

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: P332420-840

Luminaire Tested: **S123RDIW-S560D1030U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332420-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S560D1030U840-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6322.0 lumens
Efficiency: N/A
Efficacy: 139.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

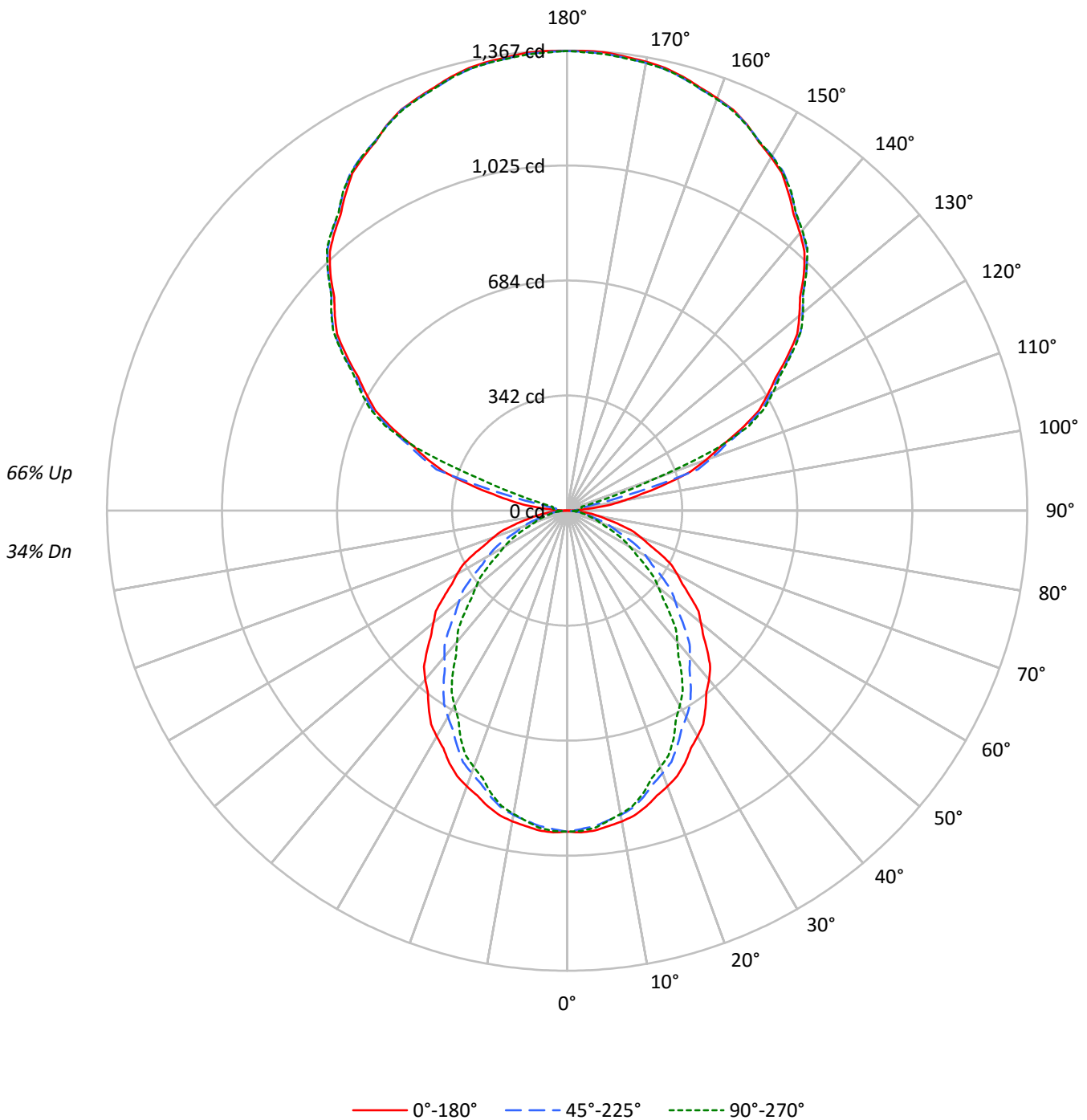
Input Watts (W): 45.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	103	103	103	103	93	93	93	93	75	75	75	57	57	57	42	42	42	34			34
1	94	90	87	83	85	82	79	76	66	63	61	51	49	48	37	36	35	29			29
2	86	79	73	68	78	72	67	62	58	54	51	45	42	40	33	31	30	25			25
3	79	70	63	57	71	63	57	52	51	47	43	40	37	34	29	27	26	21			21
4	72	62	54	48	65	56	50	44	45	41	37	35	32	30	26	24	22	18			18
5	66	55	47	41	59	50	43	38	41	36	32	32	28	26	24	21	20	16			16
6	61	49	41	36	55	45	38	33	37	32	28	29	25	23	22	19	17	14			14
7	56	44	37	31	51	41	34	29	33	28	24	26	23	20	20	17	15	13			13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	11			11
9	48	37	29	25	44	34	27	23	28	23	19	22	19	16	17	14	13	10			10
10	45	34	27	22	41	31	25	20	25	21	17	20	17	14	16	13	11	9			9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10267	10267	10267
5°	10306	10164	10222
10°	10248	10037	10002
15°	10137	9802	9698
20°	9986	9507	9286
25°	9830	9178	8884
30°	9625	8797	8316
35°	9412	8418	7796
40°	9218	7967	7152
45°	8961	7524	6570
50°	8679	7021	5921
55°	8392	6446	5315
60°	8127	5828	4646
65°	7784	5163	3978
70°	7352	4334	3213
75°	6725	3410	3023
80°	5994	3025	2777
85°	5064	2668	2482



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	1.4
10°-20°	249.2	3.9
20°-30°	358.8	5.7
30°-40°	404.2	6.4
40°-50°	386.7	6.1
50°-60°	316.7	5.0
60°-70°	213.7	3.4
70°-80°	107.5	1.7
80°-90°	32.3	0.5
90°-100°	49.6	0.8
100°-110°	236.6	3.7
110°-120°	568.2	9.0
120°-130°	723.6	11.4
130°-140°	773.1	12.2
140°-150°	723.0	11.4
150°-160°	583.2	9.2
160°-170°	376.4	6.0
170°-180°	129.7	2.1
0°-30°	697.6	11.0
0°-40°	1101.8	17.4
0°-60°	1805.2	28.6
0°-90°	2158.6	34.1
90°-120°	854.5	13.5
90°-150°	3074.2	48.6
90°-180°	4163.0	65.8
0°-180°	6322.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	954	954	954	954	954	
5°	954	950	941	947	946	90
15°	910	900	880	876	870	256
25°	828	808	773	757	748	381
35°	716	687	641	608	593	448
45°	589	552	494	452	432	454
55°	447	408	344	300	283	401
65°	306	262	203	166	156	302
75°	162	124	82	75	73	172
85°	41	25	22	20	20	46
90°	1	11	24	28	30	5
95°	62	23	31	38	39	76
105°	302	308	222	53	45	320
115°	567	573	582	592	596	560
125°	799	807	811	813	816	714
135°	995	1001	1005	1008	1005	766
145°	1148	1155	1157	1159	1159	718
155°	1265	1263	1264	1268	1263	583
165°	1334	1331	1330	1337	1331	377
175°	1365	1361	1361	1368	1360	130
180°	1365	1365	1365	1365	1365	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8
2.5°	956.9	956.3	955.8	955.2	954.7	953.6	952.0	950.3	948.7	947.1	948.6
5°	953.8	953.0	952.1	951.3	950.4	949.0	946.8	944.8	942.7	940.7	942.2
7.5°	945.0	944.1	943.1	942.2	941.3	939.5	936.9	934.1	931.4	928.8	929.6
10°	937.6	936.3	935.1	933.9	932.8	930.6	927.6	924.4	921.3	918.3	918.4
12.5°	927.1	925.7	924.3	923.0	921.7	919.2	915.3	911.6	907.8	904.0	903.9
15°	909.7	907.9	905.9	904.0	902.2	898.8	894.0	889.2	884.3	879.6	878.7
17.5°	887.9	885.8	883.5	881.3	879.1	874.9	868.8	862.7	856.6	850.5	848.7
20°	871.8	869.1	866.4	863.5	860.8	856.2	849.6	843.1	836.6	830.0	827.8
22.5°	853.8	850.7	847.6	844.3	841.2	836.2	829.2	822.2	815.4	808.4	805.6
25°	827.7	823.4	819.1	814.9	810.5	804.5	796.5	788.6	780.7	772.8	769.2
27.5°	796.0	791.2	786.5	781.7	777.0	770.2	761.4	752.7	743.9	735.1	730.0
30°	774.4	769.2	764.1	758.9	753.8	746.3	736.7	727.1	717.4	707.8	702.0
32.5°	752.7	746.9	741.0	735.2	729.3	721.3	711.1	700.9	690.7	680.5	674.2
35°	716.3	710.1	704.0	697.8	691.6	683.2	672.5	661.9	651.2	640.6	633.1
37.5°	679.5	672.7	665.8	658.8	652.0	642.9	631.5	620.2	608.7	597.3	589.0
40°	656.0	648.4	640.9	633.3	625.7	615.8	603.7	591.5	579.3	567.0	558.1
42.5°	629.3	621.8	614.3	606.7	599.2	589.1	576.4	563.8	551.2	538.6	528.8
45°	588.7	581.0	573.2	565.5	557.7	547.2	534.0	520.8	507.6	494.3	484.5
47.5°	548.0	539.5	531.0	522.5	514.0	503.2	489.9	476.7	463.4	450.2	439.6
50°	518.3	510.2	502.1	494.0	485.9	474.9	461.0	447.2	433.2	419.3	408.6
52.5°	491.7	482.9	474.1	465.3	456.7	445.4	431.5	417.8	403.9	390.2	379.1
55°	447.2	438.7	430.3	421.8	413.4	401.9	387.3	372.7	358.1	343.5	333.5
57.5°	406.0	396.8	387.6	378.4	369.2	357.3	342.6	328.0	313.3	298.6	289.2
60°	377.5	368.1	358.6	349.1	339.7	327.8	313.6	299.3	285.0	270.7	261.5
62.5°	349.0	339.6	330.1	320.6	311.2	299.3	285.1	270.8	256.5	242.3	233.6
65°	305.6	296.1	286.7	277.2	267.7	256.3	242.9	229.5	216.1	202.7	194.3
67.5°	262.1	252.6	243.0	233.4	223.9	212.7	199.8	186.9	174.1	161.2	154.9
70°	233.6	224.3	215.1	205.8	196.5	185.8	173.8	161.8	149.8	137.7	131.7
72.5°	205.1	196.0	186.8	177.7	168.5	158.5	147.6	136.6	125.7	114.8	109.9
75°	161.7	153.4	145.2	136.9	128.7	119.8	110.4	100.9	91.5	82.0	80.3
77.5°	122.1	114.6	107.1	99.7	92.2	85.4	79.4	73.3	67.2	61.1	60.2
80°	96.7	89.7	82.6	75.5	68.5	63.2	59.6	55.9	52.3	48.8	48.2
82.5°	72.6	66.4	60.4	54.3	48.2	44.3	42.6	41.0	39.3	37.6	37.1
85°	41.0	37.3	33.4	29.7	25.9	23.7	23.2	22.7	22.2	21.6	21.3
87.5°	15.0	14.0	12.9	11.9	10.8	10.6	11.1	11.7	12.3	12.9	12.9
90°	1.0	3.2	5.6	7.8	10.0	12.6	15.6	18.5	21.4	24.3	25.2
92.5°	18.9	18.3	17.6	17.0	16.4	17.2	19.4	21.5	23.7	26.0	27.4
95°	61.9	52.6	43.4	34.1	24.9	21.5	24.0	26.5	29.0	31.4	33.0
97.5°	124.3	120.2	116.0	111.9	107.8	97.6	81.4	65.1	48.9	32.6	34.4
100°	171.4	175.9	180.5	184.9	189.5	174.1	139.0	103.8	68.7	33.4	35.2
102.5°	225.0	228.2	231.5	234.7	237.9	220.4	182.0	143.6	105.1	66.8	61.2
105°	302.3	304.8	307.2	309.7	312.1	303.3	283.0	262.7	242.5	222.2	182.3
107.5°	383.8	385.8	387.8	389.8	391.7	394.4	397.6	400.7	403.9	407.2	377.9
110°	438.2	440.0	441.8	443.6	445.4	447.6	450.0	452.5	454.9	457.5	450.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	490.1	491.7	493.3	495.0	496.7	498.7	501.1	503.6	506.1	508.6	508.7
115°	567.0	568.4	569.7	571.1	572.4	574.1	576.1	578.1	580.2	582.2	584.5
117.5°	641.5	643.1	644.8	646.4	648.1	649.4	650.6	651.6	652.6	653.6	655.4
120°	687.7	689.7	691.8	693.8	695.8	697.2	697.8	698.5	699.2	699.8	701.7
122.5°	734.8	736.4	738.1	739.7	741.4	742.7	743.6	744.4	745.3	746.1	747.4
125°	799.3	801.1	802.8	804.7	806.5	807.9	808.7	809.6	810.5	811.4	811.9
127.5°	861.7	863.5	865.4	867.2	869.0	870.4	871.5	872.6	873.6	874.7	875.5
130°	900.7	902.5	904.3	906.2	908.0	909.3	910.2	911.1	912.0	912.9	913.8
132.5°	938.1	939.9	941.6	943.4	945.2	946.5	947.3	948.0	948.7	949.4	950.3
135°	995.0	996.4	997.7	999.1	1000.5	1001.6	1002.5	1003.4	1004.3	1005.2	1005.8
137.5°	1043.7	1045.4	1047.1	1048.8	1050.6	1051.7	1052.2	1052.7	1053.2	1053.7	1054.7
140°	1076.2	1077.5	1078.9	1080.3	1081.6	1082.6	1083.3	1084.0	1084.6	1085.3	1086.2
142.5°	1106.2	1107.5	1108.9	1110.2	1111.7	1112.7	1113.3	1114.0	1114.7	1115.3	1116.1
145°	1148.2	1149.7	1151.3	1153.0	1154.5	1155.5	1156.0	1156.4	1156.9	1157.3	1157.8
147.5°	1187.8	1188.8	1189.8	1190.8	1191.9	1192.7	1193.1	1193.6	1194.0	1194.5	1194.9
150°	1212.1	1212.7	1213.5	1214.2	1214.8	1215.4	1215.8	1216.3	1216.7	1217.2	1217.6
152.5°	1234.1	1234.4	1234.7	1235.0	1235.3	1235.6	1235.9	1236.1	1236.4	1236.7	1237.5
155°	1264.9	1264.4	1263.9	1263.5	1263.0	1262.9	1263.1	1263.3	1263.6	1263.8	1265.0
157.5°	1288.8	1288.8	1288.7	1288.7	1288.6	1288.5	1288.3	1288.0	1287.8	1287.6	1288.9
160°	1303.4	1303.1	1302.9	1302.7	1302.5	1302.2	1302.0	1301.8	1301.6	1301.4	1302.7
162.5°	1317.2	1316.6	1316.1	1315.5	1314.8	1314.4	1314.2	1314.0	1313.7	1313.5	1315.0
165°	1333.8	1333.1	1332.5	1331.8	1331.1	1330.7	1330.4	1330.2	1330.0	1329.8	1331.6
167.5°	1346.8	1345.9	1345.0	1344.1	1343.2	1342.7	1342.7	1342.7	1342.7	1342.7	1344.5
170°	1354.1	1353.2	1352.3	1351.4	1350.5	1350.1	1350.1	1350.1	1350.1	1350.1	1351.8
172.5°	1359.0	1357.9	1356.9	1355.7	1354.6	1354.2	1354.3	1354.5	1354.7	1354.9	1356.8
175°	1365.2	1364.1	1363.0	1361.9	1360.8	1360.3	1360.5	1360.8	1361.0	1361.2	1362.8
177.5°	1366.9	1365.9	1365.1	1364.2	1363.3	1362.9	1363.1	1363.3	1363.4	1363.6	1365.1
180°	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8
2.5°	950.1	951.6	953.1	953.7	953.4	953.1	952.9	952.6
5°	943.7	945.3	946.8	947.5	947.2	946.7	946.4	946.0
7.5°	930.5	931.3	932.2	932.3	931.7	931.2	930.6	930.0
10°	918.6	918.8	918.9	918.6	917.8	916.9	916.0	915.1
12.5°	903.8	903.7	903.6	903.0	902.0	901.0	900.1	899.1
15°	877.9	877.0	876.2	875.0	873.8	872.7	871.5	870.3
17.5°	846.9	845.1	843.1	841.4	839.6	837.8	836.0	834.2
20°	825.6	823.3	821.1	819.0	816.9	814.9	812.7	810.7
22.5°	802.8	800.0	797.3	794.9	792.9	791.0	789.1	787.2
25°	765.6	761.9	758.4	755.6	753.8	751.8	749.9	748.0
27.5°	725.0	720.0	715.0	711.0	708.1	705.3	702.4	699.4
30°	696.1	690.2	684.5	680.1	677.4	674.7	671.9	669.1
32.5°	667.8	661.4	655.0	650.4	647.5	644.6	641.7	638.8
35°	625.7	618.3	611.0	605.7	602.6	599.6	596.4	593.3
37.5°	580.6	572.2	563.8	557.7	553.9	550.1	546.2	542.4
40°	549.2	540.2	531.3	524.8	520.9	516.9	513.0	509.0
42.5°	519.1	509.3	499.5	492.8	489.3	485.7	482.2	478.7
45°	474.7	464.9	455.1	448.2	444.0	439.9	435.8	431.6
47.5°	428.9	418.3	407.6	400.4	396.8	393.0	389.4	385.7
50°	398.0	387.3	376.7	369.3	365.4	361.4	357.5	353.6
52.5°	368.1	357.0	345.9	338.6	335.1	331.5	328.0	324.5
55°	323.6	313.6	303.6	296.9	293.5	290.0	286.6	283.2
57.5°	279.7	270.3	260.9	254.8	251.9	248.9	246.0	243.1
60°	252.2	242.9	233.6	227.5	224.6	221.7	218.7	215.8
62.5°	224.8	216.1	207.3	201.5	198.4	195.3	192.3	189.2
65°	185.8	177.4	169.0	163.8	162.0	160.1	158.1	156.2
67.5°	148.7	142.3	136.0	131.9	129.9	127.8	125.8	123.8
70°	125.6	119.7	113.6	109.7	107.8	105.9	104.0	102.1
72.5°	104.9	100.1	95.1	92.3	91.5	90.7	89.9	89.1
75°	78.6	76.9	75.1	74.1	73.7	73.4	73.0	72.7
77.5°	59.3	58.4	57.4	56.8	56.5	56.0	55.7	55.3
80°	47.7	47.2	46.7	46.3	45.9	45.5	45.2	44.8
82.5°	36.6	36.1	35.5	35.2	35.1	35.1	35.0	34.9
85°	21.0	20.6	20.3	20.1	20.1	20.1	20.1	20.1
87.5°	13.0	13.0	13.1	13.1	13.0	13.0	12.9	12.9
90°	26.2	27.1	28.0	28.6	29.1	29.5	30.0	30.4
92.5°	28.9	30.3	31.7	32.6	32.8	33.1	33.4	33.6
95°	34.6	36.2	37.8	38.6	38.6	38.6	38.6	38.6
97.5°	36.3	38.1	39.9	40.9	41.1	41.3	41.6	41.8
100°	37.1	38.9	40.7	41.7	41.9	42.1	42.4	42.6
102.5°	55.5	50.0	44.3	41.8	42.2	42.6	43.0	43.4
105°	142.4	102.4	62.5	42.8	43.3	43.7	44.1	44.6
107.5°	348.6	319.4	290.1	260.4	230.4	200.4	170.3	140.2
110°	442.6	435.2	427.7	407.9	375.7	343.4	311.1	278.9



TEST NUMBER: P332420-840

CATALOG NUMBER: S123RDIW-S560D1030U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	508.9	509.0	509.1	505.7	499.0	492.2	485.3	478.6
115°	586.7	589.0	591.3	592.8	593.7	594.6	595.5	596.4
117.5°	657.2	659.0	660.9	661.9	662.0	662.2	662.4	662.6
120°	703.5	705.3	707.1	708.0	708.0	708.0	708.0	708.0
122.5°	748.6	749.9	751.1	751.9	752.0	752.2	752.5	752.7
125°	812.3	812.8	813.2	813.7	814.2	814.6	815.1	815.5
127.5°	876.2	876.9	877.7	877.8	877.3	876.9	876.5	876.0
130°	914.7	915.5	916.5	916.8	916.3	915.8	915.3	914.9
132.5°	951.2	952.1	953.0	953.1	952.5	951.9	951.3	950.6
135°	1006.5	1007.2	1007.8	1007.8	1007.2	1006.5	1005.8	1005.2
137.5°	1055.8	1056.9	1058.0	1058.3	1057.8	1057.4	1056.9	1056.5
140°	1087.1	1088.0	1088.9	1089.1	1088.7	1088.2	1087.8	1087.3
142.5°	1116.8	1117.5	1118.2	1118.2	1117.6	1117.0	1116.4	1115.7
145°	1158.2	1158.7	1159.1	1159.3	1159.3	1159.3	1159.3	1159.3
147.5°	1195.4	1195.8	1196.3	1196.0	1195.0	1193.9	1192.9	1191.8
150°	1218.1	1218.5	1219.0	1218.9	1218.2	1217.5	1216.9	1216.2
152.5°	1238.3	1239.1	1239.9	1239.8	1238.7	1237.7	1236.7	1235.7
155°	1266.1	1267.2	1268.4	1268.2	1266.9	1265.6	1264.1	1262.8
157.5°	1290.3	1291.6	1292.9	1292.7	1291.0	1289.3	1287.5	1285.8
160°	1304.0	1305.5	1306.8	1306.7	1305.0	1303.5	1301.9	1300.3
162.5°	1316.6	1318.2	1319.7	1319.7	1318.4	1317.0	1315.6	1314.1
165°	1333.3	1335.1	1337.0	1337.1	1335.5	1333.9	1332.3	1330.8
167.5°	1346.4	1348.2	1350.0	1350.0	1348.2	1346.4	1344.5	1342.7
170°	1353.6	1355.4	1357.3	1357.3	1355.4	1353.6	1351.8	1350.1
172.5°	1358.6	1360.3	1362.1	1362.0	1360.1	1358.1	1356.0	1354.1
175°	1364.3	1365.9	1367.6	1367.5	1365.6	1363.8	1362.0	1360.2
177.5°	1366.5	1368.0	1369.4	1369.3	1367.5	1365.6	1363.8	1362.0
180°	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2

(END OF REPORT)