

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: P332778-940

Luminaire Tested: **S124DIW-S795D470U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332778-940  
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-S795D470U940-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 795 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: 4338.4 lumens  
Efficiency: N/A  
Efficacy: 115.1 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

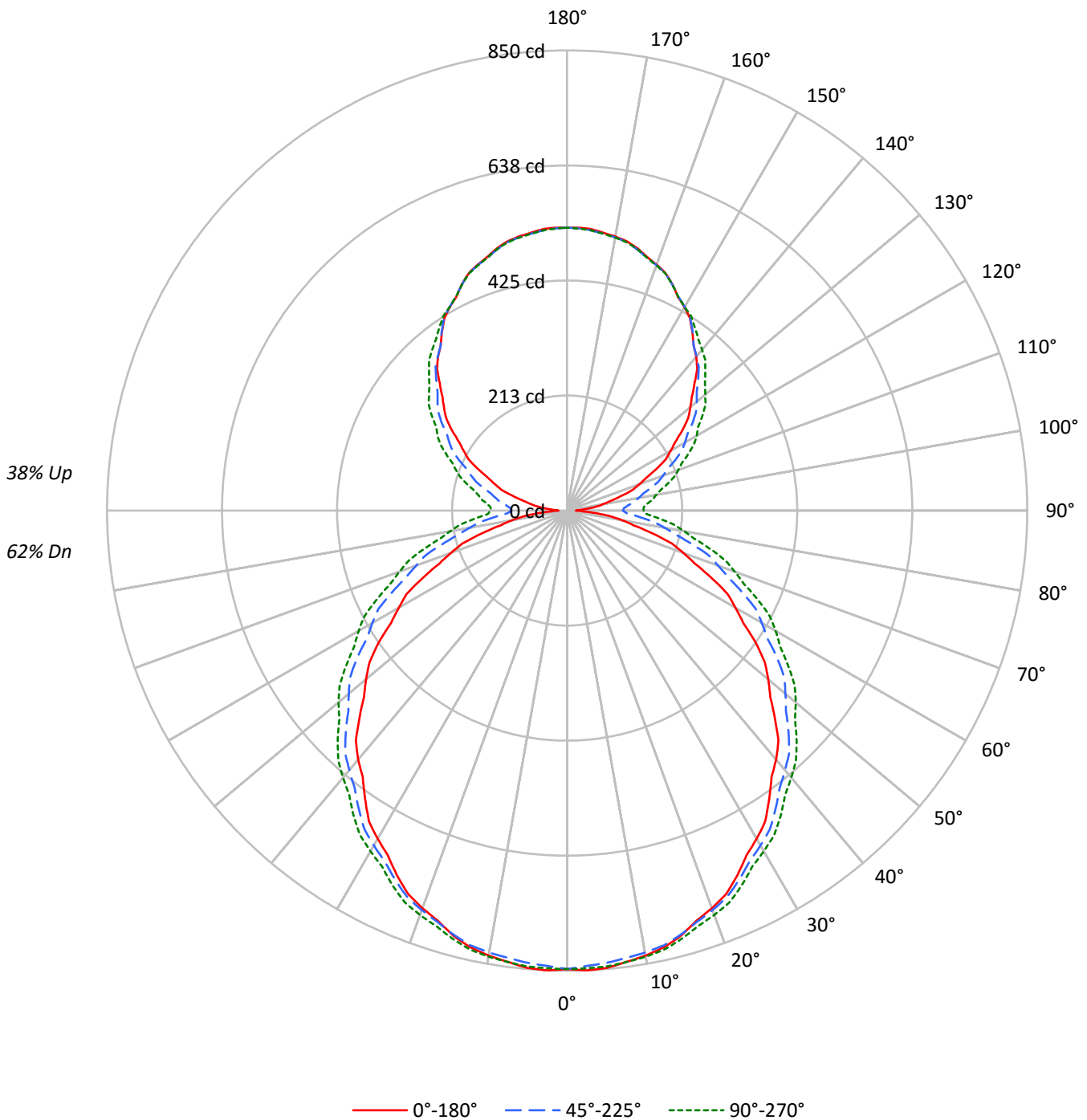
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	99	94	90	86	92	88	84	81	77	74	71	67	64	62	57	55	54	49
2	90	82	75	69	84	76	70	65	67	62	58	58	54	51	49	47	44	40
3	82	71	63	57	76	67	60	54	58	53	48	51	46	43	43	40	37	33
4	74	63	54	48	69	59	51	45	52	46	41	45	40	36	39	35	32	28
5	68	56	47	41	63	52	45	39	46	40	35	40	35	31	35	31	27	24
6	63	50	41	35	58	47	39	34	41	35	30	36	31	27	31	27	24	21
7	58	45	37	31	54	42	35	29	38	31	27	33	28	24	28	24	21	19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15
10	47	34	27	22	44	32	25	21	29	23	19	26	21	17	22	18	15	13

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

	0°	45°	90°
0°	6838	6838	6838
5°	6859	6683	6702
10°	6817	6573	6568
15°	6756	6446	6411
20°	6664	6307	6259
25°	6560	6151	6092
30°	6448	5995	5919
35°	6321	5835	5768
40°	6219	5684	5610
45°	6067	5543	5475
50°	5939	5383	5333
55°	5808	5231	5164
60°	5601	5036	5013
65°	5376	4829	4824
70°	5101	4592	4605
75°	4723	4331	4407
80°	4295	4081	4213
85°	3763	3857	4101



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	80.2	1.8
10°-20°	229.8	5.3
20°-30°	347.5	8.0
30°-40°	420.4	9.7
40°-50°	444.5	10.2
50°-60°	418.3	9.6
60°-70°	347.1	8.0
70°-80°	243.8	5.6
80°-90°	139.4	3.2
90°-100°	116.3	2.7
100°-110°	162.7	3.7
110°-120°	213.9	4.9
120°-130°	251.4	5.8
130°-140°	266.5	6.1
140°-150°	254.1	5.9
150°-160°	212.1	4.9
160°-170°	141.1	3.3
170°-180°	49.4	1.1
0°-30°	657.5	15.2
0°-40°	1077.9	24.8
0°-60°	1940.7	44.7
0°-90°	2671.0	61.6
90°-120°	492.9	11.4
90°-150°	1264.9	29.2
90°-180°	1667.0	38.4
0°-180°	4338.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	847	847	847	847	847	
5°	848	845	838	846	845	80
15°	813	814	811	819	818	229
25°	744	749	752	762	764	342
35°	651	662	672	684	688	407
45°	542	561	578	594	599	419
55°	425	445	473	492	498	378
65°	294	324	357	379	388	291
75°	163	198	238	264	273	174
85°	50	90	133	160	171	54
90°	16	59	103	132	141	12
95°	37	72	113	139	149	37
105°	103	123	159	183	192	110
115°	182	192	220	240	247	180
125°	260	261	283	299	305	232
135°	333	336	342	356	361	258
145°	403	404	404	409	412	252
155°	461	461	460	462	460	212
165°	501	500	499	502	500	141
175°	522	520	519	522	519	49
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°	847.0	847.0	847.0	847.0	847.0	847.0	847.0	847.0	847.0	847.0	847.0
2.5°	850.1	849.5	849.0	848.6	848.0	847.1	845.7	844.4	843.0	841.7	842.8
5°	847.9	847.3	846.7	846.1	845.4	844.4	842.8	841.4	839.9	838.5	840.2
7.5°	840.7	840.3	840.0	839.6	839.2	838.4	837.2	836.0	834.7	833.6	835.4
10°	834.6	834.5	834.3	834.0	833.8	833.2	832.1	831.1	830.0	828.9	830.9
12.5°	826.3	826.3	826.3	826.2	826.2	825.8	825.1	824.3	823.6	822.9	824.7
15°	812.9	813.1	813.2	813.5	813.7	813.5	812.9	812.3	811.5	810.9	812.9
17.5°	794.4	795.0	795.7	796.4	797.0	797.2	797.1	797.0	796.8	796.7	798.7
20°	781.6	782.2	782.8	783.5	784.1	784.5	784.7	784.9	785.2	785.3	787.5
22.5°	767.1	767.9	768.7	769.5	770.3	771.0	771.3	771.7	772.0	772.5	774.5
25°	743.6	744.8	746.2	747.4	748.7	749.7	750.3	750.9	751.5	752.2	754.5
27.5°	717.5	719.3	721.1	723.0	724.9	726.3	727.3	728.2	729.2	730.1	732.3
30°	700.0	701.7	703.4	705.1	706.8	708.3	709.8	711.2	712.7	714.2	716.5
32.5°	681.0	683.1	685.1	687.1	689.1	690.9	692.6	694.2	695.9	697.5	700.2
35°	650.7	653.2	655.8	658.3	660.8	663.1	665.2	667.4	669.4	671.5	674.5
37.5°	620.1	623.0	626.0	628.8	631.8	634.5	637.1	639.7	642.4	645.0	648.0
40°	600.4	603.2	605.8	608.6	611.4	614.2	617.2	620.1	623.0	626.0	629.2
42.5°	577.7	580.7	583.8	586.8	590.0	593.2	596.6	600.1	603.6	607.0	610.6
45°	542.5	546.5	550.5	554.6	558.6	562.6	566.6	570.6	574.5	578.5	582.2
47.5°	509.0	513.1	517.2	521.4	525.5	529.9	534.5	539.1	543.8	548.4	552.1
50°	484.6	489.3	493.9	498.6	503.2	507.8	512.5	517.1	521.7	526.4	530.7
52.5°	460.4	465.0	469.7	474.3	478.9	483.9	489.2	494.5	499.9	505.2	509.3
55°	424.9	429.4	433.8	438.2	442.6	448.0	454.3	460.7	467.0	473.3	477.5
57.5°	385.3	390.7	396.3	401.7	407.2	413.0	419.4	425.6	431.9	438.2	443.2
60°	359.4	365.0	370.4	375.9	381.4	387.6	394.6	401.5	408.5	415.4	420.3
62.5°	334.4	340.5	346.4	352.4	358.4	364.9	371.8	378.8	385.8	392.7	397.5
65°	294.0	300.8	307.6	314.2	321.0	328.0	335.1	342.3	349.5	356.6	361.9
67.5°	255.1	262.3	269.5	276.6	283.8	291.2	298.9	306.6	314.2	321.9	327.3
70°	228.5	235.8	242.9	250.1	257.3	264.8	272.9	280.9	288.8	296.9	302.6
72.5°	202.8	210.1	217.5	224.8	232.1	240.0	248.6	257.1	265.6	274.1	279.6
75°	163.2	170.9	178.7	186.5	194.3	202.7	211.5	220.3	229.3	238.1	244.0
77.5°	126.2	134.4	142.7	151.0	159.2	168.0	177.3	186.5	195.8	205.1	211.1
80°	103.3	111.8	120.2	128.7	137.1	146.0	155.2	164.5	173.8	183.1	189.4
82.5°	80.6	89.3	98.2	106.9	115.7	124.8	134.0	143.3	152.6	161.8	168.3
85°	50.3	59.1	67.9	76.9	85.7	94.9	104.3	113.8	123.3	132.8	139.1
87.5°	28.4	37.1	45.9	54.8	63.5	72.6	81.9	91.3	100.8	110.1	116.3
90°	16.4	25.8	35.2	44.7	54.0	63.7	73.5	83.2	93.0	102.8	109.4
92.5°	23.1	31.7	40.5	49.2	58.0	67.1	76.7	86.2	95.8	105.3	111.6
95°	36.6	44.3	52.1	59.8	67.6	76.2	85.4	94.7	104.0	113.2	119.2
97.5°	53.5	60.2	66.8	73.5	80.1	88.0	97.3	106.6	115.9	125.2	131.1
100°	67.0	72.9	78.6	84.5	90.3	97.8	106.8	115.8	124.8	133.9	139.8
102.5°	81.9	86.9	91.8	96.8	101.7	108.5	117.3	126.1	134.9	143.7	149.5
105°	102.7	107.0	111.3	115.6	119.9	126.2	134.3	142.5	150.6	158.7	164.3
107.5°	126.4	129.9	133.5	137.1	140.6	146.1	153.6	161.0	168.4	175.8	181.3
110°	141.8	144.9	148.0	151.1	154.3	159.4	166.7	174.1	181.4	188.6	193.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	157.8	160.4	163.1	165.8	168.4	173.2	180.0	186.9	193.8	200.6	205.3
115°	181.9	183.8	185.7	187.5	189.5	193.7	200.3	206.8	213.4	220.0	224.5
117.5°	205.5	206.6	207.9	209.1	210.3	213.9	220.1	226.2	232.4	238.6	242.6
120°	220.5	221.5	222.5	223.5	224.4	227.9	233.7	239.6	245.4	251.3	255.0
122.5°	237.0	237.3	237.6	237.8	238.1	241.0	246.7	252.4	258.0	263.7	267.5
125°	260.4	260.2	259.9	259.8	259.6	262.0	267.2	272.4	277.6	282.8	286.6
127.5°	282.2	282.3	282.4	282.4	282.5	284.5	288.4	292.3	296.1	300.1	303.7
130°	297.0	297.0	297.1	297.2	297.2	299.0	302.3	305.7	309.1	312.5	316.0
132.5°	312.8	312.8	312.8	312.8	312.8	314.1	316.7	319.3	322.0	324.6	328.1
135°	332.8	333.4	333.9	334.5	335.0	336.0	337.5	338.9	340.5	341.9	345.1
137.5°	355.6	355.7	355.7	355.7	355.8	356.2	357.1	357.9	358.8	359.7	362.5
140°	370.8	370.8	370.8	370.7	370.7	370.8	371.0	371.2	371.4	371.7	374.3
142.5°	384.0	384.1	384.2	384.3	384.5	384.5	384.2	384.1	383.9	383.7	386.0
145°	403.0	403.1	403.3	403.4	403.6	403.7	403.8	403.9	403.9	404.0	405.3
147.5°	422.0	422.3	422.5	422.8	422.9	423.0	422.9	422.8	422.8	422.8	422.8
150°	433.7	433.8	434.0	434.2	434.3	434.4	434.4	434.4	434.4	434.4	434.4
152.5°	444.0	444.1	444.3	444.4	444.6	444.8	444.8	444.9	445.0	445.1	445.2
155°	460.7	460.7	460.7	460.7	460.7	460.6	460.5	460.4	460.3	460.2	460.6
157.5°	474.8	474.7	474.6	474.4	474.2	474.1	474.1	474.1	474.0	474.0	474.3
160°	483.3	483.2	483.1	483.0	483.0	482.9	482.8	482.7	482.6	482.5	482.8
162.5°	491.1	490.8	490.5	490.4	490.1	489.9	489.8	489.7	489.6	489.5	490.1
165°	501.4	501.1	500.9	500.6	500.3	500.2	500.0	499.8	499.6	499.4	500.0
167.5°	509.4	509.1	508.7	508.4	507.9	507.7	507.7	507.8	507.8	507.8	508.4
170°	514.0	513.5	513.1	512.6	512.2	512.0	512.1	512.2	512.3	512.4	512.9
172.5°	517.2	516.8	516.5	516.1	515.7	515.5	515.5	515.6	515.6	515.6	516.2
175°	521.7	521.2	520.8	520.3	519.9	519.6	519.5	519.4	519.3	519.2	519.9
177.5°	523.1	522.7	522.4	522.0	521.7	521.5	521.5	521.5	521.5	521.5	522.0
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	847.0	847.0	847.0	847.0	847.0	847.0	847.0	847.0
2.5°	844.0	845.3	846.4	846.9	846.8	846.6	846.4	846.2
5°	841.9	843.6	845.2	846.0	845.7	845.5	845.3	845.1
7.5°	837.3	839.2	841.2	842.0	841.8	841.5	841.3	841.2
10°	832.8	834.6	836.6	837.4	837.2	837.0	836.8	836.6
12.5°	826.3	828.1	829.8	830.6	830.6	830.5	830.5	830.5
15°	814.8	816.6	818.5	819.4	819.2	818.9	818.8	818.5
17.5°	800.6	802.5	804.5	805.4	805.2	805.0	804.9	804.7
20°	789.5	791.7	793.8	794.9	794.9	794.9	794.9	794.9
22.5°	776.7	778.7	780.9	782.1	782.5	782.7	783.1	783.5
25°	756.8	759.1	761.4	762.7	762.9	763.1	763.3	763.6
27.5°	734.4	736.6	738.8	739.9	740.2	740.5	740.7	740.9
30°	718.8	721.1	723.4	724.9	725.3	725.7	726.1	726.6
32.5°	702.8	705.5	708.1	709.7	710.1	710.5	711.0	711.4
35°	677.4	680.4	683.3	685.1	685.7	686.3	687.1	687.7
37.5°	650.9	654.0	656.9	658.8	659.4	660.1	660.8	661.5
40°	632.3	635.5	638.6	640.6	641.5	642.3	643.2	644.0
42.5°	614.0	617.5	621.0	623.1	623.8	624.5	625.2	625.8
45°	585.8	589.3	592.9	595.2	596.3	597.4	598.4	599.4
47.5°	555.8	559.5	563.3	565.7	567.0	568.3	569.5	570.8
50°	534.8	539.0	543.2	546.0	547.2	548.6	549.8	551.1
52.5°	513.6	517.8	522.0	524.8	526.0	527.3	528.5	529.9
55°	481.7	486.0	490.2	492.9	494.2	495.4	496.7	497.9
57.5°	448.3	453.3	458.3	461.4	462.5	463.7	464.9	466.1
60°	425.2	430.0	434.8	438.1	439.8	441.5	443.2	444.9
62.5°	402.3	407.2	412.1	415.4	417.1	418.7	420.4	422.0
65°	367.2	372.5	377.7	381.2	382.9	384.6	386.2	387.9
67.5°	332.6	338.0	343.3	346.8	348.5	350.1	351.8	353.4
70°	308.3	314.0	319.7	323.2	324.7	326.2	327.6	329.1
72.5°	285.2	290.7	296.2	299.8	301.4	303.1	304.7	306.4
75°	249.9	255.7	261.7	265.6	267.5	269.4	271.3	273.1
77.5°	217.0	223.0	229.0	233.0	235.1	237.0	239.1	241.1
80°	195.7	202.1	208.4	212.3	214.0	215.7	217.4	219.1
82.5°	174.8	181.3	187.8	192.0	193.8	195.6	197.5	199.4
85°	145.4	151.8	158.1	162.3	164.4	166.5	168.6	170.8
87.5°	122.5	128.8	135.0	139.0	140.9	142.9	144.7	146.6
90°	116.1	122.7	129.4	133.7	135.5	137.4	139.3	141.2
92.5°	117.9	124.1	130.5	134.5	136.3	138.0	139.8	141.6
95°	125.1	131.1	137.1	141.0	142.9	144.8	146.7	148.6
97.5°	136.9	142.8	148.6	152.4	154.3	156.0	157.8	159.7
100°	145.6	151.5	157.4	161.0	162.6	164.0	165.5	166.9
102.5°	155.2	161.0	166.7	170.5	172.3	174.0	175.7	177.4
105°	169.9	175.4	180.9	184.7	186.6	188.6	190.6	192.5
107.5°	186.7	192.2	197.6	201.0	202.5	204.0	205.5	207.1
110°	198.0	202.6	207.3	210.6	212.6	214.5	216.5	218.5





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CATALOG NUMBER: S124DIW-S795D470U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	209.9	214.6	219.3	222.4	224.2	225.9	227.7	229.3
115°	229.1	233.6	238.2	241.1	242.5	243.9	245.2	246.6
117.5°	246.7	250.8	254.9	257.7	259.2	260.7	262.2	263.7
120°	258.8	262.6	266.4	269.1	271.0	272.9	274.7	276.6
122.5°	271.4	275.4	279.3	281.9	283.0	284.2	285.4	286.6
125°	290.4	294.2	298.0	300.5	301.6	302.6	303.7	304.9
127.5°	307.3	310.9	314.5	317.0	318.3	319.6	320.8	322.2
130°	319.7	323.3	326.9	329.1	330.1	331.0	331.9	332.8
132.5°	331.5	334.9	338.4	340.6	341.8	343.0	344.0	345.2
135°	348.3	351.5	354.6	356.8	357.8	358.7	359.7	360.7
137.5°	365.3	368.2	371.0	373.0	374.2	375.2	376.4	377.5
140°	376.9	379.6	382.2	384.1	385.0	385.9	386.9	387.9
142.5°	388.4	390.8	393.2	394.8	395.7	396.5	397.4	398.3
145°	406.4	407.6	408.8	409.7	410.2	410.8	411.3	412.0
147.5°	422.9	423.0	423.1	423.5	424.0	424.6	425.3	425.8
150°	434.4	434.4	434.4	434.4	434.3	434.2	434.1	434.0
152.5°	445.5	445.7	445.9	445.9	445.7	445.4	445.2	445.0
155°	460.9	461.3	461.6	461.6	461.3	460.9	460.6	460.2
157.5°	474.6	474.8	475.1	475.1	474.8	474.5	474.2	473.9
160°	483.0	483.3	483.6	483.5	483.0	482.6	482.1	481.6
162.5°	490.5	491.1	491.5	491.5	491.1	490.6	490.2	489.7
165°	500.5	501.1	501.6	501.7	501.3	501.0	500.6	500.2
167.5°	508.9	509.4	510.0	510.0	509.4	508.9	508.3	507.7
170°	513.4	514.0	514.5	514.4	513.8	513.2	512.6	511.9
172.5°	516.8	517.5	518.0	518.0	517.4	516.7	516.1	515.5
175°	520.5	521.1	521.7	521.7	521.1	520.5	519.9	519.2
177.5°	522.5	523.0	523.5	523.4	522.9	522.4	521.7	521.2
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5

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