

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: P331569-930

Luminaire Tested: **S122DIW-S865D970U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331569-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S865D970U930-4F0-1E-UDD-D
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6005.7 lumens
Efficiency: N/A
Efficacy: 98.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: General Diffuse

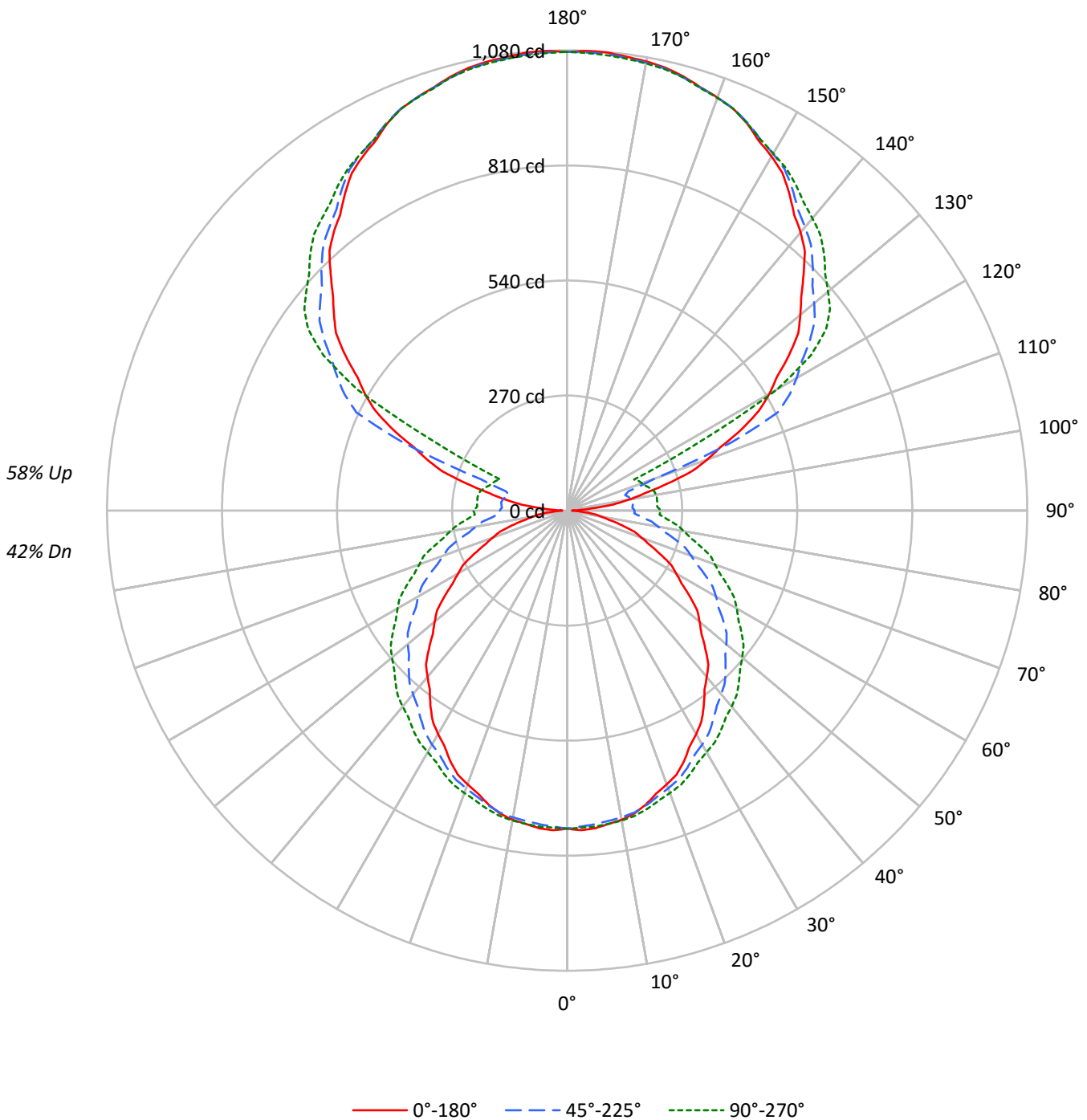
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42
1	95	90	86	82	86	82	78	75	67	65	62	54	52	50	41	40	39	33
2	86	78	71	66	78	71	65	60	58	54	50	46	43	41	36	33	32	27
3	78	68	60	54	71	62	55	50	51	46	42	41	37	34	31	29	26	22
4	71	60	52	45	64	55	47	42	45	40	35	36	32	29	28	25	22	18
5	65	53	45	38	59	49	41	36	40	34	30	32	28	25	25	22	19	16
6	60	47	39	33	54	43	36	31	36	30	26	29	25	21	22	19	17	14
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	20	17	15	12
8	51	39	31	25	46	35	28	24	29	24	20	24	20	17	19	15	13	11
9	48	35	28	22	43	32	26	21	27	22	18	22	18	15	17	14	12	10
10	44	32	25	20	40	30	23	19	25	20	16	20	16	13	16	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12053	12053	12053
5°	12111	11602	11558
10°	12036	11258	11133
15°	11869	10896	10685
20°	11659	10507	10254
25°	11452	10132	9863
30°	11160	9747	9469
35°	10866	9375	9193
40°	10556	9059	8916
45°	10260	8774	8678
50°	9944	8519	8446
55°	9611	8242	8208
60°	9207	7957	7957
65°	8784	7620	7658
70°	8310	7260	7336
75°	7704	6907	7041
80°	6744	6545	6739
85°	5835	6234	6508



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.7	1.2
10°-20°	202.8	3.4
20°-30°	307.4	5.1
30°-40°	374.4	6.2
40°-50°	402.8	6.7
50°-60°	391.1	6.5
60°-70°	341.5	5.7
70°-80°	262.9	4.4
80°-90°	179.1	3.0
90°-100°	157.5	2.6
100°-110°	220.5	3.7
110°-120°	410.7	6.8
120°-130°	613.9	10.2
130°-140°	631.7	10.5
140°-150°	576.8	9.6
150°-160°	461.8	7.7
160°-170°	297.6	5.0
170°-180°	102.4	1.7
0°-30°	580.9	9.7
0°-40°	955.3	15.9
0°-60°	1749.2	29.1
0°-90°	2532.7	42.2
90°-120°	788.6	13.1
90°-150°	2611.0	43.5
90°-180°	3473.0	57.8
0°-180°	6005.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	746	746	746	746	746	
5°	749	745	739	745	744	71
15°	714	716	716	725	725	201
25°	649	657	666	679	683	298
35°	559	578	598	621	630	349
45°	459	488	526	558	570	354
55°	352	392	447	484	500	314
65°	240	294	357	400	415	239
75°	133	194	263	308	324	141
85°	39	106	175	219	236	42
90°	12	83	158	204	220	10
95°	59	87	155	198	212	69
105°	242	285	141	185	202	259
115°	452	480	546	233	173	445
125°	636	648	695	728	742	567
135°	785	798	815	844	853	606
145°	909	909	922	933	935	569
155°	1001	995	1003	1007	1002	461
165°	1055	1051	1052	1057	1052	298
175°	1079	1074	1075	1080	1073	103
180°	1077	1077	1077	1077	1077	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5
2.5°	750.8	750.2	749.7	749.1	748.5	747.5	746.2	744.9	743.5	742.2	743.1
5°	748.6	748.0	747.2	746.5	745.8	744.7	743.2	741.8	740.4	738.9	740.4
7.5°	741.9	741.4	740.9	740.5	740.0	739.2	738.1	737.0	735.9	734.8	736.5
10°	736.8	736.3	735.8	735.3	734.8	734.3	733.5	732.8	732.1	731.3	733.3
12.5°	728.1	728.2	728.3	728.4	728.5	728.2	727.7	727.2	726.7	726.1	728.1
15°	714.0	714.5	715.0	715.5	715.9	716.2	716.2	716.2	716.2	716.2	718.4
17.5°	695.9	696.8	697.9	698.9	699.9	700.7	701.6	702.3	703.1	703.8	706.1
20°	683.7	684.9	686.2	687.4	688.5	689.7	690.6	691.5	692.5	693.5	696.1
22.5°	670.7	672.1	673.5	674.9	676.3	677.7	679.1	680.4	681.8	683.1	685.7
25°	649.1	650.8	652.5	654.2	655.8	657.8	659.9	662.1	664.2	666.4	669.3
27.5°	623.1	625.9	628.6	631.4	634.1	636.7	639.3	641.9	644.4	646.9	650.6
30°	605.8	608.9	612.1	615.2	618.3	621.5	624.6	627.7	630.9	634.0	637.8
32.5°	586.8	590.3	593.8	597.4	600.9	604.5	608.1	611.9	615.6	619.2	623.7
35°	559.3	563.4	567.5	571.6	575.7	580.0	584.6	589.1	593.7	598.3	603.6
37.5°	529.5	534.2	538.9	543.6	548.3	553.6	559.5	565.5	571.4	577.3	583.2
40°	509.6	514.9	520.2	525.5	530.7	536.6	543.1	549.6	556.1	562.6	568.8
42.5°	490.5	495.8	501.1	506.4	511.7	518.0	525.5	533.0	540.4	547.9	554.6
45°	458.7	465.2	471.7	478.2	484.7	492.1	500.5	509.0	517.4	525.8	533.2
47.5°	427.3	434.4	441.5	448.6	455.6	464.1	473.9	483.8	493.7	503.5	511.3
50°	405.7	413.1	420.6	428.0	435.5	444.7	455.4	466.3	477.1	488.0	496.1
52.5°	384.9	392.7	400.6	408.5	416.3	425.9	437.3	448.7	460.1	471.5	479.8
55°	351.6	360.3	368.9	377.6	386.2	396.8	409.3	421.8	434.3	446.8	455.4
57.5°	318.7	328.5	338.3	348.0	357.8	369.0	381.7	394.5	407.2	420.0	429.3
60°	295.4	305.7	316.0	326.4	336.7	348.7	362.4	376.1	389.8	403.6	412.7
62.5°	274.6	285.3	296.0	306.7	317.5	329.7	343.4	357.1	370.8	384.5	394.2
65°	240.2	251.9	263.7	275.5	287.3	300.3	314.5	328.6	342.8	357.0	366.9
67.5°	208.6	220.9	233.2	245.5	257.8	271.3	285.8	300.3	314.8	329.3	339.2
70°	186.1	198.6	211.1	223.6	236.1	249.8	264.7	279.6	294.5	309.4	319.8
72.5°	165.3	178.2	191.1	204.0	216.9	230.8	246.0	261.1	276.1	291.2	301.4
75°	133.1	146.5	160.0	173.5	186.9	201.4	216.7	232.1	247.5	262.9	273.2
77.5°	101.9	116.0	130.1	144.1	158.2	173.1	188.7	204.4	220.0	235.6	245.9
80°	81.1	95.8	110.5	125.1	139.8	154.9	170.6	186.2	201.8	217.4	227.6
82.5°	63.8	78.3	92.8	107.2	121.7	136.9	152.7	168.5	184.3	200.2	210.3
85°	39.0	53.9	68.7	83.6	98.6	113.7	129.1	144.5	159.9	175.3	185.4
87.5°	21.4	36.0	50.8	65.5	80.2	95.4	111.0	126.7	142.4	158.0	168.0
90°	11.6	27.5	43.3	59.1	75.0	91.3	108.1	124.8	141.6	158.4	168.8
92.5°	25.7	38.5	51.3	64.1	77.0	91.1	106.6	122.1	137.6	153.1	163.0
95°	59.3	64.9	70.4	76.1	81.6	92.2	107.9	123.5	139.2	154.8	164.8
97.5°	108.1	102.0	96.0	89.9	83.9	89.2	105.8	122.5	139.1	155.8	165.3
100°	145.4	130.6	115.9	101.0	86.2	87.0	103.4	119.8	136.2	152.6	162.9
102.5°	185.7	188.8	191.9	195.0	198.1	194.0	182.4	170.9	159.3	147.8	158.2
105°	242.2	254.4	266.6	278.8	290.9	279.6	244.8	210.1	175.3	140.6	150.9
107.5°	307.9	317.7	327.4	337.2	347.0	329.5	284.8	240.1	195.4	150.7	156.9
110°	349.4	357.9	366.3	374.8	383.2	368.4	330.0	291.8	253.6	215.3	205.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	389.3	396.6	403.8	411.1	418.3	421.4	420.3	419.1	417.9	416.8	361.3
115°	452.2	457.9	463.4	469.0	474.7	485.0	500.1	515.3	530.4	545.6	472.6
117.5°	507.4	512.5	517.5	522.5	527.5	536.5	549.5	562.5	575.4	588.4	576.2
120°	548.6	552.1	555.7	559.2	562.8	571.0	583.7	596.4	609.2	621.9	630.7
122.5°	583.5	586.6	589.7	592.8	596.0	603.7	616.2	628.6	641.1	653.5	661.3
125°	635.5	637.8	640.0	642.3	644.5	651.2	662.1	673.1	684.1	695.0	702.8
127.5°	683.7	685.9	688.2	690.4	692.7	698.1	706.8	715.4	724.1	732.8	740.5
130°	714.2	716.7	719.3	721.8	724.3	729.0	736.1	743.0	749.9	756.8	764.6
132.5°	745.3	747.5	749.6	751.7	753.8	757.8	763.6	769.4	775.2	781.0	788.1
135°	784.8	787.6	790.4	793.1	795.9	799.2	803.2	807.1	811.1	815.1	821.9
137.5°	825.8	827.7	829.6	831.4	833.3	835.7	838.5	841.3	844.2	847.0	853.1
140°	852.6	853.7	854.8	856.0	857.1	858.9	861.3	863.7	866.1	868.5	873.8
142.5°	875.0	876.0	877.0	878.0	879.1	880.7	883.0	885.3	887.5	889.8	894.3
145°	909.1	909.0	908.8	908.7	908.5	909.9	912.8	915.7	918.7	921.6	924.2
147.5°	939.9	939.1	938.5	937.8	937.2	938.3	941.3	944.1	947.1	950.0	951.0
150°	959.8	958.5	957.3	956.2	955.0	955.7	958.5	961.2	964.0	966.8	967.8
152.5°	976.6	975.3	973.9	972.6	971.2	971.8	974.4	977.1	979.7	982.4	983.4
155°	1001.1	999.5	997.9	996.4	994.8	995.1	997.2	999.2	1001.4	1003.4	1004.4
157.5°	1020.3	1019.0	1017.6	1016.3	1015.0	1015.0	1016.5	1018.0	1019.4	1020.8	1022.1
160°	1031.4	1030.5	1029.4	1028.3	1027.3	1027.3	1028.3	1029.4	1030.5	1031.4	1032.5
162.5°	1041.5	1040.4	1039.3	1038.3	1037.3	1037.2	1038.1	1039.0	1039.9	1040.8	1042.0
165°	1054.8	1053.8	1052.7	1051.7	1050.7	1050.4	1050.9	1051.4	1052.0	1052.5	1053.7
167.5°	1064.8	1063.7	1062.7	1061.7	1060.6	1060.4	1060.9	1061.4	1061.8	1062.3	1063.5
170°	1070.4	1069.3	1068.4	1067.3	1066.2	1065.9	1066.2	1066.6	1067.0	1067.3	1068.5
172.5°	1074.2	1073.1	1072.0	1071.1	1070.0	1069.7	1070.0	1070.3	1070.7	1071.1	1072.3
175°	1079.0	1077.7	1076.5	1075.4	1074.2	1073.7	1074.1	1074.4	1074.7	1075.1	1076.3
177.5°	1079.8	1078.8	1077.8	1076.8	1075.9	1075.5	1075.6	1075.7	1075.9	1076.0	1077.0
180°	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5
2.5°	744.0	745.0	746.0	746.3	745.9	745.5	745.1	744.8
5°	741.8	743.2	744.7	745.3	745.0	744.8	744.5	744.3
7.5°	738.3	740.0	741.8	742.5	742.2	742.0	741.8	741.5
10°	735.2	737.1	739.1	739.9	739.6	739.4	739.2	738.9
12.5°	730.0	731.9	733.9	734.7	734.4	734.2	733.9	733.7
15°	720.5	722.7	724.9	725.8	725.5	725.3	725.0	724.9
17.5°	708.4	710.6	712.9	714.0	714.0	714.0	714.0	714.0
20°	698.8	701.4	704.0	705.4	705.4	705.4	705.4	705.4
22.5°	688.4	691.0	693.7	695.2	695.5	695.9	696.3	696.8
25°	672.2	675.1	678.0	679.8	680.4	681.2	681.9	682.7
27.5°	654.3	657.9	661.5	663.7	664.2	664.7	665.3	665.8
30°	641.6	645.5	649.4	651.7	652.3	653.1	653.8	654.5
32.5°	628.1	632.5	636.9	639.8	641.1	642.4	643.7	645.0
35°	608.9	614.2	619.5	622.9	624.6	626.3	627.9	629.7
37.5°	589.0	594.8	600.7	604.5	606.3	608.1	609.9	611.7
40°	575.0	581.3	587.6	591.7	593.9	596.1	598.3	600.5
42.5°	561.5	568.3	575.2	579.7	581.8	584.0	586.1	588.3
45°	540.7	548.1	555.6	560.5	563.0	565.3	567.8	570.1
47.5°	519.1	526.8	534.7	539.9	542.5	545.2	547.8	550.5
50°	504.3	512.4	520.7	526.0	528.6	531.3	533.9	536.6
52.5°	488.2	496.6	504.9	510.5	513.4	516.2	519.0	521.9
55°	464.1	472.8	481.4	487.3	490.4	493.6	496.7	499.8
57.5°	438.6	447.9	457.3	463.6	466.7	469.9	473.0	476.2
60°	421.8	431.0	440.1	446.3	449.7	453.1	456.4	459.8
62.5°	403.9	413.6	423.3	429.8	432.9	436.1	439.3	442.5
65°	376.7	386.6	396.5	402.9	406.0	409.2	412.3	415.4
67.5°	349.2	359.1	369.2	375.8	379.0	382.3	385.6	388.8
70°	330.1	340.4	350.7	357.3	360.3	363.1	366.1	368.9
72.5°	311.5	321.6	331.8	338.6	342.1	345.5	349.0	352.5
75°	283.6	293.9	304.3	311.0	314.1	317.2	320.3	323.5
77.5°	256.2	266.5	276.8	283.6	287.0	290.3	293.8	297.1
80°	237.7	247.8	257.9	264.6	267.9	271.3	274.7	278.0
82.5°	220.4	230.4	240.5	247.2	250.4	253.5	256.7	259.8
85°	195.4	205.5	215.6	222.4	225.8	229.1	232.4	235.9
87.5°	178.0	188.0	198.0	204.6	207.7	210.8	213.9	217.1
90°	179.4	189.8	200.3	207.2	210.4	213.6	216.9	220.1
92.5°	172.8	182.7	192.6	199.1	202.2	205.3	208.3	211.4
95°	174.8	184.8	194.8	201.1	203.9	206.6	209.3	212.0
97.5°	175.0	184.5	194.1	200.5	203.5	206.5	209.6	212.6
100°	173.2	183.4	193.7	200.3	203.3	206.4	209.3	212.3
102.5°	168.8	179.3	189.8	196.6	199.7	202.8	206.0	209.1
105°	161.2	171.5	181.8	188.7	192.0	195.3	198.7	202.0
107.5°	163.0	169.1	175.3	180.0	183.4	186.7	190.0	193.3
110°	196.1	186.5	176.8	173.7	177.0	180.3	183.7	187.0



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CATALOG NUMBER: S122DIW-S865D970U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	305.9	250.4	194.9	168.8	172.0	175.2	178.4	181.6
115°	399.7	326.8	253.8	212.5	202.6	192.8	183.0	173.2
117.5°	563.9	551.6	539.3	514.0	475.5	436.9	398.4	360.0
120°	639.5	648.3	657.1	651.2	630.5	609.7	589.0	568.3
122.5°	669.0	676.9	684.6	687.4	685.1	682.8	680.5	678.2
125°	710.5	718.2	725.9	731.1	733.8	736.5	739.2	741.8
127.5°	748.2	755.9	763.7	768.7	770.9	773.1	775.3	777.6
130°	772.3	779.9	787.6	792.3	794.0	795.8	797.5	799.3
132.5°	795.4	802.6	809.8	814.2	816.0	817.7	819.5	821.3
135°	828.7	835.4	842.2	846.4	848.0	849.5	851.1	852.7
137.5°	859.2	865.4	871.5	875.1	876.1	877.2	878.2	879.2
140°	879.3	884.7	890.1	893.1	893.6	894.2	894.8	895.4
142.5°	898.8	903.3	907.8	910.2	910.6	911.0	911.3	911.7
145°	926.9	929.6	932.2	933.8	934.1	934.4	934.7	935.1
147.5°	952.2	953.2	954.3	954.8	954.6	954.5	954.4	954.2
150°	968.9	969.9	970.9	971.0	970.2	969.3	968.4	967.6
152.5°	984.5	985.5	986.5	986.5	985.4	984.2	983.1	981.9
155°	1005.5	1006.5	1007.5	1007.4	1006.0	1004.6	1003.2	1001.8
157.5°	1023.2	1024.4	1025.6	1025.5	1024.1	1022.8	1021.4	1020.1
160°	1033.6	1034.5	1035.6	1035.5	1034.3	1033.1	1031.9	1030.7
162.5°	1043.2	1044.3	1045.5	1045.4	1043.8	1042.4	1040.9	1039.4
165°	1054.9	1056.1	1057.4	1057.4	1056.1	1054.9	1053.7	1052.5
167.5°	1064.7	1065.9	1067.1	1067.0	1065.4	1063.9	1062.3	1060.8
170°	1069.8	1070.9	1072.1	1072.0	1070.4	1068.9	1067.3	1065.8
172.5°	1073.4	1074.6	1075.9	1075.7	1074.2	1072.6	1071.1	1069.5
175°	1077.5	1078.7	1079.9	1079.7	1077.9	1076.2	1074.5	1072.8
177.5°	1078.0	1078.9	1079.9	1079.8	1078.5	1077.3	1076.0	1074.8
180°	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6

(END OF REPORT)