

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: P332960-927

Luminaire Tested: **S124RDIP-S1020D365U927-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332960-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIP-S1020D365U927-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4342.1 lumens
Efficiency: N/A
Efficacy: 99.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

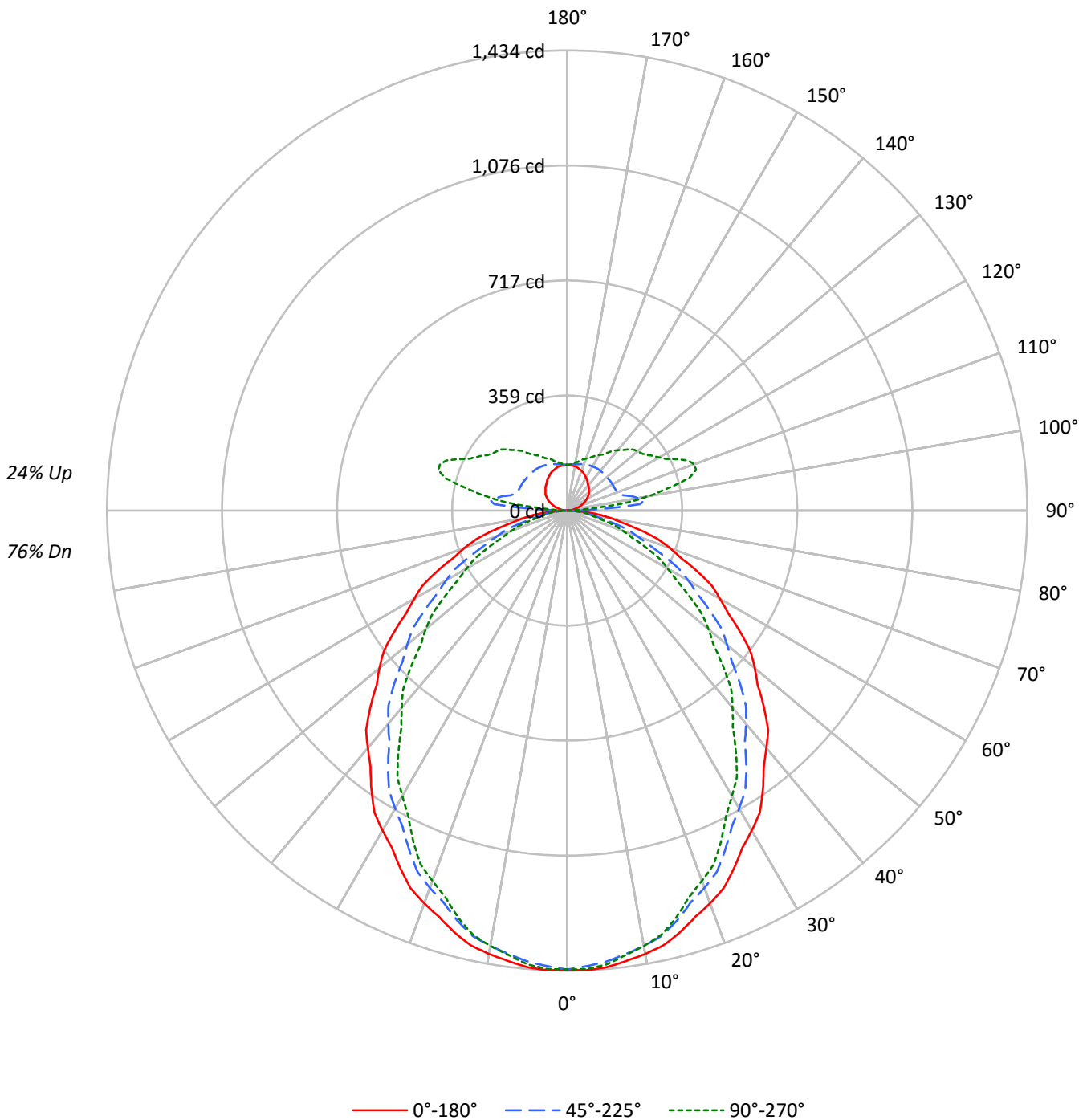
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	113	113	113	113	108	108	108	108	98	98	98	89	89	89	80	80	80	80	80	80	80	80	80	76		
1	104	100	96	92	99	95	92	89	87	84	82	79	77	75	72	70	69	69	69	69	69	69	69	65		
2	95	88	81	76	90	84	78	73	76	72	68	70	66	63	63	61	58	58	58	58	58	58	58	55		
3	87	77	70	64	83	74	67	62	68	62	58	62	58	54	57	53	50	50	50	50	50	50	50	47		
4	80	69	61	55	76	66	59	53	61	55	50	56	51	47	51	47	44	44	44	44	44	44	44	41		
5	74	62	53	47	70	59	52	46	54	48	43	50	45	41	46	42	38	38	38	38	38	38	38	36		
6	68	56	47	41	65	53	46	40	49	43	38	45	40	36	42	37	34	34	34	34	34	34	34	31		
7	63	51	42	37	60	49	41	36	45	39	34	42	36	32	38	34	30	30	30	30	30	30	30	28		
8	59	46	38	33	56	44	37	32	41	35	30	38	33	29	35	31	27	27	27	27	27	27	27	25		
9	55	42	35	29	52	41	34	29	38	32	27	35	30	26	33	28	25	25	25	25	25	25	25	23		
10	51	39	32	27	49	38	31	26	35	29	25	33	27	24	30	26	23	23	23	23	23	23	23	21		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11548	11548	11548
5°	11574	11432	11503
10°	11501	11294	11294
15°	11369	11058	10975
20°	11188	10746	10548
25°	10956	10381	10117
30°	10730	9996	9577
35°	10481	9596	9034
40°	10181	9141	8450
45°	9903	8691	7854
50°	9588	8171	7222
55°	9250	7631	6536
60°	8879	7038	5837
65°	8537	6298	5146
70°	8039	5481	4369
75°	7414	4545	3553
80°	6467	3464	3259
85°	5483	3149	2946



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.4	3.1
10°-20°	374.7	8.6
20°-30°	541.1	12.5
30°-40°	613.3	14.1
40°-50°	592.3	13.6
50°-60°	492.5	11.3
60°-70°	340.1	7.8
70°-80°	172.4	4.0
80°-90°	45.0	1.0
90°-100°	102.9	2.4
100°-110°	214.2	4.9
110°-120°	191.9	4.4
120°-130°	161.4	3.7
130°-140°	134.6	3.1
140°-150°	102.8	2.4
150°-160°	72.3	1.7
160°-170°	42.5	1.0
170°-180°	13.8	0.3
0°-30°	1050.1	24.2
0°-40°	1663.5	38.3
0°-60°	2748.2	63.3
0°-90°	3305.7	76.1
90°-120°	509.0	11.7
90°-150°	907.8	20.9
90°-180°	1036.0	23.9
0°-180°	4342.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1430	1430	1430	1430	1430	
5°	1428	1423	1411	1421	1420	135
15°	1360	1349	1323	1321	1313	383
25°	1230	1209	1165	1147	1136	566
35°	1064	1027	974	937	917	664
45°	867	826	761	709	688	669
55°	657	612	542	487	464	588
65°	447	398	330	284	269	441
75°	238	197	146	122	114	251
85°	59	38	34	32	32	67
90°	0	2	5	6	6	3
95°	9	29	228	113	68	10
105°	33	47	184	396	394	35
115°	58	72	164	315	378	57
125°	80	96	163	268	302	72
135°	96	114	162	238	270	74
145°	110	126	161	200	220	69
155°	125	135	156	177	184	58
165°	136	141	150	159	161	38
175°	142	142	144	146	145	13
180°	142	142	142	142	142	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1433.9	1433.1	1432.3	1431.6	1430.8	1429.3	1427.2	1425.1	1422.9	1420.8	1422.9
5°	1428.2	1427.3	1426.3	1425.3	1424.3	1422.4	1419.5	1416.6	1413.6	1410.7	1413.2
7.5°	1415.3	1414.3	1413.3	1412.2	1411.2	1408.8	1405.0	1401.2	1397.4	1393.6	1395.2
10°	1403.0	1401.8	1400.6	1399.4	1398.2	1395.3	1391.0	1386.6	1382.2	1377.8	1378.8
12.5°	1387.3	1385.8	1384.4	1383.1	1381.6	1378.3	1373.2	1368.0	1362.9	1357.7	1358.3
15°	1360.3	1358.1	1356.0	1353.8	1351.5	1347.4	1341.3	1335.2	1329.2	1323.1	1322.6
17.5°	1327.7	1324.5	1321.4	1318.2	1315.0	1309.8	1302.5	1295.2	1287.9	1280.6	1279.2
20°	1302.3	1299.1	1295.9	1292.8	1289.6	1283.9	1275.7	1267.3	1259.1	1250.8	1248.9
22.5°	1274.2	1270.7	1267.1	1263.6	1260.0	1253.8	1245.0	1236.1	1227.2	1218.4	1215.4
25°	1230.0	1225.6	1221.2	1216.9	1212.4	1205.3	1195.3	1185.3	1175.4	1165.4	1161.3
27.5°	1183.5	1178.1	1172.6	1167.0	1161.6	1153.5	1142.8	1132.2	1121.5	1110.8	1105.7
30°	1151.1	1145.0	1139.0	1132.9	1126.8	1118.0	1106.6	1095.1	1083.7	1072.3	1066.2
32.5°	1117.0	1110.1	1103.2	1096.4	1089.5	1080.1	1068.3	1056.5	1044.7	1032.8	1025.8
35°	1063.5	1055.7	1047.9	1040.1	1032.4	1022.4	1010.2	998.1	985.9	973.7	965.4
37.5°	1006.3	998.3	990.3	982.2	974.2	963.5	950.0	936.5	923.0	909.5	900.2
40°	966.1	958.0	950.0	941.9	933.9	923.0	909.1	895.2	881.3	867.4	857.2
42.5°	927.5	919.1	910.6	902.2	893.8	882.3	867.9	853.4	839.0	824.5	814.1
45°	867.4	858.5	849.5	840.4	831.4	819.6	805.0	790.4	775.8	761.2	749.3
47.5°	805.5	796.1	786.9	777.6	768.3	756.1	740.8	725.6	710.4	695.3	682.9
50°	763.4	753.9	744.4	734.9	725.4	712.9	697.4	681.8	666.1	650.6	638.4
52.5°	720.5	711.1	701.9	692.6	683.3	670.7	654.7	638.7	622.7	606.8	594.5
55°	657.2	647.5	637.7	628.0	618.2	605.5	589.6	573.8	558.0	542.2	529.5
57.5°	594.5	584.4	574.3	564.1	554.1	541.1	525.6	510.0	494.4	478.9	466.0
60°	549.9	540.1	530.4	520.6	510.9	498.2	482.7	467.1	451.5	435.9	423.3
62.5°	509.5	499.4	489.3	479.1	469.1	456.0	440.0	424.1	408.1	392.1	380.4
65°	446.9	436.4	426.0	415.5	405.0	392.0	376.4	360.8	345.2	329.7	319.2
67.5°	381.8	371.8	361.8	351.7	341.7	329.5	315.0	300.6	286.1	271.6	262.6
70°	340.6	330.4	320.2	310.0	299.8	287.7	273.9	259.9	246.1	232.2	224.2
72.5°	296.8	287.6	278.3	269.1	259.8	248.7	235.6	222.4	209.4	196.3	189.4
75°	237.7	228.7	219.7	210.6	201.7	191.4	180.0	168.6	157.1	145.7	140.1
77.5°	177.7	170.0	162.4	154.7	147.1	138.6	129.4	120.2	110.9	101.6	98.4
80°	139.1	132.1	125.0	118.0	110.9	103.7	96.4	89.1	81.8	74.5	73.8
82.5°	105.8	99.3	92.8	86.3	79.9	74.5	70.4	66.2	62.0	57.8	57.3
85°	59.2	54.3	49.4	44.5	39.7	36.8	36.1	35.4	34.7	34.0	33.4
87.5°	20.2	18.8	17.3	15.8	14.3	13.5	13.6	13.5	13.4	13.3	13.0
90°	0.3	0.9	1.7	2.0	2.2	2.2	3.9	3.9	4.5	5.1	4.8
92.5°	3.2	4.7	7.3	10.7	14.8	20.6	34.9	56.6	77.7	88.8	74.0
95°	9.3	10.1	12.9	16.6	23.2	35.0	59.3	105.3	172.2	228.1	234.6
97.5°	16.6	16.6	19.0	22.3	28.1	37.9	56.7	94.7	161.1	240.3	294.8
100°	21.3	21.3	23.2	26.6	31.9	40.9	57.4	89.0	146.2	225.1	296.8
102.5°	25.7	26.2	28.0	31.1	36.2	44.7	59.7	87.5	136.1	206.0	280.0
105°	32.8	33.6	35.0	38.3	43.4	51.5	65.0	88.2	127.4	183.6	249.5
107.5°	40.5	41.0	42.5	46.0	50.9	58.9	71.1	92.4	125.8	171.1	224.8
110°	45.6	46.2	47.6	50.9	56.0	63.5	75.9	95.5	126.3	166.8	212.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	50.5	51.1	52.8	55.8	60.9	68.4	80.3	98.9	127.6	164.9	205.6
115°	57.7	58.5	60.4	63.3	68.6	76.1	87.4	104.2	130.2	163.8	199.1
117.5°	65.0	65.8	67.6	70.7	75.7	83.5	94.1	109.6	132.9	163.5	196.1
120°	70.0	70.6	72.5	75.6	80.3	88.2	98.9	113.4	135.0	163.5	194.6
122.5°	74.5	75.0	77.0	79.9	85.1	92.7	103.3	117.0	137.0	163.3	192.8
125°	80.3	81.4	83.2	86.3	91.6	99.4	109.5	122.3	140.0	163.0	189.8
127.5°	85.6	86.4	88.5	92.0	97.5	105.4	115.2	127.0	142.4	162.3	185.8
130°	88.5	89.6	91.8	96.0	101.3	109.5	119.0	129.9	144.2	162.1	183.4
132.5°	91.4	92.3	95.2	99.2	105.0	112.6	122.2	132.8	145.8	161.9	181.2
135°	95.5	96.6	99.4	104.2	110.0	117.3	126.5	136.7	148.1	161.5	177.8
137.5°	99.6	100.6	103.7	108.2	114.3	121.3	129.9	139.3	149.5	161.5	174.9
140°	102.5	103.3	106.4	111.1	117.0	123.7	132.1	141.1	150.6	161.3	173.3
142.5°	105.6	106.5	109.3	113.8	119.5	126.0	134.2	142.4	151.5	161.3	172.0
145°	110.0	110.9	113.7	117.6	122.9	129.0	136.3	143.9	152.0	160.7	169.7
147.5°	115.0	115.3	117.8	121.8	126.2	131.7	138.6	145.2	152.3	159.7	167.6
150°	118.1	118.4	120.6	124.1	128.3	133.6	139.7	145.8	152.3	159.0	166.0
152.5°	121.0	121.1	123.3	126.5	130.2	135.1	140.6	146.3	151.9	157.9	164.2
155°	125.2	125.4	127.1	129.9	133.0	137.2	142.0	146.7	151.2	156.2	161.5
157.5°	129.1	129.1	130.7	132.8	135.5	138.9	142.9	146.7	150.4	154.5	158.8
160°	131.6	131.6	132.7	134.7	136.9	140.0	143.4	146.7	149.8	153.1	156.8
162.5°	133.8	133.6	134.5	136.3	138.2	140.7	143.8	146.7	149.1	151.8	155.0
165°	136.3	136.3	136.9	138.3	139.7	141.4	143.9	146.2	147.8	149.8	152.0
167.5°	138.9	138.6	138.9	139.9	140.7	142.0	143.9	145.4	146.5	147.7	149.3
170°	140.0	139.7	140.0	140.9	141.4	142.2	143.6	145.0	145.6	146.4	147.6
172.5°	141.1	140.9	140.9	141.5	141.8	142.4	143.4	144.6	144.7	145.0	146.0
175°	142.2	142.0	142.0	142.2	142.5	142.5	143.1	143.9	143.6	143.6	144.2
177.5°	142.8	142.5	142.3	142.5	142.5	142.5	142.8	143.1	142.8	142.8	143.0
180°	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1425.1	1427.2	1429.3	1430.4	1430.1	1430.0	1429.7	1429.6
5°	1415.6	1418.0	1420.5	1421.4	1420.9	1420.5	1420.0	1419.5
7.5°	1396.8	1398.3	1399.9	1400.3	1399.5	1398.7	1397.9	1397.1
10°	1379.8	1380.8	1381.7	1381.7	1380.8	1379.8	1378.8	1377.8
12.5°	1358.8	1359.5	1360.0	1359.6	1358.3	1356.9	1355.6	1354.2
15°	1322.2	1321.6	1321.1	1320.0	1318.3	1316.6	1314.9	1313.2
17.5°	1277.9	1276.5	1275.2	1273.2	1270.6	1268.0	1265.4	1262.8
20°	1246.9	1245.0	1243.0	1240.5	1237.3	1234.1	1231.0	1227.8
22.5°	1212.5	1209.6	1206.7	1204.0	1201.3	1198.8	1196.2	1193.7
25°	1157.1	1152.9	1148.8	1145.5	1143.1	1140.7	1138.2	1135.8
27.5°	1100.6	1095.5	1090.4	1086.1	1082.6	1079.0	1075.5	1072.1
30°	1060.1	1054.0	1047.9	1042.9	1039.0	1035.1	1031.3	1027.4
32.5°	1018.7	1011.7	1004.6	999.3	995.5	991.8	988.2	984.4
35°	957.1	948.9	940.6	934.3	929.9	925.5	921.1	916.7
37.5°	891.0	881.8	872.5	865.7	861.3	856.9	852.5	848.2
40°	847.0	836.8	826.6	819.3	814.9	810.5	806.1	801.8
42.5°	803.7	793.3	782.8	775.4	770.8	766.2	761.6	757.1
45°	737.4	725.4	713.5	705.4	701.0	696.6	692.2	687.9
47.5°	670.6	658.2	645.8	637.2	632.4	627.6	622.7	618.0
50°	626.2	614.1	601.9	593.5	588.9	584.2	579.6	575.0
52.5°	582.0	569.7	557.3	548.7	543.9	539.1	534.2	529.5
55°	516.8	504.2	491.5	482.9	478.2	473.6	469.1	464.4
57.5°	453.1	440.3	427.5	419.3	415.7	412.3	408.8	405.3
60°	410.6	397.9	385.3	377.0	373.1	369.2	365.4	361.5
62.5°	368.8	357.0	345.4	337.9	334.9	331.8	328.6	325.5
65°	308.7	298.3	287.8	281.1	278.2	275.3	272.4	269.4
67.5°	253.6	244.6	235.6	229.5	226.2	223.1	219.8	216.7
70°	216.1	208.1	200.1	194.8	192.4	190.0	187.5	185.1
72.5°	182.5	175.7	168.8	164.3	162.0	159.8	157.6	155.3
75°	134.5	128.9	123.3	119.8	118.3	116.8	115.3	113.9
77.5°	95.1	91.9	88.6	86.7	86.3	85.9	85.4	85.0
80°	73.0	72.3	71.5	71.1	70.8	70.6	70.3	70.1
82.5°	56.7	56.2	55.7	55.3	55.1	54.8	54.6	54.3
85°	33.0	32.5	32.0	31.8	31.8	31.8	31.8	31.8
87.5°	12.9	12.8	12.6	12.6	12.8	13.1	13.2	13.5
90°	5.1	5.3	5.6	5.6	5.9	6.2	5.9	5.9
92.5°	55.0	41.4	33.0	27.3	24.0	22.5	21.5	21.5
95°	207.5	164.1	126.5	99.4	85.6	77.0	71.9	68.3
97.5°	306.5	290.4	263.0	233.8	213.7	196.9	188.5	182.6
100°	337.6	343.3	329.5	308.8	284.5	267.4	259.0	256.7
102.5°	336.1	363.8	367.8	359.2	344.3	331.9	323.1	321.2
105°	313.5	362.0	389.8	401.2	401.8	399.5	395.6	394.0
107.5°	281.6	333.2	372.2	397.2	411.0	417.4	420.2	420.9
110°	262.4	310.8	351.4	382.1	402.0	413.8	418.8	421.4



TEST NUMBER: P332960-927

CATALOG NUMBER: S124RDIP-S1020D365U927-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	248.2	291.0	329.4	360.2	382.8	397.0	404.1	408.1
115°	234.1	268.5	301.3	328.1	350.2	367.0	376.0	378.3
117.5°	227.1	255.6	281.4	304.2	323.1	337.2	346.2	347.9
120°	223.9	250.0	272.4	292.3	308.2	320.6	327.9	331.0
122.5°	221.3	246.4	266.8	284.2	297.7	308.2	314.4	317.5
125°	216.7	240.7	260.1	275.5	286.7	294.9	300.2	301.8
127.5°	211.1	234.1	253.4	268.0	279.2	286.5	291.0	292.6
130°	206.6	228.8	247.8	262.6	274.1	281.1	285.6	287.2
132.5°	201.9	222.7	241.3	256.1	267.4	275.3	279.6	281.2
135°	195.4	213.7	230.7	244.7	255.9	263.7	268.2	269.9
137.5°	189.6	204.9	219.4	232.0	242.5	250.2	253.9	255.9
140°	186.2	199.3	211.9	223.7	233.5	239.6	243.6	245.8
142.5°	183.1	194.6	205.4	215.6	224.3	230.0	233.5	235.0
145°	178.6	188.1	196.5	204.4	211.4	216.1	219.0	220.3
147.5°	175.0	182.5	189.3	195.4	200.6	204.7	206.8	207.3
150°	172.8	179.2	184.8	189.8	194.3	198.0	199.6	199.9
152.5°	170.3	175.9	181.0	185.1	188.9	191.9	192.9	193.2
155°	166.6	171.0	175.2	178.6	181.4	183.6	184.5	184.5
157.5°	162.6	166.4	169.9	172.6	174.7	176.4	176.9	176.9
160°	160.2	163.2	166.3	168.6	170.2	171.9	172.2	172.2
162.5°	157.7	160.3	162.7	164.8	166.0	167.6	167.9	167.7
165°	154.2	156.0	157.9	159.3	160.4	161.5	161.3	161.0
167.5°	151.0	152.3	153.8	154.6	155.2	156.0	155.9	155.7
170°	148.9	149.8	150.9	151.8	152.3	152.6	152.3	152.3
172.5°	147.2	147.7	148.5	149.1	149.4	149.6	149.4	148.9
175°	144.7	145.0	145.6	145.6	145.6	146.2	145.6	145.0
177.5°	143.1	143.4	143.4	143.6	143.4	143.6	143.1	142.8
180°	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5

(END OF REPORT)