

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: P332153-830

Luminaire Tested: **S123DIW-S775D460U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332153-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S775D460U830-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

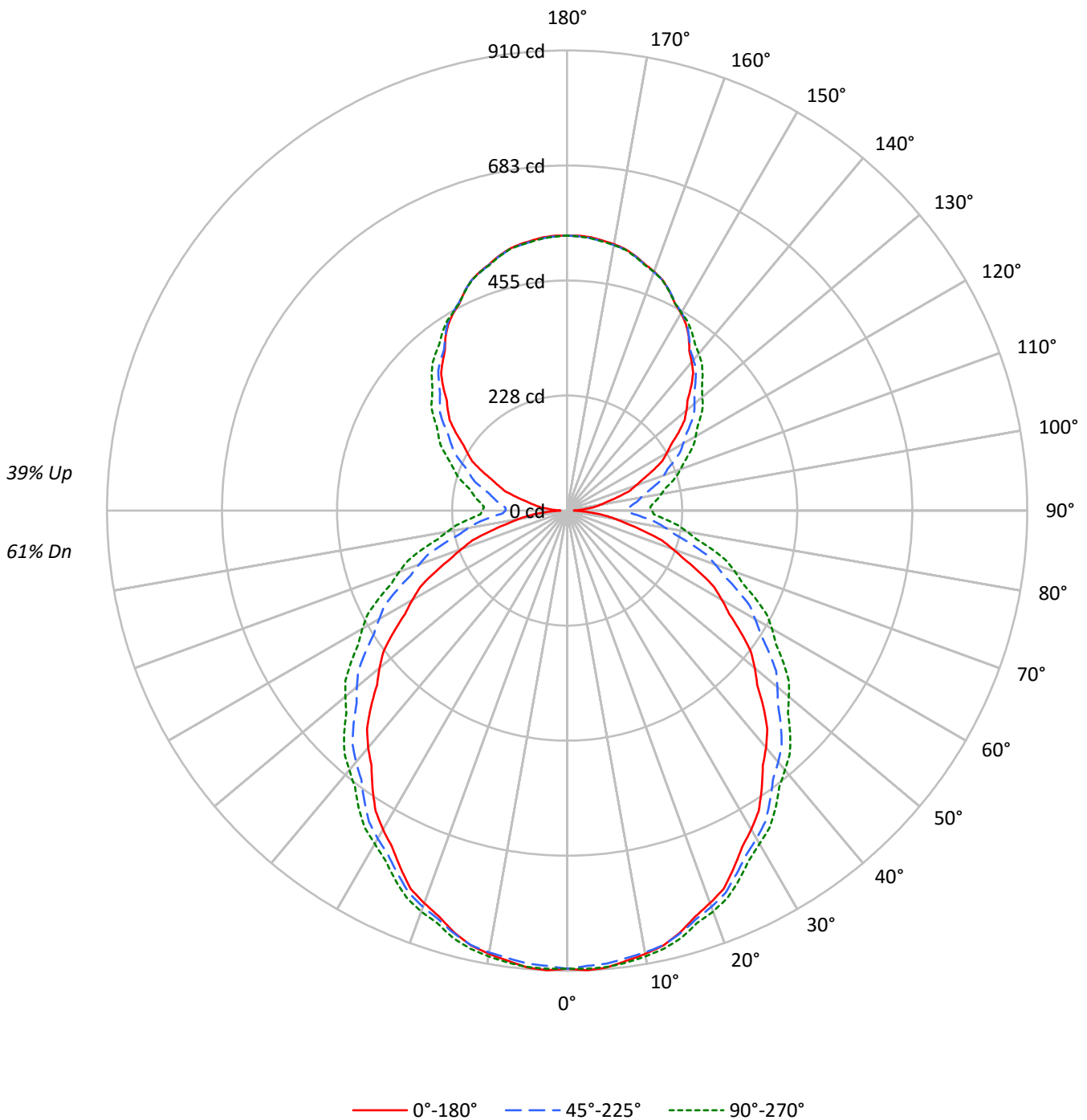
Lumens per Lamp: N/A  
Luminaire Lumens: 4552.6 lumens  
Efficiency: N/A  
Efficacy: 120.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	61
1	99	94	90	86	92	88	84	81	77	74	71	66	64	62	57	55	54	49
2	90	81	75	69	83	76	70	65	66	62	58	58	54	51	49	47	44	40
3	82	71	63	57	76	67	60	54	58	53	48	50	46	42	43	40	37	33
4	74	63	54	48	69	59	51	45	52	45	41	45	40	36	38	35	32	28
5	68	56	47	41	63	52	45	39	46	40	35	40	35	31	34	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	43	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	26	21	29	23	19	26	21	17	22	18	15	14

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

	0°	45°	90°
0°	9752	9752	9752
5°	9782	9507	9512
10°	9694	9287	9240
15°	9570	9038	8945
20°	9390	8755	8621
25°	9171	8428	8278
30°	8945	8133	7931
35°	8692	7823	7655
40°	8450	7540	7358
45°	8182	7269	7122
50°	7918	7000	6860
55°	7627	6725	6625
60°	7343	6446	6385
65°	7051	6149	6098
70°	6611	5815	5805
75°	6055	5432	5506
80°	5416	5056	5164
85°	4828	4799	4966



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.9	1.9
10°-20°	244.8	5.4
20°-30°	366.2	8.0
30°-40°	437.3	9.6
40°-50°	457.5	10.0
50°-60°	429.4	9.4
60°-70°	358.6	7.9
70°-80°	256.6	5.6
80°-90°	154.6	3.4
90°-100°	131.4	2.9
100°-110°	176.6	3.9
110°-120°	227.4	5.0
120°-130°	264.1	5.8
130°-140°	278.7	6.1
140°-150°	264.6	5.8
150°-160°	220.6	4.8
160°-170°	146.9	3.2
170°-180°	51.4	1.1
0°-30°	696.9	15.3
0°-40°	1134.2	24.9
0°-60°	2021.1	44.4
0°-90°	2790.9	61.3
90°-120°	535.4	11.8
90°-150°	1342.9	29.5
90°-180°	1762.0	38.7
0°-180°	4552.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	906	906	906	906	906	
5°	907	905	899	906	906	86
15°	864	866	866	875	874	243
25°	780	789	792	805	805	359
35°	671	687	700	714	718	420
45°	549	572	597	615	624	423
55°	418	451	486	512	521	375
65°	289	328	371	400	411	286
75°	157	203	253	284	297	168
85°	48	98	150	182	193	51
90°	13	66	122	156	168	10
95°	36	78	129	160	171	37
105°	104	130	175	201	212	111
115°	186	201	234	257	266	185
125°	269	271	298	316	322	240
135°	347	349	359	374	379	267
145°	419	419	420	428	430	261
155°	479	479	479	481	478	220
165°	522	520	520	522	520	147
175°	542	541	541	543	540	52
180°	544	544	544	544	544	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0
2.5°	909.9	909.4	908.9	908.3	907.9	906.8	905.5	904.1	902.7	901.3	902.7
5°	907.0	906.5	906.1	905.7	905.2	904.4	903.1	901.7	900.4	899.1	900.9
7.5°	898.1	898.1	898.2	898.3	898.4	897.9	896.5	895.3	894.0	892.8	894.9
10°	890.2	890.6	891.1	891.6	891.9	891.6	890.5	889.5	888.3	887.2	889.5
12.5°	880.7	881.4	881.9	882.6	883.2	883.2	882.4	881.7	880.9	880.1	882.1
15°	863.6	864.2	864.9	865.5	866.2	866.4	866.2	866.0	865.7	865.5	867.7
17.5°	841.9	843.2	844.5	845.7	847.1	847.7	847.6	847.5	847.4	847.3	849.3
20°	826.0	827.4	828.7	830.0	831.3	832.2	832.6	833.1	833.5	834.0	835.9
22.5°	809.5	810.8	812.1	813.4	814.7	815.7	816.3	816.9	817.6	818.1	820.7
25°	779.7	781.8	784.0	786.3	788.4	789.9	790.5	791.2	791.8	792.5	795.3
27.5°	749.7	752.1	754.7	757.1	759.7	761.6	763.0	764.4	765.8	767.2	769.7
30°	728.3	731.2	734.1	736.9	739.7	742.1	743.8	745.6	747.3	749.0	751.7
32.5°	704.6	707.8	711.1	714.3	717.5	720.2	722.5	724.8	727.1	729.3	732.2
35°	671.1	674.6	678.2	681.6	685.1	688.3	691.2	694.0	696.9	699.7	703.0
37.5°	635.6	639.5	643.5	647.4	651.4	655.1	658.6	662.1	665.6	669.1	672.9
40°	611.9	615.9	619.8	623.8	627.6	631.9	636.2	640.6	645.0	649.4	653.1
42.5°	585.8	590.7	595.5	600.3	605.1	609.8	614.3	619.0	623.5	628.1	632.2
45°	548.7	554.0	559.2	564.5	569.8	575.1	580.6	586.1	591.6	597.1	601.2
47.5°	509.8	515.9	521.8	527.7	533.7	539.8	546.1	552.3	558.6	564.9	569.6
50°	484.6	490.7	496.8	503.0	509.2	515.6	522.5	529.2	536.0	542.8	547.8
52.5°	457.7	464.2	470.7	477.2	483.7	490.7	498.2	505.7	513.2	520.7	525.9
55°	418.5	425.7	432.9	440.2	447.4	455.0	462.9	470.8	478.6	486.5	492.5
57.5°	380.1	387.7	395.2	402.7	410.4	418.4	427.1	435.7	444.3	453.0	458.9
60°	353.4	361.2	369.1	377.0	384.9	393.3	402.4	411.3	420.3	429.3	435.5
62.5°	328.0	336.1	344.2	352.2	360.3	369.1	378.6	388.1	397.7	407.2	413.3
65°	289.2	297.7	306.2	314.8	323.4	332.4	342.1	351.8	361.5	371.1	377.7
67.5°	249.7	258.7	267.9	276.9	286.0	295.5	305.3	315.1	324.9	334.8	342.0
70°	222.1	231.5	240.9	250.3	259.8	269.8	280.3	290.8	301.3	311.9	318.9
72.5°	196.8	206.2	215.7	225.1	234.5	244.7	255.5	266.5	277.3	288.1	295.4
75°	156.9	167.2	177.6	187.8	198.1	208.8	219.7	230.7	241.7	252.7	259.9
77.5°	122.2	132.6	143.0	153.4	163.7	174.5	185.6	196.6	207.6	218.7	226.3
80°	97.7	108.5	119.2	130.0	140.7	151.7	163.2	174.6	186.0	197.4	204.8
82.5°	76.3	87.3	98.2	109.1	120.1	131.3	142.9	154.5	166.1	177.7	185.1
85°	48.4	59.3	70.3	81.2	92.2	103.5	115.2	126.8	138.4	150.1	157.5
87.5°	26.3	37.4	48.5	59.7	70.8	82.1	93.5	104.9	116.3	127.8	135.3
90°	13.3	25.0	36.7	48.4	60.0	72.1	84.5	96.9	109.3	121.8	129.6
92.5°	22.3	32.7	43.1	53.3	63.7	74.7	86.4	98.2	109.9	121.6	129.2
95°	36.1	45.2	54.5	63.7	73.0	83.3	94.8	106.3	117.8	129.3	136.5
97.5°	54.5	62.7	70.9	79.1	87.3	96.8	107.6	118.5	129.2	140.1	147.0
100°	67.0	74.6	82.2	89.7	97.4	106.4	117.0	127.5	138.1	148.6	155.3
102.5°	81.5	88.2	94.9	101.5	108.2	116.8	127.3	137.9	148.5	158.9	165.4
105°	104.0	109.4	114.9	120.4	125.8	133.7	143.9	154.3	164.6	174.8	181.0
107.5°	129.1	133.7	138.3	142.9	147.5	154.4	163.7	173.0	182.3	191.6	197.7
110°	144.8	148.9	153.0	157.1	161.3	167.9	176.8	185.8	194.7	203.7	209.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	161.8	165.2	168.5	171.9	175.2	181.2	189.6	198.1	206.5	215.0	221.0
115°	186.4	189.4	192.3	195.2	198.1	203.4	211.1	218.9	226.6	234.2	239.6
117.5°	212.1	213.9	215.7	217.5	219.3	223.9	231.0	238.2	245.3	252.5	257.7
120°	227.3	229.0	230.6	232.3	234.0	238.2	245.0	251.8	258.5	265.2	270.2
122.5°	244.1	245.1	246.1	247.0	248.1	251.8	258.4	265.1	271.7	278.4	283.0
125°	268.6	268.9	269.2	269.5	269.8	273.0	279.2	285.3	291.5	297.7	301.9
127.5°	292.2	292.6	293.0	293.4	293.8	296.5	301.5	306.6	311.7	316.7	320.6
130°	307.9	308.5	309.1	309.5	310.1	312.5	316.5	320.7	324.7	328.9	332.6
132.5°	322.8	323.6	324.3	325.0	325.7	327.7	331.0	334.3	337.6	340.9	344.5
135°	346.7	347.0	347.3	347.7	348.1	349.4	351.8	354.0	356.4	358.6	362.2
137.5°	368.7	369.0	369.3	369.6	369.9	370.8	372.4	374.1	375.7	377.3	380.3
140°	383.2	383.7	384.2	384.7	385.2	385.8	386.5	387.3	388.0	388.8	392.0
142.5°	397.3	397.6	397.8	398.2	398.5	398.8	399.1	399.4	399.7	400.0	402.8
145°	419.1	419.1	419.1	419.1	419.1	419.1	419.4	419.7	420.0	420.3	422.0
147.5°	437.3	437.6	438.0	438.3	438.7	438.9	439.2	439.5	439.8	440.1	440.5
150°	450.6	450.8	451.0	451.2	451.4	451.6	451.8	451.9	452.1	452.3	452.3
152.5°	461.6	461.8	462.1	462.3	462.6	462.8	462.9	463.1	463.2	463.3	463.4
155°	478.8	478.8	478.8	478.8	478.8	478.9	479.0	479.1	479.2	479.3	479.7
157.5°	493.5	493.4	493.3	493.1	493.0	493.0	493.1	493.2	493.2	493.3	493.7
160°	502.8	502.6	502.4	502.2	502.0	501.9	501.9	501.9	501.9	501.9	502.4
162.5°	511.0	510.7	510.4	510.1	509.9	509.8	509.8	509.9	510.0	510.1	510.6
165°	521.5	521.2	520.9	520.7	520.4	520.3	520.3	520.3	520.3	520.3	520.8
167.5°	530.0	529.6	529.2	528.9	528.5	528.3	528.4	528.5	528.6	528.6	529.2
170°	534.8	534.4	534.0	533.7	533.3	533.1	533.1	533.1	533.1	533.1	533.8
172.5°	538.6	538.2	537.8	537.4	537.0	536.8	536.8	536.8	536.8	536.8	537.4
175°	542.4	542.1	541.7	541.3	540.9	540.7	540.7	540.7	540.7	540.7	541.3
177.5°	544.1	543.8	543.5	543.2	542.9	542.7	542.7	542.7	542.7	542.7	543.2
180°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	906.0	906.0	906.0	906.0	906.0	906.0	906.0	906.0
2.5°	904.1	905.5	906.8	907.5	907.3	907.1	906.9	906.8
5°	902.6	904.4	906.1	906.8	906.6	906.4	906.3	906.0
7.5°	897.1	899.4	901.5	902.5	902.2	902.0	901.7	901.4
10°	891.6	893.8	896.0	896.9	896.5	896.0	895.6	895.1
12.5°	884.2	886.2	888.2	889.0	888.5	888.2	887.7	887.2
15°	869.9	872.1	874.3	875.2	875.1	874.9	874.6	874.4
17.5°	851.3	853.3	855.3	856.1	855.8	855.5	855.2	854.9
20°	837.9	839.9	841.9	842.9	843.2	843.4	843.6	843.9
22.5°	823.1	825.7	828.1	829.3	829.2	829.1	829.0	828.8
25°	798.2	801.1	803.9	805.3	805.3	805.3	805.3	805.3
27.5°	772.1	774.6	777.0	778.4	778.5	778.7	778.9	779.1
30°	754.3	757.0	759.6	760.9	760.9	760.9	760.9	760.9
32.5°	734.9	737.7	740.6	742.3	742.7	743.3	743.8	744.3
35°	706.3	709.6	712.8	715.0	715.9	716.7	717.6	718.5
37.5°	676.6	680.3	684.0	686.3	686.9	687.7	688.3	689.1
40°	656.9	660.5	664.3	666.6	667.5	668.4	669.2	670.1
42.5°	636.2	640.3	644.4	647.1	648.3	649.5	650.7	652.0
45°	605.4	609.5	613.8	616.7	618.5	620.2	622.0	623.8
47.5°	574.3	579.0	583.7	586.7	588.1	589.5	590.8	592.1
50°	552.9	557.9	563.0	566.3	567.8	569.3	570.9	572.4
52.5°	531.1	536.4	541.6	545.2	547.1	548.9	550.8	552.7
55°	498.4	504.4	510.2	514.1	515.9	517.6	519.3	521.1
57.5°	465.0	470.9	476.8	480.9	483.0	485.0	487.0	489.1
60°	441.6	447.7	453.8	458.2	460.5	463.0	465.4	467.8
62.5°	419.5	425.7	431.8	435.9	438.2	440.5	442.7	444.9
65°	384.3	390.8	397.4	401.8	404.0	406.1	408.4	410.6
67.5°	349.1	356.4	363.5	368.1	369.9	371.7	373.6	375.4
70°	325.9	332.9	340.0	344.5	346.8	348.9	351.1	353.4
72.5°	302.6	309.7	317.0	321.7	323.9	326.0	328.2	330.5
75°	267.1	274.4	281.6	286.5	289.2	291.8	294.5	297.1
77.5°	233.9	241.6	249.2	254.0	256.1	258.1	260.1	262.1
80°	212.3	219.7	227.2	232.1	234.2	236.4	238.7	240.8
82.5°	192.6	200.0	207.5	212.3	214.5	216.7	218.9	221.0
85°	164.9	172.4	179.8	184.6	186.8	189.1	191.2	193.4
87.5°	142.9	150.3	157.9	162.8	165.0	167.3	169.5	171.7
90°	137.4	145.2	153.2	158.3	160.6	163.0	165.4	167.8
92.5°	136.8	144.4	151.9	156.7	158.6	160.5	162.4	164.3
95°	143.6	150.8	158.1	162.7	164.9	167.1	169.3	171.4
97.5°	154.0	161.0	168.0	172.5	174.7	176.8	179.0	181.2
100°	161.9	168.6	175.2	179.7	182.1	184.5	186.9	189.3
102.5°	171.9	178.3	184.8	189.2	191.3	193.4	195.6	197.7
105°	187.1	193.2	199.3	203.5	205.7	207.8	210.0	212.2
107.5°	204.0	210.1	216.3	220.3	222.2	223.9	225.7	227.5
110°	215.8	222.0	228.0	231.9	233.4	235.0	236.6	238.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	227.0	233.0	238.9	242.9	244.8	246.7	248.5	250.4
115°	245.0	250.3	255.7	259.2	260.9	262.5	264.2	265.9
117.5°	262.9	268.1	273.2	276.6	278.1	279.5	281.0	282.4
120°	275.1	280.1	285.0	288.2	289.5	290.9	292.3	293.6
122.5°	287.7	292.3	296.9	299.8	301.1	302.4	303.7	304.9
125°	306.1	310.4	314.6	317.3	318.4	319.6	320.7	321.9
127.5°	324.3	328.1	332.0	334.4	335.5	336.5	337.5	338.6
130°	336.4	340.2	343.9	346.2	346.9	347.5	348.2	348.8
132.5°	348.0	351.6	355.1	357.3	358.4	359.3	360.2	361.3
135°	365.8	369.4	373.0	375.2	376.1	377.0	377.9	378.8
137.5°	383.4	386.4	389.6	391.4	392.2	392.9	393.6	394.4
140°	395.2	398.4	401.6	403.4	403.8	404.3	404.7	405.1
142.5°	405.7	408.5	411.3	413.1	413.7	414.2	414.8	415.4
145°	423.6	425.3	427.0	428.0	428.5	429.0	429.5	430.0
147.5°	441.1	441.6	442.1	442.5	442.7	443.0	443.2	443.4
150°	452.3	452.3	452.3	452.2	452.1	452.0	451.9	451.8
152.5°	463.5	463.7	463.9	463.7	463.4	463.0	462.5	462.1
155°	480.0	480.4	480.8	480.6	479.9	479.3	478.6	478.0
157.5°	494.2	494.6	494.9	494.8	494.4	493.8	493.2	492.8
160°	502.8	503.3	503.8	503.8	503.4	503.0	502.7	502.3
162.5°	511.0	511.5	512.0	511.9	511.3	510.7	510.1	509.4
165°	521.4	522.0	522.5	522.5	521.8	521.1	520.5	519.8
167.5°	529.8	530.4	530.9	530.9	530.4	529.8	529.2	528.6
170°	534.4	535.1	535.7	535.7	535.1	534.4	533.8	533.1
172.5°	538.0	538.6	539.1	539.1	538.5	537.8	537.2	536.5
175°	541.9	542.4	543.0	543.0	542.3	541.7	541.0	540.4
177.5°	543.7	544.1	544.5	544.5	543.9	543.5	542.9	542.3
180°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8

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