

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: P332630-940

Luminaire Tested: **S124DIP-S1020D365U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332630-940  
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-S1020D365U940-4F0-1E-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: 4920.6 lumens  
Efficiency: N/A  
Efficacy: 113.1 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

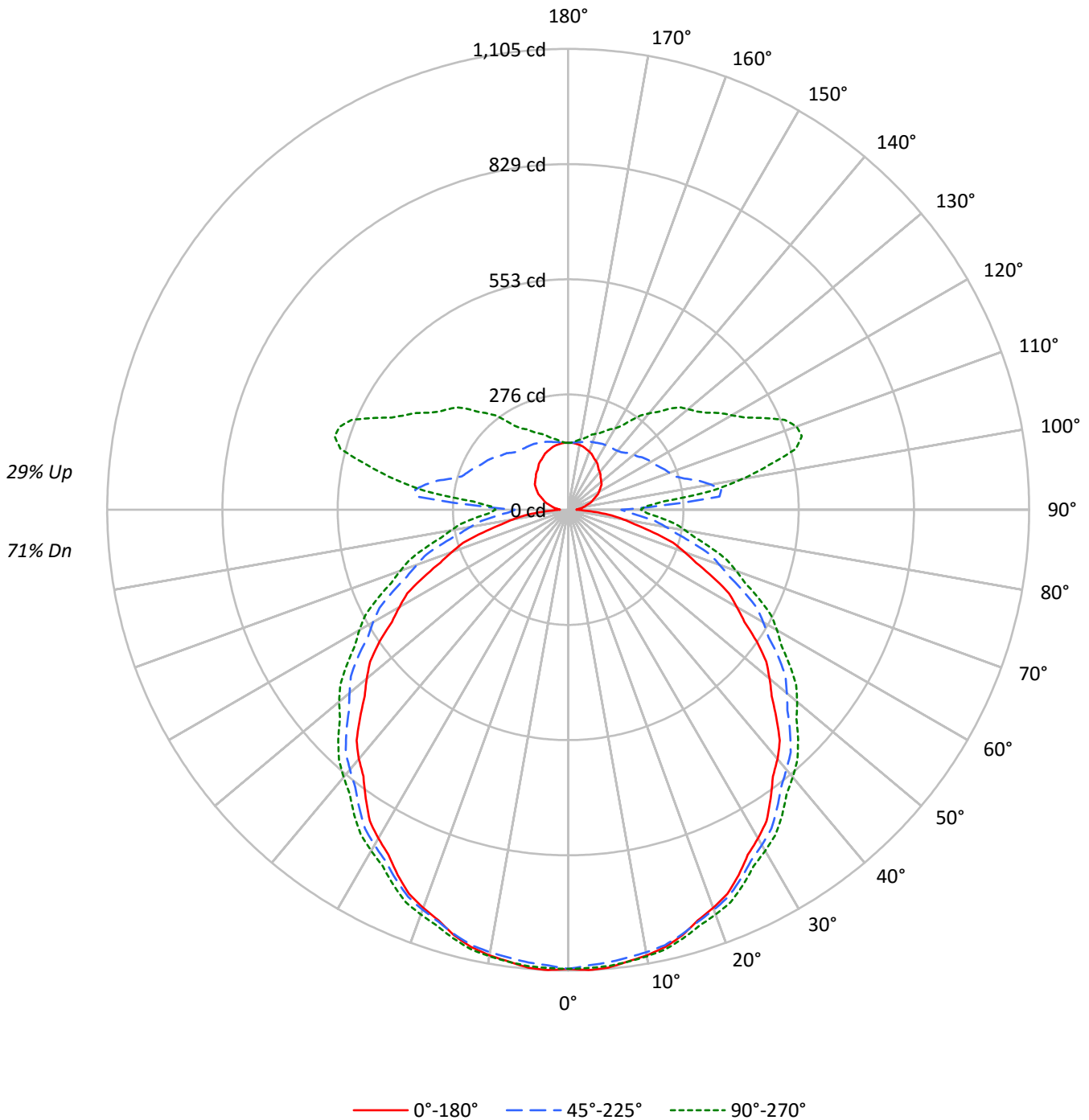
Input Watts (W): 43.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332630-940

CATALOG NUMBER: S124DIP-S1020D365U940-4F0-1E-UDD-D4

### Luminous Intensity Polar Plot





TEST NUMBER: P332630-940

CATALOG NUMBER: S124DIP-S1020D365U940-4F0-1E-UDD-D4

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	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°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



TEST NUMBER: P332630-940

CATALOG NUMBER: S124DIP-S1020D365U940-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.3	2.1
10°-20°	298.7	6.1
20°-30°	451.7	9.2
30°-40°	546.5	11.1
40°-50°	577.7	11.7
50°-60°	543.7	11.1
60°-70°	451.1	9.2
70°-80°	316.9	6.4
80°-90°	180.0	3.7
90°-100°	222.2	4.5
100°-110°	319.9	6.5
110°-120°	268.8	5.5
120°-130°	211.5	4.3
130°-140°	164.4	3.3
140°-150°	118.3	2.4
150°-160°	81.4	1.7
160°-170°	47.8	1.0
170°-180°	15.6	0.3
0°-30°	854.6	17.4
0°-40°	1401.1	28.5
0°-60°	2522.6	51.3
0°-90°	3470.7	70.5
90°-120°	810.9	16.5
90°-150°	1305.1	26.5
90°-180°	1450.0	29.5
0°-180°	4920.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	20	72	128	163	174	14
95°	26	90	364	266	228	24
105°	48	90	288	556	565	52
115°	72	102	242	438	520	72
125°	95	113	218	358	405	85
135°	110	131	193	298	342	85
145°	125	142	181	233	260	79
155°	141	152	176	199	208	65
165°	154	158	169	178	181	43
175°	160	160	162	164	163	15
180°	160	160	160	160	160	



TEST NUMBER: P332630-940

CATALOG NUMBER: S124DIP-S1020D365U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	36.6	47.9	59.2	70.4	81.7	93.3	105.7	117.7	129.8	142.0	149.8
90°	20.1	31.7	43.5	54.8	66.1	77.5	91.1	102.9	115.3	127.7	135.4
92.5°	22.3	33.8	46.6	60.4	74.8	92.2	120.0	156.2	191.8	216.1	207.1
95°	26.4	36.4	48.6	61.7	78.4	101.7	140.4	203.3	289.8	364.1	378.8
97.5°	33.2	41.0	51.5	63.0	77.3	97.8	130.1	183.9	269.9	370.1	438.6
100°	37.5	44.7	53.9	64.8	78.0	96.9	126.3	172.5	247.5	347.1	435.2
102.5°	42.5	49.3	57.5	67.3	79.3	97.2	124.5	166.3	231.5	320.7	411.1
105°	48.0	54.4	61.4	70.7	81.9	98.8	124.0	160.3	214.6	288.1	369.0
107.5°	56.4	61.5	67.6	76.2	86.1	102.1	125.6	159.0	206.3	266.8	334.0
110°	61.3	65.7	71.1	78.7	88.3	103.4	126.9	158.5	202.9	258.2	315.8



TEST NUMBER: P332630-940

CATALOG NUMBER: S124DIP-S1020D365U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	65.8	69.8	75.1	81.9	91.0	105.8	128.3	158.3	199.8	250.9	302.8
115°	72.3	75.7	80.4	86.1	94.4	108.6	130.0	157.7	195.7	242.3	288.0
117.5°	80.4	82.8	86.2	91.1	98.3	111.9	132.0	157.6	192.0	234.6	277.1
120°	85.0	86.4	89.4	93.7	99.9	113.1	133.0	157.4	189.6	229.7	270.1
122.5°	90.0	90.8	93.2	96.6	102.5	114.9	134.5	157.4	187.3	224.4	263.1
125°	95.4	96.4	98.0	101.2	106.9	119.0	137.2	158.5	185.2	217.9	253.4
127.5°	101.0	101.7	103.7	107.5	113.4	124.8	141.0	159.5	182.2	209.8	241.3
130°	103.3	104.2	106.6	111.0	116.7	127.9	142.9	159.6	180.1	204.6	233.5
132.5°	106.6	107.3	110.3	114.5	120.7	131.0	145.2	160.8	178.8	200.5	226.9
135°	109.9	111.2	114.3	119.7	126.4	135.5	147.8	161.0	175.9	193.0	215.6
137.5°	114.5	115.5	118.7	123.5	130.1	138.2	148.8	160.4	172.8	187.2	206.3
140°	117.8	118.5	121.7	126.8	133.1	140.7	150.4	160.8	171.7	184.0	201.1
142.5°	120.4	121.3	124.4	129.5	135.8	142.9	152.0	161.1	171.2	182.0	197.2
145°	125.1	125.7	128.7	132.8	138.5	145.3	153.5	162.0	171.1	180.9	192.6
147.5°	130.7	130.7	133.2	137.5	142.2	148.3	156.0	163.5	171.5	179.8	188.9
150°	134.2	134.3	136.5	140.0	144.5	150.3	157.3	164.2	171.5	179.0	186.9
152.5°	136.5	136.5	139.0	142.5	146.6	152.1	158.3	164.7	170.9	177.7	184.9
155°	140.9	141.2	143.1	146.2	149.7	154.4	159.8	165.1	170.2	175.8	181.8
157.5°	145.3	145.3	147.1	149.5	152.6	156.3	160.9	165.1	169.3	173.9	178.8
160°	148.1	148.1	149.4	151.6	154.1	157.6	161.4	165.1	168.6	172.4	176.5
162.5°	150.6	150.4	151.4	153.4	155.6	158.4	161.8	165.1	167.8	170.9	174.5
165°	153.5	153.5	154.1	155.7	157.3	159.2	162.0	164.5	166.4	168.6	171.1
167.5°	156.3	156.0	156.3	157.5	158.4	159.9	161.9	163.7	164.9	166.3	168.1
170°	157.6	157.3	157.6	158.5	159.2	160.1	161.7	163.3	163.9	164.8	166.1
172.5°	158.8	158.5	158.5	159.3	159.6	160.3	161.4	162.7	162.9	163.3	164.3
175°	160.1	159.8	159.8	160.1	160.4	160.4	161.0	162.0	161.7	161.7	162.3
177.5°	160.7	160.4	160.2	160.4	160.4	160.4	160.7	161.1	160.7	160.7	161.0
180°	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4



TEST NUMBER: P332630-940

CATALOG NUMBER: S124DIP-S1020D365U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	157.8	165.9	173.8	179.1	181.5	184.0	186.3	188.7
90°	143.7	151.9	160.2	165.2	167.7	170.2	172.1	174.3
92.5°	193.5	185.9	184.1	182.8	181.2	181.7	182.8	185.0
95°	355.6	314.1	279.3	253.7	240.7	233.4	230.2	228.5
97.5°	459.0	448.0	424.4	396.3	375.9	359.4	352.2	348.0
100°	488.6	502.3	494.2	475.5	450.0	432.7	425.3	424.6
102.5°	481.4	519.9	531.5	526.5	511.8	500.0	492.1	492.3
105°	448.1	509.4	547.4	564.9	567.8	567.4	565.2	565.4
107.5°	404.7	469.5	520.1	552.6	570.2	579.3	584.4	587.2
110°	378.2	439.0	491.0	529.9	554.5	569.9	577.7	582.8





TEST NUMBER: P332630-940

CATALOG NUMBER: S124DIP-S1020D365U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	357.0	411.3	460.5	499.3	526.9	545.1	555.2	562.0
115°	333.5	378.3	421.2	455.4	482.2	503.0	515.1	519.5
117.5°	317.6	355.3	390.0	419.6	443.1	461.2	473.6	477.7
120°	308.7	343.5	374.2	400.4	420.5	436.6	447.0	452.6
122.5°	300.8	334.5	362.9	386.3	403.4	417.2	426.1	431.6
125°	288.8	321.2	348.1	368.9	383.2	393.9	401.5	405.1
127.5°	274.6	305.4	332.1	351.9	366.4	376.5	383.3	387.1
130°	264.7	294.4	320.8	340.8	355.3	364.9	371.6	375.1
132.5°	254.9	283.0	308.7	328.6	342.9	353.4	359.9	363.4
135°	239.9	264.7	288.3	307.1	321.4	331.8	338.5	342.1
137.5°	226.8	248.1	268.3	285.3	298.4	308.4	314.0	317.6
140°	219.2	237.6	255.3	271.0	283.4	291.7	297.5	301.4
142.5°	212.8	229.0	244.2	257.9	268.8	276.3	281.4	284.4
145°	204.4	216.7	227.8	238.0	247.0	253.4	257.7	260.4
147.5°	197.4	206.2	213.9	221.4	228.1	233.5	236.8	238.3
150°	194.5	201.7	208.0	213.7	218.7	222.8	224.7	225.0
152.5°	191.7	198.0	203.8	208.4	212.7	216.0	217.1	217.5
155°	187.5	192.5	197.2	201.1	204.2	206.7	207.7	207.7
157.5°	183.1	187.3	191.3	194.3	196.6	198.6	199.1	199.1
160°	180.3	183.7	187.2	189.8	191.6	193.5	193.9	193.9
162.5°	177.5	180.5	183.2	185.5	186.8	188.7	189.0	188.8
165°	173.6	175.6	177.7	179.3	180.6	181.8	181.6	181.2
167.5°	170.0	171.4	173.2	174.1	174.7	175.6	175.5	175.2
170°	167.6	168.6	169.9	170.9	171.5	171.7	171.5	171.5
172.5°	165.7	166.3	167.1	167.8	168.2	168.4	168.2	167.6
175°	162.9	163.3	163.9	163.9	163.9	164.5	163.9	163.3
177.5°	161.1	161.4	161.4	161.7	161.4	161.7	161.1	160.7
180°	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4

(END OF REPORT)