

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: P274320

Luminaire Tested: **LD4B15DE010W2N2765 EU4B1020W2N902765 4LBSW0LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P274320
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1808-906-2)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15DE010W2N2765 EU4B1020W2N902765 4LBSW0LI
Description: PORTFOLIO 4" W2N RN DOWNLIGHT, SINGLE WALLWASH WITH SPECULAR FINISH
Light Source: W2N 2700K-6500K CCT TUNING RANGE
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1246.9 lumens
Efficiency: N/A
Efficacy: 56.7 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.29 / 1.17
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

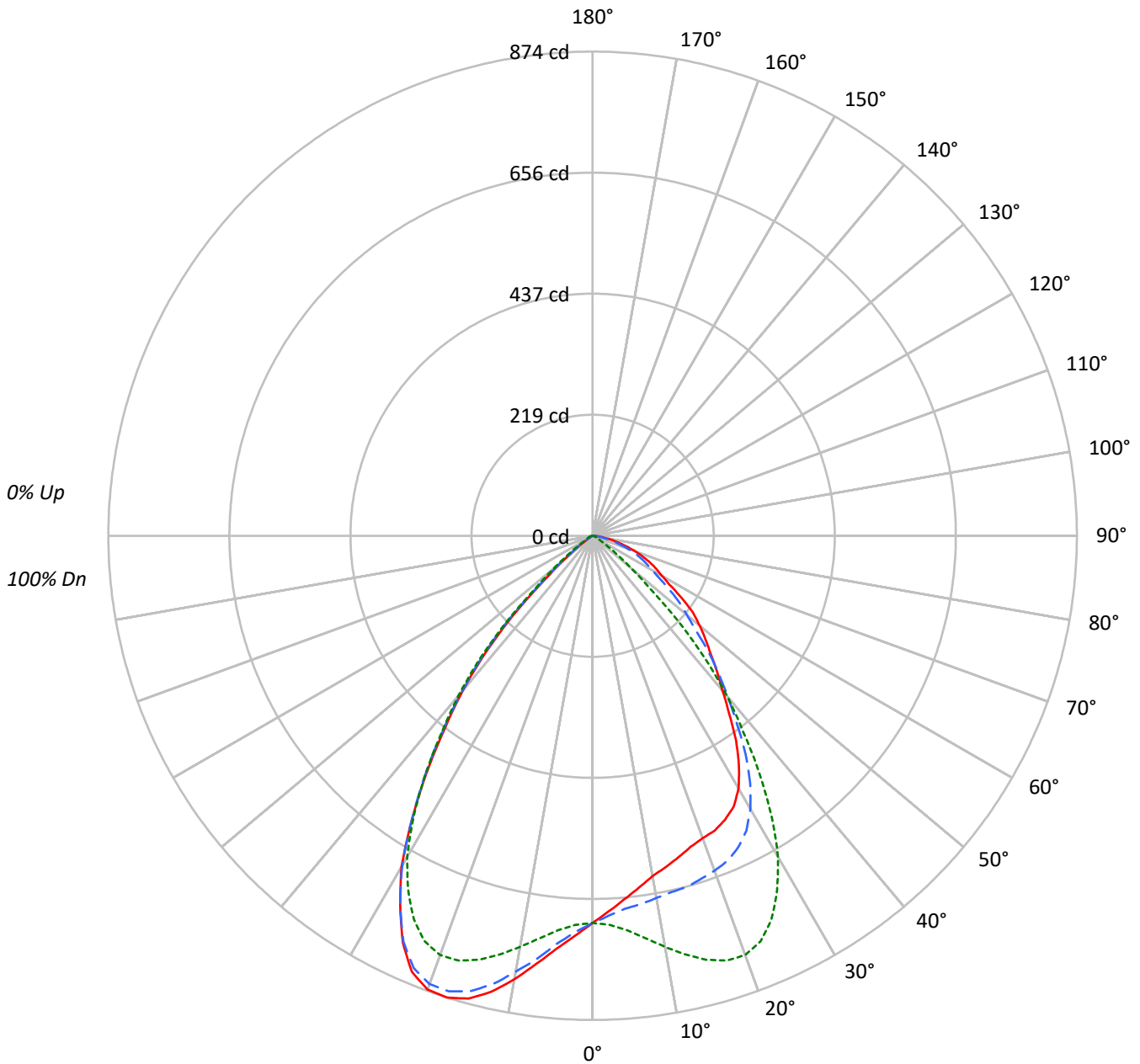
Input Watts (W): 22
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	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	112	109	106	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90								
2	105	99	94	89	102	97	92	88	94	90	86	91	87	85	88	85	83	81								
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73								
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65								
5	86	75	68	63	84	74	68	63	72	67	62	71	66	62	69	65	61	59								
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54								
7	75	64	57	52	74	63	56	52	62	56	51	61	55	51	59	54	51	49								
8	71	59	52	47	69	59	52	47	58	51	47	56	51	47	55	50	47	45								
9	67	55	48	43	65	55	48	43	54	47	43	53	47	43	52	47	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	68113	68113	68113
5°	64441	69900	73197
10°	61722	74558	80466
15°	60578	79940	87265
20°	60247	83520	90375
25°	60799	82134	87156
30°	59250	75297	77638
35°	53693	62640	62176
40°	46360	47848	46360
45°	41458	30198	27882
50°	38147	13373	9825
55°	33490	5726	2872
60°	28048	2534	760
65°	26312	2099	600
70°	23280	1482	741
75°	18074	979	490
80°	13806	730	730
85°	11629	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.4	5.5
10°-20°	213.8	17.1
20°-30°	327.2	26.2
30°-40°	313.0	25.1
40°-50°	186.9	15.0
50°-60°	75.7	6.1
60°-70°	40.1	3.2
70°-80°	17.9	1.4
80°-90°	3.8	0.3
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°	609.5	48.9
0°-40°	922.5	74.0
0°-60°	1185.1	95.0
0°-90°	1246.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1246.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	699	699	699	699	699	
5°	659	676	714	739	748	62
15°	600	656	792	851	865	170
25°	565	621	764	808	810	259
35°	451	481	526	526	523	280
45°	301	294	219	211	202	234
55°	197	169	34	18	17	176
65°	114	96	9	3	3	112
75°	48	38	3	1	1	53
85°	10	8	0	0	0	12
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°	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9
2.5°	678.2	679.5	679.5	680.8	679.5	682.1	680.8	684.7	683.4	684.7	686.0
5°	658.7	658.7	658.7	661.3	661.3	663.9	663.9	666.5	670.4	673.0	675.6
7.5°	640.6	639.3	641.9	641.9	644.5	647.1	649.7	654.9	658.7	663.9	670.4
10°	623.7	623.7	626.3	628.9	630.2	634.1	636.7	641.9	647.1	656.2	663.9
12.5°	612.1	610.8	613.4	616.0	619.8	622.4	625.0	632.8	639.3	649.7	658.7
15°	600.4	600.4	603.0	605.6	609.5	613.4	616.0	625.0	632.8	644.5	656.2
17.5°	588.7	588.7	591.3	595.2	599.1	603.0	605.6	614.7	625.0	638.0	649.7
20°	580.9	579.6	583.5	586.1	591.3	596.5	599.1	608.2	617.3	630.2	643.2
22.5°	575.8	574.5	577.1	579.6	584.8	590.0	592.6	600.4	610.8	621.1	635.4
25°	565.4	565.4	568.0	570.6	575.8	579.6	582.2	590.0	599.1	609.5	621.1
27.5°	551.1	549.8	552.4	553.7	558.9	562.8	565.4	571.9	580.9	587.4	600.4
30°	526.5	526.5	526.5	529.1	531.7	536.9	538.1	544.6	551.1	560.2	569.3
32.5°	491.5	492.8	492.8	495.4	497.9	501.8	503.1	508.3	514.8	520.0	529.1
35°	451.3	448.7	450.0	451.3	455.2	457.8	457.8	464.2	465.5	472.0	481.1
37.5°	404.6	405.9	405.9	407.2	411.1	411.1	415.0	416.3	420.1	424.0	427.9
40°	364.4	365.7	367.0	367.0	369.6	369.6	370.9	373.5	374.8	378.6	378.6
42.5°	332.0	329.4	330.7	329.4	332.0	333.3	334.6	334.6	335.9	335.9	335.9
45°	300.8	300.8	300.8	300.8	300.8	300.8	302.1	303.4	300.8	298.3	294.4
47.5°	276.2	276.2	274.9	274.9	273.6	273.6	272.3	268.4	264.5	259.3	251.6
50°	251.6	251.6	251.6	249.0	249.0	246.4	246.4	242.5	237.3	230.8	221.7
52.5°	228.2	226.9	228.2	225.6	223.0	223.0	221.7	217.9	212.7	204.9	197.1
55°	197.1	197.1	195.8	193.2	191.9	191.9	191.9	188.0	182.8	177.7	168.6
57.5°	164.7	164.7	164.7	162.1	160.8	160.8	159.5	158.2	154.3	149.1	142.6
60°	143.9	143.9	143.9	142.6	140.0	140.0	138.8	136.2	133.6	128.4	123.2
62.5°	129.7	128.4	128.4	128.4	125.8	125.8	125.8	123.2	119.3	115.4	110.2
65°	114.1	114.1	114.1	112.8	111.5	111.5	110.2	108.9	105.0	102.4	96.0
67.5°	97.3	98.6	97.3	96.0	94.7	96.0	94.7	92.1	89.5	86.9	81.7
70°	81.7	80.4	80.4	79.1	79.1	77.8	77.8	75.2	72.6	70.0	66.1
72.5°	63.5	63.5	63.5	62.2	60.9	60.9	59.7	59.7	57.1	53.2	50.6
75°	48.0	48.0	48.0	46.7	46.7	45.4	44.1	44.1	42.8	40.2	37.6
77.5°	35.0	35.0	35.0	33.7	33.7	32.4	32.4	31.1	29.8	28.5	25.9
80°	24.6	24.6	24.6	23.3	23.3	23.3	22.0	22.0	20.7	19.5	16.9
82.5°	16.9	16.9	16.9	16.9	15.6	15.6	15.6	14.3	14.3	13.0	11.7
85°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	9.1	9.1	7.8	7.8
87.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	3.9	3.9
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°	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9
2.5°	686.0	689.9	689.9	692.5	693.8	695.1	695.1	698.9	700.2	702.8	702.8
5°	679.5	683.4	688.6	693.8	693.8	697.6	700.2	705.4	709.3	714.5	718.4
7.5°	675.6	682.1	689.9	696.4	700.2	704.1	710.6	717.1	723.6	732.7	737.8
10°	673.0	682.1	692.5	702.8	708.0	713.2	723.6	730.1	741.7	753.4	759.9
12.5°	670.4	682.1	696.4	709.3	715.8	723.6	737.8	746.9	761.2	774.2	784.5
15°	669.1	682.1	698.9	715.8	723.6	731.4	749.5	762.5	776.7	792.3	805.3
17.5°	663.9	682.1	700.2	721.0	728.8	737.8	756.0	771.6	787.1	804.0	815.7
20°	660.0	676.9	698.9	719.7	730.1	737.8	758.6	774.2	789.7	805.3	818.2
22.5°	652.3	667.8	689.9	710.6	719.7	727.5	746.9	763.8	776.7	792.3	801.4
25°	638.0	654.9	673.0	692.5	700.2	706.7	722.3	737.8	749.5	763.8	774.2
27.5°	614.7	628.9	647.1	661.3	670.4	673.0	686.0	700.2	709.3	721.0	727.5
30°	580.9	592.6	605.6	619.8	627.6	627.6	639.3	651.0	657.4	669.1	673.0
32.5°	536.9	545.9	557.6	565.4	569.3	571.9	579.6	587.4	593.9	601.7	604.3
35°	486.3	495.4	499.2	507.0	505.7	508.3	513.5	517.4	523.9	526.5	529.1
37.5°	430.5	435.7	439.6	439.6	442.2	438.3	442.2	442.2	446.1	447.4	453.9
40°	378.6	379.9	377.4	377.4	377.4	373.5	373.5	372.2	372.2	376.1	373.5
42.5°	333.3	328.1	321.6	316.4	312.5	307.3	303.4	302.1	298.3	300.8	298.3
45°	289.2	278.8	267.1	254.2	247.7	241.2	232.1	225.6	221.7	219.1	219.1
47.5°	242.5	228.2	211.4	191.9	181.5	172.5	160.8	147.8	142.6	137.5	132.3
50°	208.8	193.2	173.8	151.7	141.3	131.0	114.1	102.4	93.4	88.2	84.3
52.5°	184.1	166.0	146.5	123.2	111.5	101.1	83.0	71.3	60.9	54.5	50.6
55°	158.2	142.6	123.2	101.1	89.5	77.8	60.9	48.0	38.9	33.7	29.8
57.5°	133.6	120.6	102.4	80.4	68.7	59.7	44.1	32.4	24.6	19.5	16.9
60°	114.1	102.4	86.9	67.4	57.1	48.0	33.7	24.6	16.9	13.0	10.4
62.5°	102.4	90.8	75.2	58.4	50.6	42.8	28.5	20.7	14.3	10.4	7.8
65°	89.5	77.8	64.8	49.3	42.8	36.3	24.6	16.9	11.7	9.1	6.5
67.5°	73.9	64.8	53.2	41.5	35.0	29.8	20.7	14.3	9.1	7.8	5.2
70°	59.7	51.9	42.8	32.4	27.2	23.3	15.6	10.4	7.8	5.2	3.9
72.5°	45.4	38.9	32.4	24.6	20.7	18.2	11.7	7.8	6.5	3.9	2.6
75°	33.7	28.5	22.0	16.9	15.6	13.0	9.1	6.5	3.9	2.6	2.6
77.5°	23.3	19.5	15.6	11.7	10.4	9.1	6.5	3.9	2.6	2.6	1.3
80°	15.6	13.0	10.4	7.8	6.5	6.5	3.9	2.6	2.6	1.3	1.3
82.5°	10.4	7.8	6.5	5.2	3.9	3.9	2.6	1.3	1.3	1.3	1.3
85°	6.5	5.2	3.9	2.6	2.6	1.3	1.3	1.3	0.0	0.0	0.0
87.5°	3.9	2.6	1.3	1.3	1.3	0.0	0.0	0.0	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°	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9
2.5°	705.4	706.7	709.3	709.3	710.6	710.6	713.2	715.8	715.8	717.1	718.4
5°	719.7	724.9	726.2	727.5	731.4	731.4	734.0	737.8	739.1	740.4	740.4
7.5°	743.0	746.9	750.8	753.4	756.0	758.6	763.8	767.7	770.3	770.3	771.6
10°	766.4	772.9	780.6	783.2	785.8	788.4	794.9	796.2	798.8	800.1	802.7
12.5°	793.6	800.1	807.9	810.5	814.4	818.2	823.4	824.7	828.6	831.2	832.5
15°	814.4	822.1	829.9	832.5	836.4	840.3	845.5	846.8	850.7	852.0	855.9
17.5°	826.0	833.8	841.6	845.5	848.1	852.0	859.7	859.7	862.3	863.6	866.2
20°	824.7	835.1	842.9	845.5	849.4	853.3	858.4	859.7	861.0	863.6	864.9
22.5°	811.8	820.8	824.7	828.6	832.5	833.8	840.3	841.6	844.2	844.2	846.8
25°	780.6	787.1	793.6	794.9	800.1	801.4	802.7	802.7	807.9	806.6	809.2
27.5°	735.3	740.4	744.3	745.6	748.2	748.2	750.8	749.5	752.1	750.8	754.7
30°	676.9	682.1	684.7	686.0	686.0	686.0	687.3	686.0	687.3	683.4	683.4
32.5°	606.9	612.1	610.8	612.1	614.7	612.1	612.1	605.6	606.9	608.2	608.2
35°	530.4	531.7	538.1	535.6	534.3	530.4	530.4	529.1	526.5	523.9	522.6
37.5°	452.6	455.2	453.9	451.3	451.3	452.6	448.7	448.7	444.8	443.5	443.5
40°	374.8	376.1	370.9	372.2	373.5	372.2	370.9	370.9	365.7	364.4	364.4
42.5°	298.3	294.4	295.7	297.0	294.4	295.7	297.0	294.4	291.8	289.2	290.5
45°	219.1	212.7	212.7	211.4	212.7	212.7	214.0	212.7	211.4	206.2	208.8
47.5°	132.3	128.4	125.8	125.8	125.8	124.5	121.9	124.5	123.2	120.6	121.9
50°	81.7	76.5	76.5	73.9	72.6	73.9	71.3	70.0	68.7	66.1	67.4
52.5°	48.0	45.4	42.8	42.8	41.5	40.2	40.2	37.6	37.6	37.6	37.6
55°	25.9	23.3	20.7	19.5	19.5	18.2	18.2	18.2	18.2	16.9	16.9
57.5°	14.3	13.0	10.4	9.1	7.8	7.8	6.5	6.5	6.5	5.2	6.5
60°	7.8	6.5	5.2	5.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9
62.5°	6.5	5.2	3.9	3.9	3.9	2.6	2.6	2.6	2.6	2.6	2.6
65°	5.2	3.9	3.9	3.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6
67.5°	3.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
72.5°	2.6	2.6	1.3	2.6	1.3	1.3	1.3	1.3	2.6	1.3	1.3
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	698.9	698.9	698.9	698.9	698.9	698.9	698.9	698.9
2.5°	717.1	719.7	721.0	719.7	721.0	721.0	721.0	722.3
5°	744.3	745.6	746.9	744.3	746.9	746.9	746.9	748.2
7.5°	772.9	775.5	776.7	776.7	776.7	778.0	778.0	779.3
10°	806.6	806.6	807.9	807.9	809.2	810.5	807.9	813.1
12.5°	835.1	837.7	837.7	837.7	839.0	839.0	839.0	842.9
15°	857.1	858.4	859.7	859.7	859.7	863.6	862.3	864.9
17.5°	868.8	871.4	871.4	870.1	872.7	874.0	872.7	874.0
20°	866.2	868.8	867.5	867.5	868.8	870.1	868.8	871.4
22.5°	848.1	848.1	848.1	845.5	849.4	849.4	846.8	852.0
25°	807.9	810.5	809.2	806.6	806.6	807.9	805.3	810.5
27.5°	754.7	754.7	752.1	752.1	749.5	750.8	752.1	752.1
30°	686.0	684.7	684.7	682.1	684.7	683.4	683.4	689.9
32.5°	604.3	605.6	604.3	603.0	605.6	605.6	605.6	606.9
35°	526.5	525.2	522.6	521.3	523.9	520.0	521.3	522.6
37.5°	442.2	439.6	439.6	437.0	439.6	437.0	435.7	437.0
40°	364.4	363.1	363.1	361.8	361.8	363.1	360.5	364.4
42.5°	287.9	285.3	286.6	286.6	284.0	284.0	284.0	285.3
45°	210.1	207.5	208.8	207.5	204.9	203.6	203.6	202.3
47.5°	119.3	119.3	116.7	119.3	119.3	118.0	115.4	112.8
50°	67.4	67.4	66.1	66.1	66.1	64.8	64.8	64.8
52.5°	36.3	36.3	36.3	36.3	35.0	36.3	36.3	36.3
55°	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9
57.5°	5.2	6.5	6.5	5.2	6.5	5.2	6.5	5.2
60°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
62.5°	3.9	2.6	3.9	3.9	2.6	3.9	3.9	3.9
65°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
67.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
72.5°	2.6	1.3	2.6	2.6	2.6	2.6	2.6	1.3
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)