

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: P332807-935

Luminaire Tested: **S124DIW-S1020D470U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332807-935
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-S1020D470U935-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5239.1 lumens
Efficiency: N/A
Efficacy: 113.4 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: Semi-Direct

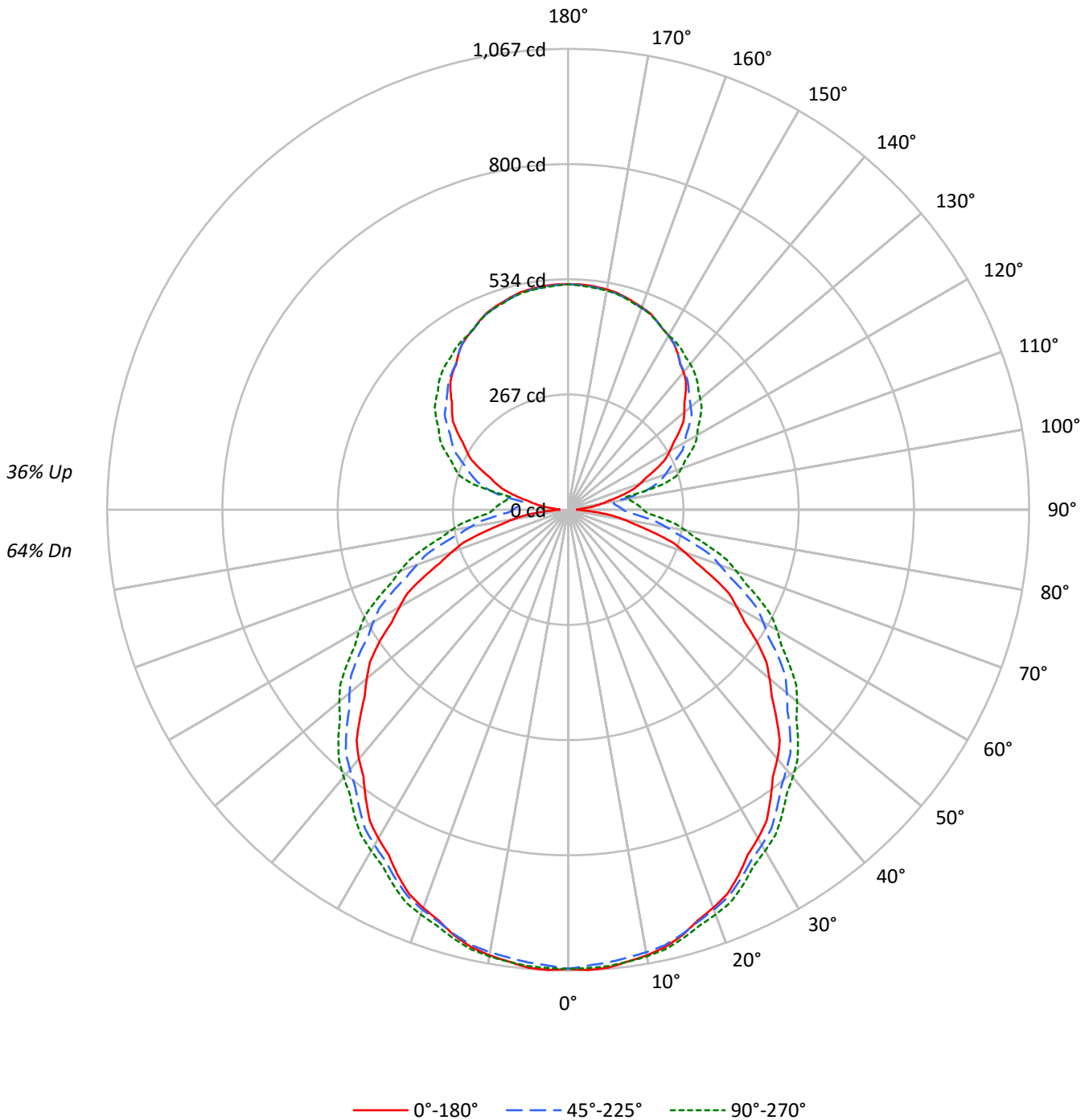
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	104	104	104	104	91	91	91	80	80	80	69	69	69	64
1	100	95	90	86	93	89	85	81	78	75	72	68	66	64	59	57	56	51
2	90	82	75	69	84	77	71	66	68	63	59	59	55	52	51	48	46	42
3	82	72	64	57	76	67	60	54	59	54	49	52	47	44	45	41	38	35
4	75	63	55	48	70	59	52	46	52	46	41	46	41	37	40	36	33	29
5	69	56	47	41	64	53	45	39	47	40	35	41	36	32	36	32	28	25
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22
7	58	45	37	31	55	43	35	30	38	32	27	34	28	24	29	25	22	19
8	54	41	33	27	51	39	31	26	35	28	24	31	26	22	27	23	20	17
9	50	38	30	24	47	36	28	23	32	26	21	28	23	20	25	21	18	15
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8582	8582	8582
5°	8608	8387	8412
10°	8556	8250	8244
15°	8479	8091	8047
20°	8364	7916	7856
25°	8233	7719	7645
30°	8093	7524	7428
35°	7933	7324	7239
40°	7804	7134	7041
45°	7615	6958	6871
50°	7455	6755	6692
55°	7289	6565	6482
60°	7031	6322	6290
65°	6747	6061	6055
70°	6405	5763	5780
75°	5924	5435	5533
80°	5397	5119	5288
85°	4721	4842	5146



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.7	1.9
10°-20°	288.4	5.5
20°-30°	436.1	8.3
30°-40°	527.7	10.1
40°-50°	557.9	10.6
50°-60°	525.0	10.0
60°-70°	435.6	8.3
70°-80°	306.0	5.8
80°-90°	174.5	3.3
90°-100°	120.6	2.3
100°-110°	189.8	3.6
110°-120°	268.7	5.1
120°-130°	305.1	5.8
130°-140°	308.0	5.9
140°-150°	278.9	5.3
150°-160°	222.9	4.3
160°-170°	143.8	2.7
170°-180°	49.6	0.9
0°-30°	825.2	15.8
0°-40°	1352.9	25.8
0°-60°	2435.8	46.5
0°-90°	3351.8	64.0
90°-120°	579.0	11.1
90°-150°	1471.0	28.1
90°-180°	1887.0	36.0
0°-180°	5239.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1063	1063	1063	1063	1063	
5°	1064	1060	1052	1061	1061	101
15°	1020	1021	1018	1028	1027	287
25°	933	940	944	956	958	430
35°	817	831	843	859	863	511
45°	681	704	726	746	752	526
55°	533	559	594	617	625	475
65°	369	407	448	476	487	366
75°	205	249	299	331	343	218
85°	63	113	167	201	214	67
90°	20	72	126	162	174	14
95°	37	64	112	145	158	40
105°	128	155	200	232	229	135
115°	226	240	276	302	311	223
125°	313	315	342	365	374	280
135°	385	385	394	413	422	297
145°	442	442	442	450	455	276
155°	484	484	483	484	483	223
165°	510	508	508	511	508	144
175°	522	520	520	523	519	50
180°	522	522	522	522	522	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1066.9	1066.3	1065.6	1065.0	1064.3	1063.2	1061.4	1059.8	1058.1	1056.4	1057.8
5°	1064.2	1063.4	1062.6	1061.9	1061.1	1059.7	1057.9	1056.0	1054.2	1052.3	1054.5
7.5°	1055.2	1054.7	1054.2	1053.8	1053.3	1052.3	1050.8	1049.2	1047.7	1046.1	1048.5
10°	1047.6	1047.3	1047.1	1046.8	1046.5	1045.7	1044.4	1043.1	1041.7	1040.4	1042.8
12.5°	1037.1	1037.1	1037.0	1036.9	1036.9	1036.4	1035.5	1034.6	1033.7	1032.8	1035.0
15°	1020.2	1020.5	1020.7	1021.0	1021.2	1021.0	1020.2	1019.4	1018.6	1017.8	1020.2
17.5°	997.1	997.9	998.7	999.4	1000.3	1000.6	1000.4	1000.3	1000.1	1000.0	1002.4
20°	980.9	981.7	982.5	983.3	984.1	984.6	984.9	985.2	985.4	985.7	988.3
22.5°	962.8	963.8	964.8	965.9	966.8	967.6	968.0	968.5	969.0	969.5	972.2
25°	933.3	934.9	936.4	938.1	939.6	940.8	941.6	942.5	943.2	944.0	946.9
27.5°	900.4	902.8	905.1	907.4	909.7	911.5	912.7	914.0	915.2	916.4	919.1
30°	878.6	880.6	882.8	884.8	887.0	889.0	890.8	892.7	894.5	896.4	899.3
32.5°	854.7	857.3	859.8	862.4	864.9	867.2	869.3	871.3	873.4	875.5	878.7
35°	816.7	819.8	822.9	826.1	829.3	832.2	834.9	837.5	840.2	842.8	846.5
37.5°	778.3	782.0	785.6	789.3	792.9	796.3	799.6	802.9	806.2	809.5	813.2
40°	753.5	757.0	760.4	763.9	767.3	770.9	774.6	778.3	782.0	785.7	789.6
42.5°	725.0	728.8	732.7	736.6	740.4	744.5	748.8	753.2	757.5	761.9	766.3
45°	680.9	686.0	691.0	696.0	701.0	706.0	711.1	716.1	721.1	726.2	730.6
47.5°	638.8	643.9	649.1	654.4	659.5	665.0	670.8	676.7	682.5	688.3	692.9
50°	608.3	614.2	619.9	625.8	631.5	637.4	643.3	649.0	654.9	660.6	666.0
52.5°	577.8	583.7	589.4	595.3	601.2	607.3	614.0	620.7	627.3	634.0	639.3
55°	533.3	538.9	544.4	550.0	555.5	562.2	570.2	578.2	586.1	594.0	599.3
57.5°	483.5	490.4	497.3	504.2	511.1	518.4	526.3	534.3	542.1	550.0	556.3
60°	451.2	458.1	464.9	471.8	478.7	486.5	495.2	503.9	512.6	521.4	527.4
62.5°	419.7	427.2	434.8	442.3	449.8	457.9	466.7	475.4	484.1	492.8	498.9
65°	369.0	377.5	386.0	394.4	402.9	411.6	420.6	429.6	438.6	447.6	454.2
67.5°	320.2	329.2	338.2	347.2	356.2	365.5	375.1	384.8	394.4	404.1	410.8
70°	286.9	295.9	304.9	313.8	322.9	332.4	342.4	352.5	362.6	372.6	379.8
72.5°	254.5	263.7	272.9	282.1	291.4	301.3	311.9	322.6	333.4	344.1	350.9
75°	204.7	214.6	224.3	234.1	243.9	254.3	265.4	276.6	287.7	298.8	306.2
77.5°	158.3	168.7	179.1	189.4	199.8	210.8	222.5	234.1	245.7	257.4	264.8
80°	129.8	140.3	150.9	161.5	172.1	183.2	194.8	206.5	218.1	229.7	237.7
82.5°	101.2	112.2	123.2	134.2	145.2	156.5	168.2	179.8	191.5	203.1	211.2
85°	63.1	74.2	85.3	96.4	107.5	119.1	131.0	142.8	154.7	166.7	174.6
87.5°	35.5	46.5	57.4	68.4	79.4	90.7	102.5	114.3	126.0	137.7	145.4
90°	20.2	31.8	43.3	54.8	66.4	78.2	90.2	102.3	114.3	126.4	134.7
92.5°	23.0	32.5	42.2	51.7	61.3	72.2	84.2	96.3	108.3	120.4	128.4
95°	36.9	42.7	48.5	54.2	60.1	68.4	79.4	90.3	101.3	112.2	119.9
97.5°	59.6	69.0	78.4	87.6	97.0	102.2	103.3	104.4	105.4	106.5	113.5
100°	77.1	85.5	93.9	102.4	110.8	114.3	112.6	110.9	109.3	107.6	113.3
102.5°	97.7	104.9	112.0	119.2	126.4	134.2	142.8	151.4	159.9	168.4	159.5
105°	128.2	134.0	139.8	145.6	151.4	159.5	169.6	179.9	190.1	200.4	207.7
107.5°	158.4	163.1	167.6	172.2	176.8	184.1	193.9	203.8	213.6	223.4	230.3
110°	178.1	182.0	186.1	190.0	194.0	200.8	210.6	220.4	230.1	240.0	246.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	197.1	200.9	204.6	208.4	212.2	218.5	227.6	236.7	245.7	254.9	260.7
115°	226.4	229.1	231.7	234.4	237.0	242.5	250.9	259.2	267.7	276.0	282.0
117.5°	253.9	255.7	257.4	259.2	261.0	266.0	274.0	282.1	290.2	298.3	303.7
120°	271.6	272.9	274.0	275.1	276.2	280.6	288.2	295.8	303.3	310.9	316.4
122.5°	289.1	289.6	289.9	290.2	290.7	294.5	301.9	309.3	316.6	324.0	329.3
125°	313.1	313.1	313.2	313.2	313.3	316.6	323.0	329.5	336.0	342.3	347.7
127.5°	336.5	336.3	336.1	336.0	335.8	338.5	344.0	349.4	354.9	360.3	365.1
130°	350.9	350.7	350.5	350.3	350.2	352.3	356.8	361.3	365.8	370.2	375.1
132.5°	364.9	364.8	364.7	364.5	364.5	366.3	370.0	373.7	377.4	381.2	385.8
135°	384.8	384.7	384.6	384.5	384.4	385.5	387.7	389.9	392.1	394.3	398.7
137.5°	403.5	403.2	402.9	402.8	402.5	403.0	404.3	405.6	406.9	408.2	412.2
140°	415.6	415.5	415.4	415.3	415.3	415.4	415.9	416.3	416.7	417.2	420.9
142.5°	425.6	425.9	426.1	426.4	426.6	426.7	426.6	426.6	426.5	426.5	429.7
145°	442.1	442.1	442.1	442.1	442.1	442.1	442.1	442.1	442.1	442.1	443.8
147.5°	455.5	455.7	455.9	456.2	456.3	456.4	456.3	456.2	456.2	456.1	456.3
150°	465.1	465.2	465.3	465.4	465.5	465.5	465.4	465.3	465.2	465.1	465.1
152.5°	472.3	472.5	472.8	472.9	473.2	473.2	473.1	472.9	472.8	472.6	472.8
155°	483.5	483.5	483.6	483.7	483.8	483.7	483.5	483.2	482.9	482.7	483.0
157.5°	493.1	493.0	492.9	492.9	492.8	492.7	492.4	492.1	491.8	491.5	492.0
160°	498.7	498.4	498.2	497.9	497.7	497.5	497.4	497.3	497.2	497.1	497.7
162.5°	503.7	503.3	503.0	502.7	502.4	502.1	502.0	502.0	501.9	501.8	502.3
165°	510.0	509.5	509.1	508.7	508.2	508.1	508.1	508.1	508.1	508.1	508.8
167.5°	515.0	514.5	514.1	513.7	513.2	512.9	512.9	512.8	512.8	512.7	513.5
170°	517.8	517.3	516.8	516.3	515.7	515.5	515.6	515.7	515.7	515.8	516.5
172.5°	519.7	519.2	518.7	518.1	517.6	517.4	517.5	517.5	517.6	517.7	518.4
175°	521.7	521.2	520.6	520.1	519.6	519.4	519.5	519.6	519.7	519.8	520.6
177.5°	522.6	522.2	521.7	521.2	520.7	520.6	520.6	520.8	520.9	521.1	521.6
180°	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1059.4	1060.8	1062.3	1062.9	1062.7	1062.5	1062.3	1062.1
5°	1056.5	1058.7	1060.8	1061.7	1061.4	1061.2	1060.9	1060.7
7.5°	1050.9	1053.3	1055.7	1056.7	1056.4	1056.2	1055.9	1055.7
10°	1045.2	1047.6	1050.0	1051.0	1050.8	1050.5	1050.2	1050.0
12.5°	1037.2	1039.3	1041.5	1042.6	1042.5	1042.4	1042.4	1042.3
15°	1022.6	1024.9	1027.3	1028.4	1028.1	1027.9	1027.6	1027.3
17.5°	1004.8	1007.3	1009.7	1010.8	1010.6	1010.4	1010.1	1010.0
20°	990.9	993.6	996.3	997.6	997.6	997.6	997.6	997.6
22.5°	974.7	977.4	980.1	981.6	982.1	982.4	982.8	983.3
25°	949.9	952.7	955.6	957.3	957.5	957.8	958.0	958.3
27.5°	921.8	924.5	927.2	928.7	929.0	929.4	929.6	930.0
30°	902.2	905.1	908.0	909.7	910.2	910.8	911.4	911.9
32.5°	882.1	885.5	888.8	890.7	891.2	891.7	892.3	892.9
35°	850.2	853.9	857.6	859.9	860.7	861.4	862.3	863.1
37.5°	817.0	820.8	824.5	826.8	827.7	828.5	829.3	830.2
40°	793.6	797.5	801.6	804.1	805.1	806.2	807.3	808.3
42.5°	770.7	775.1	779.5	782.0	782.9	783.8	784.6	785.4
45°	735.1	739.7	744.2	747.1	748.4	749.7	751.1	752.3
47.5°	697.6	702.2	707.0	710.1	711.6	713.3	714.8	716.4
50°	671.2	676.6	681.8	685.3	686.9	688.5	690.0	691.6
52.5°	644.6	649.9	655.2	658.6	660.2	661.8	663.4	665.0
55°	604.6	609.9	615.2	618.6	620.2	621.8	623.4	625.0
57.5°	562.6	568.9	575.1	579.0	580.5	582.0	583.5	585.0
60°	533.6	539.7	545.7	549.8	552.0	554.1	556.2	558.3
62.5°	505.0	511.1	517.2	521.2	523.4	525.5	527.6	529.8
65°	460.8	467.4	474.1	478.5	480.5	482.7	484.7	486.9
67.5°	417.5	424.2	430.9	435.3	437.4	439.5	441.5	443.6
70°	386.8	394.0	401.1	405.7	407.5	409.4	411.2	413.1
72.5°	357.9	364.8	371.8	376.3	378.3	380.4	382.5	384.5
75°	313.6	321.0	328.4	333.3	335.7	338.1	340.4	342.9
77.5°	272.4	279.9	287.4	292.5	295.0	297.6	300.1	302.6
80°	245.6	253.6	261.5	266.5	268.6	270.8	272.9	275.0
82.5°	219.4	227.6	235.7	240.9	243.2	245.6	247.9	250.2
85°	182.5	190.5	198.4	203.7	206.4	209.0	211.6	214.3
87.5°	153.2	161.0	168.8	173.8	176.2	178.6	180.9	183.3
90°	142.8	151.0	159.2	164.5	166.8	169.0	171.3	173.6
92.5°	136.4	144.4	152.3	157.4	159.5	161.7	163.8	166.0
95°	127.5	135.2	142.8	147.8	150.3	152.8	155.2	157.7
97.5°	120.5	127.4	134.4	139.1	141.5	143.8	146.2	148.5
100°	119.0	124.7	130.4	134.1	136.0	138.0	139.9	141.9
102.5°	150.5	141.5	132.5	129.1	131.2	133.3	135.3	137.4
105°	215.1	222.5	229.9	233.1	232.0	231.1	230.1	229.0
107.5°	237.2	244.1	251.0	255.5	257.8	260.0	262.3	264.5
110°	252.4	258.7	264.9	269.3	271.6	274.1	276.4	278.8



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CATALOG NUMBER: S124DIW-S1020D470U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	266.5	272.3	278.2	282.3	284.8	287.2	289.6	292.1
115°	288.0	294.0	300.0	303.9	305.7	307.6	309.4	311.3
117.5°	309.2	314.6	320.1	323.9	326.0	328.0	330.1	332.2
120°	321.8	327.4	332.8	336.5	338.5	340.4	342.3	344.3
122.5°	334.8	340.2	345.5	349.1	350.9	352.6	354.3	356.0
125°	352.9	358.3	363.5	367.0	368.7	370.3	372.0	373.7
127.5°	369.8	374.4	379.2	382.5	384.2	385.9	387.6	389.3
130°	380.0	384.8	389.7	392.9	394.5	396.1	397.6	399.2
132.5°	390.4	395.0	399.7	402.8	404.2	405.8	407.3	408.8
135°	403.1	407.5	411.9	415.0	416.7	418.5	420.3	422.1
137.5°	416.3	420.3	424.4	427.1	428.3	429.6	430.8	432.1
140°	424.6	428.3	432.0	434.5	435.9	437.3	438.8	440.1
142.5°	432.9	436.1	439.4	441.5	442.6	443.8	444.9	446.0
145°	445.5	447.1	448.8	450.2	451.5	452.7	453.9	455.2
147.5°	456.7	456.9	457.2	457.8	458.7	459.7	460.6	461.5
150°	465.1	465.1	465.1	465.2	465.3	465.4	465.5	465.5
152.5°	472.9	473.0	473.2	473.2	473.2	473.1	473.0	473.0
155°	483.4	483.7	484.1	484.1	483.9	483.6	483.4	483.1
157.5°	492.4	492.8	493.3	493.3	492.8	492.4	492.0	491.5
160°	498.2	498.7	499.2	499.2	498.7	498.2	497.7	497.1
162.5°	502.8	503.3	503.9	503.9	503.3	502.7	502.0	501.5
165°	509.5	510.1	510.8	510.7	510.0	509.2	508.4	507.6
167.5°	514.3	515.1	515.8	515.7	514.9	514.0	513.2	512.3
170°	517.2	517.9	518.7	518.6	517.6	516.8	515.9	515.1
172.5°	519.1	519.8	520.5	520.4	519.4	518.5	517.5	516.6
175°	521.3	522.1	522.9	522.7	521.7	520.6	519.6	518.6
177.5°	522.2	522.7	523.3	523.1	522.4	521.5	520.6	519.9
180°	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7

(END OF REPORT)