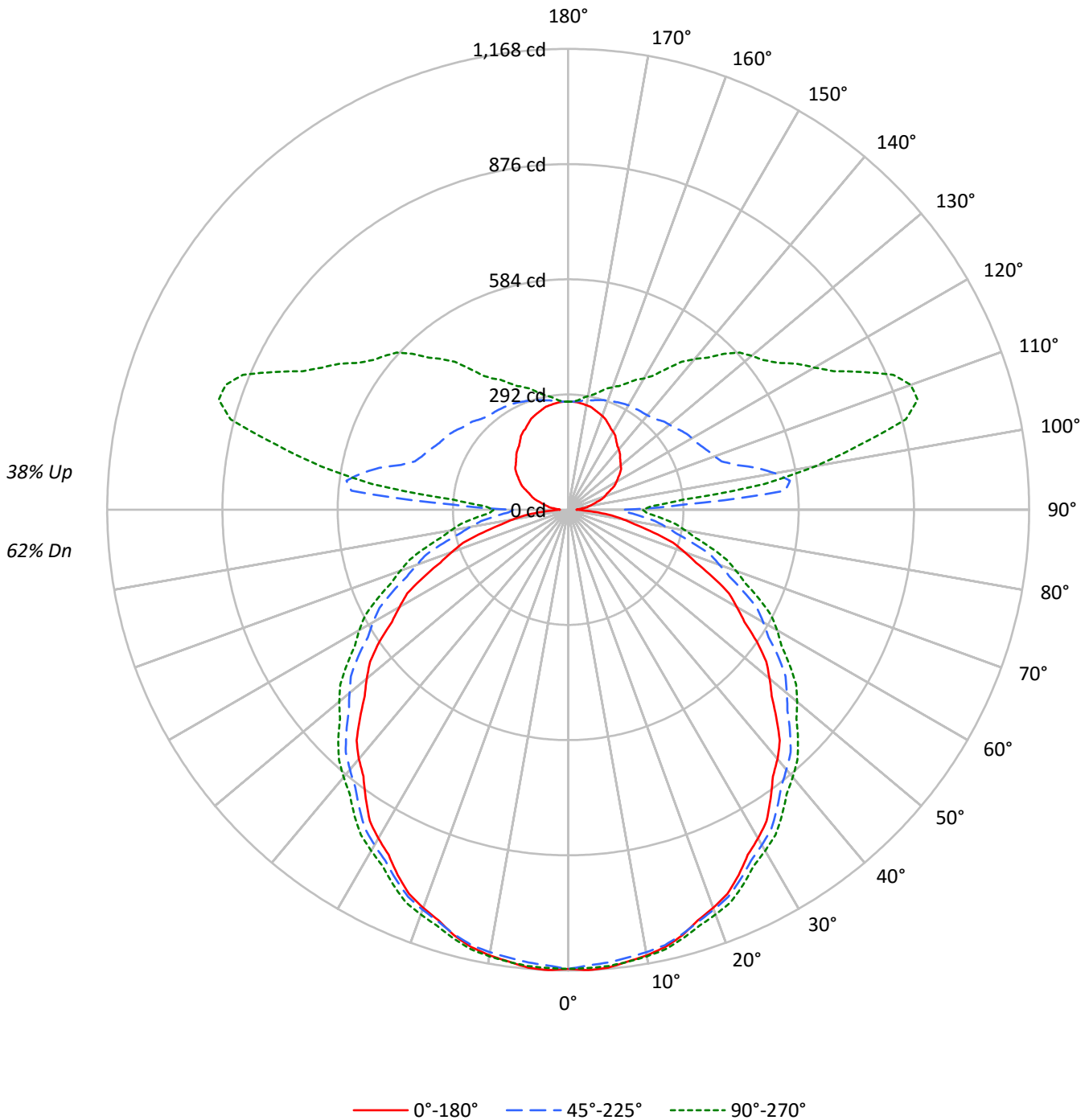
Input Watts (W): 48.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	99	94	90	86	92	88	84	81	77	74	71	67	64	62	57	55	54	49
2	90	82	75	69	84	76	70	65	67	62	58	58	54	51	49	47	44	40
3	82	71	63	57	76	67	60	54	58	53	48	51	46	43	43	40	37	33
4	74	63	54	48	69	59	51	45	52	46	41	45	40	36	39	35	32	28
5	68	56	47	41	63	52	45	39	46	40	35	40	35	31	35	31	27	24
6	63	50	41	35	58	47	39	34	41	35	30	36	31	27	31	27	24	21
7	58	45	37	31	54	42	35	29	38	31	27	33	28	24	28	24	21	19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15
10	47	34	27	22	44	32	25	21	29	23	19	26	21	17	22	18	15	13

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	1.8
10°-20°	315.7	5.3
20°-30°	477.4	8.0
30°-40°	577.6	9.7
40°-50°	610.7	10.2
50°-60°	574.7	9.6
60°-70°	476.8	8.0
70°-80°	334.9	5.6
80°-90°	190.9	3.2
90°-100°	310.1	5.2
100°-110°	494.6	8.3
110°-120°	424.3	7.1
120°-130°	341.5	5.7
130°-140°	272.1	4.6
140°-150°	200.2	3.4
150°-160°	138.8	2.3
160°-170°	81.6	1.4
170°-180°	26.6	0.4
0°-30°	903.4	15.2
0°-40°	1481.0	24.9
0°-60°	2666.4	44.7
0°-90°	3669.1	61.6
90°-120°	1229.1	20.6
90°-150°	2042.8	34.3
90°-180°	2290.0	38.4
0°-180°	5958.9	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°	21	77	139	176	188	15
95°	35	116	552	364	291	33
105°	75	130	439	877	886	80
115°	119	160	376	693	826	118
125°	160	189	349	575	649	142
135°	186	221	322	488	559	144
145°	213	242	309	393	436	134
155°	240	259	300	340	354	111
165°	262	270	288	305	309	74
175°	273	274	276	280	278	26
180°	274	274	274	274	274	



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CATALOG NUMBER: S124DIP-S1020D590U830-4F0-1E-UDD-D4

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	50.7	62.9	74.7	86.7	99.0	112.3	125.0	137.9	150.7	159.0
90°	21.4	34.0	47.2	59.4	71.4	83.5	99.2	111.6	125.2	138.6	146.6
92.5°	25.9	39.1	54.7	71.6	89.9	112.5	152.3	206.4	259.6	293.3	273.0
95°	34.7	45.8	60.8	77.3	99.8	133.1	191.7	291.8	432.2	551.6	571.7
97.5°	47.2	55.4	68.2	82.9	102.3	131.2	179.0	263.5	403.0	566.8	678.9
100°	55.2	62.8	74.0	88.0	105.8	132.3	175.4	247.4	368.4	531.3	676.7
102.5°	63.8	71.3	81.2	93.8	110.2	135.3	175.1	239.7	344.0	489.6	639.0
105°	74.6	82.0	90.5	102.7	118.2	142.0	178.6	233.9	319.9	438.8	572.3
107.5°	89.3	95.0	102.5	114.1	128.1	150.9	184.7	235.5	309.9	407.1	517.4
110°	98.0	103.2	109.9	120.5	134.2	155.8	189.5	237.3	306.6	394.7	489.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	106.5	111.1	117.8	127.4	140.7	161.9	194.4	239.5	304.4	385.7	470.2
115°	118.6	122.8	129.1	137.1	150.0	170.4	201.2	242.7	302.0	375.8	449.9
117.5°	132.5	135.5	140.4	148.0	159.1	179.3	208.3	246.6	300.1	367.4	436.1
120°	140.9	142.9	147.5	154.3	164.3	184.0	212.8	249.2	299.0	362.2	427.7
122.5°	149.6	150.8	154.8	160.4	170.6	189.3	217.6	251.8	298.1	356.6	419.1
125°	159.5	161.4	164.3	169.9	179.8	198.4	225.0	256.9	298.1	349.4	406.5
127.5°	169.3	170.7	174.3	180.8	191.1	209.0	233.2	261.5	296.5	340.4	390.8
130°	173.8	175.7	179.6	187.5	197.4	215.2	238.1	263.6	295.8	334.8	380.9
132.5°	179.4	180.9	186.2	193.5	204.2	220.7	242.7	266.9	295.5	330.2	372.1
135°	186.0	188.1	193.5	202.6	214.0	228.9	248.6	270.0	294.2	322.0	357.8
137.5°	193.8	195.6	201.1	209.6	221.0	234.7	252.2	271.3	291.9	315.8	345.8
140°	199.3	200.8	206.3	215.2	226.2	239.1	255.5	273.1	291.6	312.3	339.2
142.5°	204.3	205.9	211.3	220.0	230.8	243.2	258.7	274.5	291.7	310.2	334.0
145°	212.6	214.0	219.0	226.2	236.2	247.9	261.8	276.4	292.0	308.6	327.5
147.5°	222.2	222.4	226.9	234.3	242.5	253.1	266.2	278.8	292.5	306.7	322.1
150°	228.2	228.5	232.4	238.7	246.4	256.5	268.3	280.1	292.5	305.4	318.9
152.5°	232.7	232.8	237.0	243.0	250.2	259.5	270.0	281.0	291.6	303.2	315.4
155°	240.3	240.9	244.1	249.5	255.4	263.4	272.6	281.7	290.3	300.0	310.2
157.5°	248.0	248.0	251.0	255.1	260.3	266.6	274.5	281.7	289.0	296.7	305.0
160°	252.7	252.7	254.9	258.6	262.9	268.8	275.3	281.7	287.7	294.1	301.1
162.5°	257.0	256.6	258.3	261.6	265.5	270.1	276.2	281.7	286.3	291.5	297.7
165°	261.8	261.8	262.9	265.6	268.3	271.5	276.4	280.7	283.9	287.7	292.0
167.5°	266.6	266.2	266.6	268.7	270.2	272.7	276.3	279.4	281.3	283.8	286.8
170°	268.8	268.3	268.8	270.4	271.5	273.1	275.8	278.5	279.6	281.2	283.3
172.5°	271.0	270.4	270.5	271.7	272.4	273.5	275.4	277.7	277.9	278.6	280.3
175°	273.1	272.6	272.6	273.1	273.7	273.7	274.8	276.4	275.8	275.8	276.9
177.5°	274.1	273.7	273.2	273.7	273.7	273.7	274.1	274.9	274.1	274.1	274.6
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7



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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°	167.6	176.1	184.5	190.0	192.7	195.4	197.7	200.4
90°	155.5	164.4	173.3	178.7	181.5	184.5	186.2	188.5
92.5°	244.7	226.7	218.7	213.1	209.2	208.5	209.1	211.3
95°	527.4	451.9	387.7	340.7	317.0	302.9	295.9	291.4
97.5°	709.1	685.7	640.7	589.7	553.6	523.7	510.0	501.3
100°	763.1	781.7	763.2	728.3	683.5	652.8	638.7	636.4
102.5°	754.4	815.4	830.6	819.0	792.5	771.0	756.2	755.1
105°	702.7	803.0	863.4	890.2	893.6	891.6	886.5	885.5
107.5°	633.5	739.6	821.7	874.3	903.0	917.3	924.7	928.2
110°	591.4	691.1	775.7	839.3	879.9	904.7	916.7	923.9



TEST NUMBER: P332639-830

CATALOG NUMBER: S124DIP-S1020D590U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	558.6	647.3	727.5	790.9	836.6	866.2	882.0	892.2
115°	523.5	596.0	665.2	721.0	765.6	799.8	819.1	825.5
117.5°	501.6	562.4	617.9	665.8	704.4	733.8	753.6	759.2
120°	489.9	545.7	594.6	636.8	669.8	695.7	712.0	720.2
122.5°	479.6	533.7	578.5	616.0	643.9	666.3	680.1	688.2
125°	463.6	515.4	558.0	591.2	614.4	631.8	643.8	648.7
127.5°	444.5	493.9	536.1	567.8	591.4	607.2	617.7	622.9
130°	430.6	478.3	520.2	552.1	575.9	591.1	601.4	606.3
132.5°	417.0	461.9	502.6	534.4	557.8	574.7	584.6	589.6
135°	396.2	435.8	473.3	503.4	526.6	543.4	553.7	558.7
137.5°	378.1	412.0	443.8	471.0	492.6	508.9	517.4	522.7
140°	367.7	396.7	424.7	449.9	470.1	483.4	492.4	498.1
142.5°	358.6	384.2	408.3	430.1	448.0	460.1	468.1	472.3
145°	346.5	366.6	384.4	400.9	415.5	425.8	432.3	436.2
147.5°	336.5	351.3	364.4	376.8	387.7	396.4	401.4	403.3
150°	331.8	344.1	354.9	364.6	373.2	380.1	383.3	383.9
152.5°	327.0	337.6	347.5	355.5	362.8	368.5	370.4	371.0
155°	319.9	328.5	336.6	343.0	348.5	352.7	354.3	354.3
157.5°	312.3	319.5	326.2	331.4	335.5	338.7	339.7	339.7
160°	307.6	313.5	319.3	323.7	326.9	330.2	330.6	330.6
162.5°	302.8	307.8	312.5	316.4	318.8	322.0	322.5	322.1
165°	296.2	299.4	303.2	305.9	308.1	310.2	309.7	309.2
167.5°	289.9	292.4	295.4	297.0	298.1	299.4	299.4	299.0
170°	286.1	287.7	289.8	291.4	292.5	293.0	292.5	292.5
172.5°	282.6	283.8	285.1	286.3	286.9	287.5	286.9	286.1
175°	278.0	278.5	279.6	279.6	279.6	280.7	279.6	278.5
177.5°	274.9	275.4	275.4	275.8	275.4	275.8	274.9	274.1
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7

(END OF REPORT)