

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: P332813-930

Luminaire Tested: **S124DIW-S1020D770U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332813-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D770U930-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5936.7 lumens
Efficiency: N/A
Efficacy: 110.8 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

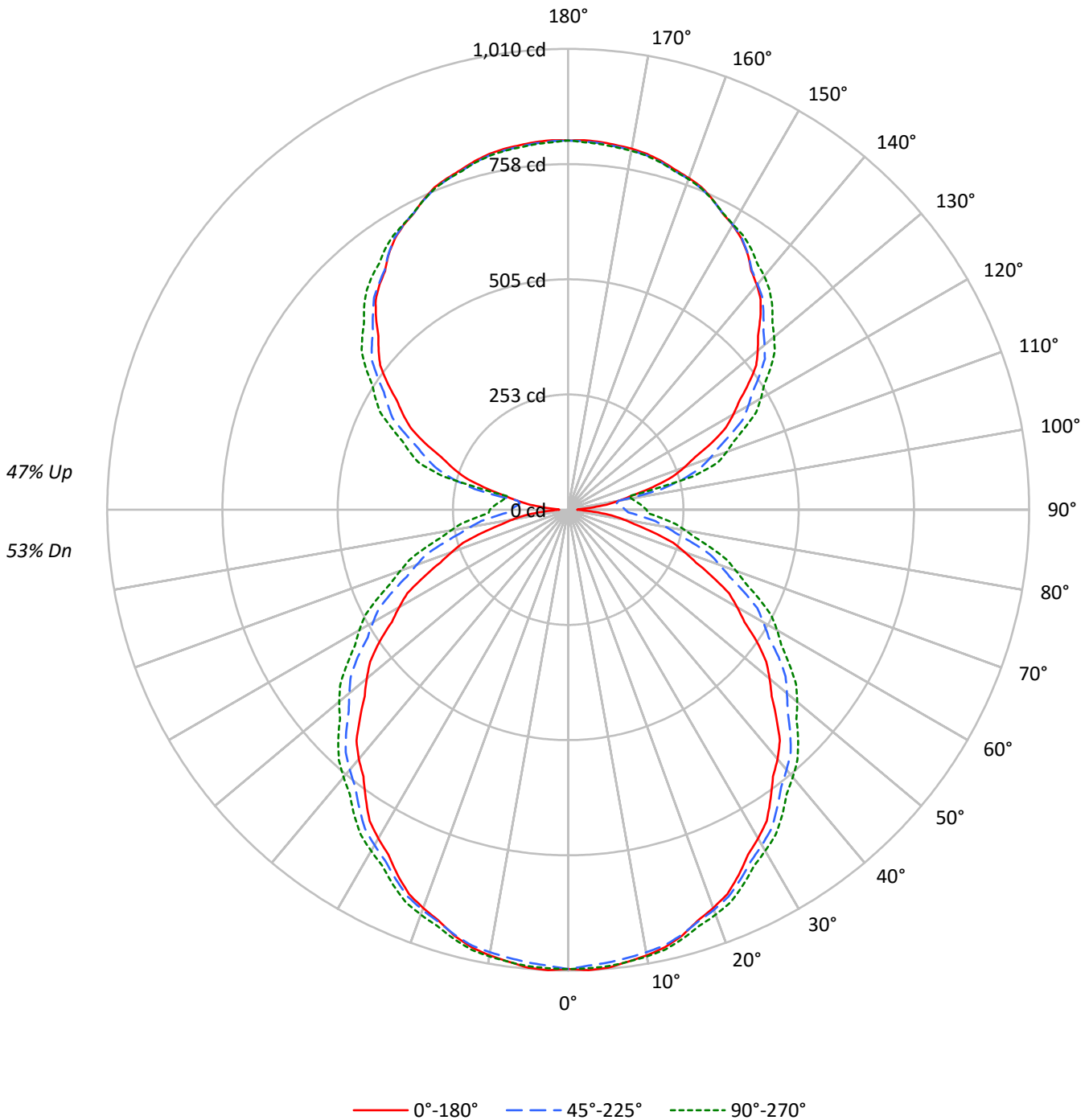
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	97	93	88	84	90	86	82	79	73	70	68	61	59	58	51	49	48	43
2	88	80	74	68	81	74	69	64	63	59	55	53	50	47	44	42	39	35
3	80	70	62	56	74	65	58	53	56	50	46	47	43	39	39	36	33	29
4	73	62	54	47	67	57	50	44	49	43	39	41	37	33	34	31	28	25
5	67	55	46	40	62	51	44	38	44	38	33	37	32	29	31	27	24	21
6	62	49	41	35	57	46	38	33	39	33	29	33	29	25	28	24	21	18
7	57	44	36	30	53	41	34	29	36	30	25	30	26	22	25	22	19	16
8	53	40	32	27	49	38	30	25	32	27	22	28	23	20	23	20	17	14
9	49	37	29	24	45	34	27	22	30	24	20	25	21	18	21	18	15	13
10	46	34	26	21	43	31	25	20	27	22	18	23	19	16	20	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8127	8127	8127
5°	8151	7942	7965
10°	8102	7812	7807
15°	8029	7662	7620
20°	7920	7496	7438
25°	7797	7310	7239
30°	7663	7125	7034
35°	7511	6935	6855
40°	7390	6755	6667
45°	7210	6588	6507
50°	7059	6397	6337
55°	6902	6217	6138
60°	6657	5986	5956
65°	6389	5740	5734
70°	6066	5458	5474
75°	5612	5146	5239
80°	5110	4847	5007
85°	4474	4583	4872



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	1.6
10°-20°	273.1	4.6
20°-30°	413.0	7.0
30°-40°	499.7	8.4
40°-50°	528.2	8.9
50°-60°	497.1	8.4
60°-70°	412.5	6.9
70°-80°	289.7	4.9
80°-90°	166.1	2.8
90°-100°	124.9	2.1
100°-110°	248.5	4.2
110°-120°	385.9	6.5
120°-130°	455.8	7.7
130°-140°	470.2	7.9
140°-150°	431.1	7.3
150°-160°	345.7	5.8
160°-170°	223.0	3.8
170°-180°	76.9	1.3
0°-30°	781.4	13.2
0°-40°	1281.1	21.6
0°-60°	2306.5	38.9
0°-90°	3174.8	53.5
90°-120°	759.2	12.8
90°-150°	2116.3	35.6
90°-180°	2762.0	46.5
0°-180°	5936.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1007	1007	1007	1007	1007	
5°	1008	1004	996	1005	1004	96
15°	966	967	964	973	973	272
25°	884	890	894	906	907	407
35°	773	787	798	813	817	484
45°	645	666	688	706	712	498
55°	505	529	562	584	592	450
65°	349	386	424	451	461	346
75°	194	236	283	313	325	206
85°	60	107	158	190	203	64
90°	20	72	125	160	172	13
95°	48	66	111	144	156	54
105°	192	220	263	294	284	202
115°	347	360	394	419	428	342
125°	483	485	511	533	541	431
135°	595	595	605	624	632	459
145°	685	686	686	693	699	428
155°	750	750	749	751	749	346
165°	791	788	788	792	787	223
175°	809	806	806	811	804	77
180°	809	809	809	809	809	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1010.2	1009.7	1009.0	1008.4	1007.8	1006.7	1005.1	1003.6	1001.9	1000.3	1001.7
5°	1007.7	1007.0	1006.2	1005.5	1004.8	1003.5	1001.8	1000.0	998.3	996.5	998.5
7.5°	999.1	998.7	998.3	997.8	997.4	996.5	995.0	993.5	992.1	990.6	992.9
10°	992.0	991.7	991.5	991.2	991.0	990.2	989.0	987.7	986.4	985.2	987.5
12.5°	982.0	982.0	981.9	981.9	981.9	981.4	980.6	979.7	978.8	978.0	980.1
15°	966.0	966.3	966.5	966.8	967.0	966.8	966.0	965.3	964.5	963.8	966.0
17.5°	944.2	944.9	945.7	946.4	947.2	947.5	947.3	947.2	947.1	946.9	949.2
20°	928.9	929.6	930.3	931.1	931.9	932.4	932.6	932.9	933.1	933.4	935.9
22.5°	911.7	912.6	913.6	914.6	915.5	916.2	916.6	917.1	917.5	918.0	920.6
25°	883.8	885.3	886.7	888.3	889.7	890.9	891.6	892.4	893.2	893.9	896.7
27.5°	852.6	854.8	857.0	859.2	861.4	863.2	864.3	865.4	866.6	867.7	870.3
30°	831.9	833.9	835.9	837.9	839.9	841.8	843.5	845.3	847.0	848.8	851.6
32.5°	809.3	811.8	814.2	816.6	819.0	821.2	823.1	825.1	827.0	829.0	832.1
35°	773.3	776.3	779.3	782.3	785.3	788.1	790.6	793.0	795.6	798.1	801.6
37.5°	736.9	740.5	743.9	747.4	750.8	754.1	757.2	760.3	763.4	766.5	770.1
40°	713.5	716.8	720.1	723.3	726.6	729.9	733.4	736.9	740.5	744.0	747.7
42.5°	686.5	690.2	693.8	697.5	701.1	705.0	709.1	713.2	717.3	721.5	725.6
45°	644.7	649.5	654.3	659.1	663.8	668.5	673.4	678.1	682.8	687.6	691.9
47.5°	604.9	609.8	614.7	619.6	624.5	629.7	635.2	640.7	646.3	651.8	656.2
50°	576.0	581.6	587.0	592.6	598.0	603.6	609.1	614.6	620.1	625.6	630.6
52.5°	547.1	552.7	558.2	563.7	569.2	575.1	581.4	587.7	594.0	600.4	605.4
55°	505.0	510.3	515.5	520.8	526.0	532.4	540.0	547.5	555.0	562.5	567.5
57.5°	457.9	464.4	470.9	477.4	484.0	490.9	498.4	505.9	513.3	520.8	526.8
60°	427.2	433.7	440.3	446.8	453.3	460.6	469.0	477.2	485.4	493.7	499.5
62.5°	397.5	404.6	411.7	418.8	425.9	433.6	441.9	450.1	458.4	466.7	472.5
65°	349.4	357.4	365.5	373.5	381.5	389.8	398.3	406.8	415.3	423.9	430.1
67.5°	303.2	311.8	320.2	328.8	337.3	346.1	355.2	364.4	373.5	382.6	389.0
70°	271.7	280.2	288.7	297.2	305.7	314.8	324.2	333.8	343.3	352.9	359.6
72.5°	241.0	249.7	258.4	267.2	275.9	285.3	295.4	305.5	315.7	325.8	332.3
75°	193.9	203.2	212.4	221.7	231.0	240.8	251.4	261.9	272.4	282.9	289.9
77.5°	149.9	159.7	169.6	179.4	189.2	199.6	210.7	221.7	232.7	243.7	250.8
80°	122.9	132.9	142.9	153.0	163.0	173.5	184.5	195.5	206.5	217.5	225.1
82.5°	95.8	106.2	116.7	127.1	137.5	148.2	159.2	170.2	181.3	192.3	200.0
85°	59.8	70.3	80.8	91.3	101.8	112.8	124.0	135.3	146.5	157.8	165.3
87.5°	33.8	44.3	54.8	65.3	75.8	86.7	97.8	109.0	120.2	131.4	138.8
90°	19.8	31.4	42.9	54.4	65.9	77.5	89.4	101.2	113.1	124.9	133.0
92.5°	24.8	33.8	43.0	52.0	61.1	71.7	83.5	95.3	107.1	119.0	126.9
95°	47.9	51.6	55.4	59.0	62.7	69.8	80.1	90.6	101.0	111.4	119.0
97.5°	84.0	93.9	104.0	113.9	123.8	126.4	121.6	116.8	111.9	107.0	113.7
100°	111.6	120.6	129.6	138.4	147.4	147.5	138.7	129.9	121.1	112.3	116.8
102.5°	143.6	151.1	158.6	166.1	173.6	180.8	188.0	195.2	202.3	209.5	191.4
105°	192.3	198.1	203.9	209.8	215.6	223.5	233.4	243.4	253.3	263.2	270.7
107.5°	239.4	243.9	248.4	252.9	257.5	264.6	274.3	283.9	293.6	303.3	310.1
110°	270.4	274.3	278.3	282.2	286.1	292.9	302.4	312.0	321.6	331.2	337.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	300.5	304.4	308.2	312.0	315.8	322.1	330.9	339.7	348.4	357.1	362.6
115°	346.9	349.5	352.2	354.8	357.5	362.8	370.6	378.5	386.5	394.3	400.1
117.5°	389.6	391.5	393.4	395.3	397.2	402.0	409.8	417.5	425.3	433.1	438.2
120°	417.8	419.1	420.4	421.7	422.9	427.1	434.2	441.4	448.5	455.7	461.0
122.5°	444.9	445.3	445.8	446.3	446.8	450.5	457.5	464.6	471.7	478.7	483.9
125°	482.6	482.9	483.1	483.5	483.7	486.9	492.9	498.9	504.9	510.9	516.0
127.5°	519.2	519.0	518.9	518.9	518.7	521.4	526.8	532.2	537.7	543.1	547.5
130°	542.0	541.8	541.8	541.7	541.5	543.6	548.1	552.5	556.9	561.3	566.0
132.5°	563.8	563.8	563.8	563.8	563.8	565.6	569.3	573.1	576.7	580.5	584.9
135°	595.3	595.2	595.1	594.9	594.8	595.9	598.2	600.5	602.8	605.0	609.4
137.5°	624.3	624.0	623.9	623.7	623.5	624.1	625.6	627.0	628.4	629.9	633.8
140°	643.1	643.2	643.2	643.2	643.2	643.5	644.0	644.5	645.1	645.6	649.2
142.5°	659.2	659.7	660.1	660.5	661.0	661.1	661.1	661.2	661.2	661.2	664.3
145°	685.0	685.2	685.3	685.4	685.6	685.7	685.7	685.7	685.7	685.7	687.3
147.5°	705.7	706.2	706.7	707.2	707.7	707.8	707.8	707.6	707.4	707.4	707.7
150°	720.7	721.0	721.3	721.5	721.9	721.9	721.8	721.6	721.5	721.4	721.4
152.5°	732.4	732.8	733.1	733.5	733.9	733.9	733.7	733.5	733.3	733.0	733.2
155°	749.8	750.0	750.1	750.2	750.4	750.2	749.8	749.4	749.0	748.6	749.2
157.5°	764.8	764.7	764.6	764.5	764.4	764.1	763.7	763.2	762.7	762.3	763.0
160°	773.4	773.0	772.7	772.3	771.8	771.5	771.4	771.3	771.1	771.0	771.8
162.5°	781.1	780.6	780.2	779.7	779.1	778.8	778.7	778.5	778.4	778.3	779.1
165°	791.0	790.3	789.6	789.0	788.3	788.0	788.0	788.0	788.0	788.0	789.0
167.5°	798.7	798.0	797.4	796.6	795.9	795.6	795.5	795.4	795.3	795.2	796.4
170°	803.1	802.3	801.4	800.6	799.9	799.5	799.6	799.8	799.9	800.1	801.1
172.5°	806.0	805.2	804.4	803.6	802.7	802.4	802.6	802.7	802.8	803.0	804.0
175°	809.1	808.3	807.6	806.7	805.9	805.6	805.7	805.8	806.0	806.1	807.3
177.5°	810.6	809.8	809.1	808.3	807.6	807.3	807.6	807.7	808.0	808.1	809.0
180°	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1003.1	1004.5	1005.9	1006.5	1006.3	1006.1	1005.9	1005.8
5°	1000.5	1002.5	1004.5	1005.3	1005.1	1004.9	1004.6	1004.4
7.5°	995.2	997.4	999.6	1000.6	1000.4	1000.1	999.9	999.6
10°	989.7	992.0	994.3	995.2	995.0	994.7	994.5	994.3
12.5°	982.1	984.1	986.2	987.2	987.2	987.1	987.1	987.0
15°	968.3	970.5	972.8	973.8	973.5	973.3	973.1	972.8
17.5°	951.5	953.8	956.1	957.2	956.9	956.8	956.5	956.3
20°	938.3	940.9	943.4	944.6	944.6	944.6	944.6	944.6
22.5°	923.0	925.5	928.1	929.5	929.9	930.3	930.7	931.1
25°	899.4	902.1	904.9	906.4	906.7	906.9	907.2	907.4
27.5°	872.9	875.4	878.0	879.4	879.7	880.0	880.3	880.6
30°	854.4	857.0	859.8	861.4	861.9	862.4	863.0	863.5
32.5°	835.3	838.5	841.6	843.4	843.9	844.4	844.9	845.5
35°	805.1	808.6	812.1	814.2	815.0	815.7	816.5	817.3
37.5°	773.6	777.2	780.7	782.9	783.7	784.6	785.3	786.1
40°	751.5	755.2	759.0	761.4	762.4	763.4	764.4	765.4
42.5°	729.8	733.9	738.1	740.5	741.4	742.2	743.0	743.7
45°	696.1	700.4	704.7	707.4	708.7	709.9	711.2	712.4
47.5°	660.6	665.0	669.4	672.4	673.8	675.4	676.9	678.4
50°	635.6	640.7	645.6	648.9	650.4	651.9	653.4	654.9
52.5°	610.4	615.4	620.4	623.6	625.2	626.6	628.2	629.7
55°	572.5	577.6	582.5	585.8	587.3	588.8	590.3	591.8
57.5°	532.7	538.7	544.6	548.3	549.7	551.1	552.5	553.9
60°	505.2	511.0	516.7	520.7	522.7	524.6	526.7	528.6
62.5°	478.2	484.0	489.8	493.6	495.6	497.6	499.6	501.7
65°	436.3	442.6	448.9	453.1	455.0	457.1	459.0	461.1
67.5°	395.3	401.7	408.1	412.2	414.2	416.1	418.1	420.0
70°	366.3	373.1	379.8	384.2	385.9	387.7	389.4	391.2
72.5°	338.9	345.4	352.0	356.3	358.2	360.2	362.2	364.1
75°	296.9	303.9	311.0	315.6	317.9	320.2	322.4	324.7
77.5°	258.0	265.1	272.1	277.0	279.3	281.8	284.1	286.6
80°	232.6	240.1	247.6	252.3	254.4	256.4	258.4	260.4
82.5°	207.7	215.5	223.1	228.1	230.3	232.5	234.7	236.9
85°	172.8	180.3	187.8	192.9	195.4	197.9	200.4	202.9
87.5°	146.3	153.7	161.1	165.9	168.2	170.5	172.7	175.0
90°	141.0	149.1	157.2	162.4	164.6	166.9	169.2	171.5
92.5°	134.8	142.6	150.5	155.5	157.5	159.6	161.7	163.7
95°	126.5	134.1	141.7	146.7	149.0	151.4	153.8	156.2
97.5°	120.3	127.0	133.6	138.1	140.4	142.7	145.0	147.2
100°	121.2	125.7	130.2	133.4	135.3	137.1	139.1	141.0
102.5°	173.3	155.2	137.1	129.0	130.9	133.0	134.9	136.9
105°	278.2	285.6	293.1	295.5	292.6	289.8	286.9	284.1
107.5°	316.8	323.5	330.3	334.8	337.1	339.5	341.8	344.1
110°	343.2	349.2	355.2	359.5	361.9	364.3	366.7	369.1



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CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	368.1	373.7	379.2	383.2	385.7	388.2	390.7	393.2
115°	405.9	411.6	417.4	421.2	423.0	424.7	426.5	428.2
117.5°	443.4	448.5	453.7	457.2	459.2	461.1	463.1	465.0
120°	466.2	471.5	476.8	480.3	482.0	483.7	485.5	487.2
122.5°	489.1	494.2	499.5	502.8	504.3	505.8	507.4	508.9
125°	521.2	526.4	531.5	534.9	536.5	538.2	539.8	541.4
127.5°	552.0	556.4	560.8	563.8	565.4	567.0	568.6	570.2
130°	570.6	575.3	579.9	582.9	584.5	586.0	587.5	589.0
132.5°	589.4	593.8	598.3	601.2	602.6	604.0	605.4	606.7
135°	613.6	617.8	622.2	625.2	627.0	628.8	630.5	632.3
137.5°	637.8	641.7	645.7	648.2	649.4	650.6	651.8	653.0
140°	652.9	656.6	660.2	662.8	664.1	665.5	666.9	668.3
142.5°	667.5	670.7	673.8	675.9	677.0	678.1	679.1	680.2
145°	688.9	690.6	692.2	693.7	695.0	696.2	697.5	698.8
147.5°	707.9	708.3	708.6	709.2	710.1	711.1	712.0	713.0
150°	721.4	721.4	721.4	721.5	721.6	721.7	721.9	721.9
152.5°	733.4	733.6	733.9	733.9	733.9	733.8	733.7	733.6
155°	749.7	750.2	750.7	750.8	750.4	750.0	749.6	749.3
157.5°	763.7	764.4	765.1	765.1	764.4	763.7	763.0	762.3
160°	772.7	773.4	774.2	774.2	773.4	772.7	771.8	771.0
162.5°	779.9	780.6	781.5	781.5	780.6	779.6	778.7	777.8
165°	790.1	791.2	792.2	792.2	791.0	789.8	788.6	787.3
167.5°	797.6	798.7	800.0	799.9	798.5	797.2	795.8	794.5
170°	802.2	803.3	804.4	804.2	802.9	801.5	800.2	798.8
172.5°	805.1	806.2	807.2	807.1	805.6	804.2	802.7	801.3
175°	808.5	809.8	811.0	810.7	809.1	807.6	805.9	804.3
177.5°	809.9	810.7	811.6	811.4	810.1	808.8	807.6	806.2
180°	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1

(END OF REPORT)