

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: P332647-927

Luminaire Tested: **S124DIP-S1020D810U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332647-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D810U927-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5558.3 lumens  
Efficiency: N/A  
Efficacy: 102.2 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

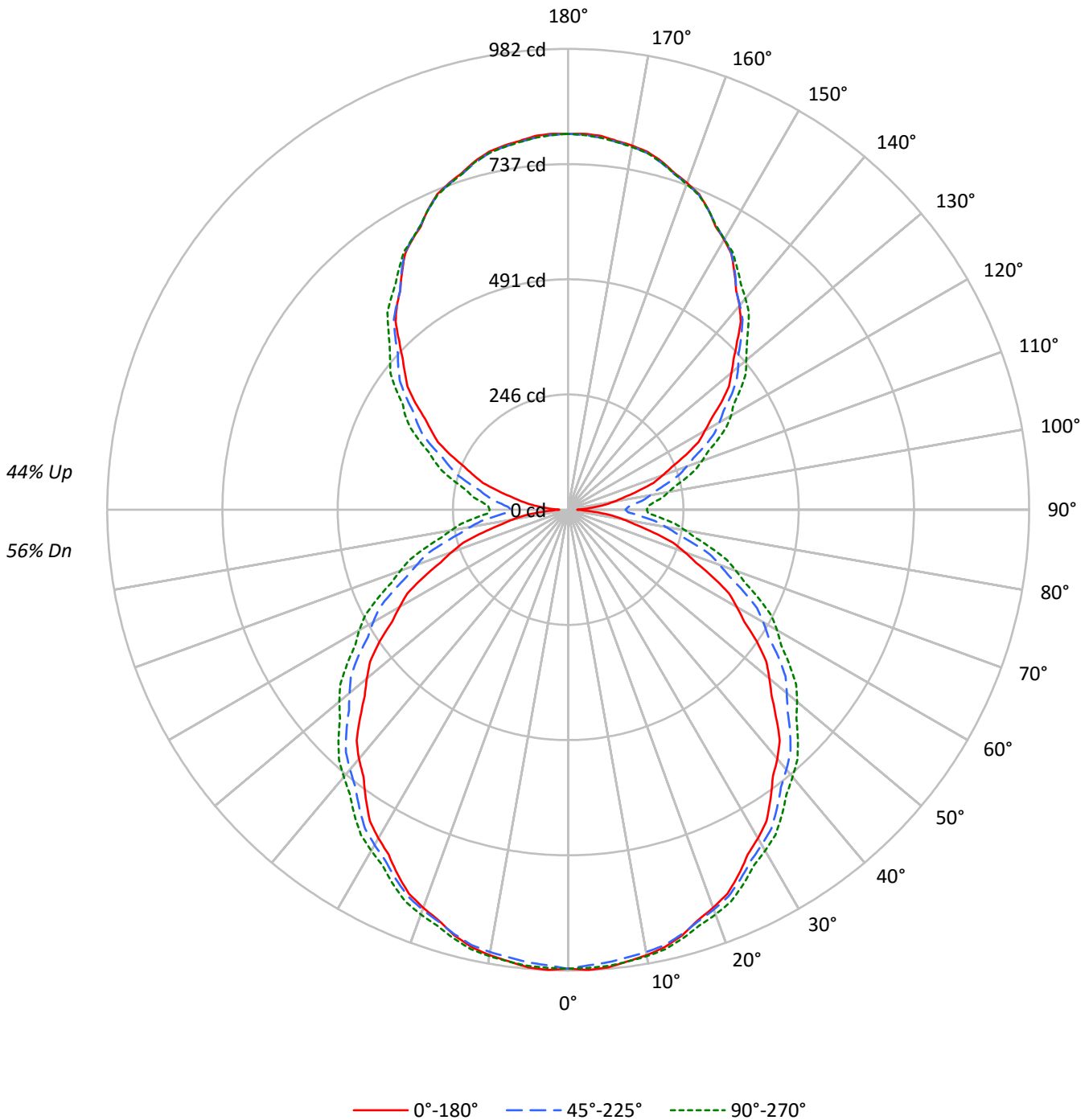
Input Watts (W): 54.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	101	101	101	86	86	86	73	73	73	61	61	61	56
1	98	93	89	85	91	86	83	79	74	71	69	63	61	59	52	51	49	44
2	89	81	74	68	82	75	69	64	64	60	56	54	51	48	45	43	41	36
3	81	70	63	56	74	66	59	53	56	51	46	48	44	40	40	37	34	30
4	74	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	26
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	32	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	26	29	25	22	19
7	57	45	36	30	53	42	34	29	36	30	26	31	26	23	26	22	19	17
8	53	40	32	27	49	38	31	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	35	27	23	30	24	20	26	21	18	22	18	16	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.6	1.7
10°-20°	265.4	4.8
20°-30°	401.3	7.2
30°-40°	485.5	8.7
40°-50°	513.3	9.2
50°-60°	483.1	8.7
60°-70°	400.8	7.2
70°-80°	281.5	5.1
80°-90°	161.5	2.9
90°-100°	147.3	2.7
100°-110°	226.4	4.1
110°-120°	312.5	5.6
120°-130°	376.6	6.8
130°-140°	404.7	7.3
140°-150°	388.8	7.0
150°-160°	325.0	5.8
160°-170°	216.2	3.9
170°-180°	75.7	1.4
0°-30°	759.3	13.7
0°-40°	1244.8	22.4
0°-60°	2241.1	40.3
0°-90°	3084.9	55.5
90°-120°	686.2	12.3
90°-150°	1856.3	33.4
90°-180°	2473.0	44.5
0°-180°	5558.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	19	70	122	156	168	14
95°	51	94	142	173	184	53
105°	154	178	220	248	260	164
115°	277	288	320	343	351	273
125°	398	398	423	442	448	355
135°	509	513	521	536	542	394
145°	617	619	619	625	628	386
155°	706	706	705	708	705	325
165°	769	767	766	769	767	217
175°	800	797	796	800	796	76
180°	801	801	801	801	801	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	32.8	43.0	53.2	63.5	73.8	84.3	95.1	106.1	116.9	127.8	135.1
90°	19.4	30.7	41.9	53.2	64.4	75.8	87.4	98.9	110.5	122.1	129.9
92.5°	29.9	40.4	50.9	61.4	71.9	82.8	94.0	105.2	116.5	127.7	135.1
95°	51.4	60.7	69.9	79.2	88.5	98.5	109.6	120.5	131.4	142.4	149.3
97.5°	77.8	85.7	93.6	101.6	109.5	118.9	129.9	140.9	151.9	163.0	169.8
100°	98.8	105.6	112.5	119.4	126.3	135.1	145.8	156.5	167.2	178.0	184.8
102.5°	121.5	127.3	133.1	138.9	144.7	152.7	163.1	173.6	184.0	194.4	201.2
105°	154.2	159.1	164.1	169.2	174.2	181.5	191.0	200.6	210.2	219.7	226.2
107.5°	190.4	194.6	198.8	203.0	207.1	213.5	222.0	230.7	239.3	247.9	254.3
110°	214.4	218.1	221.7	225.5	229.1	235.1	243.5	251.9	260.3	268.6	274.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	239.2	242.3	245.4	248.5	251.5	257.1	264.9	272.8	280.7	288.6	293.9
115°	276.6	278.8	281.0	283.2	285.3	290.2	297.7	305.2	312.8	320.3	325.5
117.5°	312.8	314.2	315.6	317.0	318.5	322.7	329.8	336.8	343.9	350.9	355.5
120°	336.2	337.5	338.7	340.0	341.4	345.3	351.9	358.5	365.2	371.9	376.0
122.5°	361.5	361.8	362.2	362.6	362.9	366.4	372.8	379.3	385.8	392.3	396.6
125°	397.7	397.4	397.2	396.9	396.6	399.5	405.4	411.5	417.4	423.3	427.7
127.5°	431.3	431.4	431.6	431.7	431.9	434.2	438.7	443.1	447.6	452.0	456.1
130°	454.2	454.3	454.5	454.6	454.8	456.9	460.7	464.6	468.6	472.5	476.6
132.5°	478.4	478.5	478.6	478.6	478.6	480.2	483.2	486.2	489.2	492.2	496.1
135°	509.4	510.2	511.0	511.9	512.7	514.0	515.7	517.4	519.1	520.8	524.4
137.5°	544.3	544.5	544.6	544.8	544.9	545.5	546.5	547.6	548.7	549.7	552.9
140°	567.6	567.7	567.7	567.8	567.8	567.9	568.2	568.4	568.6	568.9	571.9
142.5°	588.0	588.3	588.5	588.7	589.0	588.9	588.7	588.4	588.2	588.0	590.7
145°	617.3	617.6	617.9	618.2	618.5	618.8	618.9	619.0	619.2	619.3	620.7
147.5°	646.6	647.0	647.4	647.8	648.2	648.4	648.2	648.2	648.0	647.9	648.0
150°	664.4	664.7	665.0	665.3	665.6	665.7	665.7	665.7	665.7	665.7	665.7
152.5°	680.3	680.6	680.9	681.2	681.5	681.7	681.8	681.9	682.0	682.1	682.5
155°	706.0	706.0	706.0	706.0	706.0	705.9	705.8	705.7	705.5	705.4	705.9
157.5°	727.9	727.5	727.3	727.1	726.8	726.7	726.7	726.7	726.6	726.6	727.0
160°	740.7	740.5	740.5	740.3	740.1	740.0	739.9	739.7	739.6	739.5	739.9
162.5°	752.6	752.3	751.9	751.5	751.1	750.9	750.8	750.7	750.5	750.4	751.1
165°	768.6	768.2	767.8	767.3	766.9	766.6	766.3	766.0	765.7	765.5	766.3
167.5°	780.9	780.2	779.7	779.1	778.6	778.2	778.2	778.3	778.3	778.3	779.2
170°	787.7	787.1	786.4	785.7	785.1	784.7	784.9	785.1	785.1	785.3	786.1
172.5°	792.7	792.2	791.5	791.0	790.4	790.1	790.2	790.2	790.2	790.3	791.2
175°	799.5	798.8	798.1	797.5	796.8	796.4	796.2	796.1	796.0	795.8	796.8
177.5°	801.8	801.2	800.7	800.1	799.5	799.3	799.3	799.3	799.3	799.3	800.0
180°	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	142.3	149.5	156.7	161.4	163.6	165.8	168.0	170.2
90°	137.8	145.7	153.6	158.7	160.9	163.1	165.3	167.5
92.5°	142.4	149.8	157.2	161.8	164.0	166.1	168.2	170.3
95°	156.3	163.3	170.3	174.9	177.1	179.3	181.5	183.6
97.5°	176.7	183.5	190.4	194.9	197.0	199.1	201.2	203.3
100°	191.7	198.5	205.4	209.7	211.4	213.1	214.8	216.5
102.5°	207.9	214.7	221.5	225.9	227.8	229.9	231.9	233.9
105°	232.7	239.2	245.7	250.1	252.5	254.8	257.2	259.5
107.5°	260.6	267.0	273.4	277.4	279.2	280.9	282.6	284.3
110°	279.3	284.6	289.9	293.8	296.1	298.5	300.9	303.2





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CATALOG NUMBER: S124DIP-S1020D810U927-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	299.3	304.6	310.0	313.6	315.7	317.7	319.7	321.8
115°	330.7	335.9	341.1	344.5	346.1	347.7	349.2	350.8
117.5°	360.1	364.7	369.3	372.5	374.1	375.8	377.5	379.1
120°	380.2	384.4	388.6	391.8	394.0	396.2	398.5	400.7
122.5°	401.1	405.4	409.9	412.6	413.9	415.2	416.5	417.7
125°	432.0	436.3	440.7	443.5	444.7	445.8	447.0	448.2
127.5°	460.3	464.4	468.5	471.3	472.7	474.1	475.5	477.0
130°	480.6	484.7	488.9	491.4	492.3	493.2	494.1	495.0
132.5°	500.0	504.0	507.9	510.4	511.7	512.9	514.1	515.4
135°	528.1	531.6	535.3	537.6	538.7	539.7	540.7	541.8
137.5°	556.1	559.3	562.4	564.7	566.0	567.4	568.6	569.9
140°	574.9	578.0	581.0	583.0	584.1	585.2	586.3	587.3
142.5°	593.4	596.2	598.9	600.8	601.7	602.8	603.8	604.8
145°	621.9	623.3	624.6	625.6	626.1	626.7	627.2	627.8
147.5°	648.1	648.2	648.2	648.6	649.3	649.9	650.5	651.2
150°	665.7	665.7	665.7	665.7	665.6	665.4	665.3	665.1
152.5°	682.8	683.1	683.4	683.4	683.1	682.7	682.4	682.0
155°	706.5	707.0	707.6	707.6	707.0	706.5	705.9	705.4
157.5°	727.4	727.9	728.3	728.2	727.8	727.3	726.8	726.4
160°	740.3	740.7	741.1	741.0	740.3	739.6	738.9	738.2
162.5°	751.9	752.6	753.4	753.4	752.7	752.0	751.3	750.6
165°	767.1	767.9	768.8	768.9	768.3	767.8	767.2	766.8
167.5°	780.0	780.9	781.6	781.6	780.8	779.9	779.1	778.2
170°	787.0	787.7	788.6	788.5	787.6	786.6	785.6	784.7
172.5°	792.1	793.1	794.0	794.0	793.1	792.0	791.1	790.1
175°	797.7	798.7	799.7	799.7	798.7	797.7	796.8	795.8
177.5°	800.8	801.6	802.4	802.3	801.5	800.6	799.7	798.8
180°	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7

(END OF REPORT)