

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: P219490

Luminaire Tested: **LDSQ4B15D010 EU4B10208027 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219490
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B15D010 EU4B10208027 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1116.4 lumens
Efficiency: N/A
Efficacy: 77.6 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

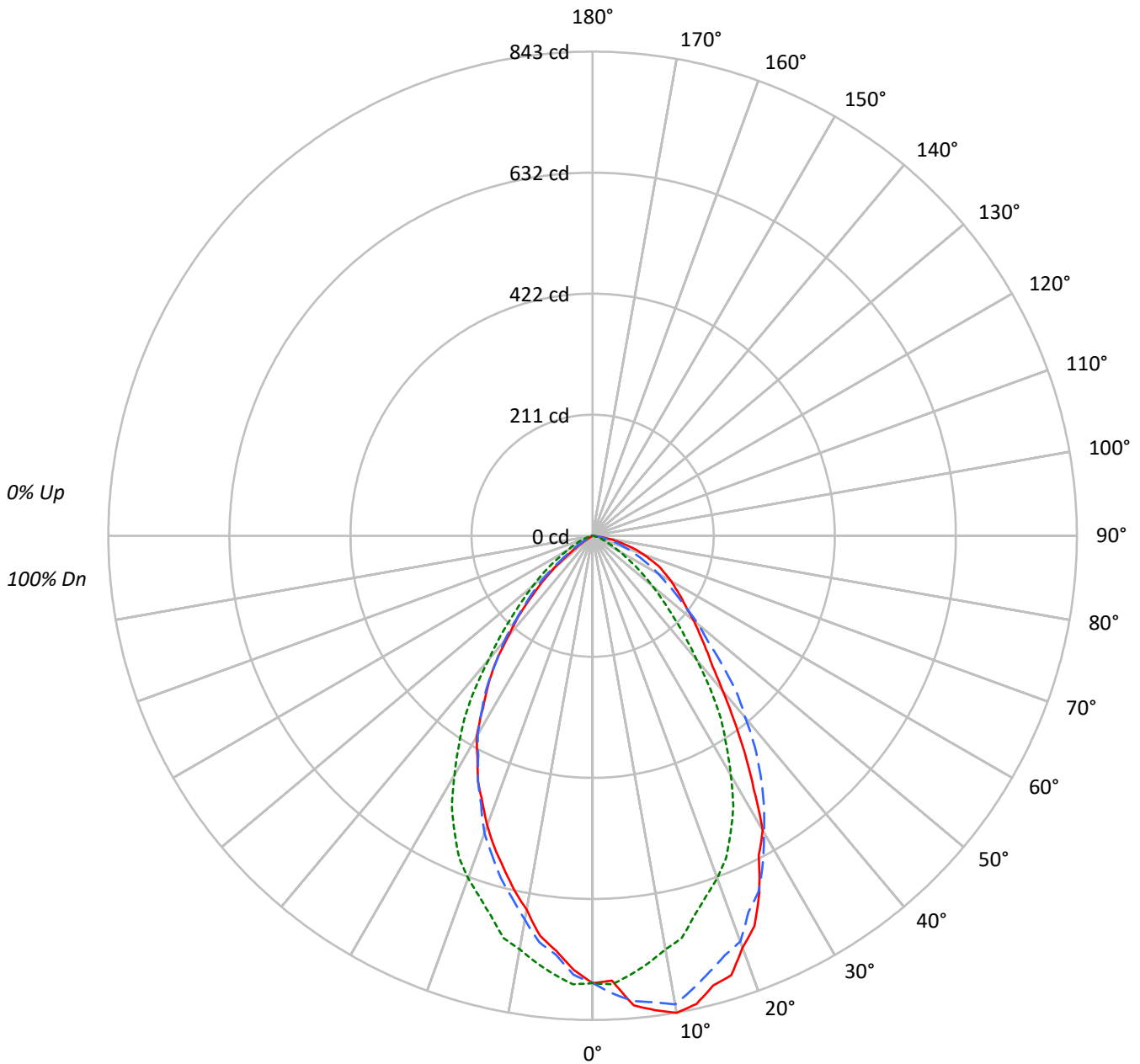
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41																			
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	75456	75456	75456
5°	79829	74558	70561
10°	82955	71928	65042
15°	81297	68660	60035
20°	78660	65371	55268
25°	73369	60788	50409
30°	66234	53806	45125
35°	54555	46052	37442
40°	44527	35548	28821
45°	38251	27003	20728
50°	34618	20542	13097
55°	31854	14829	4729
60°	30574	10133	717
65°	29547	6854	206
70°	26455	4759	255
75°	21672	2433	0
80°	13557	1060	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	6.5
10°-20°	196.6	17.6
20°-30°	262.5	23.5
30°-40°	249.2	22.3
40°-50°	172.3	15.4
50°-60°	95.2	8.5
60°-70°	47.3	4.2
70°-80°	18.6	1.7
80°-90°	1.8	0.2
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°	532.1	47.7
0°-40°	781.3	70.0
0°-60°	1048.8	93.9
0°-90°	1116.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1116.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	779	779	779	779	779	
5°	821	813	767	732	726	79
15°	811	786	685	617	599	229
25°	686	684	569	472	472	313
35°	461	510	389	320	317	289
45°	279	320	197	162	151	218
55°	189	177	88	45	28	170
65°	129	93	30	1	1	125
75°	58	36	6	0	0	62
85°	0	1	0	0	0	5
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°	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9
2.5°	775.1	796.6	798.5	796.6	799.4	798.5	803.2	798.5	804.1	795.7	797.6
5°	820.9	812.5	830.2	820.9	820.9	820.0	817.2	816.2	820.0	807.8	813.4
7.5°	833.0	845.2	861.1	841.4	842.4	842.4	836.8	834.9	834.9	812.5	819.0
10°	843.3	835.8	844.2	836.8	843.3	842.4	846.1	834.0	842.4	829.3	828.4
12.5°	834.9	832.1	843.3	831.2	827.4	828.4	823.7	820.9	823.7	808.8	807.8
15°	810.6	813.4	830.2	817.2	815.3	813.4	807.8	798.5	806.0	785.4	786.3
17.5°	802.2	797.6	800.4	789.1	791.9	790.1	789.1	780.7	778.9	765.8	765.8
20°	763.0	773.3	773.3	765.8	765.8	764.9	752.7	760.2	751.8	748.1	751.8
22.5°	735.9	736.8	736.8	730.3	731.2	727.5	721.0	716.3	721.0	716.3	708.8
25°	686.4	688.3	699.5	687.4	685.5	689.2	683.6	680.8	679.9	668.7	683.6
27.5°	626.6	645.3	644.4	639.7	645.3	637.9	635.1	636.0	638.8	637.9	641.6
30°	592.1	594.9	597.7	594.0	594.9	592.1	592.1	593.0	600.5	597.7	596.8
32.5°	522.1	531.4	538.9	538.9	539.8	542.6	541.7	561.3	565.9	556.6	554.7
35°	461.3	467.9	474.4	475.4	487.5	488.4	489.4	495.0	508.0	510.8	509.9
37.5°	403.4	410.0	411.9	420.3	426.8	433.3	440.8	448.3	459.5	468.8	464.1
40°	352.1	354.9	359.6	363.3	376.4	376.4	380.1	395.0	407.2	414.7	413.7
42.5°	309.1	310.1	313.8	320.3	332.5	329.7	332.5	342.7	360.5	361.4	371.7
45°	279.2	278.3	281.1	282.0	289.5	293.2	295.1	302.6	317.5	319.4	320.3
47.5°	252.2	251.2	255.9	257.8	260.6	264.3	264.3	265.2	270.8	275.5	271.8
50°	229.7	229.7	229.7	231.6	236.3	235.3	236.3	240.0	242.8	240.9	240.0
52.5°	205.5	209.2	212.0	212.9	213.9	213.9	214.8	212.9	212.0	209.2	203.6
55°	188.6	192.4	192.4	192.4	192.4	196.1	191.4	192.4	192.4	184.9	177.4
57.5°	171.8	175.6	178.4	174.6	178.4	174.6	172.8	171.8	170.0	162.5	151.3
60°	157.8	159.7	158.8	157.8	159.7	156.9	155.0	151.3	149.4	139.2	131.7
62.5°	142.0	142.9	143.8	142.0	140.1	139.2	135.4	129.8	126.1	117.7	111.1
65°	128.9	126.1	125.1	124.2	122.3	119.5	116.7	110.2	107.4	99.9	93.4
67.5°	109.3	108.3	110.2	107.4	102.7	102.7	99.9	94.3	87.8	83.1	76.6
70°	93.4	92.5	90.6	87.8	86.9	83.1	83.1	76.6	74.7	66.3	60.7
72.5°	76.6	76.6	73.8	71.0	68.2	66.3	65.4	60.7	57.9	53.2	48.6
75°	57.9	57.9	57.0	54.2	52.3	50.4	49.5	45.8	43.0	38.3	35.5
77.5°	41.1	41.1	37.4	35.5	36.4	34.6	32.7	31.8	30.8	28.0	24.3
80°	24.3	23.3	20.5	21.5	20.5	20.5	19.6	18.7	16.8	14.9	13.1
82.5°	6.5	7.5	7.5	7.5	8.4	6.5	6.5	6.5	7.5	7.5	4.7
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9
87.5°	0.9	1.9	3.7	3.7	3.7	3.7	3.7	2.8	2.8	2.8	1.9
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°	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9
2.5°	788.2	787.3	788.2	781.7	796.6	785.4	783.5	781.7	788.2	781.7	772.3
5°	805.0	795.7	792.9	790.1	798.5	785.4	782.6	783.5	778.9	766.7	767.7
7.5°	810.6	802.2	793.8	776.1	783.5	780.7	773.3	767.7	760.2	749.9	748.1
10°	812.5	803.2	791.0	785.4	774.2	770.5	767.7	758.3	749.0	731.2	726.6
12.5°	806.9	795.7	780.7	776.1	767.7	755.5	749.0	739.7	731.2	717.2	707.0
15°	782.6	773.3	768.6	752.7	749.0	741.5	728.4	715.4	703.2	684.6	678.9
17.5°	754.6	750.9	746.2	734.0	733.1	725.6	713.5	702.3	686.4	657.5	648.1
20°	725.6	725.6	710.7	706.0	715.4	700.4	691.1	680.8	648.1	634.1	617.3
22.5°	704.2	693.9	685.5	678.0	678.9	669.6	656.5	636.0	623.8	607.0	587.4
25°	662.1	665.9	647.2	644.4	647.2	625.7	619.2	602.4	584.6	568.7	553.8
27.5°	636.0	625.7	613.6	603.3	603.3	594.9	576.2	572.5	545.4	530.5	511.8
30°	596.8	589.3	579.0	564.1	562.2	555.7	540.7	531.4	503.4	481.0	470.7
32.5°	547.3	544.5	536.1	519.2	513.6	506.2	487.5	471.6	458.5	433.3	421.2
35°	511.8	501.5	483.8	469.8	465.1	452.0	437.1	425.9	411.9	389.4	373.6
37.5°	458.5	448.3	431.5	414.7	414.7	401.6	381.0	369.8	350.2	337.1	324.1
40°	411.9	398.8	382.0	362.4	359.6	340.9	332.5	313.8	301.7	281.1	279.2
42.5°	359.6	347.4	332.5	317.5	306.3	297.0	275.5	261.5	248.4	238.1	235.3
45°	311.9	296.0	283.0	264.3	253.1	241.9	227.9	218.5	208.3	197.1	190.5
47.5°	270.8	257.8	239.1	222.3	211.1	205.5	189.6	179.3	170.9	163.4	158.8
50°	228.8	212.9	202.7	184.0	182.1	169.0	156.0	147.6	142.9	136.3	129.8
52.5°	197.1	182.1	168.1	154.1	146.6	142.0	129.8	121.4	114.9	110.2	106.5
55°	166.2	153.2	142.0	127.9	123.3	116.7	102.7	100.9	94.3	87.8	83.1
57.5°	142.9	130.7	117.7	108.3	99.9	95.3	84.1	76.6	72.8	67.2	62.6
60°	121.4	108.3	98.1	86.9	83.1	76.6	68.2	61.6	57.0	52.3	47.6
62.5°	101.8	90.6	79.4	70.0	64.4	60.7	54.2	48.6	43.9	40.2	36.4
65°	84.1	73.8	64.4	55.1	52.3	47.6	43.0	38.3	34.6	29.9	26.1
67.5°	69.1	59.8	50.4	43.9	41.1	39.2	33.6	29.0	26.1	23.3	19.6
70°	54.2	47.6	40.2	34.6	31.8	29.0	25.2	22.4	18.7	16.8	14.0
72.5°	42.0	36.4	29.9	25.2	23.3	21.5	17.7	14.9	13.1	11.2	9.3
75°	29.9	25.2	21.5	16.8	15.9	14.9	12.1	10.3	8.4	6.5	5.6
77.5°	20.5	16.8	13.1	11.2	10.3	8.4	7.5	5.6	4.7	3.7	2.8
80°	11.2	8.4	6.5	5.6	4.7	3.7	3.7	2.8	1.9	1.9	0.9
82.5°	3.7	2.8	1.9	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.9
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°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	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°	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9
2.5°	777.9	767.7	770.5	770.5	768.6	768.6	766.7	763.9	764.9	759.3	747.1
5°	769.5	756.5	754.6	756.5	749.0	747.1	743.4	749.0	732.2	738.7	731.2
7.5°	745.3	733.1	730.3	736.8	727.5	721.9	721.0	728.4	713.5	706.0	697.6
10°	718.2	713.5	705.1	700.4	697.6	698.6	691.1	681.7	678.9	677.1	669.6
12.5°	693.9	683.6	676.1	670.5	668.7	668.7	656.5	654.7	646.3	644.4	633.2
15°	664.9	652.8	648.1	640.7	634.1	637.9	623.8	620.1	617.3	605.2	607.0
17.5°	639.7	626.6	615.4	610.8	605.2	599.6	586.5	589.3	582.8	582.8	565.9
20°	607.0	593.0	584.6	575.3	575.3	567.8	558.5	559.4	551.0	542.6	527.7
22.5°	572.5	557.5	547.3	543.5	534.2	532.3	521.1	518.3	507.1	508.0	495.0
25°	536.1	521.1	507.1	508.0	499.6	495.9	489.4	476.3	471.6	466.0	462.3
27.5°	493.1	482.8	470.7	469.8	453.9	454.8	446.4	442.7	431.5	434.3	425.9
30°	453.9	438.9	427.7	424.9	418.4	416.5	403.4	397.8	399.7	392.2	387.6
32.5°	413.7	391.3	386.6	381.0	377.3	372.6	363.3	367.0	358.6	360.5	353.0
35°	360.5	351.1	339.0	339.0	335.3	331.5	325.0	328.7	320.3	316.6	309.1
37.5°	315.7	307.3	295.1	298.8	292.3	286.7	281.1	282.0	274.6	273.6	266.2
40°	267.1	262.4	254.0	254.0	249.4	249.4	246.6	243.7	239.1	233.5	225.1
42.5°	221.3	217.6	213.9	214.8	208.3	213.9	206.4	211.1	196.1	195.2	189.6
45°	187.7	179.3	180.2	176.5	172.8	174.6	168.1	170.0	161.6	159.7	154.1
47.5°	152.2	149.4	143.8	142.0	142.0	139.2	136.3	135.4	131.7	127.0	119.5
50°	125.1	114.9	113.0	110.2	108.3	108.3	104.6	99.0	99.9	95.3	87.8
52.5°	98.1	89.7	85.9	85.0	81.2	79.4	74.7	71.0	68.2	66.3	61.6
55°	75.6	68.2	63.5	63.5	57.9	57.9	51.4	48.6	44.8	41.1	38.3
57.5°	57.0	53.2	48.6	44.8	43.0	38.3	34.6	29.9	27.1	21.5	17.7
60°	43.0	39.2	34.6	31.8	29.9	25.2	20.5	16.8	10.3	8.4	7.5
62.5°	31.8	28.0	23.3	21.5	19.6	15.9	11.2	5.6	2.8	2.8	2.8
65°	23.3	18.7	14.9	13.1	11.2	8.4	3.7	1.9	0.9	0.9	0.9
67.5°	15.9	12.1	8.4	7.5	5.6	2.8	0.9	0.9	0.9	0.9	0.9
70°	10.3	7.5	3.7	2.8	1.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	6.5	3.7	1.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.7	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	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	0.9	0.9	0.9
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	778.9	778.9	778.9	778.9	778.9	778.9	778.9	778.9
2.5°	760.2	753.7	757.4	749.0	752.7	759.3	754.6	756.5
5°	734.0	730.3	725.6	713.5	722.8	730.3	726.6	725.6
7.5°	706.0	693.0	699.5	695.8	693.9	701.4	693.0	702.3
10°	677.1	667.7	666.8	660.3	660.3	665.9	666.8	661.2
12.5°	634.1	629.5	629.5	628.5	627.6	633.2	634.1	631.3
15°	603.3	601.4	596.8	595.8	590.2	598.6	599.6	598.6
17.5°	565.9	566.9	562.2	562.2	565.9	568.7	561.3	568.7
20°	540.7	536.1	534.2	525.8	530.5	535.1	535.1	536.1
22.5°	504.3	496.8	499.6	495.0	492.2	498.7	498.7	501.5
25°	463.2	463.2	465.1	462.3	464.1	467.9	465.1	471.6
27.5°	424.0	427.7	427.7	424.0	425.9	437.1	441.7	434.3
30°	387.6	388.5	391.3	389.4	395.0	398.8	397.8	403.4
32.5°	346.5	351.1	353.0	350.2	352.1	360.5	355.8	354.9
35°	314.7	306.3	305.4	306.3	310.1	311.9	310.1	316.6
37.5°	269.0	266.2	262.4	263.4	266.2	269.9	271.8	276.4
40°	225.1	221.3	221.3	220.4	217.6	227.9	227.9	227.9
42.5°	186.8	185.8	181.2	181.2	184.9	187.7	185.8	192.4
45°	153.2	149.4	146.6	146.6	149.4	149.4	152.2	151.3
47.5°	120.5	116.7	117.7	114.9	117.7	121.4	116.7	117.7
50°	90.6	90.6	88.7	90.6	89.7	90.6	88.7	86.9
52.5°	61.6	70.0	71.0	67.2	58.8	51.4	46.7	50.4
55°	35.5	31.8	31.8	30.8	29.0	28.0	25.2	28.0
57.5°	17.7	15.9	15.9	15.9	14.9	14.0	12.1	12.1
60°	7.5	6.5	6.5	5.6	4.7	3.7	2.8	3.7
62.5°	2.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9
65°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
67.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)