

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: P219499

Luminaire Tested: **LDSQ4B15D010 EU4B10209040 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219499
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 EU4B10209040 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1012.7 lumens
Efficiency: N/A
Efficacy: 70.4 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

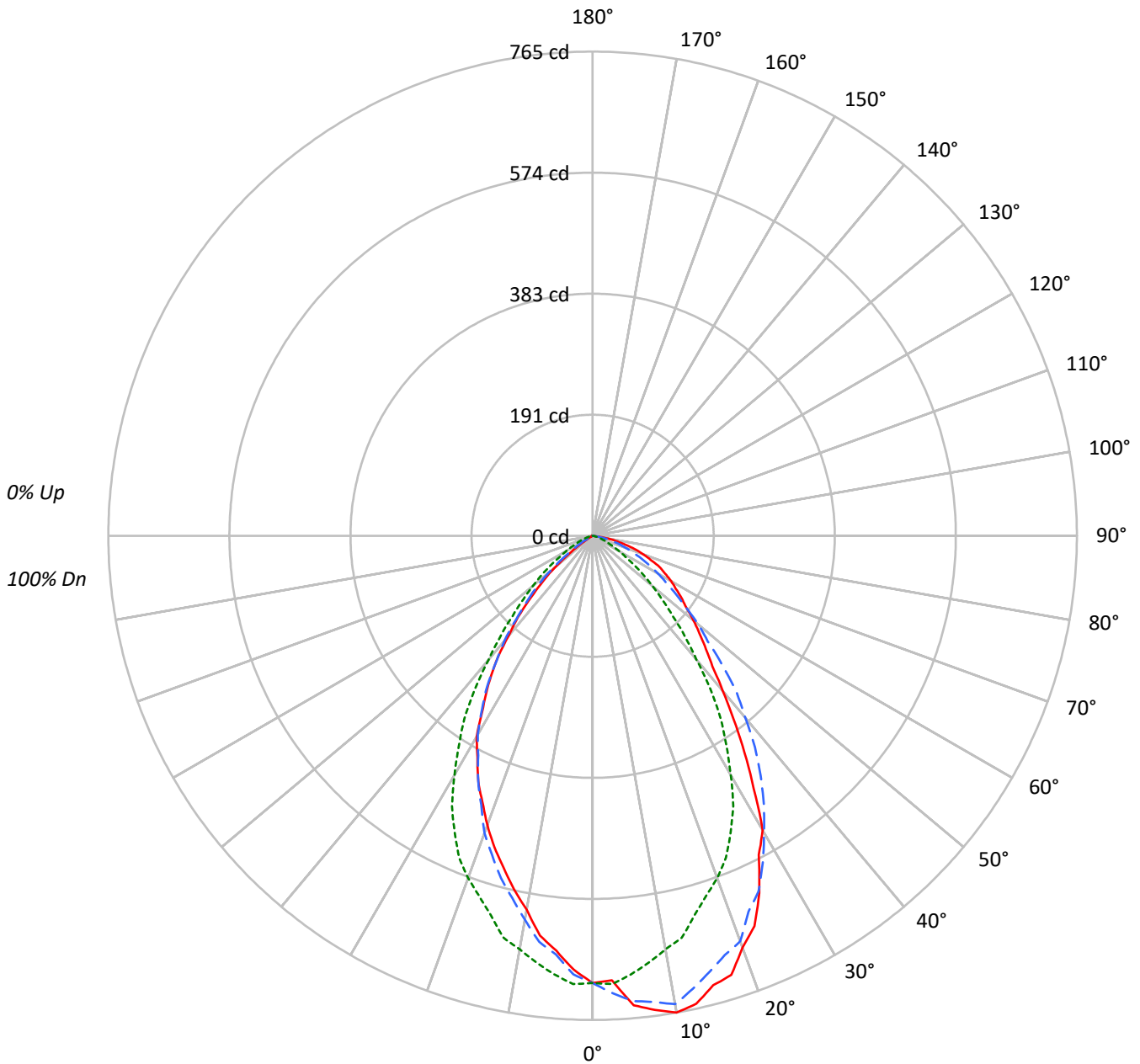
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	68442	68442	68442
5°	72409	67634	64007
10°	75243	65249	59002
15°	73745	62272	54459
20°	71350	59299	50124
25°	66550	55145	45728
30°	60081	48805	40942
35°	49493	41771	33965
40°	40392	32248	26140
45°	34703	24482	18797
50°	31408	18643	11876
55°	28898	13444	4290
60°	27745	9184	659
65°	26797	6212	183
70°	23991	4305	227
75°	19651	2208	0
80°	12273	948	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.2	6.5
10°-20°	178.3	17.6
20°-30°	238.1	23.5
30°-40°	226.1	22.3
40°-50°	156.3	15.4
50°-60°	86.3	8.5
60°-70°	42.9	4.2
70°-80°	16.9	1.7
80°-90°	1.6	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°	482.7	47.7
0°-40°	708.7	70.0
0°-60°	951.3	93.9
0°-90°	1012.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1012.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	706	706	706	706	706	
5°	745	738	696	664	658	71
15°	735	713	621	560	543	208
25°	623	620	516	428	428	284
35°	418	462	353	291	287	262
45°	253	291	179	147	137	198
55°	171	161	80	41	25	154
65°	117	85	27	1	1	113
75°	52	32	6	0	0	56
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°	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5
2.5°	703.1	722.6	724.3	722.6	725.1	724.3	728.5	724.3	729.4	721.7	723.4
5°	744.6	737.0	753.1	744.6	744.6	743.8	741.2	740.4	743.8	732.8	737.8
7.5°	755.6	766.6	781.0	763.2	764.1	764.1	759.0	757.3	757.3	737.0	742.9
10°	764.9	758.2	765.8	759.0	764.9	764.1	767.5	756.5	764.1	752.2	751.4
12.5°	757.3	754.8	764.9	753.9	750.5	751.4	747.2	744.6	747.2	733.6	732.8
15°	735.3	737.8	753.1	741.2	739.5	737.8	732.8	724.3	731.1	712.4	713.3
17.5°	727.7	723.4	726.0	715.8	718.4	716.7	715.8	708.2	706.5	694.6	694.6
20°	692.1	701.4	701.4	694.6	694.6	693.8	682.8	689.6	681.9	678.5	681.9
22.5°	667.5	668.4	668.4	662.4	663.3	659.9	654.0	649.7	654.0	649.7	643.0
25°	622.6	624.3	634.5	623.5	621.8	625.2	620.1	617.5	616.7	606.5	620.1
27.5°	568.4	585.4	584.5	580.3	585.4	578.6	576.0	576.9	579.4	578.6	582.0
30°	537.1	539.6	542.2	538.8	539.6	537.1	537.1	537.9	544.7	542.2	541.3
32.5°	473.5	482.0	488.8	488.8	489.6	492.2	491.3	509.1	513.4	504.9	503.2
35°	418.5	424.4	430.3	431.2	442.2	443.0	443.9	449.0	460.8	463.4	462.5
37.5°	366.0	371.9	373.6	381.2	387.1	393.1	399.8	406.6	416.8	425.3	421.0
40°	319.4	321.9	326.1	329.5	341.4	341.4	344.8	358.3	369.3	376.1	375.3
42.5°	280.4	281.2	284.6	290.6	301.6	299.0	301.6	310.9	327.0	327.8	337.2
45°	253.3	252.4	255.0	255.8	262.6	266.0	267.7	274.5	288.0	289.7	290.6
47.5°	228.7	227.9	232.1	233.8	236.3	239.7	239.7	240.6	245.7	249.9	246.5
50°	208.4	208.4	208.4	210.1	214.3	213.5	214.3	217.7	220.2	218.6	217.7
52.5°	186.4	189.8	192.3	193.1	194.0	194.0	194.8	193.1	192.3	189.8	184.7
55°	171.1	174.5	174.5	174.5	174.5	177.9	173.7	174.5	174.5	167.7	161.0
57.5°	155.9	159.3	161.8	158.4	161.8	158.4	156.7	155.9	154.2	147.4	137.2
60°	143.2	144.9	144.0	143.2	144.9	142.3	140.6	137.2	135.5	126.2	119.4
62.5°	128.8	129.6	130.5	128.8	127.1	126.2	122.8	117.7	114.4	106.7	100.8
65°	116.9	114.4	113.5	112.7	111.0	108.4	105.9	100.0	97.4	90.6	84.7
67.5°	99.1	98.3	100.0	97.4	93.2	93.2	90.6	85.6	79.6	75.4	69.5
70°	84.7	83.9	82.2	79.6	78.8	75.4	75.4	69.5	67.8	60.1	55.1
72.5°	69.5	69.5	66.9	64.4	61.8	60.1	59.3	55.1	52.5	48.3	44.0
75°	52.5	52.5	51.7	49.1	47.4	45.7	44.9	41.5	39.0	34.7	32.2
77.5°	37.3	37.3	33.9	32.2	33.0	31.3	29.6	28.8	28.0	25.4	22.0
80°	22.0	21.2	18.6	19.5	18.6	18.6	17.8	16.9	15.2	13.6	11.9
82.5°	5.9	6.8	6.8	6.8	7.6	5.9	5.9	5.9	6.8	6.8	4.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8
87.5°	0.8	1.7	3.4	3.4	3.4	3.4	3.4	2.5	2.5	2.5	1.7
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°	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5
2.5°	715.0	714.1	715.0	709.0	722.6	712.4	710.7	709.0	715.0	709.0	700.6
5°	730.2	721.7	719.2	716.7	724.3	712.4	709.9	710.7	706.5	695.5	696.3
7.5°	735.3	727.7	720.0	704.0	710.7	708.2	701.4	696.3	689.6	680.2	678.5
10°	737.0	728.5	717.5	712.4	702.3	698.9	696.3	687.9	679.4	663.3	659.1
12.5°	731.9	721.7	708.2	704.0	696.3	685.3	679.4	670.9	663.3	650.6	641.3
15°	709.9	701.4	697.2	682.8	679.4	672.6	660.7	648.9	637.9	620.9	615.9
17.5°	684.5	681.1	676.8	665.8	665.0	658.2	647.2	637.0	622.6	596.4	587.9
20°	658.2	658.2	644.7	640.4	648.9	635.3	626.9	617.5	587.9	575.2	559.9
22.5°	638.7	629.4	621.8	615.0	615.9	607.4	595.5	576.9	565.9	550.6	532.8
25°	600.6	604.0	587.1	584.5	587.1	567.6	561.6	546.4	530.3	515.9	502.3
27.5°	576.9	567.6	556.6	547.2	547.2	539.6	522.7	519.3	494.7	481.2	464.2
30°	541.3	534.5	525.2	511.7	510.0	504.0	490.5	482.0	456.6	436.3	426.9
32.5°	496.4	493.9	486.2	471.0	465.9	459.1	442.2	427.8	415.9	393.1	382.0
35°	464.2	454.9	438.8	426.1	421.9	410.0	396.4	386.3	373.6	353.2	338.8
37.5°	415.9	406.6	391.4	376.1	376.1	364.3	345.6	335.5	317.7	305.8	293.9
40°	373.6	361.7	346.5	328.7	326.1	309.2	301.6	284.6	273.6	255.0	253.3
42.5°	326.1	315.1	301.6	288.0	277.9	269.4	249.9	237.2	225.3	216.0	213.5
45°	282.9	268.5	256.7	239.7	229.6	219.4	206.7	198.2	188.9	178.7	172.8
47.5°	245.7	233.8	216.9	201.6	191.4	186.4	172.0	162.6	155.0	148.2	144.0
50°	207.5	193.1	183.8	166.9	165.2	153.3	141.5	133.8	129.6	123.7	117.7
52.5°	178.7	165.2	152.5	139.8	133.0	128.8	117.7	110.1	104.2	100.0	96.6
55°	150.8	138.9	128.8	116.1	111.8	105.9	93.2	91.5	85.6	79.6	75.4
57.5°	129.6	118.6	106.7	98.3	90.6	86.4	76.2	69.5	66.1	61.0	56.8
60°	110.1	98.3	88.9	78.8	75.4	69.5	61.8	55.9	51.7	47.4	43.2
62.5°	92.3	82.2	72.0	63.5	58.5	55.1	49.1	44.0	39.8	36.4	33.0
65°	76.2	66.9	58.5	50.0	47.4	43.2	39.0	34.7	31.3	27.1	23.7
67.5°	62.7	54.2	45.7	39.8	37.3	35.6	30.5	26.3	23.7	21.2	17.8
70°	49.1	43.2	36.4	31.3	28.8	26.3	22.9	20.3	16.9	15.2	12.7
72.5°	38.1	33.0	27.1	22.9	21.2	19.5	16.1	13.6	11.9	10.2	8.5
75°	27.1	22.9	19.5	15.2	14.4	13.6	11.0	9.3	7.6	5.9	5.1
77.5°	18.6	15.2	11.9	10.2	9.3	7.6	6.8	5.1	4.2	3.4	2.5
80°	10.2	7.6	5.9	5.1	4.2	3.4	3.4	2.5	1.7	1.7	0.8
82.5°	3.4	2.5	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.8
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°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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°	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5
2.5°	705.6	696.3	698.9	698.9	697.2	697.2	695.5	692.9	693.8	688.7	677.7
5°	698.0	686.2	684.5	686.2	679.4	677.7	674.3	679.4	664.1	670.1	663.3
7.5°	676.0	665.0	662.4	668.4	659.9	654.8	654.0	660.7	647.2	640.4	632.8
10°	651.4	647.2	639.6	635.3	632.8	633.6	626.9	618.4	615.9	614.2	607.4
12.5°	629.4	620.1	613.3	608.2	606.5	606.5	595.5	593.8	586.2	584.5	574.3
15°	603.1	592.1	587.9	581.1	575.2	578.6	565.9	562.5	559.9	548.9	550.6
17.5°	580.3	568.4	558.2	554.0	548.9	543.8	532.0	534.5	528.6	528.6	513.4
20°	550.6	537.9	530.3	521.8	521.8	515.0	506.6	507.4	499.8	492.2	478.6
22.5°	519.3	505.7	496.4	493.0	484.5	482.9	472.7	470.1	460.0	460.8	449.0
25°	486.2	472.7	460.0	460.8	453.2	449.8	443.9	432.0	427.8	422.7	419.3
27.5°	447.3	438.0	426.9	426.1	411.7	412.5	404.9	401.5	391.4	393.9	386.3
30°	411.7	398.1	388.0	385.4	379.5	377.8	366.0	360.9	362.6	355.8	351.6
32.5°	375.3	354.9	350.7	345.6	342.2	338.0	329.5	332.9	325.3	327.0	320.2
35°	327.0	318.5	307.5	307.5	304.1	300.7	294.8	298.2	290.6	287.2	280.4
37.5°	286.3	278.7	267.7	271.1	265.1	260.1	255.0	255.8	249.1	248.2	241.4
40°	242.3	238.0	230.4	230.4	226.2	226.2	223.6	221.1	216.9	211.8	204.2
42.5°	200.8	197.4	194.0	194.8	188.9	194.0	187.2	191.4	177.9	177.0	172.0
45°	170.3	162.6	163.5	160.1	156.7	158.4	152.5	154.2	146.6	144.9	139.8
47.5°	138.1	135.5	130.5	128.8	128.8	126.2	123.7	122.8	119.4	115.2	108.4
50°	113.5	104.2	102.5	100.0	98.3	98.3	94.9	89.8	90.6	86.4	79.6
52.5°	88.9	81.3	77.9	77.1	73.7	72.0	67.8	64.4	61.8	60.1	55.9
55°	68.6	61.8	57.6	57.6	52.5	52.5	46.6	44.0	40.7	37.3	34.7
57.5°	51.7	48.3	44.0	40.7	39.0	34.7	31.3	27.1	24.6	19.5	16.1
60°	39.0	35.6	31.3	28.8	27.1	22.9	18.6	15.2	9.3	7.6	6.8
62.5°	28.8	25.4	21.2	19.5	17.8	14.4	10.2	5.1	2.5	2.5	2.5
65°	21.2	16.9	13.6	11.9	10.2	7.6	3.4	1.7	0.8	0.8	0.8
67.5°	14.4	11.0	7.6	6.8	5.1	2.5	0.8	0.8	0.8	0.8	0.8
70°	9.3	6.8	3.4	2.5	1.7	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	5.9	3.4	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.8	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	0.8	0.8	0.8
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°	706.5	706.5	706.5	706.5	706.5	706.5	706.5	706.5
2.5°	689.6	683.6	687.0	679.4	682.8	688.7	684.5	686.2
5°	665.8	662.4	658.2	647.2	655.7	662.4	659.1	658.2
7.5°	640.4	628.6	634.5	631.1	629.4	636.2	628.6	637.0
10°	614.2	605.7	604.8	598.9	598.9	604.0	604.8	599.8
12.5°	575.2	571.0	571.0	570.1	569.3	574.3	575.2	572.6
15°	547.2	545.5	541.3	540.5	535.4	543.0	543.8	543.0
17.5°	513.4	514.2	510.0	510.0	513.4	515.9	509.1	515.9
20°	490.5	486.2	484.5	476.9	481.2	485.4	485.4	486.2
22.5°	457.4	450.7	453.2	449.0	446.4	452.4	452.4	454.9
25°	420.2	420.2	421.9	419.3	421.0	424.4	421.9	427.8
27.5°	384.6	388.0	388.0	384.6	386.3	396.4	400.7	393.9
30°	351.6	352.4	354.9	353.2	358.3	361.7	360.9	366.0
32.5°	314.3	318.5	320.2	317.7	319.4	327.0	322.8	321.9
35°	285.5	277.9	277.0	277.9	281.2	282.9	281.2	287.2
37.5°	244.0	241.4	238.0	238.9	241.4	244.8	246.5	250.7
40°	204.2	200.8	200.8	199.9	197.4	206.7	206.7	206.7
42.5°	169.4	168.6	164.3	164.3	167.7	170.3	168.6	174.5
45°	138.9	135.5	133.0	133.0	135.5	135.5	138.1	137.2
47.5°	109.3	105.9	106.7	104.2	106.7	110.1	105.9	106.7
50°	82.2	82.2	80.5	82.2	81.3	82.2	80.5	78.8
52.5°	55.9	63.5	64.4	61.0	53.4	46.6	42.4	45.7
55°	32.2	28.8	28.8	28.0	26.3	25.4	22.9	25.4
57.5°	16.1	14.4	14.4	14.4	13.6	12.7	11.0	11.0
60°	6.8	5.9	5.9	5.1	4.2	3.4	2.5	3.4
62.5°	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7
65°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
70°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)