

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: P332140-940

Luminaire Tested: **S123DIW-S560D1320U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332140-940
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: S123DIW-S560D1320U940-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6817.8 lumens
Efficiency: N/A
Efficacy: 126.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

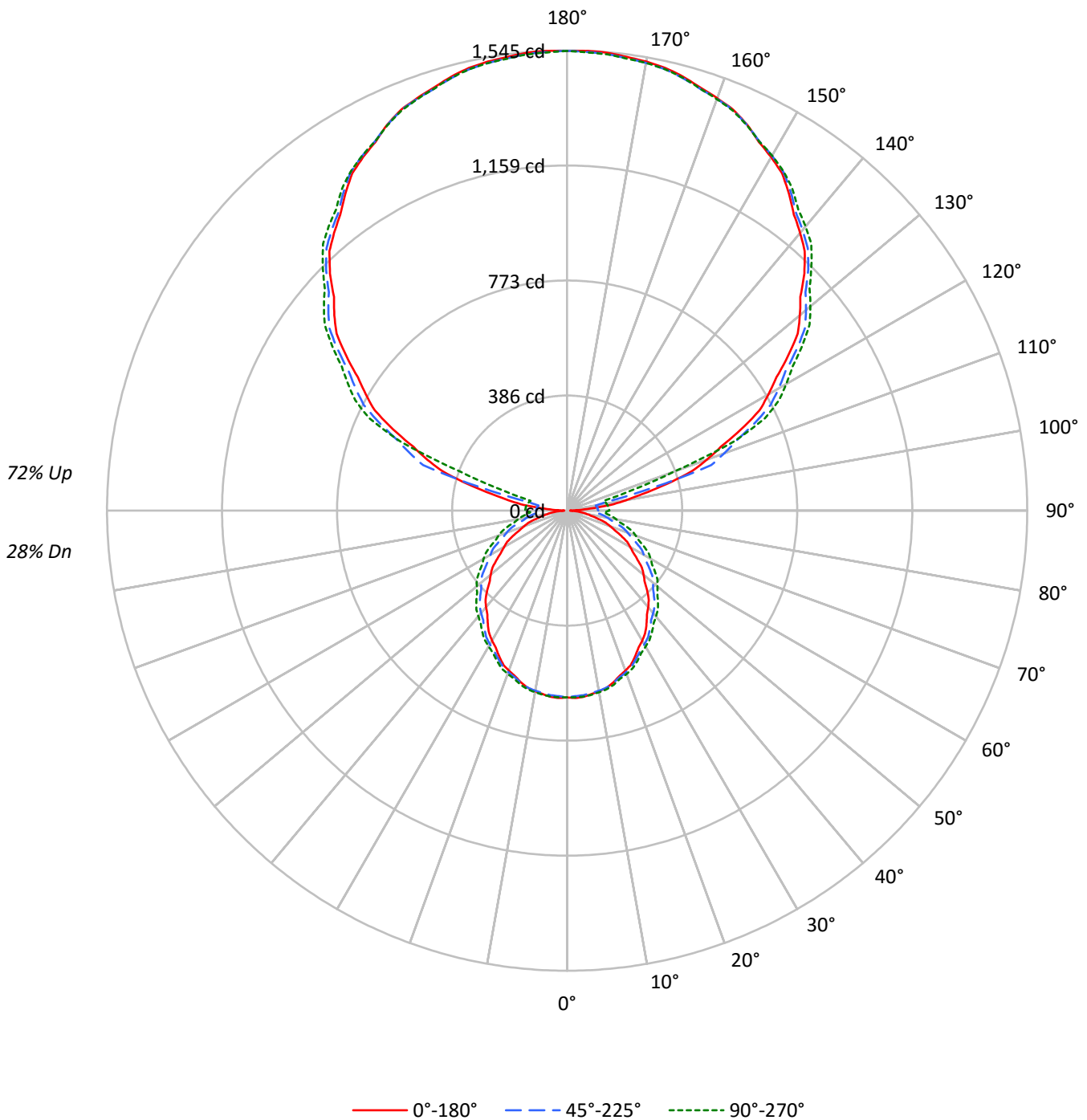
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332140-940

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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28				
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23				
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	26	24	18				
3	76	67	60	54	68	60	54	49	47	43	39	35	32	29	24	22	20	15				
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13				
5	64	52	44	38	57	47	40	35	37	32	28	28	24	21	19	17	15	11				
6	59	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10				
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	16	13	12	9				
8	50	38	30	25	45	34	28	23	27	22	19	20	17	14	14	12	10	8				
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7				
10	43	31	24	20	39	28	22	18	23	18	15	17	14	12	12	10	8	6				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6750	6750	6750
5°	6771	6579	6584
10°	6710	6428	6396
15°	6624	6256	6191
20°	6501	6059	5966
25°	6348	5833	5729
30°	6191	5629	5489
35°	6016	5414	5298
40°	5848	5218	5093
45°	5664	5030	4929
50°	5480	4845	4748
55°	5278	4654	4586
60°	5080	4461	4419
65°	4879	4255	4221
70°	4575	4025	4016
75°	4191	3760	3810
80°	3748	3499	3575
85°	3332	3319	3435



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.4	0.9
10°-20°	169.5	2.5
20°-30°	253.4	3.7
30°-40°	302.7	4.4
40°-50°	316.7	4.6
50°-60°	297.2	4.4
60°-70°	248.2	3.6
70°-80°	177.6	2.6
80°-90°	110.2	1.6
90°-100°	122.5	1.8
100°-110°	316.2	4.6
110°-120°	675.0	9.9
120°-130°	836.6	12.3
130°-140°	882.3	12.9
140°-150°	819.0	12.0
150°-160°	659.2	9.7
160°-170°	425.5	6.2
170°-180°	146.6	2.2
0°-30°	482.3	7.1
0°-40°	785.0	11.5
0°-60°	1398.8	20.5
0°-90°	1934.8	28.4
90°-120°	1113.7	16.3
90°-150°	3651.7	53.6
90°-180°	4883.0	71.6
0°-180°	6817.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	627	627	627	627	627	
5°	628	626	622	627	627	59
15°	598	600	599	605	605	168
25°	540	546	548	557	557	249
35°	464	475	484	494	497	290
45°	380	396	413	426	432	293
55°	290	312	337	354	361	259
65°	200	227	257	277	284	198
75°	109	141	175	197	206	116
85°	33	68	104	126	134	35
90°	10	55	105	131	142	9
95°	78	61	103	131	139	92
105°	347	370	302	129	127	368
115°	644	660	694	721	732	636
125°	906	916	939	955	963	809
135°	1126	1133	1144	1159	1160	867
145°	1299	1306	1308	1316	1319	812
155°	1430	1428	1429	1434	1428	658
165°	1508	1504	1503	1511	1504	426
175°	1543	1538	1539	1546	1538	147
180°	1543	1543	1543	1543	1543	



TEST NUMBER: P332140-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	629.8	629.5	629.1	628.7	628.3	627.7	626.7	625.7	624.7	623.8	624.7
5°	627.8	627.4	627.1	626.9	626.5	625.9	625.0	624.1	623.2	622.2	623.5
7.5°	621.6	621.6	621.7	621.8	621.9	621.4	620.5	619.6	618.8	617.9	619.4
10°	616.2	616.4	616.7	617.1	617.3	617.2	616.4	615.6	614.8	614.1	615.6
12.5°	609.6	610.0	610.5	610.8	611.3	611.3	610.7	610.2	609.7	609.1	610.6
15°	597.7	598.2	598.6	599.1	599.5	599.7	599.5	599.3	599.2	599.1	600.6
17.5°	582.6	583.5	584.5	585.4	586.3	586.7	586.7	586.6	586.6	586.5	587.8
20°	571.8	572.7	573.5	574.4	575.3	576.0	576.3	576.6	576.8	577.2	578.5
22.5°	560.3	561.2	562.0	563.0	563.9	564.5	565.0	565.4	565.9	566.2	568.0
25°	539.7	541.2	542.7	544.2	545.7	546.7	547.2	547.6	548.0	548.5	550.5
27.5°	518.9	520.6	522.4	524.1	525.8	527.1	528.1	529.1	530.0	531.0	532.7
30°	504.1	506.0	508.0	510.1	512.0	513.6	514.8	516.0	517.2	518.4	520.3
32.5°	487.7	489.9	492.1	494.4	496.6	498.5	500.1	501.6	503.2	504.8	506.8
35°	464.5	466.9	469.3	471.8	474.2	476.4	478.4	480.4	482.3	484.3	486.6
37.5°	439.9	442.6	445.3	448.1	450.8	453.4	455.8	458.3	460.7	463.2	465.7
40°	423.5	426.2	429.0	431.7	434.4	437.3	440.3	443.4	446.4	449.4	452.0
42.5°	405.5	408.8	412.1	415.4	418.8	422.0	425.3	428.4	431.6	434.7	437.6
45°	379.8	383.4	387.1	390.7	394.3	398.1	401.9	405.6	409.5	413.2	416.2
47.5°	352.8	357.0	361.1	365.2	369.3	373.6	378.0	382.3	386.6	391.0	394.2
50°	335.4	339.7	343.8	348.1	352.4	356.9	361.6	366.3	371.0	375.7	379.2
52.5°	316.8	321.3	325.8	330.3	334.7	339.7	344.8	350.0	355.2	360.4	364.0
55°	289.6	294.6	299.6	304.6	309.7	314.9	320.4	325.8	331.3	336.7	340.8
57.5°	263.1	268.3	273.6	278.7	284.0	289.6	295.6	301.6	307.6	313.5	317.6
60°	244.5	250.0	255.5	260.9	266.4	272.2	278.5	284.7	290.9	297.1	301.4
62.5°	227.0	232.6	238.3	243.8	249.4	255.5	262.1	268.7	275.3	281.9	286.1
65°	200.1	206.1	212.0	217.9	223.8	230.2	236.8	243.4	250.1	256.8	261.4
67.5°	172.8	179.1	185.4	191.6	198.0	204.5	211.3	218.1	224.9	231.7	236.7
70°	153.7	160.2	166.7	173.3	179.8	186.7	193.9	201.3	208.6	215.9	220.7
72.5°	136.2	142.8	149.3	155.8	162.3	169.3	176.8	184.4	191.9	199.5	204.5
75°	108.6	115.7	122.9	130.0	137.1	144.5	152.1	159.7	167.3	174.9	179.9
77.5°	84.5	91.8	99.0	106.1	113.3	120.7	128.4	136.1	143.7	151.4	156.7
80°	67.6	75.1	82.5	90.0	97.4	105.0	112.9	120.8	128.8	136.6	141.8
82.5°	52.9	60.5	67.9	75.5	83.1	90.9	98.9	106.9	114.9	123.0	128.1
85°	33.4	41.0	48.7	56.3	63.8	71.6	79.7	87.7	95.8	103.8	109.0
87.5°	18.4	26.5	34.5	42.6	50.6	58.9	67.3	75.7	84.1	92.6	97.9
90°	10.0	20.0	30.0	39.9	49.9	60.5	71.5	82.6	93.6	104.7	110.9
92.5°	29.7	35.7	41.6	47.6	53.7	61.7	71.8	81.9	92.0	102.2	108.9
95°	77.5	72.9	68.4	63.8	59.4	62.2	72.4	82.7	92.9	103.2	109.7
97.5°	147.2	147.9	148.6	149.3	149.9	144.6	133.3	122.1	110.8	99.6	106.2
100°	199.9	209.9	219.8	229.8	239.7	228.4	195.6	162.8	130.0	97.3	103.7
102.5°	259.9	268.0	276.0	284.0	292.0	277.9	241.3	204.7	168.2	131.6	129.6
105°	347.1	353.6	360.1	366.5	372.9	367.9	351.5	335.1	318.7	302.3	261.4
107.5°	438.5	443.9	449.2	454.5	459.9	467.4	477.2	487.1	496.9	506.7	477.7
110°	499.4	504.2	509.0	513.7	518.5	525.3	534.2	543.1	552.0	560.8	556.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	558.1	562.2	566.3	570.3	574.4	580.8	589.4	598.1	606.7	615.4	619.3
115°	644.4	647.7	651.0	654.4	657.7	663.3	671.1	678.9	686.6	694.4	700.5
117.5°	728.3	731.4	734.4	737.4	740.4	745.1	751.4	757.7	764.0	770.3	776.0
120°	780.2	783.2	786.2	789.3	792.3	796.7	802.5	808.2	814.0	819.8	825.4
122.5°	833.3	835.6	837.9	840.2	842.4	846.4	852.2	857.9	863.6	869.4	874.1
125°	905.5	907.6	909.6	911.7	913.7	917.5	922.8	928.3	933.7	939.1	942.8
127.5°	976.2	978.1	980.0	981.9	983.7	987.1	991.9	996.8	1001.7	1006.6	1010.4
130°	1020.2	1022.1	1024.0	1025.9	1027.8	1030.7	1034.8	1038.8	1042.9	1047.0	1050.9
132.5°	1061.8	1063.9	1065.9	1067.9	1069.9	1072.5	1075.8	1079.0	1082.3	1085.5	1089.3
135°	1126.1	1127.6	1128.9	1130.3	1131.7	1133.7	1136.4	1139.1	1141.7	1144.4	1148.0
137.5°	1181.1	1182.9	1184.7	1186.5	1188.3	1190.0	1191.5	1193.0	1194.4	1196.0	1199.6
140°	1217.2	1218.7	1220.3	1221.8	1223.3	1224.7	1225.9	1227.2	1228.3	1229.6	1232.9
142.5°	1251.2	1252.6	1253.9	1255.4	1256.8	1257.9	1258.7	1259.6	1260.4	1261.3	1264.2
145°	1298.6	1300.3	1301.9	1303.5	1305.1	1306.2	1306.7	1307.2	1307.8	1308.2	1310.0
147.5°	1342.6	1343.8	1345.0	1346.1	1347.4	1348.2	1348.7	1349.2	1349.7	1350.2	1351.1
150°	1370.2	1370.9	1371.7	1372.4	1373.2	1373.9	1374.4	1374.8	1375.4	1375.9	1376.4
152.5°	1394.9	1395.3	1395.6	1396.0	1396.3	1396.7	1397.0	1397.3	1397.6	1397.9	1398.8
155°	1429.8	1429.3	1428.8	1428.3	1427.7	1427.6	1427.9	1428.2	1428.4	1428.6	1429.9
157.5°	1456.9	1456.8	1456.8	1456.7	1456.6	1456.5	1456.3	1456.0	1455.7	1455.5	1457.0
160°	1473.4	1473.1	1472.8	1472.6	1472.3	1472.1	1471.9	1471.6	1471.3	1471.1	1472.6
162.5°	1489.0	1488.3	1487.6	1486.9	1486.3	1485.9	1485.6	1485.3	1485.1	1484.8	1486.6
165°	1507.8	1507.0	1506.2	1505.5	1504.7	1504.2	1504.0	1503.7	1503.4	1503.2	1505.2
167.5°	1522.4	1521.4	1520.4	1519.4	1518.3	1517.9	1517.9	1517.9	1517.9	1517.9	1519.9
170°	1530.7	1529.6	1528.7	1527.7	1526.6	1526.1	1526.1	1526.1	1526.1	1526.1	1528.1
172.5°	1536.2	1535.0	1533.7	1532.5	1531.3	1530.8	1531.0	1531.2	1531.4	1531.6	1533.7
175°	1543.3	1542.0	1540.8	1539.4	1538.2	1537.7	1537.9	1538.2	1538.5	1538.7	1540.5
177.5°	1545.2	1544.1	1543.1	1542.1	1541.1	1540.7	1540.9	1541.1	1541.2	1541.5	1543.1
180°	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	625.7	626.7	627.7	628.1	627.9	627.9	627.8	627.6
5°	624.7	625.9	627.1	627.7	627.5	627.3	627.2	627.1
7.5°	620.9	622.4	624.0	624.6	624.5	624.3	624.1	623.9
10°	617.2	618.7	620.2	620.7	620.5	620.2	619.8	619.6
12.5°	612.0	613.3	614.7	615.3	615.0	614.7	614.4	614.1
15°	602.1	603.6	605.1	605.8	605.6	605.5	605.4	605.2
17.5°	589.2	590.6	591.9	592.5	592.3	592.1	591.9	591.7
20°	580.0	581.3	582.6	583.4	583.5	583.7	583.9	584.0
22.5°	569.7	571.5	573.2	574.0	573.9	573.8	573.7	573.6
25°	552.4	554.5	556.4	557.4	557.4	557.4	557.4	557.4
27.5°	534.4	536.1	537.8	538.8	538.9	539.0	539.1	539.2
30°	522.1	523.9	525.8	526.6	526.6	526.6	526.6	526.6
32.5°	508.6	510.6	512.6	513.7	514.1	514.4	514.8	515.1
35°	488.8	491.2	493.4	494.8	495.4	496.1	496.7	497.3
37.5°	468.2	470.8	473.4	475.0	475.5	475.9	476.4	476.9
40°	454.6	457.2	459.8	461.4	462.0	462.6	463.2	463.8
42.5°	440.3	443.2	446.0	447.8	448.7	449.5	450.4	451.2
45°	419.0	421.9	424.8	426.9	428.0	429.3	430.5	431.7
47.5°	397.5	400.7	403.9	406.1	407.0	408.0	408.9	409.8
50°	382.6	386.2	389.7	391.9	393.0	394.0	395.1	396.2
52.5°	367.7	371.2	374.9	377.3	378.6	379.9	381.2	382.5
55°	344.9	349.0	353.1	355.8	357.0	358.2	359.4	360.7
57.5°	321.8	325.9	330.0	332.8	334.2	335.6	337.1	338.5
60°	305.7	309.9	314.1	317.1	318.8	320.4	322.1	323.8
62.5°	290.3	294.6	298.8	301.8	303.3	304.8	306.4	307.9
65°	265.9	270.5	275.1	278.1	279.6	281.2	282.7	284.2
67.5°	241.7	246.6	251.6	254.8	256.0	257.3	258.6	259.8
70°	225.6	230.4	235.3	238.4	240.0	241.5	243.0	244.5
72.5°	209.4	214.4	219.4	222.7	224.2	225.7	227.2	228.7
75°	184.9	189.9	194.9	198.3	200.1	202.0	203.8	205.6
77.5°	161.9	167.2	172.5	175.8	177.3	178.6	180.0	181.5
80°	147.0	152.1	157.3	160.6	162.1	163.6	165.1	166.7
82.5°	133.3	138.4	143.6	147.0	148.5	150.0	151.5	153.0
85°	114.1	119.3	124.5	127.8	129.3	130.8	132.3	133.8
87.5°	103.3	108.6	114.0	117.4	119.1	120.7	122.3	123.9
90°	117.1	123.2	129.4	133.5	135.5	137.6	139.6	141.6
92.5°	115.5	122.2	128.9	133.0	134.7	136.4	138.1	139.8
95°	116.2	122.6	129.1	133.1	134.6	136.2	137.7	139.2
97.5°	112.7	119.3	125.9	130.0	131.8	133.6	135.4	137.1
100°	110.1	116.5	123.1	127.2	128.9	130.6	132.4	134.2
102.5°	127.5	125.5	123.4	123.4	125.4	127.3	129.3	131.3
105°	220.6	179.8	138.9	119.5	121.4	123.2	125.1	127.0
107.5°	448.7	419.6	390.7	359.8	327.2	294.5	261.9	229.3
110°	551.9	547.4	543.0	523.2	487.9	452.7	417.5	382.3



TEST NUMBER: P332140-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	623.3	627.2	631.2	630.1	623.7	617.3	611.0	604.6
115°	706.7	712.9	719.1	723.4	725.6	727.8	730.0	732.3
117.5°	781.6	787.2	792.9	796.4	797.8	799.2	800.6	801.9
120°	830.9	836.4	842.0	845.3	846.3	847.4	848.5	849.5
122.5°	879.0	883.8	888.6	891.6	892.9	894.1	895.4	896.7
125°	946.6	950.2	954.0	956.5	958.1	959.7	961.3	962.9
127.5°	1014.2	1018.1	1021.9	1024.0	1024.6	1025.1	1025.6	1026.1
130°	1054.8	1058.6	1062.6	1064.7	1065.1	1065.5	1066.0	1066.3
132.5°	1093.1	1096.8	1100.6	1102.7	1103.0	1103.3	1103.7	1103.9
135°	1151.5	1154.9	1158.4	1160.2	1160.2	1160.2	1160.2	1160.2
137.5°	1203.3	1206.8	1210.5	1212.4	1212.6	1212.9	1213.2	1213.4
140°	1236.2	1239.5	1242.8	1244.6	1244.8	1245.0	1245.3	1245.5
142.5°	1267.0	1269.9	1272.7	1274.2	1274.3	1274.3	1274.3	1274.3
145°	1311.7	1313.4	1315.2	1316.3	1317.0	1317.5	1318.1	1318.8
147.5°	1352.0	1352.8	1353.7	1353.8	1353.2	1352.5	1351.9	1351.3
150°	1376.9	1377.4	1378.0	1378.0	1377.5	1377.1	1376.6	1376.1
152.5°	1399.7	1400.7	1401.6	1401.5	1400.3	1399.3	1398.1	1397.0
155°	1431.2	1432.4	1433.8	1433.6	1432.1	1430.6	1429.1	1427.5
157.5°	1458.6	1460.1	1461.6	1461.3	1459.4	1457.4	1455.4	1453.4
160°	1474.1	1475.7	1477.2	1477.0	1475.2	1473.5	1471.7	1469.9
162.5°	1488.3	1490.0	1491.7	1491.8	1490.2	1488.7	1487.1	1485.5
165°	1507.3	1509.3	1511.4	1511.4	1509.7	1507.9	1506.1	1504.3
167.5°	1522.0	1523.9	1526.0	1526.0	1523.9	1522.0	1519.9	1517.9
170°	1530.2	1532.2	1534.3	1534.3	1532.2	1530.2	1528.1	1526.1
172.5°	1535.7	1537.8	1539.8	1539.6	1537.4	1535.2	1532.9	1530.7
175°	1542.3	1544.1	1545.9	1545.7	1543.7	1541.7	1539.6	1537.6
177.5°	1544.7	1546.4	1548.0	1547.8	1545.8	1543.7	1541.7	1539.6
180°	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3

(END OF REPORT)