

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: P332808-930

Luminaire Tested: **S124DIW-S1020D470U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332808-930
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: S124DIW-S1020D470U930-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4758.2 lumens
Efficiency: N/A
Efficacy: 103.0 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

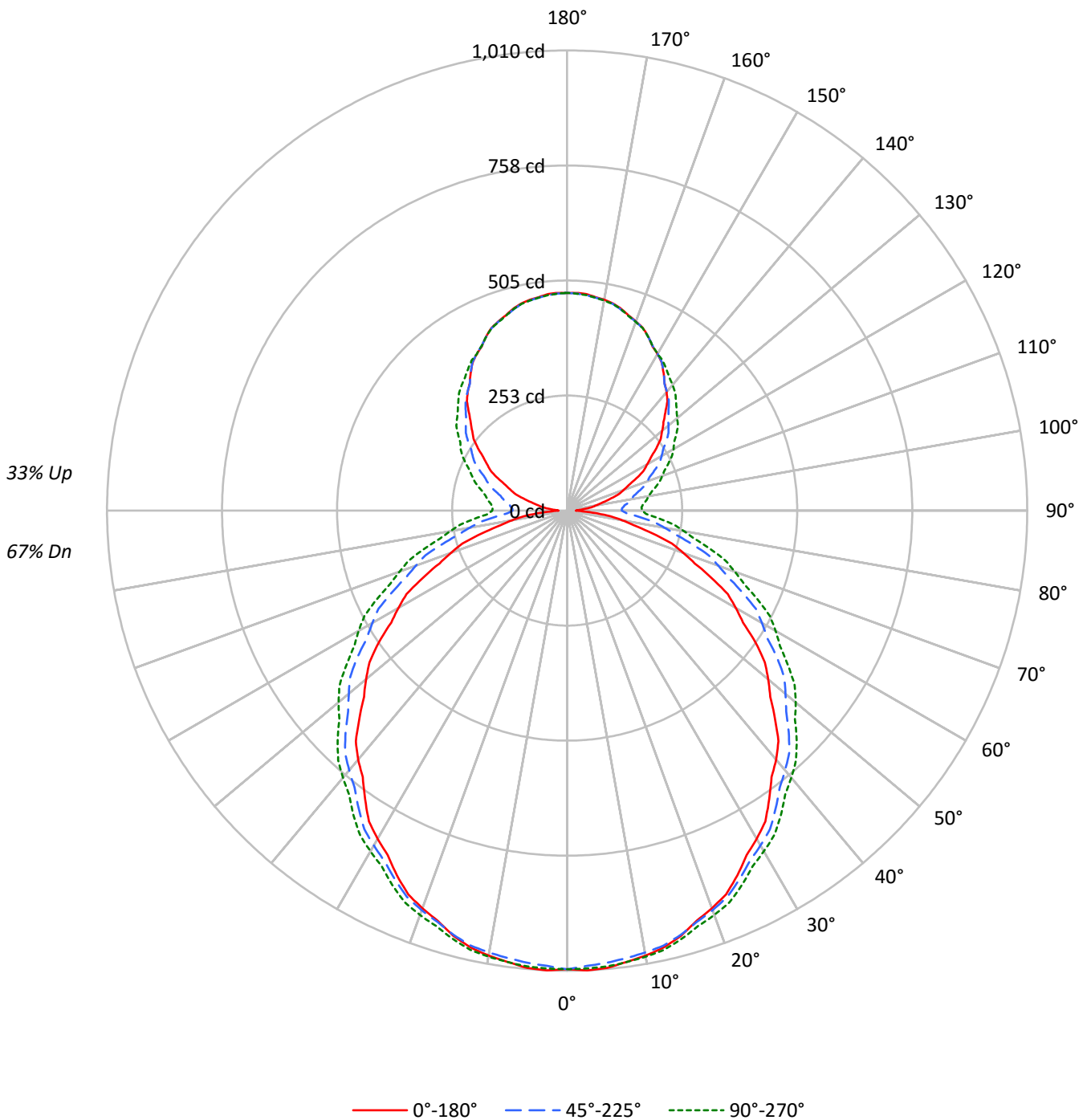
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71	67
1	100	95	91	87	94	90	86	82	79	76	73	70	67	65	61	59	58	53
2	91	82	75	70	85	78	71	66	69	64	60	61	57	53	53	50	48	44
3	82	72	64	57	77	68	61	55	60	54	50	53	48	45	46	43	40	36
4	75	63	55	48	70	60	52	46	53	47	42	47	42	38	41	37	34	31
5	69	56	48	41	65	53	45	39	47	41	36	42	37	33	37	33	29	26
6	63	51	42	36	59	48	40	34	43	36	31	38	33	28	33	29	26	23
7	59	46	37	31	55	43	35	30	39	32	27	34	29	25	30	26	23	20
8	55	41	33	28	51	39	32	26	35	29	24	32	26	22	28	24	20	18
9	51	38	30	25	48	36	29	24	32	26	22	29	24	20	26	21	18	16
10	47	35	27	22	45	33	26	21	30	24	20	27	22	18	24	20	17	15

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	2.0
10°-20°	273.1	5.7
20°-30°	413.0	8.7
30°-40°	499.7	10.5
40°-50°	528.2	11.1
50°-60°	497.1	10.4
60°-70°	412.5	8.7
70°-80°	289.7	6.1
80°-90°	165.2	3.5
90°-100°	128.8	2.7
100°-110°	165.3	3.5
110°-120°	206.7	4.3
120°-130°	236.1	5.0
130°-140°	246.4	5.2
140°-150°	232.9	4.9
150°-160°	193.9	4.1
160°-170°	129.0	2.7
170°-180°	45.2	0.9
0°-30°	781.4	16.4
0°-40°	1281.1	26.9
0°-60°	2306.5	48.5
0°-90°	3173.9	66.7
90°-120°	500.8	10.5
90°-150°	1216.2	25.6
90°-180°	1584.0	33.3
0°-180°	4758.2	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°	19	68	120	153	164	13
95°	37	78	126	156	168	36
105°	96	120	162	190	202	103
115°	168	179	213	237	245	166
125°	239	240	266	286	292	213
135°	305	307	315	332	338	236
145°	369	369	369	376	379	231
155°	421	421	421	422	421	194
165°	458	457	457	459	457	129
175°	477	475	475	477	475	45
180°	478	478	478	478	478	



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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°	33.6	44.0	54.4	64.8	75.2	85.9	97.0	108.2	119.3	130.4	137.7
90°	19.2	30.1	41.0	51.9	62.9	74.0	85.4	96.9	108.3	119.7	127.5
92.5°	25.0	35.1	45.2	55.2	65.2	75.9	87.2	98.3	109.6	120.8	128.2
95°	36.9	45.8	54.9	63.8	72.8	82.8	93.6	104.4	115.3	126.1	133.1
97.5°	52.0	59.8	67.4	75.2	82.8	92.1	103.0	113.8	124.7	135.5	142.4
100°	64.1	70.9	77.8	84.6	91.5	100.2	110.6	121.2	131.7	142.2	149.1
102.5°	77.7	83.6	89.4	95.2	101.1	109.2	119.4	129.6	139.8	150.1	156.9
105°	96.2	101.3	106.4	111.5	116.6	123.9	133.5	143.2	152.7	162.3	168.8
107.5°	117.8	122.0	126.2	130.4	134.6	141.1	149.9	158.7	167.6	176.4	182.8
110°	131.7	135.3	139.0	142.7	146.3	152.5	161.2	169.9	178.6	187.3	192.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	146.1	149.3	152.4	155.6	158.7	164.4	172.6	180.8	189.1	197.2	202.8
115°	167.9	170.1	172.4	174.6	176.8	181.9	189.8	197.6	205.5	213.3	218.7
117.5°	189.3	190.8	192.2	193.6	195.0	199.4	206.8	214.1	221.4	228.8	233.7
120°	202.9	204.0	205.0	206.2	207.2	211.3	218.3	225.3	232.4	239.4	243.9
122.5°	218.0	218.3	218.6	218.8	219.2	222.7	229.3	236.1	242.9	249.6	254.4
125°	239.1	238.9	238.6	238.4	238.1	241.1	247.3	253.4	259.6	265.8	270.4
127.5°	259.0	259.0	259.0	259.0	259.0	261.4	266.0	270.8	275.4	280.1	284.5
130°	272.3	272.3	272.3	272.3	272.3	274.3	278.3	282.3	286.3	290.3	294.7
132.5°	286.8	286.7	286.7	286.6	286.6	288.0	291.2	294.3	297.5	300.6	304.8
135°	304.8	305.3	305.8	306.3	306.8	307.9	309.7	311.4	313.2	315.0	318.8
137.5°	325.6	325.6	325.6	325.6	325.5	326.0	327.0	328.0	329.1	330.0	333.5
140°	339.6	339.5	339.4	339.3	339.2	339.3	339.6	339.8	340.1	340.3	343.5
142.5°	351.4	351.5	351.6	351.7	351.8	351.8	351.6	351.3	351.1	350.9	353.8
145°	368.8	368.8	368.8	368.9	369.0	369.1	369.2	369.2	369.3	369.4	370.9
147.5°	386.1	386.3	386.5	386.6	386.8	386.8	386.7	386.6	386.6	386.5	386.6
150°	396.8	396.9	397.0	397.1	397.1	397.1	397.1	397.1	397.1	397.1	397.1
152.5°	405.9	406.1	406.3	406.4	406.5	406.7	406.7	406.8	406.8	406.9	407.1
155°	421.2	421.2	421.2	421.2	421.2	421.1	421.0	420.9	420.9	420.8	421.1
157.5°	434.1	434.0	433.9	433.7	433.6	433.5	433.5	433.5	433.4	433.4	433.7
160°	441.9	441.8	441.7	441.6	441.6	441.5	441.4	441.3	441.2	441.2	441.4
162.5°	449.0	448.7	448.5	448.3	448.1	447.9	447.8	447.8	447.7	447.6	448.1
165°	458.4	458.2	458.0	457.7	457.5	457.3	457.1	457.0	456.8	456.6	457.1
167.5°	465.8	465.5	465.1	464.8	464.4	464.2	464.2	464.3	464.3	464.3	464.8
170°	469.9	469.5	469.1	468.7	468.3	468.1	468.2	468.3	468.4	468.5	469.0
172.5°	472.9	472.5	472.2	471.9	471.5	471.3	471.3	471.4	471.4	471.4	472.0
175°	477.0	476.5	476.1	475.7	475.3	475.1	475.0	474.9	474.8	474.7	475.3
177.5°	478.3	477.9	477.6	477.3	477.0	476.8	476.8	476.8	476.8	476.8	477.3
180°	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7



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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°	145.0	152.5	159.8	164.6	166.8	169.1	171.3	173.6
90°	135.3	143.0	150.7	155.7	157.9	160.0	162.2	164.4
92.5°	135.5	142.9	150.3	155.0	157.1	159.2	161.3	163.4
95°	140.1	147.2	154.2	158.8	161.1	163.3	165.6	167.9
97.5°	149.2	156.0	162.9	167.5	169.6	171.7	173.9	176.0
100°	156.0	163.0	169.9	174.2	176.0	177.7	179.5	181.2
102.5°	163.7	170.5	177.2	181.6	183.7	185.7	187.8	189.7
105°	175.4	181.8	188.3	192.7	195.0	197.2	199.5	201.7
107.5°	189.1	195.6	201.9	206.0	207.8	209.6	211.4	213.2
110°	198.4	204.1	209.7	213.6	215.8	218.1	220.4	222.6



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CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	208.3	213.9	219.4	223.1	225.2	227.2	229.3	231.4
115°	224.2	229.6	235.1	238.6	240.3	241.9	243.6	245.2
117.5°	238.6	243.6	248.5	251.9	253.7	255.6	257.4	259.3
120°	248.6	253.2	257.8	261.1	263.3	265.5	267.7	269.8
122.5°	259.1	263.8	268.6	271.7	273.2	274.7	276.2	277.7
125°	275.0	279.6	284.1	287.1	288.5	289.8	291.1	292.5
127.5°	288.8	293.1	297.5	300.4	302.0	303.5	305.2	306.7
130°	299.1	303.4	307.7	310.5	311.7	312.8	314.1	315.2
132.5°	308.9	313.1	317.2	320.0	321.3	322.7	324.1	325.5
135°	322.6	326.4	330.3	332.9	334.1	335.4	336.6	337.9
137.5°	336.9	340.3	343.8	346.2	347.5	348.8	350.1	351.3
140°	346.7	349.8	353.0	355.1	356.4	357.5	358.7	359.9
142.5°	356.6	359.4	362.2	364.2	365.3	366.2	367.3	368.4
145°	372.3	373.7	375.1	376.2	377.0	377.7	378.5	379.3
147.5°	386.8	386.9	387.0	387.5	388.2	388.9	389.6	390.4
150°	397.1	397.1	397.1	397.1	397.1	397.0	396.9	396.8
152.5°	407.3	407.5	407.7	407.6	407.5	407.2	407.1	406.8
155°	421.4	421.8	422.1	422.1	421.8	421.4	421.1	420.8
157.5°	433.9	434.1	434.4	434.4	434.1	433.8	433.6	433.3
160°	441.6	441.9	442.1	442.1	441.6	441.2	440.8	440.3
162.5°	448.5	449.0	449.4	449.4	449.0	448.6	448.2	447.8
165°	457.6	458.1	458.6	458.7	458.4	458.0	457.7	457.4
167.5°	465.3	465.8	466.3	466.3	465.8	465.3	464.7	464.2
170°	469.4	469.9	470.4	470.3	469.8	469.2	468.6	468.1
172.5°	472.5	473.1	473.6	473.6	473.0	472.5	471.9	471.3
175°	475.9	476.5	477.0	477.0	476.5	475.9	475.3	474.7
177.5°	477.8	478.2	478.7	478.6	478.1	477.6	477.0	476.5
180°	477.7	477.7	477.7	477.7	477.7	477.7	477.7	477.7

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