

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: P332628-840

Luminaire Tested: **S124DIP-S1020D365U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332628-840  
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-S1020D365U840-4F0-1E-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**

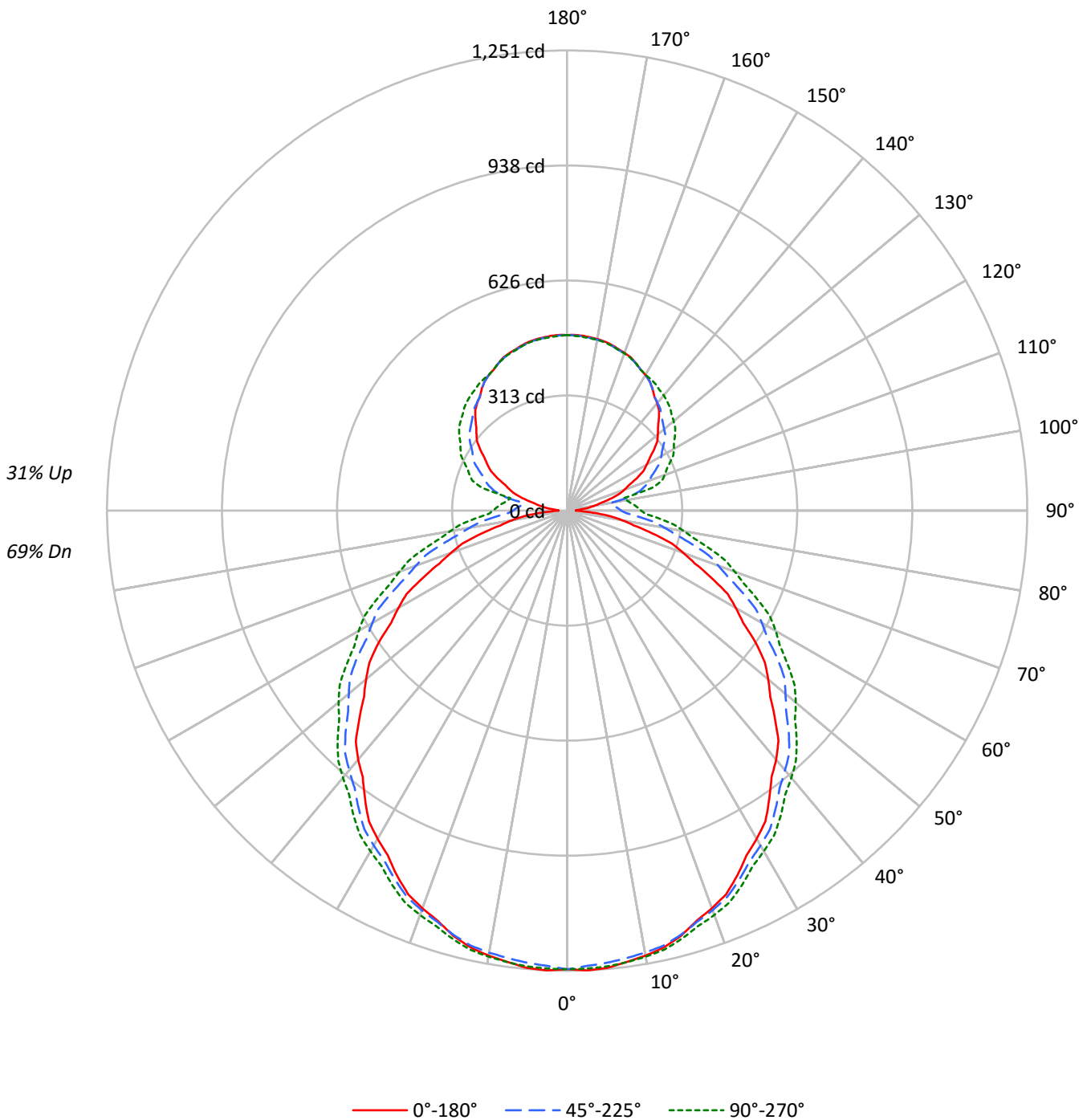
Lumens per Lamp: N/A  
Luminaire Lumens: 5727.8 lumens  
Efficiency: N/A  
Efficacy: 131.7 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 43.5  
Input Voltage (V): 120  
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



TEST NUMBER: P332628-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332628-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-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°	10066	10066	10066
5°	10097	9838	9866
10°	10035	9677	9669
15°	9945	9490	9439
20°	9810	9285	9213
25°	9657	9054	8967
30°	9492	8825	8712
35°	9305	8591	8490
40°	9154	8367	8259
45°	8931	8161	8059
50°	8744	7924	7849
55°	8549	7700	7603
60°	8247	7415	7378
65°	7914	7109	7102
70°	7513	6760	6779
75°	6949	6374	6488
80°	6328	6004	6203
85°	5536	5679	6037



TEST NUMBER: P332628-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.1	2.1
10°-20°	338.3	5.9
20°-30°	511.5	8.9
30°-40°	618.9	10.8
40°-50°	654.3	11.4
50°-60°	615.8	10.8
60°-70°	510.9	8.9
70°-80°	358.9	6.3
80°-90°	204.3	3.6
90°-100°	136.8	2.4
100°-110°	193.2	3.4
110°-120°	258.9	4.5
120°-130°	286.5	5.0
130°-140°	285.0	5.0
140°-150°	255.8	4.5
150°-160°	203.9	3.6
160°-170°	131.5	2.3
170°-180°	45.3	0.8
0°-30°	967.9	16.9
0°-40°	1586.8	27.7
0°-60°	2856.9	49.9
0°-90°	3930.9	68.6
90°-120°	588.9	10.3
90°-150°	1416.1	24.7
90°-180°	1797.0	31.4
0°-180°	5727.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1247	1247	1247	1247	1247	
5°	1248	1244	1234	1245	1244	118
15°	1197	1198	1194	1206	1205	337
25°	1095	1103	1107	1122	1124	504
35°	958	974	989	1007	1012	600
45°	799	825	852	875	882	617
55°	626	656	697	724	733	557
65°	433	478	525	559	571	429
75°	240	292	350	388	402	255
85°	74	133	196	236	251	79
90°	23	83	146	187	201	16
95°	38	73	129	168	182	40
105°	120	151	204	239	240	127
115°	209	224	267	297	308	206
125°	288	289	322	348	358	257
135°	352	353	363	386	396	272
145°	405	404	404	413	419	253
155°	442	442	442	443	442	204
165°	466	465	465	467	464	132
175°	477	475	475	478	474	45
180°	477	477	477	477	477	



TEST NUMBER: P332628-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1251.3	1250.6	1249.8	1249.1	1248.3	1247.0	1245.0	1243.0	1241.0	1239.0	1240.7
5°	1248.2	1247.3	1246.4	1245.5	1244.6	1242.9	1240.8	1238.6	1236.5	1234.3	1236.8
7.5°	1237.6	1237.1	1236.5	1236.0	1235.4	1234.3	1232.4	1230.6	1228.8	1227.0	1229.8
10°	1228.7	1228.4	1228.1	1227.8	1227.5	1226.5	1225.0	1223.5	1221.8	1220.3	1223.1
12.5°	1216.4	1216.4	1216.3	1216.2	1216.2	1215.6	1214.6	1213.5	1212.4	1211.3	1214.0
15°	1196.6	1196.9	1197.2	1197.5	1197.8	1197.5	1196.6	1195.7	1194.7	1193.8	1196.6
17.5°	1169.5	1170.4	1171.3	1172.3	1173.3	1173.6	1173.4	1173.3	1173.1	1172.9	1175.7
20°	1150.5	1151.4	1152.4	1153.3	1154.3	1154.9	1155.2	1155.5	1155.8	1156.1	1159.2
22.5°	1129.2	1130.4	1131.7	1132.9	1134.0	1134.9	1135.4	1136.0	1136.5	1137.1	1140.2
25°	1094.7	1096.5	1098.3	1100.2	1102.1	1103.5	1104.4	1105.4	1106.3	1107.2	1110.6
27.5°	1056.1	1058.8	1061.6	1064.3	1067.0	1069.1	1070.6	1072.0	1073.4	1074.8	1078.0
30°	1030.5	1032.9	1035.4	1037.8	1040.4	1042.7	1044.8	1047.0	1049.1	1051.4	1054.8
32.5°	1002.5	1005.5	1008.5	1011.5	1014.4	1017.1	1019.6	1022.0	1024.4	1026.8	1030.7
35°	957.9	961.6	965.2	969.0	972.7	976.1	979.3	982.3	985.4	988.6	992.9
37.5°	912.8	917.2	921.4	925.7	930.0	934.0	937.9	941.7	945.6	949.5	953.8
40°	883.8	887.9	891.9	896.0	900.0	904.1	908.5	912.8	917.2	921.5	926.1
42.5°	850.3	854.9	859.4	863.9	868.4	873.2	878.3	883.4	888.5	893.6	898.8
45°	798.6	804.6	810.4	816.4	822.2	828.1	834.0	839.9	845.8	851.7	857.0
47.5°	749.2	755.3	761.3	767.5	773.6	780.0	786.8	793.7	800.5	807.3	812.7
50°	713.5	720.3	727.1	734.0	740.7	747.6	754.5	761.2	768.1	774.9	781.1
52.5°	677.7	684.6	691.4	698.2	705.1	712.4	720.1	728.0	735.8	743.7	749.8
55°	625.5	632.1	638.5	645.1	651.6	659.4	668.8	678.1	687.4	696.7	703.0
57.5°	567.1	575.2	583.3	591.4	599.5	608.0	617.3	626.6	635.8	645.1	652.5
60°	529.2	537.2	545.3	553.4	561.5	570.6	580.9	591.1	601.3	611.6	618.6
62.5°	492.3	501.1	510.0	518.8	527.6	537.0	547.3	557.5	567.8	578.0	585.2
65°	432.8	442.7	452.7	462.6	472.5	482.8	493.3	503.9	514.4	525.0	532.7
67.5°	375.6	386.2	396.7	407.3	417.8	428.7	440.0	451.3	462.6	473.9	481.8
70°	336.5	347.1	357.6	368.1	378.7	389.9	401.6	413.4	425.3	437.1	445.5
72.5°	298.5	309.3	320.1	330.9	341.7	353.4	365.9	378.4	391.0	403.5	411.6
75°	240.1	251.7	263.1	274.6	286.1	298.3	311.3	324.4	337.4	350.4	359.1
77.5°	185.7	197.8	210.1	222.2	234.4	247.2	260.9	274.6	288.2	301.8	310.6
80°	152.2	164.6	177.0	189.5	201.9	214.9	228.5	242.2	255.8	269.4	278.8
82.5°	118.7	131.6	144.5	157.4	170.3	183.6	197.2	210.9	224.6	238.2	247.7
85°	74.0	87.1	100.1	113.1	126.1	139.7	153.6	167.5	181.5	195.5	204.8
87.5°	41.5	54.3	67.3	80.1	92.9	106.1	119.9	133.6	147.3	161.0	170.2
90°	23.4	36.7	50.0	63.2	76.5	90.2	104.1	118.2	132.1	146.1	155.5
92.5°	25.8	37.0	48.2	59.4	70.6	83.2	97.1	111.2	125.1	139.1	148.3
95°	37.8	45.3	52.8	60.4	68.0	78.2	90.9	103.7	116.5	129.4	138.1
97.5°	58.2	68.7	79.2	89.7	100.2	107.2	111.0	114.7	118.5	122.2	130.4
100°	73.9	83.4	92.9	102.4	111.9	117.1	118.4	119.5	120.7	121.8	128.9
102.5°	92.7	100.9	109.0	117.1	125.2	134.5	144.9	155.3	165.7	176.2	169.8
105°	120.0	126.6	133.4	140.1	146.7	156.0	167.8	179.8	191.7	203.5	212.0
107.5°	147.6	153.0	158.2	163.6	169.0	177.3	188.6	200.1	211.5	222.9	230.9
110°	165.3	170.0	174.5	179.0	183.7	191.7	203.0	214.3	225.6	237.0	244.3



TEST NUMBER: P332628-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	182.5	186.8	191.1	195.3	199.7	207.0	217.6	228.2	238.8	249.3	256.2
115°	208.9	212.0	215.0	218.0	221.1	227.5	237.3	247.2	257.1	266.9	273.9
117.5°	234.0	236.0	238.0	239.9	242.0	247.7	257.1	266.5	276.0	285.4	291.8
120°	250.0	251.3	252.6	253.8	255.0	260.1	269.0	277.9	286.9	295.8	302.2
122.5°	266.0	266.4	266.8	267.1	267.5	272.1	280.6	289.2	297.8	306.5	312.8
125°	287.5	287.5	287.5	287.5	287.6	291.3	298.9	306.6	314.2	321.7	327.9
127.5°	308.9	308.7	308.5	308.3	308.0	311.0	317.4	323.8	330.0	336.4	341.9
130°	321.8	321.6	321.3	321.1	320.9	323.4	328.6	333.8	339.0	344.2	349.8
132.5°	334.7	334.5	334.4	334.2	334.0	336.1	340.3	344.6	348.9	353.1	358.6
135°	352.5	352.4	352.4	352.3	352.2	353.5	356.0	358.4	360.9	363.3	368.5
137.5°	369.6	369.3	369.1	368.8	368.5	369.1	370.4	371.8	373.2	374.7	379.4
140°	380.7	380.6	380.4	380.3	380.1	380.3	380.8	381.2	381.7	382.1	386.5
142.5°	389.6	389.8	390.1	390.3	390.5	390.6	390.5	390.4	390.3	390.2	393.9
145°	404.7	404.7	404.6	404.5	404.5	404.3	404.3	404.3	404.3	404.3	406.3
147.5°	416.9	417.1	417.2	417.3	417.5	417.5	417.4	417.3	417.2	417.2	417.5
150°	425.8	425.8	425.8	425.8	425.8	425.8	425.7	425.6	425.5	425.5	425.5
152.5°	432.0	432.2	432.4	432.6	432.8	432.8	432.7	432.5	432.4	432.3	432.4
155°	442.2	442.3	442.3	442.4	442.5	442.4	442.2	441.9	441.7	441.5	441.8
157.5°	451.0	450.9	450.9	450.8	450.8	450.6	450.4	450.1	449.8	449.6	450.0
160°	456.2	455.9	455.7	455.4	455.1	455.0	454.9	454.8	454.7	454.6	455.1
162.5°	460.7	460.4	460.1	459.8	459.5	459.3	459.2	459.1	459.1	459.0	459.5
165°	466.5	466.1	465.6	465.2	464.8	464.6	464.6	464.6	464.6	464.6	465.3
167.5°	471.0	470.6	470.2	469.8	469.4	469.2	469.1	469.1	469.0	469.0	469.7
170°	473.6	473.1	472.6	472.2	471.7	471.5	471.6	471.7	471.7	471.8	472.4
172.5°	475.3	474.8	474.3	473.9	473.4	473.2	473.3	473.4	473.4	473.5	474.1
175°	477.2	476.7	476.3	475.7	475.2	475.0	475.1	475.2	475.3	475.3	476.2
177.5°	478.1	477.6	477.2	476.7	476.3	476.1	476.3	476.4	476.5	476.6	477.2
180°	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2



TEST NUMBER: P332628-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1242.5	1244.3	1246.0	1246.7	1246.5	1246.2	1246.0	1245.8
5°	1239.2	1241.7	1244.3	1245.3	1245.0	1244.7	1244.4	1244.1
7.5°	1232.6	1235.4	1238.2	1239.4	1239.1	1238.8	1238.5	1238.2
10°	1225.9	1228.7	1231.5	1232.7	1232.4	1232.1	1231.8	1231.5
12.5°	1216.5	1219.0	1221.5	1222.8	1222.7	1222.6	1222.6	1222.5
15°	1199.4	1202.1	1205.0	1206.2	1205.9	1205.6	1205.3	1205.0
17.5°	1178.5	1181.4	1184.3	1185.6	1185.3	1185.1	1184.8	1184.6
20°	1162.3	1165.4	1168.5	1170.0	1170.0	1170.0	1170.0	1170.0
22.5°	1143.3	1146.4	1149.5	1151.3	1151.9	1152.3	1152.8	1153.3
25°	1114.1	1117.4	1120.8	1122.8	1123.1	1123.4	1123.7	1124.0
27.5°	1081.2	1084.3	1087.5	1089.2	1089.6	1090.0	1090.4	1090.8
30°	1058.2	1061.6	1065.0	1067.0	1067.6	1068.2	1068.9	1069.5
32.5°	1034.6	1038.5	1042.5	1044.7	1045.3	1045.9	1046.5	1047.2
35°	997.2	1001.6	1005.9	1008.6	1009.5	1010.4	1011.4	1012.3
37.5°	958.3	962.7	967.0	969.8	970.8	971.8	972.7	973.7
40°	930.8	935.4	940.2	943.1	944.3	945.5	946.8	948.1
42.5°	903.9	909.1	914.2	917.3	918.3	919.3	920.3	921.2
45°	862.2	867.6	872.8	876.3	877.8	879.3	880.9	882.4
47.5°	818.2	823.6	829.2	832.8	834.7	836.6	838.4	840.3
50°	787.3	793.6	799.7	803.8	805.7	807.5	809.3	811.2
52.5°	756.1	762.2	768.5	772.4	774.4	776.2	778.1	779.9
55°	709.1	715.4	721.5	725.6	727.4	729.3	731.1	733.1
57.5°	659.8	667.2	674.6	679.1	680.9	682.7	684.4	686.1
60°	625.8	633.0	640.1	644.9	647.4	649.8	652.4	654.8
62.5°	592.3	599.5	606.6	611.4	613.9	616.3	618.8	621.4
65°	540.5	548.3	556.0	561.2	563.6	566.1	568.6	571.1
67.5°	489.7	497.6	505.4	510.6	513.0	515.4	517.9	520.3
70°	453.7	462.1	470.5	475.8	478.0	480.2	482.3	484.5
72.5°	419.8	427.9	436.1	441.3	443.7	446.2	448.6	451.0
75°	367.8	376.5	385.2	390.9	393.7	396.6	399.3	402.1
77.5°	319.5	328.3	337.1	343.1	346.0	349.0	351.9	355.0
80°	288.1	297.4	306.7	312.6	315.1	317.6	320.0	322.6
82.5°	257.3	266.9	276.4	282.6	285.3	288.0	290.7	293.5
85°	214.1	223.4	232.7	238.9	242.1	245.1	248.2	251.4
87.5°	179.3	188.3	197.4	203.3	206.1	208.8	211.6	214.4
90°	165.0	174.5	184.0	190.1	192.7	195.3	197.9	200.6
92.5°	157.5	166.7	176.0	181.9	184.4	186.9	189.5	191.9
95°	147.0	155.9	164.7	170.6	173.5	176.3	179.3	182.1
97.5°	138.6	146.7	154.9	160.4	163.2	165.9	168.6	171.4
100°	135.8	142.9	150.0	154.6	156.8	159.1	161.4	163.6
102.5°	163.4	156.9	150.6	148.6	151.0	153.4	155.8	158.2
105°	220.5	228.9	237.4	241.5	241.1	240.7	240.3	239.9
107.5°	238.8	246.8	254.8	260.0	262.6	265.2	267.7	270.2
110°	251.6	258.8	266.2	271.1	273.9	276.6	279.3	282.1





TEST NUMBER: P332628-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	263.1	269.9	276.8	281.7	284.4	287.2	289.9	292.8
115°	280.8	287.9	294.9	299.4	301.6	303.8	306.0	308.1
117.5°	298.2	304.7	311.0	315.5	317.9	320.4	322.9	325.3
120°	308.5	314.9	321.2	325.6	327.9	330.2	332.5	334.9
122.5°	319.1	325.4	331.6	335.9	337.9	340.0	342.0	344.2
125°	334.1	340.1	346.3	350.3	352.2	354.3	356.2	358.1
127.5°	347.4	352.9	358.5	362.3	364.4	366.4	368.4	370.5
130°	355.6	361.2	366.9	370.6	372.4	374.4	376.2	378.1
132.5°	364.0	369.4	374.9	378.4	380.2	382.0	383.8	385.6
135°	373.7	378.8	383.8	387.5	389.5	391.5	393.5	395.6
137.5°	384.1	388.8	393.5	396.6	398.1	399.6	401.1	402.6
140°	390.7	395.0	399.3	402.2	403.8	405.5	407.1	408.7
142.5°	397.7	401.3	405.1	407.6	408.9	410.2	411.5	412.8
145°	408.3	410.2	412.1	413.8	415.2	416.6	418.0	419.4
147.5°	417.8	418.1	418.4	419.1	420.2	421.2	422.3	423.3
150°	425.5	425.5	425.5	425.5	425.6	425.7	425.7	425.8
152.5°	432.5	432.6	432.8	432.8	432.7	432.7	432.7	432.6
155°	442.1	442.4	442.7	442.8	442.5	442.3	442.1	441.8
157.5°	450.4	450.8	451.2	451.2	450.8	450.4	450.0	449.6
160°	455.7	456.2	456.6	456.6	456.2	455.7	455.1	454.6
162.5°	459.9	460.4	460.9	460.8	460.3	459.8	459.2	458.7
165°	466.0	466.6	467.3	467.2	466.5	465.7	465.0	464.3
167.5°	470.4	471.1	471.7	471.7	470.9	470.1	469.3	468.6
170°	473.1	473.7	474.3	474.2	473.5	472.7	471.9	471.1
172.5°	474.8	475.4	476.1	475.9	475.1	474.2	473.4	472.5
175°	476.9	477.6	478.3	478.2	477.2	476.3	475.2	474.3
177.5°	477.7	478.2	478.7	478.5	477.8	477.0	476.3	475.4
180°	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2

(END OF REPORT)