

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: P219484

Luminaire Tested: **LDSQ4B10D010 EU4B10209030 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219484
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: LDSQ4B10D010 EU4B10209030 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 715.6 lumens
Efficiency: N/A
Efficacy: 71.2 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')

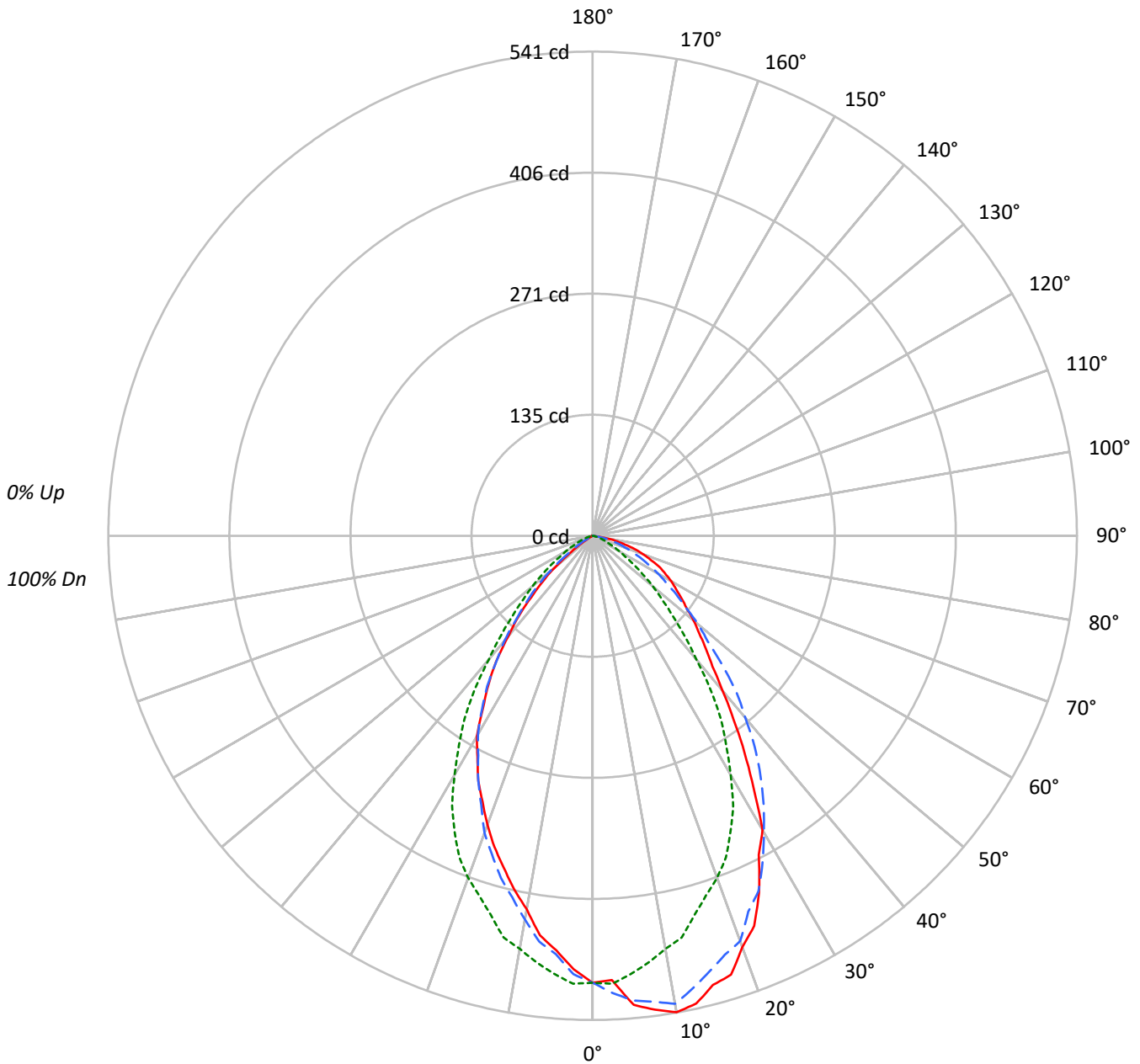
CIE Type: Direct
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	48370	48370	48370
5°	51171	47796	45229
10°	53179	46106	41689
15°	52112	44008	38482
20°	50423	41907	35423
25°	47032	38972	32313
30°	42452	34487	28928
35°	34970	29518	23996
40°	28542	22788	18476
45°	24523	17303	13289
50°	22200	13172	8395
55°	20420	9509	3040
60°	19608	6491	465
65°	18934	4401	138
70°	16966	3059	170
75°	13886	1572	0
80°	8703	669	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.8	6.5
10°-20°	126.0	17.6
20°-30°	168.3	23.5
30°-40°	159.7	22.3
40°-50°	110.4	15.4
50°-60°	61.0	8.5
60°-70°	30.3	4.2
70°-80°	11.9	1.7
80°-90°	1.1	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°	341.1	47.7
0°-40°	500.8	70.0
0°-60°	672.3	93.9
0°-90°	715.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	715.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	499	499	499	499	499	
5°	526	521	492	469	465	50
15°	520	504	439	396	384	147
25°	440	438	365	302	302	201
35°	296	327	250	205	203	185
45°	179	205	126	104	97	140
55°	121	114	56	29	18	109
65°	83	60	19	1	1	80
75°	37	23	4	0	0	40
85°	0	1	0	0	0	3
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°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	496.9	510.6	511.8	510.6	512.4	511.8	514.8	511.8	515.4	510.0	511.2
5°	526.2	520.8	532.2	526.2	526.2	525.6	523.8	523.2	525.6	517.8	521.4
7.5°	534.0	541.8	551.9	539.4	540.0	540.0	536.4	535.2	535.2	520.8	525.0
10°	540.6	535.8	541.2	536.4	540.6	540.0	542.4	534.6	540.0	531.6	531.0
12.5°	535.2	533.4	540.6	532.8	530.4	531.0	528.0	526.2	528.0	518.4	517.8
15°	519.6	521.4	532.2	523.8	522.6	521.4	517.8	511.8	516.6	503.4	504.0
17.5°	514.2	511.2	513.0	505.8	507.6	506.4	505.8	500.4	499.3	490.9	490.9
20°	489.1	495.7	495.7	490.9	490.9	490.3	482.5	487.3	481.9	479.5	481.9
22.5°	471.7	472.3	472.3	468.1	468.7	466.3	462.1	459.1	462.1	459.1	454.4
25°	440.0	441.2	448.4	440.6	439.4	441.8	438.2	436.4	435.8	428.6	438.2
27.5°	401.7	413.6	413.1	410.1	413.6	408.9	407.1	407.7	409.5	408.9	411.3
30°	379.5	381.3	383.1	380.7	381.3	379.5	379.5	380.1	384.9	383.1	382.5
32.5°	334.6	340.6	345.4	345.4	346.0	347.8	347.2	359.8	362.8	356.8	355.6
35°	295.7	299.9	304.1	304.7	312.5	313.1	313.7	317.3	325.7	327.4	326.8
37.5°	258.6	262.8	264.0	269.4	273.6	277.8	282.6	287.3	294.5	300.5	297.5
40°	225.7	227.5	230.5	232.9	241.2	241.2	243.6	253.2	261.0	265.8	265.2
42.5°	198.1	198.7	201.1	205.3	213.1	211.3	213.1	219.7	231.1	231.7	238.3
45°	179.0	178.4	180.2	180.8	185.6	188.0	189.2	194.0	203.5	204.7	205.3
47.5°	161.6	161.0	164.0	165.2	167.0	169.4	169.4	170.0	173.6	176.6	174.2
50°	147.3	147.3	147.3	148.5	151.5	150.9	151.5	153.8	155.6	154.4	153.8
52.5°	131.7	134.1	135.9	136.5	137.1	137.1	137.7	136.5	135.9	134.1	130.5
55°	120.9	123.3	123.3	123.3	123.3	125.7	122.7	123.3	123.3	118.5	113.7
57.5°	110.1	112.5	114.3	111.9	114.3	111.9	110.7	110.1	108.9	104.2	97.0
60°	101.2	102.4	101.8	101.2	102.4	100.6	99.4	97.0	95.8	89.2	84.4
62.5°	91.0	91.6	92.2	91.0	89.8	89.2	86.8	83.2	80.8	75.4	71.2
65°	82.6	80.8	80.2	79.6	78.4	76.6	74.8	70.6	68.8	64.1	59.9
67.5°	70.0	69.4	70.6	68.8	65.8	65.8	64.1	60.5	56.3	53.3	49.1
70°	59.9	59.3	58.1	56.3	55.7	53.3	53.3	49.1	47.9	42.5	38.9
72.5°	49.1	49.1	47.3	45.5	43.7	42.5	41.9	38.9	37.1	34.1	31.1
75°	37.1	37.1	36.5	34.7	33.5	32.3	31.7	29.3	27.5	24.5	22.7
77.5°	26.3	26.3	23.9	22.7	23.3	22.1	21.0	20.4	19.8	18.0	15.6
80°	15.6	15.0	13.2	13.8	13.2	13.2	12.6	12.0	10.8	9.6	8.4
82.5°	4.2	4.8	4.8	4.8	5.4	4.2	4.2	4.2	4.8	4.8	3.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
87.5°	0.6	1.2	2.4	2.4	2.4	2.4	2.4	1.8	1.8	1.8	1.2
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°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	505.2	504.6	505.2	501.0	510.6	503.4	502.2	501.0	505.2	501.0	495.1
5°	516.0	510.0	508.2	506.4	511.8	503.4	501.6	502.2	499.3	491.5	492.1
7.5°	519.6	514.2	508.8	497.5	502.2	500.4	495.7	492.1	487.3	480.7	479.5
10°	520.8	514.8	507.0	503.4	496.3	493.9	492.1	486.1	480.1	468.7	465.7
12.5°	517.2	510.0	500.4	497.5	492.1	484.3	480.1	474.1	468.7	459.7	453.2
15°	501.6	495.7	492.7	482.5	480.1	475.3	466.9	458.5	450.8	438.8	435.2
17.5°	483.7	481.3	478.3	470.5	469.9	465.1	457.3	450.2	440.0	421.4	415.4
20°	465.1	465.1	455.6	452.6	458.5	449.0	443.0	436.4	415.4	406.5	395.7
22.5°	451.4	444.8	439.4	434.6	435.2	429.2	420.8	407.7	399.9	389.1	376.5
25°	424.4	426.8	414.8	413.1	414.8	401.1	396.9	386.1	374.7	364.6	355.0
27.5°	407.7	401.1	393.3	386.7	386.7	381.3	369.4	367.0	349.6	340.0	328.0
30°	382.5	377.7	371.1	361.6	360.4	356.2	346.6	340.6	322.7	308.3	301.7
32.5°	350.8	349.0	343.6	332.8	329.2	324.5	312.5	302.3	293.9	277.8	270.0
35°	328.0	321.5	310.1	301.1	298.1	289.7	280.2	273.0	264.0	249.6	239.4
37.5°	293.9	287.3	276.6	265.8	265.8	257.4	244.2	237.1	224.5	216.1	207.7
40°	264.0	255.6	244.8	232.3	230.5	218.5	213.1	201.1	193.4	180.2	179.0
42.5°	230.5	222.7	213.1	203.5	196.3	190.4	176.6	167.6	159.2	152.6	150.9
45°	199.9	189.8	181.4	169.4	162.2	155.0	146.1	140.1	133.5	126.3	122.1
47.5°	173.6	165.2	153.2	142.5	135.3	131.7	121.5	114.9	109.5	104.8	101.8
50°	146.7	136.5	129.9	117.9	116.7	108.4	100.0	94.6	91.6	87.4	83.2
52.5°	126.3	116.7	107.8	98.8	94.0	91.0	83.2	77.8	73.6	70.6	68.2
55°	106.6	98.2	91.0	82.0	79.0	74.8	65.8	64.7	60.5	56.3	53.3
57.5°	91.6	83.8	75.4	69.4	64.1	61.1	53.9	49.1	46.7	43.1	40.1
60°	77.8	69.4	62.9	55.7	53.3	49.1	43.7	39.5	36.5	33.5	30.5
62.5°	65.2	58.1	50.9	44.9	41.3	38.9	34.7	31.1	28.1	25.7	23.3
65°	53.9	47.3	41.3	35.3	33.5	30.5	27.5	24.5	22.1	19.2	16.8
67.5°	44.3	38.3	32.3	28.1	26.3	25.1	21.6	18.6	16.8	15.0	12.6
70°	34.7	30.5	25.7	22.1	20.4	18.6	16.2	14.4	12.0	10.8	9.0
72.5°	26.9	23.3	19.2	16.2	15.0	13.8	11.4	9.6	8.4	7.2	6.0
75°	19.2	16.2	13.8	10.8	10.2	9.6	7.8	6.6	5.4	4.2	3.6
77.5°	13.2	10.8	8.4	7.2	6.6	5.4	4.8	3.6	3.0	2.4	1.8
80°	7.2	5.4	4.2	3.6	3.0	2.4	2.4	1.8	1.2	1.2	0.6
82.5°	2.4	1.8	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.6
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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	498.7	492.1	493.9	493.9	492.7	492.7	491.5	489.7	490.3	486.7	478.9
5°	493.3	484.9	483.7	484.9	480.1	478.9	476.5	480.1	469.3	473.5	468.7
7.5°	477.7	469.9	468.1	472.3	466.3	462.7	462.1	466.9	457.3	452.6	447.2
10°	460.3	457.3	452.0	449.0	447.2	447.8	443.0	437.0	435.2	434.0	429.2
12.5°	444.8	438.2	433.4	429.8	428.6	428.6	420.8	419.6	414.2	413.1	405.9
15°	426.2	418.4	415.4	410.7	406.5	408.9	399.9	397.5	395.7	387.9	389.1
17.5°	410.1	401.7	394.5	391.5	387.9	384.3	375.9	377.7	373.5	373.5	362.8
20°	389.1	380.1	374.7	368.8	368.8	364.0	358.0	358.6	353.2	347.8	338.2
22.5°	367.0	357.4	350.8	348.4	342.4	341.2	334.0	332.2	325.1	325.7	317.3
25°	343.6	334.0	325.1	325.7	320.3	317.9	313.7	305.3	302.3	298.7	296.3
27.5°	316.1	309.5	301.7	301.1	290.9	291.5	286.1	283.7	276.6	278.4	273.0
30°	290.9	281.4	274.2	272.4	268.2	267.0	258.6	255.0	256.2	251.4	248.4
32.5°	265.2	250.8	247.8	244.2	241.8	238.9	232.9	235.3	229.9	231.1	226.3
35°	231.1	225.1	217.3	217.3	214.9	212.5	208.3	210.7	205.3	202.9	198.1
37.5°	202.3	196.9	189.2	191.6	187.4	183.8	180.2	180.8	176.0	175.4	170.6
40°	171.2	168.2	162.8	162.8	159.8	159.8	158.0	156.2	153.2	149.7	144.3
42.5°	141.9	139.5	137.1	137.7	133.5	137.1	132.3	135.3	125.7	125.1	121.5
45°	120.3	114.9	115.5	113.1	110.7	111.9	107.8	108.9	103.6	102.4	98.8
47.5°	97.6	95.8	92.2	91.0	91.0	89.2	87.4	86.8	84.4	81.4	76.6
50°	80.2	73.6	72.4	70.6	69.4	69.4	67.0	63.5	64.1	61.1	56.3
52.5°	62.9	57.5	55.1	54.5	52.1	50.9	47.9	45.5	43.7	42.5	39.5
55°	48.5	43.7	40.7	40.7	37.1	37.1	32.9	31.1	28.7	26.3	24.5
57.5°	36.5	34.1	31.1	28.7	27.5	24.5	22.1	19.2	17.4	13.8	11.4
60°	27.5	25.1	22.1	20.4	19.2	16.2	13.2	10.8	6.6	5.4	4.8
62.5°	20.4	18.0	15.0	13.8	12.6	10.2	7.2	3.6	1.8	1.8	1.8
65°	15.0	12.0	9.6	8.4	7.2	5.4	2.4	1.2	0.6	0.6	0.6
67.5°	10.2	7.8	5.4	4.8	3.6	1.8	0.6	0.6	0.6	0.6	0.6
70°	6.6	4.8	2.4	1.8	1.2	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	4.2	2.4	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.6	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	0.6	0.6	0.6
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°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	487.3	483.1	485.5	480.1	482.5	486.7	483.7	484.9
5°	470.5	468.1	465.1	457.3	463.3	468.1	465.7	465.1
7.5°	452.6	444.2	448.4	446.0	444.8	449.6	444.2	450.2
10°	434.0	428.0	427.4	423.2	423.2	426.8	427.4	423.8
12.5°	406.5	403.5	403.5	402.9	402.3	405.9	406.5	404.7
15°	386.7	385.5	382.5	381.9	378.3	383.7	384.3	383.7
17.5°	362.8	363.4	360.4	360.4	362.8	364.6	359.8	364.6
20°	346.6	343.6	342.4	337.0	340.0	343.0	343.0	343.6
22.5°	323.3	318.5	320.3	317.3	315.5	319.7	319.7	321.5
25°	296.9	296.9	298.1	296.3	297.5	299.9	298.1	302.3
27.5°	271.8	274.2	274.2	271.8	273.0	280.2	283.1	278.4
30°	248.4	249.0	250.8	249.6	253.2	255.6	255.0	258.6
32.5°	222.1	225.1	226.3	224.5	225.7	231.1	228.1	227.5
35°	201.7	196.3	195.7	196.3	198.7	199.9	198.7	202.9
37.5°	172.4	170.6	168.2	168.8	170.6	173.0	174.2	177.2
40°	144.3	141.9	141.9	141.3	139.5	146.1	146.1	146.1
42.5°	119.7	119.1	116.1	116.1	118.5	120.3	119.1	123.3
45°	98.2	95.8	94.0	94.0	95.8	95.8	97.6	97.0
47.5°	77.2	74.8	75.4	73.6	75.4	77.8	74.8	75.4
50°	58.1	58.1	56.9	58.1	57.5	58.1	56.9	55.7
52.5°	39.5	44.9	45.5	43.1	37.7	32.9	29.9	32.3
55°	22.7	20.4	20.4	19.8	18.6	18.0	16.2	18.0
57.5°	11.4	10.2	10.2	10.2	9.6	9.0	7.8	7.8
60°	4.8	4.2	4.2	3.6	3.0	2.4	1.8	2.4
62.5°	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2
65°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
67.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)