

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P274342

Luminaire Tested: **LD4B20DE010W2N2050 EU4B1020W2N902050 4LBDW0H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274342  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBDW0H  
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, DOUBLE WALLWASH WITH HAZE FINISH  
Light Source: W2N 2000K-5000K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1322.5 lumens  
Efficiency: N/A  
Efficacy: 47.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

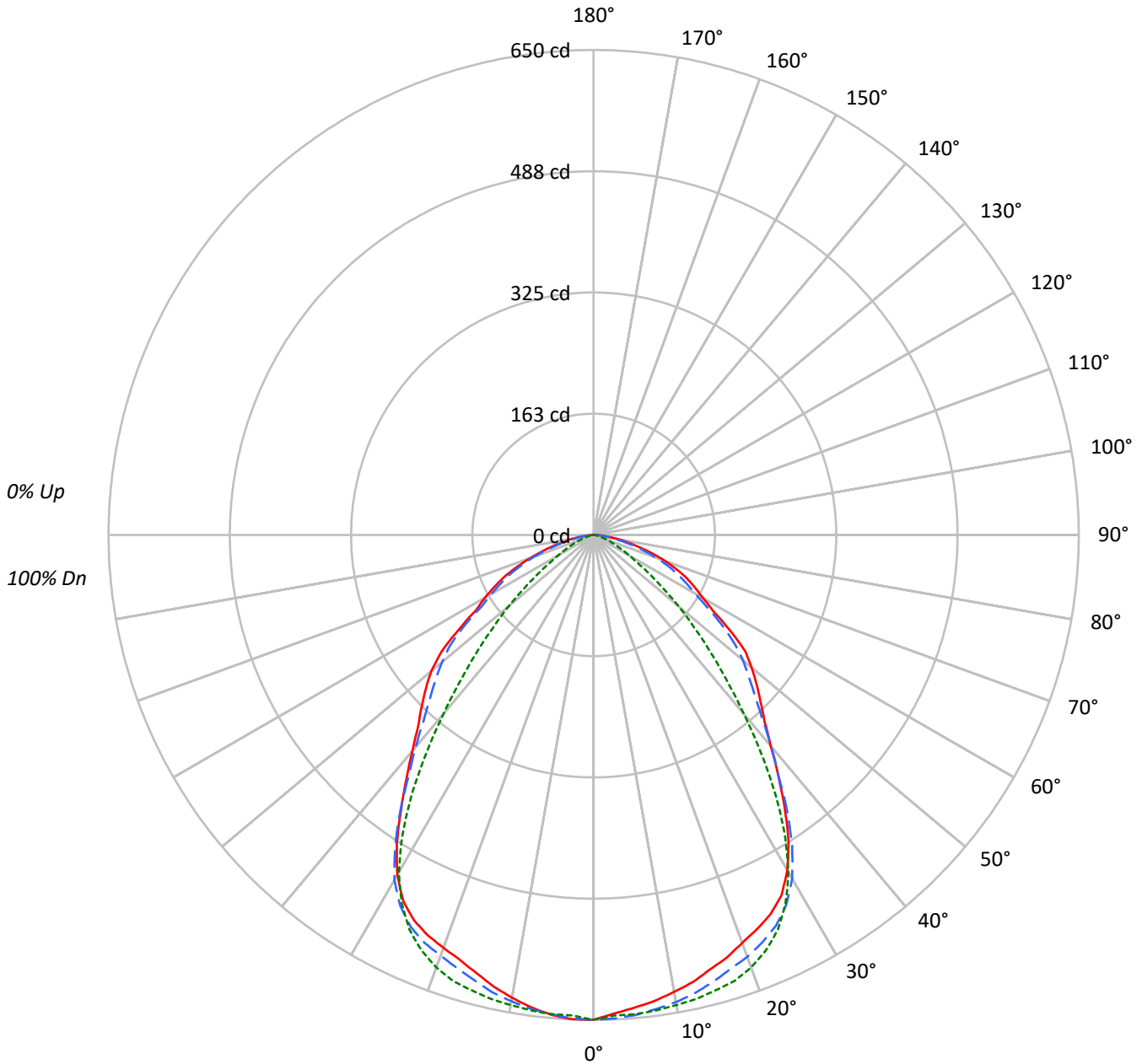
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P274342

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

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

	0°	90°	180°
0°	63328	63328	63328
5°	62201	63081	63179
10°	61534	63316	62326
15°	60820	63746	61325
20°	60340	63970	61066
25°	60305	62778	61272
30°	58383	58721	59171
35°	53051	50552	53527
40°	46932	39808	48077
45°	43539	30308	44918
50°	41831	22439	43044
55°	37874	15462	37364
60°	32921	10525	32726
65°	31824	7610	30209
70°	28780	5129	25645
75°	23723	3389	20334
80°	19082	2245	15153
85°	15655	1118	10064



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	61.3	4.6
10°-20°	175.4	13.3
20°-30°	265.0	20.0
30°-40°	277.3	21.0
40°-50°	224.6	17.0
50°-60°	163.4	12.4
60°-70°	100.8	7.6
70°-80°	45.5	3.4
80°-90°	9.3	0.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	501.7	37.9
0°-40°	779.0	58.9
0°-60°	1166.9	88.2
0°-90°	1322.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1322.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	650	650	650	650	650	
5°	636	646	645	645	646	60
15°	603	620	632	618	608	170
25°	561	578	584	580	570	257
35°	446	452	425	452	450	278
45°	316	306	220	310	326	246
55°	223	209	91	211	220	199
65°	138	124	33	122	131	135
75°	63	54	9	47	54	68
85°	14	11	1	8	9	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8
2.5°	641.8	641.8	647.8	654.8	648.8	642.8	646.8	644.8	651.8	651.8	648.8
5°	635.8	637.8	642.8	648.8	643.8	637.8	642.8	640.8	647.8	647.8	645.8
7.5°	629.8	630.8	636.8	643.8	638.8	632.8	636.8	635.8	641.8	642.8	640.8
10°	621.8	622.8	628.8	635.8	630.8	625.8	629.8	628.8	636.8	636.8	635.8
12.5°	613.8	614.8	620.8	626.8	621.8	616.8	620.8	620.8	628.8	629.8	628.8
15°	602.8	604.8	609.8	615.8	612.8	606.8	610.8	610.8	617.8	619.8	619.8
17.5°	593.8	594.8	599.8	605.8	601.8	596.8	600.8	600.8	607.8	609.8	609.8
20°	581.8	583.8	588.8	594.8	591.8	587.8	590.8	590.8	598.8	600.8	601.8
22.5°	571.8	573.8	577.8	585.8	580.8	577.8	581.8	580.8	589.8	590.8	590.8
25°	560.8	562.8	567.8	572.8	569.8	566.8	569.8	569.8	576.8	577.8	577.8
27.5°	544.8	545.8	550.8	555.8	552.8	548.8	552.8	551.8	558.8	559.8	558.8
30°	518.8	520.8	522.8	529.8	526.8	523.8	527.8	525.8	532.8	532.8	531.8
32.5°	485.9	485.9	489.9	494.8	490.8	488.9	491.8	492.8	497.8	497.8	494.8
35°	445.9	447.9	450.9	453.9	450.9	448.9	451.9	450.9	456.9	454.9	451.9
37.5°	405.9	406.9	409.9	413.9	409.9	406.9	407.9	406.9	411.9	411.9	406.9
40°	368.9	370.9	372.9	376.9	372.9	370.9	371.9	368.9	374.9	372.9	369.9
42.5°	338.9	339.9	342.9	344.9	340.9	339.9	340.9	338.9	341.9	339.9	333.9
45°	315.9	315.9	316.9	319.9	315.9	314.9	314.9	312.9	315.9	311.9	305.9
47.5°	295.9	296.9	297.9	299.9	296.9	293.9	294.9	290.9	292.9	289.9	281.9
50°	275.9	277.9	278.9	280.9	277.9	275.9	276.9	272.9	272.9	267.9	260.9
52.5°	255.9	256.9	255.9	257.9	255.9	252.9	253.9	249.9	249.9	243.9	236.9
55°	222.9	223.9	224.9	226.9	224.9	221.9	223.9	220.9	220.9	216.9	208.9
57.5°	189.9	190.9	191.9	192.9	192.9	190.9	191.9	189.9	188.9	185.9	179.9
60°	168.9	168.9	168.9	169.9	168.9	167.9	167.9	165.9	165.9	162.0	156.0
62.5°	153.0	154.0	154.0	155.0	154.0	153.0	152.0	150.0	149.0	145.0	140.0
65°	138.0	138.0	137.0	139.0	138.0	137.0	137.0	135.0	133.0	129.0	124.0
67.5°	120.0	121.0	120.0	121.0	121.0	120.0	119.0	117.0	116.0	113.0	107.0
70°	101.0	101.0	101.0	102.0	101.0	101.0	102.0	99.0	98.0	94.0	89.0
72.5°	82.0	83.0	83.0	82.0	83.0	81.0	81.0	81.0	80.0	76.0	71.0
75°	63.0	64.0	64.0	65.0	64.0	63.0	63.0	62.0	61.0	58.0	54.0
77.5°	47.0	47.0	48.0	48.0	48.0	47.0	47.0	45.0	45.0	43.0	39.0
80°	34.0	34.0	33.0	34.0	34.0	33.0	33.0	32.0	32.0	30.0	27.0
82.5°	22.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	21.0	20.0	18.0
85°	14.0	14.0	14.0	14.0	15.0	14.0	15.0	14.0	14.0	12.0	11.0
87.5°	6.0	6.0	6.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	5.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8
2.5°	648.8	649.8	646.8	650.8	647.8	648.8	649.8	648.8	644.8	644.8	655.8
5°	644.8	646.8	643.8	648.8	646.8	646.8	648.8	647.8	643.8	644.8	654.8
7.5°	640.8	643.8	641.8	646.8	643.8	643.8	645.8	645.8	641.8	642.8	651.8
10°	634.8	638.8	637.8	642.8	639.8	639.8	642.8	642.8	638.8	639.8	648.8
12.5°	629.8	633.8	632.8	637.8	635.8	636.8	637.8	639.8	634.8	636.8	644.8
15°	621.8	625.8	625.8	630.8	628.8	630.8	632.8	635.8	631.8	631.8	639.8
17.5°	612.8	617.8	617.8	621.8	621.8	622.8	626.8	629.8	625.8	626.8	633.8
20°	602.8	608.8	608.8	613.8	612.8	614.8	617.8	620.8	616.8	616.8	624.8
22.5°	592.8	597.8	598.8	601.8	601.8	602.8	605.8	607.8	602.8	602.8	610.8
25°	578.8	583.8	584.8	586.8	584.8	584.8	586.8	588.8	583.8	583.8	590.8
27.5°	559.8	564.8	564.8	563.8	561.8	562.8	561.8	562.8	557.8	556.8	563.8
30°	531.8	534.8	534.8	533.8	530.8	530.8	527.8	528.8	521.8	521.8	527.8
32.5°	493.8	496.8	494.8	492.8	488.9	486.9	484.9	483.9	476.9	476.9	483.9
35°	448.9	450.9	447.9	443.9	438.9	435.9	432.9	428.9	423.9	424.9	428.9
37.5°	402.9	402.9	398.9	390.9	386.9	381.9	376.9	376.9	368.9	367.9	370.9
40°	363.9	359.9	352.9	341.9	334.9	329.9	322.9	318.9	312.9	312.9	317.9
42.5°	328.9	320.9	311.9	296.9	289.9	283.9	274.9	270.9	263.9	262.9	265.9
45°	297.9	289.9	276.9	260.9	251.9	244.9	231.9	226.9	220.9	219.9	221.9
47.5°	272.9	263.9	247.9	226.9	217.9	208.9	195.9	188.9	183.9	180.9	183.9
50°	250.9	238.9	221.9	199.9	187.9	179.9	163.9	157.0	150.0	148.0	149.0
52.5°	226.9	214.9	196.9	173.9	163.0	151.0	136.0	126.0	120.0	117.0	120.0
55°	200.9	188.9	170.9	148.0	136.0	125.0	109.0	101.0	94.0	91.0	94.0
57.5°	172.9	162.0	146.0	123.0	112.0	102.0	87.0	79.0	72.0	70.0	72.0
60°	149.0	140.0	124.0	102.0	93.0	82.0	69.0	61.0	55.0	54.0	55.0
62.5°	133.0	123.0	108.0	87.0	78.0	69.0	57.0	49.0	44.0	43.0	44.0
65°	117.0	106.0	92.0	74.0	65.0	58.0	46.0	39.0	34.0	33.0	34.0
67.5°	99.0	89.0	77.0	61.0	54.0	47.0	37.0	30.0	26.0	25.0	26.0
70°	82.0	73.0	61.0	49.0	42.0	37.0	28.0	23.0	19.0	18.0	19.0
72.5°	65.0	57.0	47.0	37.0	33.0	28.0	22.0	17.0	14.0	13.0	14.0
75°	50.0	44.0	36.0	27.0	24.0	21.0	15.0	12.0	10.0	9.0	10.0
77.5°	35.0	31.0	25.0	20.0	17.0	15.0	11.0	8.0	7.0	6.0	7.0
80°	24.0	21.0	17.0	13.0	11.0	9.0	7.0	5.0	4.0	4.0	4.0
82.5°	16.0	13.0	10.0	8.0	7.0	6.0	4.0	3.0	3.0	2.0	2.0
85°	9.0	8.0	6.0	5.0	4.0	3.0	2.0	2.0	1.0	1.0	1.0
87.5°	4.0	3.0	2.0	2.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8
2.5°	652.8	649.8	653.8	649.8	647.8	649.8	647.8	653.8	648.8	644.8	648.8
5°	651.8	647.8	651.8	648.8	645.8	646.8	644.8	650.8	644.8	641.8	643.8
7.5°	649.8	646.8	648.8	645.8	642.8	643.8	641.8	646.8	640.8	637.8	639.8
10°	646.8	643.8	644.8	642.8	639.8	639.8	637.8	641.8	634.8	630.8	632.8
12.5°	642.8	638.8	640.8	637.8	633.8	633.8	631.8	634.8	627.8	623.8	624.8
15°	637.8	633.8	633.8	630.8	626.8	626.8	622.8	625.8	617.8	613.8	613.8
17.5°	631.8	626.8	626.8	623.8	618.8	617.8	614.8	617.8	608.8	604.8	604.8
20°	622.8	618.8	617.8	615.8	610.8	609.8	605.8	606.8	599.8	596.8	595.8
22.5°	610.8	606.8	607.8	604.8	600.8	599.8	595.8	598.8	591.8	588.8	589.8
25°	589.8	587.8	589.8	588.8	585.8	585.8	583.8	585.8	579.8	577.8	578.8
27.5°	565.8	564.8	565.8	565.8	563.8	563.8	563.8	566.8	560.8	559.8	559.8
30°	530.8	530.8	531.8	532.8	532.8	534.8	533.8	537.8	533.8	531.8	533.8
32.5°	484.9	488.9	491.8	491.8	491.8	493.8	495.8	498.8	494.8	495.8	495.8
35°	432.9	435.9	437.9	442.9	439.9	446.9	448.9	452.9	451.9	453.9	452.9
37.5°	374.9	378.9	382.9	389.9	388.9	396.9	400.9	408.9	406.9	410.9	412.9
40°	320.9	326.9	332.9	337.9	341.9	349.9	357.9	367.9	370.9	373.9	374.9
42.5°	268.9	274.9	284.9	291.9	297.9	310.9	321.9	333.9	336.9	342.9	344.9
45°	226.9	231.9	243.9	252.9	257.9	276.9	289.9	304.9	309.9	316.9	319.9
47.5°	187.9	196.9	208.9	219.9	226.9	246.9	263.9	279.9	286.9	294.9	298.9
50°	154.0	163.9	179.9	189.9	199.9	221.9	240.9	257.9	264.9	273.9	277.9
52.5°	126.0	137.0	152.0	163.0	173.9	196.9	216.9	232.9	241.9	247.9	253.9
55°	99.0	111.0	126.0	138.0	147.0	171.9	188.9	204.9	210.9	215.9	218.9
57.5°	77.0	86.0	101.0	111.0	122.0	144.0	161.0	172.9	177.9	183.9	185.9
60°	60.0	69.0	83.0	93.0	103.0	124.0	141.0	153.0	158.0	163.0	165.9
62.5°	48.0	57.0	70.0	79.0	88.0	107.0	122.0	134.0	140.0	145.0	148.0
65°	38.0	46.0	57.0	66.0	73.0	90.0	105.0	116.0	122.0	127.0	130.0
67.5°	30.0	37.0	47.0	53.0	60.0	74.0	87.0	97.0	102.0	108.0	111.0
70°	23.0	28.0	37.0	42.0	47.0	59.0	69.0	79.0	84.0	88.0	90.0
72.5°	17.0	21.0	28.0	32.0	35.0	45.0	53.0	60.0	64.0	68.0	70.0
75°	12.0	15.0	20.0	23.0	25.0	32.0	39.0	44.0	47.0	50.0	53.0
77.5°	8.0	10.0	13.0	15.0	17.0	22.0	26.0	30.0	33.0	36.0	37.0
80°	5.0	7.0	9.0	10.0	11.0	14.0	18.0	20.0	22.0	24.0	25.0
82.5°	3.0	4.0	5.0	6.0	7.0	9.0	11.0	13.0	14.0	16.0	17.0
85°	1.0	2.0	2.0	3.0	3.0	5.0	6.0	7.0	8.0	9.0	10.0
87.5°	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





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CATALOG NUMBER: LD4B20DE010W2N2050 EU4B1020W2N902050 4LBDW0H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	649.8	649.8	649.8	649.8	649.8	649.8	649.8	649.8
2.5°	652.8	649.8	647.8	646.8	653.8	644.8	648.8	649.8
5°	648.8	645.8	643.8	642.8	648.8	640.8	643.8	645.8
7.5°	642.8	640.8	637.8	636.8	642.8	633.8	637.8	638.8
10°	635.8	632.8	630.8	629.8	634.8	625.8	629.8	629.8
12.5°	626.8	624.8	620.8	620.8	624.8	616.8	619.8	619.8
15°	614.8	612.8	608.8	608.8	612.8	604.8	607.8	607.8
17.5°	604.8	602.8	599.8	598.8	602.8	594.8	597.8	596.8
20°	596.8	594.8	590.8	590.8	593.8	585.8	588.8	588.8
22.5°	589.8	588.8	584.8	584.8	588.8	580.8	582.8	580.8
25°	578.8	577.8	573.8	574.8	576.8	568.8	571.8	569.8
27.5°	560.8	560.8	556.8	555.8	558.8	551.8	553.8	552.8
30°	532.8	533.8	528.8	528.8	529.8	523.8	526.8	525.8
32.5°	494.8	495.8	491.8	490.8	493.8	488.9	490.8	490.8
35°	452.9	453.9	450.9	450.9	453.9	450.9	450.9	449.9
37.5°	410.9	412.9	410.9	411.9	413.9	410.9	412.9	411.9
40°	376.9	378.9	375.9	377.9	379.9	376.9	379.9	377.9
42.5°	345.9	348.9	346.9	348.9	350.9	348.9	350.9	347.9
45°	322.9	324.9	323.9	324.9	326.9	325.9	326.9	325.9
47.5°	300.9	304.9	302.9	304.9	307.9	305.9	307.9	304.9
50°	280.9	283.9	282.9	284.9	285.9	284.9	286.9	283.9
52.5°	254.9	257.9	256.9	256.9	258.9	256.9	258.9	256.9
55°	220.9	221.9	221.9	222.9	221.9	220.9	221.9	219.9
57.5°	187.9	189.9	186.9	189.9	188.9	187.9	187.9	185.9
60°	166.9	169.9	167.9	169.9	168.9	168.9	168.9	167.9
62.5°	150.0	152.0	150.0	151.0	151.0	151.0	150.0	149.0
65°	131.0	134.0	132.0	133.0	132.0	131.0	132.0	131.0
67.5°	112.0	113.0	113.0	112.0	112.0	112.0	112.0	110.0
70°	91.0	92.0	91.0	93.0	92.0	91.0	92.0	90.0
72.5°	71.0	72.0	71.0	72.0	71.0	71.0	71.0	71.0
75°	53.0	54.0	54.0	54.0	54.0	54.0	52.0	54.0
77.5°	38.0	38.0	38.0	39.0	38.0	38.0	38.0	38.0
80°	26.0	26.0	26.0	27.0	26.0	27.0	26.0	27.0
82.5°	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
85°	9.0	10.0	10.0	9.0	9.0	9.0	9.0	9.0
87.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)