

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: P243623

Luminaire Tested: **S124RDR-H795D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243623  
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-H795D940-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

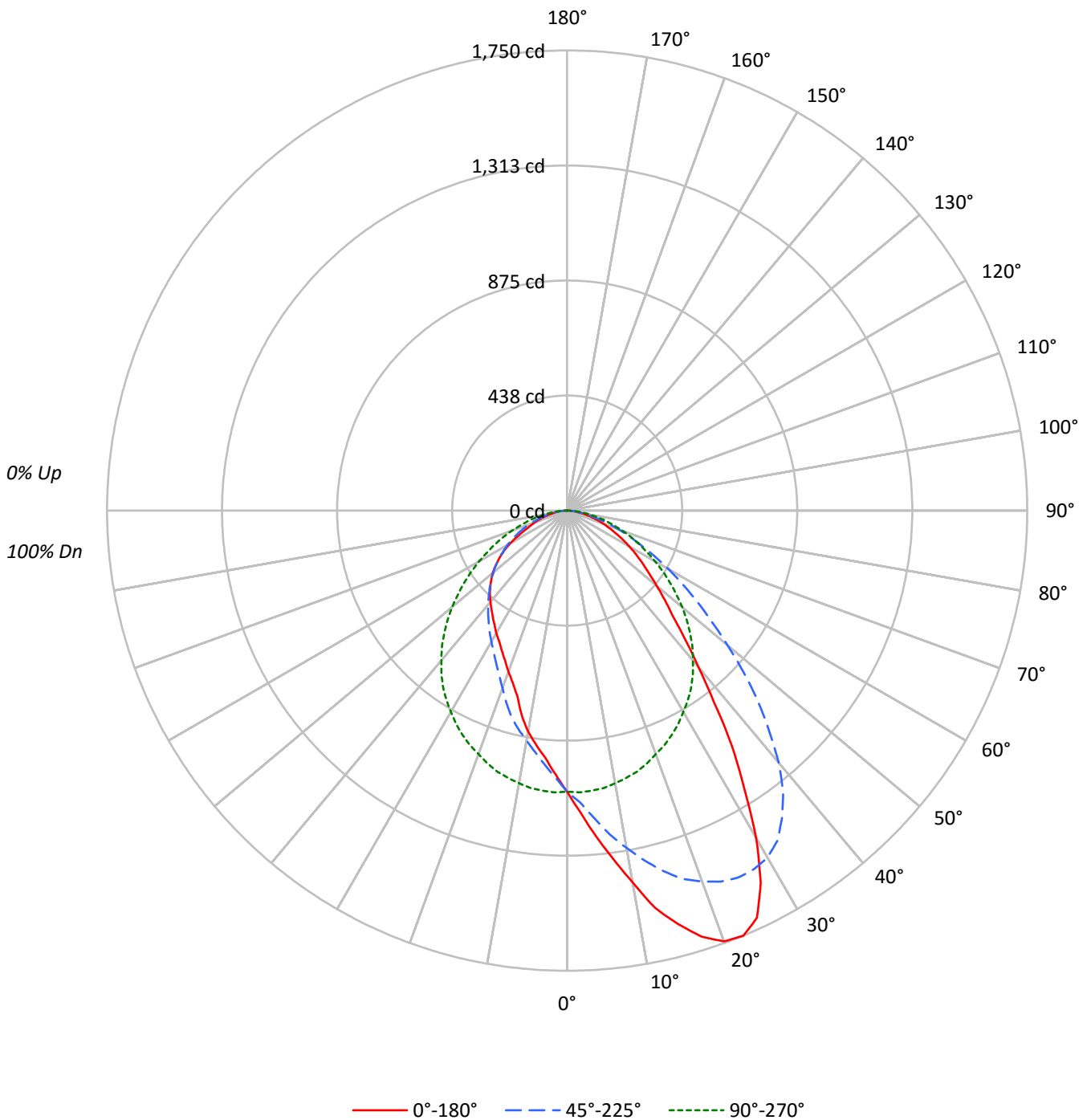
Lumens per Lamp: N/A  
Luminaire Lumens: 2759.1 lumens  
Efficiency: N/A  
Efficacy: 116.9 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (Ain): 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: P243623

CATALOG NUMBER: S124RDR-H795D940-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P243623

CATALOG NUMBER: S124RDR-H795D940-X4F0-XX-UDD-A-W

**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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	9502	9502	9502
5°	11069	9542	8424
10°	12963	9503	7703
15°	14979	9455	6727
20°	16491	9320	6167
25°	16756	9235	5765
30°	14749	9071	5529
35°	11836	8917	5349
40°	9004	8632	5266
45°	7148	8316	5202
50°	6137	7904	5112
55°	5419	7394	4865
60°	4855	6860	4455
65°	4272	6339	3748
70°	3807	5757	3376
75°	3318	5234	3002
80°	2810	4494	2769
85°	2458	3865	2805



TEST NUMBER: P243623

CATALOG NUMBER: S124RDR-H795D940-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.7	3.8
10°-20°	314.6	11.4
20°-30°	490.9	17.8
30°-40°	547.4	19.8
40°-50°	492.1	17.8
50°-60°	388.8	14.1
60°-70°	258.3	9.4
70°-80°	129.5	4.7
80°-90°	33.7	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°	909.2	33.0
0°-40°	1456.7	52.8
0°-60°	2337.6	84.7
0°-90°	2759.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2759.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1069	1069	1069	1069	1069	
5°	1240	1174	1069	971	944	124
15°	1628	1420	1027	814	731	463
25°	1708	1540	942	640	588	765
35°	1091	1425	822	520	493	678
45°	569	1027	662	416	414	451
55°	350	603	477	315	314	315
65°	203	309	301	206	178	203
75°	97	122	152	102	87	103
85°	24	26	38	28	28	27
90°	0	0	0	0	0	



TEST NUMBER: P243623

CATALOG NUMBER: S124RDR-H795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0
2.5°	1148.1	1144.0	1143.5	1138.1	1137.7	1132.3	1130.6	1126.1	1116.9	1109.8	1110.2
5°	1240.5	1237.2	1236.8	1231.4	1229.7	1223.0	1212.6	1200.2	1185.6	1173.5	1165.6
7.5°	1335.4	1341.3	1335.0	1335.0	1323.0	1315.0	1294.7	1284.2	1259.3	1241.8	1223.5
10°	1436.2	1441.6	1439.1	1434.1	1418.3	1402.1	1380.8	1360.4	1330.0	1302.6	1284.2
12.5°	1548.6	1532.3	1542.8	1527.4	1514.4	1488.6	1468.2	1427.4	1403.3	1363.3	1327.5
15°	1627.7	1621.4	1621.0	1610.6	1596.5	1568.2	1546.1	1503.6	1462.4	1420.4	1380.0
17.5°	1698.4	1699.3	1693.5	1676.8	1658.5	1631.0	1601.0	1563.2	1516.1	1469.5	1421.6
20°	1743.4	1743.8	1739.7	1730.9	1710.9	1686.0	1655.2	1605.6	1552.3	1500.7	1452.8
22.5°	1750.1	1751.3	1750.1	1744.7	1730.9	1710.5	1682.2	1640.2	1586.5	1527.4	1470.3
25°	1708.4	1712.6	1713.0	1720.5	1713.4	1705.5	1684.7	1649.3	1599.8	1539.8	1477.8
27.5°	1594.4	1606.0	1616.9	1630.2	1642.2	1653.1	1654.7	1636.0	1593.5	1537.8	1478.6
30°	1437.0	1450.8	1472.4	1486.6	1524.0	1547.8	1579.8	1586.9	1566.5	1523.6	1466.6
32.5°	1253.9	1268.4	1276.7	1323.4	1377.1	1415.8	1469.1	1500.7	1508.6	1488.2	1441.6
35°	1090.7	1093.2	1099.4	1152.3	1205.6	1264.3	1330.5	1385.4	1422.9	1424.9	1402.1
37.5°	915.8	918.7	943.3	983.7	1029.9	1094.4	1170.6	1248.9	1317.5	1349.2	1342.5
40°	776.0	775.1	801.4	836.3	881.3	948.3	1027.0	1112.3	1185.6	1251.8	1267.6
42.5°	662.7	665.6	688.1	708.5	751.8	798.9	882.9	971.6	1065.7	1138.1	1186.4
45°	568.6	576.1	591.5	610.7	643.2	686.5	755.1	843.4	939.6	1026.6	1084.4
47.5°	503.7	505.8	513.7	537.4	559.1	594.0	652.7	727.7	813.0	910.4	986.6
50°	443.8	448.8	451.7	465.8	487.1	520.4	565.7	621.5	706.0	795.5	890.9
52.5°	392.1	395.1	400.5	413.4	430.0	453.3	489.1	538.3	608.6	691.5	781.4
55°	349.7	350.1	355.5	364.7	377.6	395.5	429.6	465.0	527.4	602.8	684.4
57.5°	311.4	308.9	313.9	319.3	331.8	347.2	369.2	405.5	454.2	518.3	592.0
60°	273.1	275.2	274.7	281.0	287.7	303.1	321.8	345.5	385.5	444.2	506.6
62.5°	237.3	236.9	241.0	244.8	249.4	261.8	277.2	296.8	328.0	371.3	431.7
65°	203.1	204.0	207.3	210.2	215.2	223.1	234.8	250.6	275.6	308.9	359.7
67.5°	172.3	175.3	176.9	177.8	182.3	188.2	198.2	211.1	228.1	254.8	297.2
70°	146.5	147.4	148.2	151.1	153.2	156.5	164.0	171.1	186.5	206.1	236.9
72.5°	122.4	121.6	124.1	124.9	125.7	129.0	133.6	137.4	147.4	164.0	183.2
75°	96.6	97.0	97.4	98.7	102.0	102.4	104.5	108.7	115.7	122.4	135.3
77.5°	72.4	73.7	73.3	74.5	75.8	77.0	77.8	81.6	86.6	92.0	98.2
80°	54.9	54.9	54.9	55.8	54.9	57.9	57.9	59.1	60.4	62.9	67.4
82.5°	37.5	38.3	38.7	39.1	39.5	39.5	40.0	40.8	42.5	43.3	44.5
85°	24.1	23.3	23.7	23.7	23.7	23.7	24.6	25.4	25.4	25.8	27.1
87.5°	10.8	10.8	10.8	10.8	10.4	10.8	11.2	11.2	11.7	11.7	12.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243623

CATALOG NUMBER: S124RDR-H795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0
2.5°	1107.7	1106.5	1100.2	1093.6	1087.3	1081.1	1079.0	1072.8	1065.3	1058.6	1051.1
5°	1157.3	1147.3	1133.5	1119.4	1104.8	1091.5	1081.1	1069.4	1056.1	1040.3	1027.8
7.5°	1207.2	1188.9	1166.4	1145.6	1120.6	1100.7	1080.7	1064.0	1044.9	1022.4	1005.3
10°	1255.9	1225.5	1198.1	1165.2	1133.5	1106.1	1080.7	1052.8	1027.4	1003.2	979.5
12.5°	1294.7	1264.3	1224.7	1184.3	1143.5	1107.7	1073.6	1040.7	1009.1	979.9	953.7
15°	1338.8	1295.1	1246.4	1201.8	1146.0	1101.9	1062.8	1027.4	991.2	955.8	927.1
17.5°	1371.2	1319.6	1259.3	1208.1	1154.4	1099.4	1052.4	1007.8	966.2	929.2	899.6
20°	1396.2	1335.0	1274.7	1209.7	1145.6	1089.4	1036.6	985.3	943.3	902.9	871.7
22.5°	1407.0	1342.5	1275.5	1205.1	1136.9	1073.2	1018.2	965.4	917.9	876.3	840.1
25°	1411.6	1340.9	1271.3	1191.4	1122.3	1057.4	996.2	941.6	892.9	845.9	810.1
27.5°	1407.9	1332.1	1252.2	1176.8	1098.6	1034.9	969.9	914.6	863.8	818.4	778.5
30°	1397.9	1312.1	1232.6	1148.1	1072.8	1005.7	942.5	883.8	832.6	786.4	746.8
32.5°	1372.1	1289.7	1199.3	1116.9	1035.7	969.5	912.1	854.2	802.2	753.9	715.6
35°	1340.0	1259.3	1164.8	1078.6	998.3	931.2	873.4	821.7	770.5	719.3	680.2
37.5°	1299.6	1217.6	1126.5	1033.6	955.0	890.0	837.2	785.1	734.3	687.3	643.6
40°	1245.1	1170.2	1078.6	985.3	906.3	843.8	791.8	743.9	698.9	652.7	605.7
42.5°	1177.3	1120.2	1025.7	933.7	856.3	794.3	748.1	705.2	661.9	614.4	572.0
45°	1104.8	1056.1	970.4	877.5	803.8	743.5	699.4	661.5	620.7	578.6	534.1
47.5°	1023.2	987.0	912.9	820.9	743.5	691.9	651.1	616.5	579.5	542.0	498.7
50°	931.2	909.2	845.9	762.2	688.5	636.1	602.4	571.6	539.9	502.5	465.4
52.5°	839.2	835.1	776.0	702.3	632.8	584.0	551.2	522.9	497.0	461.7	430.4
55°	742.7	755.1	706.0	638.2	576.1	529.1	500.0	477.1	454.6	424.6	394.6
57.5°	656.9	671.1	637.3	574.9	517.0	477.1	452.1	431.3	411.7	384.2	364.3
60°	562.0	587.8	569.9	512.9	461.7	425.9	402.5	385.9	369.7	345.9	328.4
62.5°	487.1	505.0	494.5	452.1	406.7	377.6	356.8	341.4	328.4	310.1	293.1
65°	406.7	429.2	423.8	395.9	355.9	329.3	313.5	301.4	288.1	273.5	259.3
67.5°	334.3	357.6	356.3	337.2	307.6	285.6	270.6	261.8	251.0	236.9	228.1
70°	268.9	290.6	291.4	281.8	261.0	240.2	229.4	221.5	213.1	202.7	196.5
72.5°	209.0	228.5	231.9	227.3	214.0	200.2	190.7	185.2	178.2	169.4	164.0
75°	156.1	170.3	178.2	176.1	170.7	161.5	156.1	152.4	145.3	139.0	134.5
77.5°	111.1	122.4	130.3	133.6	131.1	127.4	122.4	119.5	112.0	109.1	106.6
80°	74.5	84.5	91.6	93.7	94.9	94.1	89.5	87.8	84.1	82.8	80.3
82.5°	45.8	51.2	56.2	61.6	64.1	64.1	61.6	62.0	58.7	57.0	56.2
85°	27.9	29.1	30.0	34.1	37.5	38.7	37.5	37.9	36.6	35.4	34.1
87.5°	12.9	12.9	13.3	14.2	15.0	17.5	18.3	19.6	17.9	17.9	15.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243623

CATALOG NUMBER: S124RDR-H795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0	1069.0
2.5°	1046.5	1041.1	1037.0	1030.3	1024.9	1016.2	1013.2	1013.2	1014.9	1012.8	1014.9
5°	1019.1	1009.1	998.3	988.7	978.3	970.8	963.3	961.6	960.8	955.8	956.2
7.5°	991.6	978.3	964.5	952.0	939.1	927.5	919.6	916.2	913.3	910.0	906.3
10°	962.0	946.6	930.4	916.2	903.8	887.9	880.0	877.5	869.2	867.5	861.7
12.5°	930.8	915.0	898.8	880.4	868.4	853.0	841.3	835.9	828.0	822.2	813.4
15°	906.3	886.3	864.6	846.7	830.9	813.8	798.0	787.6	777.2	761.0	753.1
17.5°	875.9	853.0	834.2	815.1	792.2	767.2	748.5	733.1	721.8	708.5	700.6
20°	843.0	821.7	798.4	771.4	747.2	718.9	701.9	689.0	680.2	672.3	668.1
22.5°	813.8	789.3	757.2	731.4	697.7	675.2	661.5	653.2	644.8	636.5	632.3
25°	782.2	753.5	714.3	682.7	657.3	639.8	626.5	618.6	609.9	604.9	598.6
27.5°	751.0	713.9	674.8	646.1	626.1	605.7	594.5	588.2	581.6	574.5	569.5
30°	713.1	671.1	638.6	612.4	592.4	575.3	567.0	557.8	552.0	547.8	544.9
32.5°	673.6	633.2	603.6	581.1	561.6	548.7	538.3	532.4	527.4	522.9	519.5
35°	636.5	597.4	572.4	550.7	534.5	519.9	512.0	506.6	502.5	498.7	497.0
37.5°	599.9	566.6	539.5	522.4	505.4	493.7	486.2	481.2	478.7	475.0	475.4
40°	563.7	533.7	512.0	492.5	476.6	466.7	460.8	458.7	455.0	453.8	455.0
42.5°	531.2	503.7	482.9	464.6	450.8	441.3	436.7	433.8	432.5	432.1	432.5
45°	499.5	473.7	453.8	438.8	424.6	415.9	412.1	410.0	408.8	410.9	411.3
47.5°	467.9	444.6	426.7	409.2	397.6	391.3	387.6	385.9	387.1	388.0	390.9
50°	436.7	415.0	396.3	380.9	371.7	365.9	364.7	361.8	363.8	365.1	367.2
52.5°	405.0	385.5	368.8	354.3	344.7	340.9	338.0	336.8	339.7	339.7	341.8
55°	373.0	355.9	340.5	327.2	319.7	315.1	313.0	311.4	313.0	313.5	313.0
57.5°	343.0	326.8	310.5	299.3	293.1	288.1	286.0	285.2	284.7	286.4	286.0
60°	311.4	296.0	283.1	271.4	265.2	262.3	257.7	258.5	258.5	258.5	254.4
62.5°	279.7	264.3	253.1	245.2	237.7	232.7	231.9	230.6	228.1	227.7	222.3
65°	247.3	235.6	226.0	218.1	210.6	206.5	205.2	201.5	198.6	193.2	189.4
67.5°	217.3	209.0	197.7	191.1	184.8	179.8	175.3	172.3	166.5	161.1	157.8
70°	187.3	178.6	171.1	164.0	157.8	153.2	147.8	142.4	138.6	135.3	132.8
72.5°	157.4	149.9	143.6	137.0	130.3	125.7	121.6	117.4	115.7	114.1	112.8
75°	129.5	122.4	116.6	111.1	107.4	102.0	99.9	98.2	96.6	94.5	92.0
77.5°	102.4	97.0	92.4	87.8	84.5	81.6	79.9	74.9	70.8	69.9	69.1
80°	76.2	72.0	69.1	65.8	62.0	57.9	56.6	54.9	54.1	54.1	54.5
82.5°	53.3	50.8	47.5	44.5	43.3	41.6	41.6	41.2	40.8	41.2	41.2
85°	32.5	29.1	28.3	27.9	28.3	28.3	28.3	28.3	27.9	28.3	27.5
87.5°	14.2	15.4	15.8	14.6	15.0	14.2	14.6	14.6	14.6	15.0	14.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P243623

CATALOG NUMBER: S124RDR-H795D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1069.0	1069.0	1069.0	1069.0
2.5°	1012.4	1012.4	1008.2	1004.9
5°	955.4	950.0	949.1	944.1
7.5°	902.1	901.3	899.2	899.2
10°	859.6	856.7	853.8	853.4
12.5°	799.7	803.8	798.9	797.6
15°	747.2	743.9	739.7	731.0
17.5°	698.5	692.3	690.6	686.9
20°	660.2	655.7	654.0	651.9
22.5°	624.0	623.2	618.2	616.9
25°	597.4	593.2	589.9	587.8
27.5°	568.2	565.3	563.7	560.3
30°	541.6	540.8	538.7	538.7
32.5°	517.4	514.9	514.9	514.5
35°	495.4	496.2	493.7	492.9
37.5°	474.6	473.3	473.7	472.9
40°	454.2	453.3	453.3	453.8
42.5°	433.4	433.8	434.6	434.6
45°	412.5	413.0	413.8	413.8
47.5°	393.0	392.1	393.0	392.1
50°	368.0	370.5	370.1	369.7
52.5°	342.6	341.8	343.4	343.0
55°	315.1	313.9	315.5	313.9
57.5°	284.3	284.7	284.7	283.9
60°	253.5	252.3	250.6	250.6
62.5°	217.7	214.0	211.5	213.1
65°	183.2	180.3	179.4	178.2
67.5°	155.7	152.4	151.1	150.7
70°	132.0	130.3	129.9	129.9
72.5°	112.0	112.0	110.7	109.9
75°	91.2	89.5	87.4	87.4
77.5°	68.3	67.9	67.4	67.4
80°	53.3	53.3	53.7	54.1
82.5°	40.0	40.4	40.8	40.8
85°	27.1	27.1	27.5	27.5
87.5°	14.6	14.6	14.6	14.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)