

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: P243602

Luminaire Tested: **S124RDR-H575D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243602
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H575D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2209.3 lumens
Efficiency: N/A
Efficacy: 128.4 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

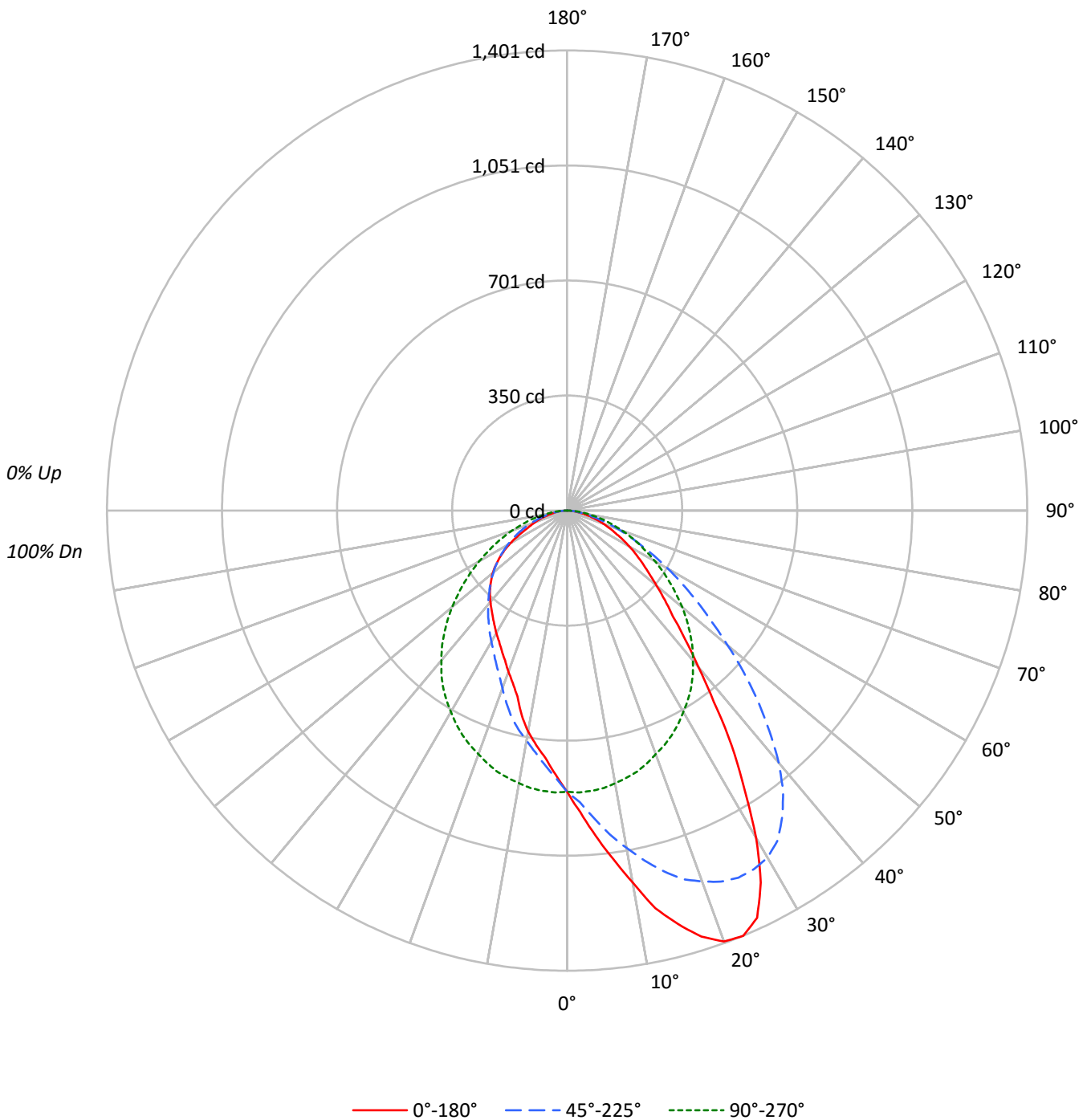
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88				86	
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75				73	
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65				63	
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57				55	
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50				48	
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44				42	
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40				38	
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36				34	
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32				31	
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30				28	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7609	7609	7609
5°	8864	7642	6746
10°	10380	7609	6167
15°	11995	7571	5386
20°	13205	7463	4938
25°	13417	7395	4617
30°	11811	7264	4427
35°	9478	7140	4283
40°	7209	6912	4216
45°	5723	6659	4165
50°	4913	6329	4093
55°	4339	5920	3894
60°	3888	5493	3568
65°	3422	5075	3001
70°	3049	4608	2703
75°	2655	4190	2404
80°	2252	3599	2216
85°	1968	3090	2244



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.1	3.8
10°-20°	251.9	11.4
20°-30°	393.1	17.8
30°-40°	438.4	19.8
40°-50°	394.1	17.8
50°-60°	311.4	14.1
60°-70°	206.8	9.4
70°-80°	103.7	4.7
80°-90°	27.0	1.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	728.0	33.0
0°-40°	1166.4	52.8
0°-60°	1871.8	84.7
0°-90°	2209.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2209.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	856	856	856	856	856	
5°	993	940	856	777	756	100
15°	1303	1137	823	652	585	370
25°	1368	1233	754	512	471	612
35°	873	1141	658	416	395	543
45°	455	822	530	333	331	361
55°	280	483	382	252	251	252
65°	163	247	241	165	143	163
75°	77	98	122	82	70	83
85°	19	21	30	23	22	22
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0
2.5°	919.4	916.0	915.7	911.4	911.0	906.7	905.4	901.7	894.4	888.7	889.0
5°	993.4	990.7	990.4	986.0	984.7	979.4	971.0	961.0	949.4	939.7	933.4
7.5°	1069.4	1074.0	1069.0	1069.0	1059.4	1053.0	1036.7	1028.4	1008.4	994.4	979.7
10°	1150.0	1154.4	1152.4	1148.4	1135.7	1122.7	1105.7	1089.4	1065.0	1043.0	1028.4
12.5°	1240.0	1227.0	1235.4	1223.0	1212.7	1192.0	1175.7	1143.0	1123.7	1091.7	1063.0
15°	1303.4	1298.4	1298.0	1289.7	1278.4	1255.7	1238.0	1204.0	1171.0	1137.4	1105.0
17.5°	1360.0	1360.7	1356.0	1342.7	1328.0	1306.0	1282.0	1251.7	1214.0	1176.7	1138.4
20°	1396.0	1396.4	1393.0	1386.0	1370.0	1350.0	1325.4	1285.7	1243.0	1201.7	1163.4
22.5°	1401.4	1402.4	1401.4	1397.0	1386.0	1369.7	1347.0	1313.4	1270.4	1223.0	1177.4
25°	1368.0	1371.4	1371.7	1377.7	1372.0	1365.7	1349.0	1320.7	1281.0	1233.0	1183.4
27.5°	1276.7	1286.0	1294.7	1305.4	1315.0	1323.7	1325.0	1310.0	1276.0	1231.4	1184.0
30°	1150.7	1161.7	1179.0	1190.4	1220.4	1239.4	1265.0	1270.7	1254.4	1220.0	1174.4
32.5°	1004.0	1015.7	1022.4	1059.7	1102.7	1133.7	1176.4	1201.7	1208.0	1191.7	1154.4
35°	873.4	875.4	880.4	922.7	965.4	1012.4	1065.4	1109.4	1139.4	1141.0	1122.7
37.5°	733.3	735.7	755.3	787.7	824.7	876.4	937.4	1000.0	1055.0	1080.4	1075.0
40°	621.3	620.7	641.7	669.7	705.7	759.3	822.4	890.7	949.4	1002.4	1015.0
42.5°	530.7	533.0	551.0	567.3	602.0	639.7	707.0	778.0	853.4	911.4	950.0
45°	455.3	461.3	473.7	489.0	515.0	549.7	604.7	675.3	752.3	822.0	868.4
47.5°	403.3	405.0	411.3	430.3	447.7	475.7	522.7	582.7	651.0	729.0	790.0
50°	355.3	359.3	361.7	373.0	390.0	416.7	453.0	497.7	565.3	637.0	713.3
52.5°	314.0	316.3	320.7	331.0	344.3	363.0	391.7	431.0	487.3	553.7	625.7
55°	280.0	280.3	284.7	292.0	302.3	316.7	344.0	372.3	422.3	482.7	548.0
57.5°	249.3	247.3	251.3	255.7	265.7	278.0	295.7	324.7	363.7	415.0	474.0
60°	218.7	220.3	220.0	225.0	230.3	242.7	257.7	276.7	308.7	355.7	405.7
62.5°	190.0	189.7	193.0	196.0	199.7	209.7	222.0	237.7	262.7	297.3	345.7
65°	162.7	163.3	166.0	168.3	172.3	178.7	188.0	200.7	220.7	247.3	288.0
67.5°	138.0	140.3	141.7	142.3	146.0	150.7	158.7	169.0	182.7	204.0	238.0
70°	117.3	118.0	118.7	121.0	122.7	125.3	131.3	137.0	149.3	165.0	189.7
72.5°	98.0	97.3	99.3	100.0	100.7	103.3	107.0	110.0	118.0	131.3	146.7
75°	77.3	77.7	78.0	79.0	81.7	82.0	83.7	87.0	92.7	98.0	108.3
77.5°	58.0	59.0	58.7	59.7	60.7	61.7	62.3	65.3	69.3	73.7	78.7
80°	44.0	44.0	44.0	44.7	44.0	46.3	46.3	47.3	48.3	50.3	54.0
82.5°	30.0	30.7	31.0	31.3	31.7	31.7	32.0	32.7	34.0	34.7	35.7
85°	19.3	18.7	19.0	19.0	19.0	19.0	19.7	20.3	20.3	20.7	21.7
87.5°	8.7	8.7	8.7	8.7	8.3	8.7	9.0	9.0	9.3	9.3	10.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0
2.5°	887.0	886.0	881.0	875.7	870.7	865.7	864.0	859.0	853.0	847.7	841.7
5°	926.7	918.7	907.7	896.4	884.7	874.0	865.7	856.4	845.7	833.0	823.0
7.5°	966.7	952.0	934.0	917.4	897.4	881.4	865.4	852.0	836.7	818.7	805.0
10°	1005.7	981.4	959.4	933.0	907.7	885.7	865.4	843.0	822.7	803.4	784.4
12.5°	1036.7	1012.4	980.7	948.4	915.7	887.0	859.7	833.4	808.0	784.7	763.7
15°	1072.0	1037.0	998.0	962.4	917.7	882.4	851.0	822.7	793.7	765.3	742.3
17.5°	1098.0	1056.7	1008.4	967.4	924.4	880.4	842.7	807.0	773.7	744.0	720.3
20°	1118.0	1069.0	1020.7	968.7	917.4	872.4	830.0	789.0	755.3	723.0	698.0
22.5°	1126.7	1075.0	1021.4	965.0	910.4	859.4	815.4	773.0	735.0	701.7	672.7
25°	1130.4	1073.7	1018.0	954.0	898.7	846.7	797.7	754.0	715.0	677.3	648.7
27.5°	1127.4	1066.7	1002.7	942.4	879.7	828.7	776.7	732.3	691.7	655.3	623.3
30°	1119.4	1050.7	987.0	919.4	859.0	805.4	754.7	707.7	666.7	629.7	598.0
32.5°	1098.7	1032.7	960.4	894.4	829.4	776.4	730.3	684.0	642.3	603.7	573.0
35°	1073.0	1008.4	932.7	863.7	799.4	745.7	699.3	658.0	617.0	576.0	544.7
37.5°	1040.7	975.0	902.0	827.7	764.7	712.7	670.3	628.7	588.0	550.3	515.3
40°	997.0	937.0	863.7	789.0	725.7	675.7	634.0	595.7	559.7	522.7	485.0
42.5°	942.7	897.0	821.4	747.7	685.7	636.0	599.0	564.7	530.0	492.0	458.0
45°	884.7	845.7	777.0	702.7	643.7	595.3	560.0	529.7	497.0	463.3	427.7
47.5°	819.4	790.4	731.0	657.3	595.3	554.0	521.3	493.7	464.0	434.0	399.3
50°	745.7	728.0	677.3	610.3	551.3	509.3	482.3	457.7	432.3	402.3	372.7
52.5°	672.0	668.7	621.3	562.3	506.7	467.7	441.3	418.7	398.0	369.7	344.7
55°	594.7	604.7	565.3	511.0	461.3	423.7	400.3	382.0	364.0	340.0	316.0
57.5°	526.0	537.3	510.3	460.3	414.0	382.0	362.0	345.3	329.7	307.7	291.7
60°	450.0	470.7	456.3	410.7	369.7	341.0	322.3	309.0	296.0	277.0	263.0
62.5°	390.0	404.3	396.0	362.0	325.7	302.3	285.7	273.3	263.0	248.3	234.7
65°	325.7	343.7	339.3	317.0	285.0	263.7	251.0	241.3	230.7	219.0	207.7
67.5°	267.7	286.3	285.3	270.0	246.3	228.7	216.7	209.7	201.0	189.7	182.7
70°	215.3	232.7	233.3	225.7	209.0	192.3	183.7	177.3	170.7	162.3	157.3
72.5°	167.3	183.0	185.7	182.0	171.3	160.3	152.7	148.3	142.7	135.7	131.3
75°	125.0	136.3	142.7	141.0	136.7	129.3	125.0	122.0	116.3	111.3	107.7
77.5°	89.0	98.0	104.3	107.0	105.0	102.0	98.0	95.7	89.7	87.3	85.3
80°	59.7	67.7	73.3	75.0	76.0	75.3	71.7	70.3	67.3	66.3	64.3
82.5°	36.7	41.0	45.0	49.3	51.3	51.3	49.3	49.7	47.0	45.7	45.0
85°	22.3	23.3	24.0	27.3	30.0	31.0	30.0	30.3	29.3	28.3	27.3
87.5°	10.3	10.3	10.7	11.3	12.0	14.0	14.7	15.7	14.3	14.3	12.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0
2.5°	838.0	833.7	830.4	825.0	820.7	813.7	811.4	811.4	812.7	811.0	812.7
5°	816.0	808.0	799.4	791.7	783.4	777.4	771.3	770.0	769.3	765.3	765.7
7.5°	794.0	783.4	772.3	762.3	752.0	742.7	736.3	733.7	731.3	728.7	725.7
10°	770.3	758.0	745.0	733.7	723.7	711.0	704.7	702.7	696.0	694.7	690.0
12.5°	745.3	732.7	719.7	705.0	695.3	683.0	673.7	669.3	663.0	658.3	651.3
15°	725.7	709.7	692.3	678.0	665.3	651.7	639.0	630.7	622.3	609.3	603.0
17.5°	701.3	683.0	668.0	652.7	634.3	614.3	599.3	587.0	578.0	567.3	561.0
20°	675.0	658.0	639.3	617.7	598.3	575.7	562.0	551.7	544.7	538.3	535.0
22.5°	651.7	632.0	606.3	585.7	558.7	540.7	529.7	523.0	516.3	509.7	506.3
25°	626.3	603.3	572.0	546.7	526.3	512.3	501.7	495.3	488.3	484.3	479.3
27.5°	601.3	571.7	540.3	517.3	501.3	485.0	476.0	471.0	465.7	460.0	456.0
30°	571.0	537.3	511.3	490.3	474.3	460.7	454.0	446.7	442.0	438.7	436.3
32.5°	539.3	507.0	483.3	465.3	449.7	439.3	431.0	426.3	422.3	418.7	416.0
35°	509.7	478.3	458.3	441.0	428.0	416.3	410.0	405.7	402.3	399.3	398.0
37.5°	480.3	453.7	432.0	418.3	404.7	395.3	389.3	385.3	383.3	380.3	380.7
40°	451.3	427.3	410.0	394.3	381.7	373.7	369.0	367.3	364.3	363.3	364.3
42.5°	425.3	403.3	386.7	372.0	361.0	353.3	349.7	347.3	346.3	346.0	346.3
45°	400.0	379.3	363.3	351.3	340.0	333.0	330.0	328.3	327.3	329.0	329.3
47.5°	374.7	356.0	341.7	327.7	318.3	313.3	310.3	309.0	310.0	310.7	313.0
50°	349.7	332.3	317.3	305.0	297.7	293.0	292.0	289.7	291.3	292.3	294.0
52.5°	324.3	308.7	295.3	283.7	276.0	273.0	270.7	269.7	272.0	272.0	273.7
55°	298.7	285.0	272.7	262.0	256.0	252.3	250.7	249.3	250.7	251.0	250.7
57.5°	274.7	261.7	248.7	239.7	234.7	230.7	229.0	228.3	228.0	229.3	229.0
60°	249.3	237.0	226.7	217.3	212.3	210.0	206.3	207.0	207.0	207.0	203.7
62.5°	224.0	211.7	202.7	196.3	190.3	186.3	185.7	184.7	182.7	182.3	178.0
65°	198.0	188.7	181.0	174.7	168.7	165.3	164.3	161.3	159.0	154.7	151.7
67.5°	174.0	167.3	158.3	153.0	148.0	144.0	140.3	138.0	133.3	129.0	126.3
70°	150.0	143.0	137.0	131.3	126.3	122.7	118.3	114.0	111.0	108.3	106.3
72.5°	126.0	120.0	115.0	109.7	104.3	100.7	97.3	94.0	92.7	91.3	90.3
75°	103.7	98.0	93.3	89.0	86.0	81.7	80.0	78.7	77.3	75.7	73.7
77.5°	82.0	77.7	74.0	70.3	67.7	65.3	64.0	60.0	56.7	56.0	55.3
80°	61.0	57.7	55.3	52.7	49.7	46.3	45.3	44.0	43.3	43.3	43.7
82.5°	42.7	40.7	38.0	35.7	34.7	33.3	33.3	33.0	32.7	33.0	33.0
85°	26.0	23.3	22.7	22.3	22.7	22.7	22.7	22.7	22.3	22.7	22.0
87.5°	11.3	12.3	12.7	11.7	12.0	11.3	11.7	11.7	11.7	12.0	11.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: S124RDR-H575D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	856.0	856.0	856.0	856.0
2.5°	810.7	810.7	807.4	804.7
5°	765.0	760.7	760.0	756.0
7.5°	722.3	721.7	720.0	720.0
10°	688.3	686.0	683.7	683.3
12.5°	640.3	643.7	639.7	638.7
15°	598.3	595.7	592.3	585.3
17.5°	559.3	554.3	553.0	550.0
20°	528.7	525.0	523.7	522.0
22.5°	499.7	499.0	495.0	494.0
25°	478.3	475.0	472.3	470.7
27.5°	455.0	452.7	451.3	448.7
30°	433.7	433.0	431.3	431.3
32.5°	414.3	412.3	412.3	412.0
35°	396.7	397.3	395.3	394.7
37.5°	380.0	379.0	379.3	378.7
40°	363.7	363.0	363.0	363.3
42.5°	347.0	347.3	348.0	348.0
45°	330.3	330.7	331.3	331.3
47.5°	314.7	314.0	314.7	314.0
50°	294.7	296.7	296.3	296.0
52.5°	274.3	273.7	275.0	274.7
55°	252.3	251.3	252.7	251.3
57.5°	227.7	228.0	228.0	227.3
60°	203.0	202.0	200.7	200.7
62.5°	174.3	171.3	169.3	170.7
65°	146.7	144.3	143.7	142.7
67.5°	124.7	122.0	121.0	120.7
70°	105.7	104.3	104.0	104.0
72.5°	89.7	89.7	88.7	88.0
75°	73.0	71.7	70.0	70.0
77.5°	54.7	54.3	54.0	54.0
80°	42.7	42.7	43.0	43.3
82.5°	32.0	32.3	32.7	32.7
85°	21.7	21.7	22.0	22.0
87.5°	11.7	11.7	11.7	11.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)