

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: P243519

Luminaire Tested: **S124DR-H575D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243519
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DR-H575D940-X4F0-XX-UDD-A-W
Description: DEFINE 4 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: 2088.2 lumens
Efficiency: N/A
Efficacy: 121.4 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

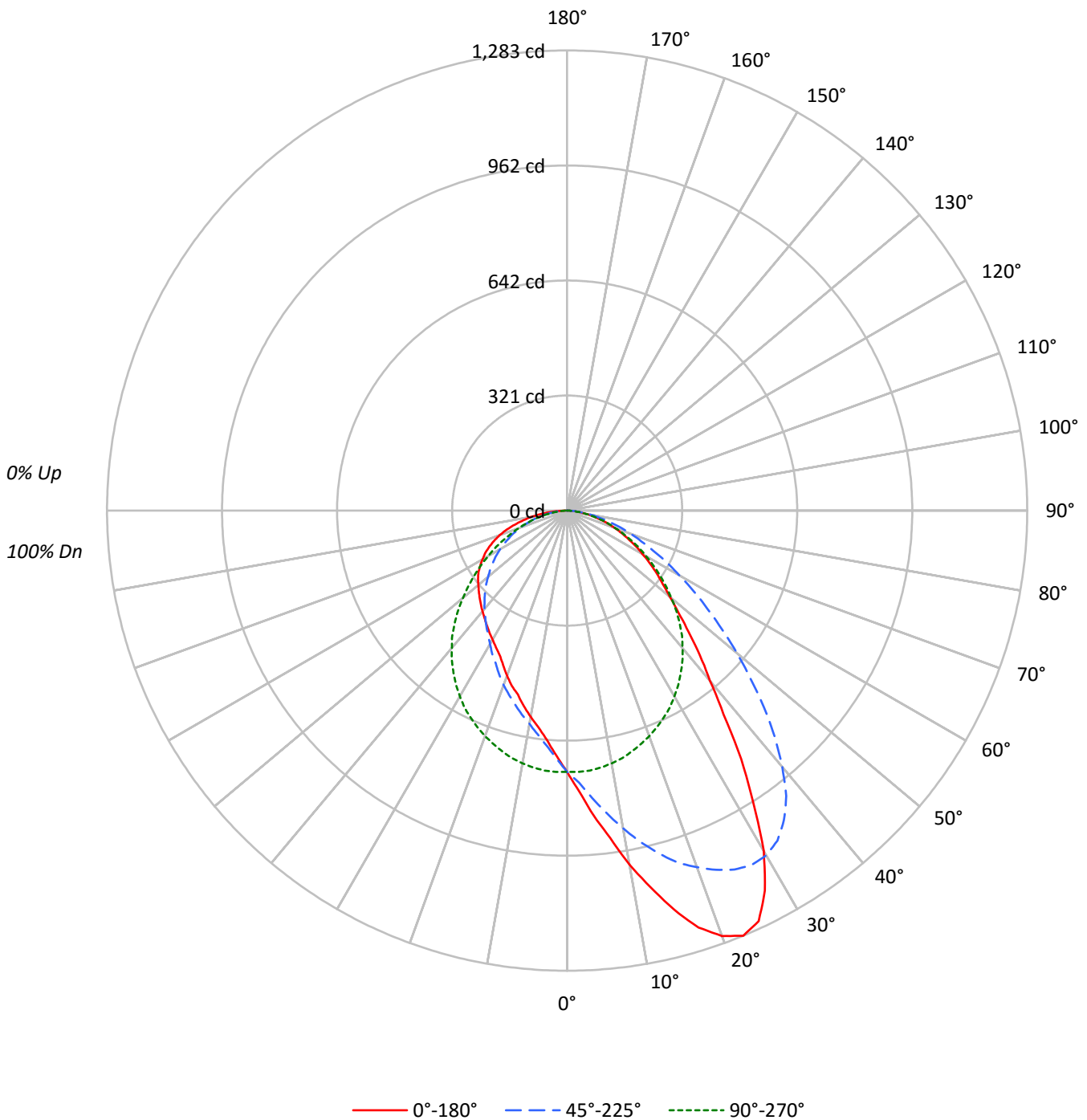
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93		94	92	90		91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77		83	79	76		80	77	74	72
3	92	81	74	67	89	80	73	67	77	71	66		74	69	64		72	67	63	61
4	84	73	64	58	82	71	63	57	69	62	56		66	60	56		64	59	55	53
5	78	65	56	50	75	64	56	50	62	55	49		60	54	49		58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43		54	48	43		53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	38		50	43	38		48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	35		46	39	34		44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31		42	36	31		41	35	31	29
10	54	41	34	29	53	41	34	28	40	33	28		39	33	28		38	32	28	26

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6473	6473	6473
5°	7617	6490	5728
10°	9052	6461	5275
15°	10602	6403	4886
20°	11939	6329	4634
25°	12390	6245	4362
30°	11251	6139	4265
35°	9180	5993	4239
40°	7188	5805	4256
45°	6016	5571	4334
50°	5162	5245	4464
55°	4717	4893	4680
60°	4322	4528	4852
65°	3965	4146	5039
70°	3646	3740	5190
75°	3246	3287	5186
80°	2708	2693	5175
85°	2060	2030	4855



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.9	3.4
10°-20°	219.5	10.5
20°-30°	352.7	16.9
30°-40°	403.2	19.3
40°-50°	371.1	17.8
50°-60°	303.6	14.5
60°-70°	216.4	10.4
70°-80°	118.9	5.7
80°-90°	31.9	1.5
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°	643.1	30.8
0°-40°	1046.3	50.1
0°-60°	1721.0	82.4
0°-90°	2088.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2088.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	728	728	728	728	728	
5°	854	805	727	658	642	86
15°	1152	990	696	560	531	328
25°	1263	1104	637	471	445	567
35°	846	1054	552	393	391	526
45°	479	777	443	324	345	374
55°	304	477	316	252	302	273
65°	188	264	197	177	240	188
75°	94	122	96	98	151	101
85°	20	25	20	27	48	24
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°	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2
2.5°	784.1	781.8	780.6	779.1	778.8	777.3	774.3	770.2	764.8	759.2	759.2
5°	853.7	853.1	848.6	848.9	843.3	837.0	832.3	826.3	814.7	804.9	798.1
7.5°	920.3	926.5	925.0	920.3	911.9	903.0	893.5	885.2	863.8	851.9	842.1
10°	1002.9	1005.3	1001.1	994.3	986.8	969.6	957.1	943.2	920.0	899.8	881.9
12.5°	1075.4	1081.1	1073.6	1067.1	1049.6	1036.8	1024.3	996.4	972.0	946.4	920.6
15°	1152.1	1146.2	1150.0	1134.0	1121.5	1109.3	1077.5	1049.0	1021.3	989.8	962.8
17.5°	1218.7	1218.7	1211.6	1201.2	1188.1	1165.2	1133.4	1101.9	1071.3	1029.9	991.6
20°	1262.1	1265.4	1257.0	1246.0	1230.3	1206.5	1181.2	1147.1	1106.3	1058.2	1014.8
22.5°	1282.9	1283.5	1280.5	1271.3	1258.5	1238.3	1212.5	1179.2	1136.1	1084.3	1038.9
25°	1263.3	1266.6	1265.7	1265.1	1258.5	1246.9	1226.1	1195.2	1156.0	1104.3	1055.2
27.5°	1194.3	1202.4	1209.2	1212.2	1219.3	1219.9	1213.6	1194.9	1162.8	1114.1	1059.4
30°	1096.2	1092.1	1110.5	1119.7	1144.1	1158.7	1169.1	1167.9	1149.4	1109.9	1057.9
32.5°	965.4	976.7	989.8	1011.5	1040.4	1074.2	1099.8	1118.8	1117.0	1091.2	1047.8
35°	846.0	846.0	862.6	889.4	920.0	960.7	1003.5	1038.9	1060.6	1054.0	1023.4
37.5°	716.4	724.4	743.4	764.2	801.7	840.9	897.4	944.3	989.8	1003.5	987.7
40°	619.5	623.0	643.2	660.8	699.1	739.8	787.1	847.1	899.5	933.0	935.1
42.5°	547.5	547.2	555.5	571.3	602.2	638.5	689.6	748.5	809.7	857.3	879.5
45°	478.6	478.0	486.6	502.6	524.6	556.7	601.0	659.9	722.6	776.7	811.8
47.5°	420.3	425.7	429.5	442.0	460.1	487.5	525.5	572.5	632.8	693.5	740.7
50°	373.3	375.7	384.0	390.0	410.2	429.2	459.8	502.0	553.8	617.4	668.5
52.5°	335.9	337.4	342.4	350.2	361.7	378.4	402.8	441.7	488.4	543.7	596.6
55°	304.4	303.5	306.8	311.8	321.9	335.9	353.7	383.4	424.2	477.4	526.1
57.5°	273.5	273.5	276.4	280.0	285.7	297.2	314.8	338.3	371.0	418.2	461.3
60°	243.1	245.2	246.4	250.0	254.7	263.4	276.4	294.9	322.5	361.2	404.0
62.5°	216.4	216.4	218.5	219.7	225.9	232.1	241.7	257.4	279.1	313.6	346.9
65°	188.5	190.2	190.2	192.6	198.0	202.7	210.2	222.0	239.9	264.5	295.8
67.5°	164.7	164.7	166.2	167.3	170.3	173.6	180.1	189.3	204.5	224.1	252.4
70°	140.3	141.2	140.6	142.1	143.9	147.1	151.9	159.6	170.6	187.6	208.4
72.5°	118.3	117.1	117.7	119.2	120.1	122.2	125.1	131.1	140.0	153.7	168.8
75°	94.5	93.9	96.0	95.4	96.9	98.7	101.4	105.8	112.7	122.2	133.8
77.5°	73.7	72.8	73.7	74.3	74.9	76.4	78.5	81.1	85.9	92.1	102.5
80°	52.9	52.6	53.2	53.8	54.1	56.5	57.1	59.7	61.8	66.6	71.6
82.5°	35.1	35.7	36.0	36.6	36.3	37.5	38.0	39.8	41.6	44.0	47.9
85°	20.2	19.3	20.2	20.2	20.2	21.7	21.4	22.6	23.8	25.0	27.6
87.5°	7.1	7.1	7.4	7.7	7.7	8.6	8.3	8.9	10.1	10.1	11.0
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°	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2
2.5°	757.4	754.1	751.7	744.9	740.7	736.9	733.3	729.4	725.3	719.9	716.7
5°	791.0	783.8	773.4	763.9	753.2	743.7	736.0	727.4	717.8	708.0	699.4
7.5°	828.1	814.7	798.7	781.2	764.5	750.5	736.0	722.3	708.9	695.8	683.7
10°	865.3	842.1	821.0	796.9	774.9	753.8	734.8	715.8	699.1	681.9	666.4
12.5°	899.8	871.8	840.9	810.9	781.5	754.1	730.6	707.4	686.0	665.5	647.4
15°	926.2	891.1	854.6	818.9	785.0	756.5	725.9	695.8	673.6	648.6	628.7
17.5°	956.5	914.9	878.7	835.8	793.6	747.6	715.2	682.5	655.7	631.6	611.7
20°	976.7	931.0	878.7	830.2	786.8	745.5	706.5	669.1	640.9	612.9	588.8
22.5°	992.8	945.5	887.9	837.3	782.9	733.0	690.8	653.9	620.6	594.2	571.3
25°	1001.1	943.5	888.5	827.2	772.8	725.0	677.4	636.7	603.1	573.7	554.1
27.5°	1001.4	942.3	877.2	816.5	758.3	706.5	659.6	619.5	581.7	553.5	530.0
30°	999.9	934.5	865.9	799.6	741.6	688.7	639.7	598.1	563.6	533.6	511.3
32.5°	990.4	923.8	848.9	779.4	716.4	663.2	618.0	576.7	539.8	512.4	489.0
35°	969.0	900.4	825.1	753.5	693.8	638.5	593.9	552.3	519.3	489.6	465.5
37.5°	941.7	877.5	801.1	726.2	661.7	609.3	567.4	528.2	493.7	466.4	442.3
40°	907.2	846.8	771.6	693.8	629.3	576.4	536.8	500.3	470.8	442.9	419.4
42.5°	859.9	813.6	736.3	660.5	593.0	543.1	504.7	474.4	444.1	418.8	395.3
45°	809.4	767.2	698.5	623.3	558.5	507.1	471.1	443.2	417.3	391.8	372.7
47.5°	753.5	719.0	655.4	582.0	518.1	472.6	437.2	412.3	388.5	368.9	349.9
50°	686.9	668.8	609.3	542.8	480.6	434.0	404.8	379.3	361.7	342.7	324.9
52.5°	625.1	610.5	562.1	496.7	440.2	399.2	368.0	347.8	330.5	316.6	302.3
55°	557.9	550.5	509.5	453.0	401.9	360.9	334.1	315.7	302.0	288.9	278.5
57.5°	496.1	495.5	459.2	410.8	360.9	326.1	300.5	285.4	273.5	264.2	255.3
60°	432.8	437.8	408.1	363.8	324.3	291.6	268.4	254.7	246.7	238.1	230.7
62.5°	375.4	383.1	356.1	321.3	282.4	255.6	237.8	227.4	218.5	212.2	206.6
65°	320.4	330.2	308.2	277.0	247.3	222.0	206.9	197.1	190.2	186.7	182.8
67.5°	272.0	277.3	262.5	238.1	213.4	191.4	178.9	170.3	164.4	162.9	158.4
70°	223.5	229.8	219.4	197.1	178.0	162.0	150.7	143.9	140.3	138.2	135.2
72.5°	184.6	187.3	176.9	161.4	146.2	132.9	124.5	119.5	115.3	114.4	113.0
75°	144.5	148.3	140.0	128.1	115.6	106.1	99.9	95.7	93.6	92.1	92.1
77.5°	109.1	112.4	107.6	97.2	89.8	81.4	77.3	73.4	72.5	71.0	71.6
80°	77.6	79.1	76.4	69.3	62.7	58.3	54.7	52.6	52.3	51.1	52.3
82.5°	51.4	51.7	48.7	45.5	40.4	38.0	35.7	34.8	34.5	34.5	33.9
85°	28.5	29.1	27.0	25.0	23.2	21.1	20.5	19.9	19.3	20.2	20.8
87.5°	11.0	11.3	11.0	10.1	9.5	8.9	8.6	9.2	8.3	8.9	9.2
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°	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2	728.2
2.5°	711.6	709.2	705.7	699.7	695.6	691.1	689.3	689.9	688.1	685.7	686.3
5°	692.9	686.0	680.1	671.8	664.0	657.5	655.4	652.7	650.4	648.9	647.4
7.5°	673.0	663.4	654.5	646.2	637.3	629.0	625.7	623.3	622.1	618.0	616.2
10°	653.9	642.9	632.2	622.4	613.2	604.0	600.7	597.8	593.6	591.8	589.7
12.5°	633.7	622.7	611.1	599.2	590.0	582.6	577.0	574.9	570.7	568.9	567.7
15°	614.1	600.7	591.5	582.3	568.3	560.0	557.6	550.2	547.8	544.3	541.9
17.5°	594.5	582.0	568.3	557.6	549.0	538.6	533.0	529.7	525.2	522.0	517.5
20°	575.2	560.6	549.9	536.5	527.0	517.5	510.4	507.4	503.5	499.1	492.8
22.5°	556.4	540.4	530.0	517.5	505.6	494.6	488.7	484.5	476.8	475.9	470.2
25°	534.4	520.2	506.5	493.4	481.8	470.8	467.0	460.4	457.8	452.4	451.5
27.5°	513.6	498.5	483.6	469.3	459.2	451.5	444.7	440.5	437.8	433.7	434.0
30°	491.9	475.3	461.3	448.2	437.2	429.8	425.4	423.3	419.4	418.8	416.7
32.5°	468.8	453.6	439.0	427.4	416.1	409.6	407.5	405.4	403.1	403.4	402.8
35°	445.6	432.2	416.7	406.0	396.8	393.0	389.7	389.1	388.2	388.8	388.8
37.5°	423.0	408.4	395.6	385.8	380.5	375.1	373.6	373.3	373.6	374.2	375.7
40°	401.0	387.6	375.1	367.1	361.2	358.8	356.7	357.6	358.8	360.9	362.6
42.5°	379.0	366.2	355.8	347.8	342.1	340.9	341.2	343.0	343.3	346.3	349.6
45°	355.8	344.8	335.0	328.8	325.2	323.7	324.3	326.1	328.2	332.3	336.5
47.5°	334.4	324.6	316.0	309.7	307.1	306.5	307.6	310.0	314.8	318.9	323.7
50°	312.7	303.8	295.8	290.1	289.8	287.7	290.4	293.4	299.0	304.7	311.8
52.5°	291.3	282.7	275.8	271.4	270.2	270.2	273.5	278.8	283.9	291.3	297.8
55°	269.0	261.3	254.7	253.3	251.5	252.4	255.9	261.3	268.4	276.7	283.9
57.5°	246.1	239.6	234.8	232.7	231.9	234.8	239.0	244.6	253.8	262.2	269.9
60°	224.4	218.8	213.7	213.1	212.5	216.4	221.4	227.4	236.6	244.9	254.4
62.5°	201.2	196.8	193.5	192.6	192.6	196.5	202.1	209.9	218.5	227.4	237.5
65°	177.8	173.9	173.0	171.8	174.5	176.9	182.5	189.9	199.2	209.0	219.7
67.5°	156.1	153.7	151.9	151.9	154.0	158.4	163.5	170.9	180.4	190.8	200.3
70°	134.4	132.0	130.5	132.0	133.2	138.5	143.9	151.0	159.9	170.0	180.1
72.5°	111.8	112.1	112.4	112.1	113.2	118.3	123.7	130.5	139.1	148.9	158.1
75°	91.8	90.4	90.7	91.3	95.1	97.8	103.1	109.7	118.9	127.8	135.5
77.5°	71.3	70.7	72.2	72.2	75.8	79.1	83.5	90.1	98.1	106.1	112.4
80°	52.3	52.6	53.8	54.1	57.1	60.6	65.4	69.9	77.0	82.6	88.6
82.5°	35.4	36.0	37.5	39.5	40.7	42.8	47.0	51.7	56.8	62.7	66.3
85°	20.5	21.4	22.6	24.1	25.3	27.3	30.3	34.2	37.7	41.0	44.0
87.5°	10.1	10.1	11.0	11.6	12.5	13.7	15.8	17.2	19.6	22.0	23.2
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: S124DR-H575D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	728.2	728.2	728.2	728.2
2.5°	685.1	684.8	683.7	684.3
5°	646.5	643.5	643.2	642.0
7.5°	613.2	612.3	612.3	609.9
10°	587.7	585.0	585.6	584.4
12.5°	563.3	561.8	560.0	558.2
15°	535.9	535.9	535.9	530.9
17.5°	514.5	514.2	512.7	512.4
20°	492.2	491.0	487.2	489.9
22.5°	469.6	468.8	465.5	466.1
25°	448.5	447.6	447.1	444.7
27.5°	430.4	430.7	431.3	429.8
30°	416.7	415.8	417.0	415.5
32.5°	404.0	404.0	402.8	403.1
35°	389.4	390.6	390.9	390.6
37.5°	376.6	378.1	379.3	378.1
40°	364.7	365.9	367.1	366.8
42.5°	352.2	354.3	355.2	356.1
45°	340.3	343.0	344.5	344.8
47.5°	328.2	331.4	334.4	334.1
50°	316.3	320.4	323.1	322.8
52.5°	304.4	308.5	311.8	313.3
55°	291.0	296.4	299.3	302.0
57.5°	277.6	283.6	286.5	287.7
60°	262.8	268.1	272.0	272.9
62.5°	246.1	251.8	256.8	258.0
65°	228.9	235.1	239.0	239.6
67.5°	209.0	214.9	218.8	220.6
70°	188.5	192.9	197.1	199.7
72.5°	165.6	170.9	174.8	176.6
75°	141.8	147.7	149.8	151.0
77.5°	117.1	120.7	124.0	124.2
80°	92.4	96.9	98.1	101.1
82.5°	68.1	72.2	71.3	72.5
85°	44.9	46.4	47.3	47.6
87.5°	23.8	24.7	25.3	25.6
90°	0.0	0.0	0.0	0.0

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