

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: P219491

Luminaire Tested: **LDSQ4B15D010 EU4B10208030 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219491  
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 EU4B10208030 4LBSQLWWLI  
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1166.7 lumens  
Efficiency: N/A  
Efficacy: 81.1 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

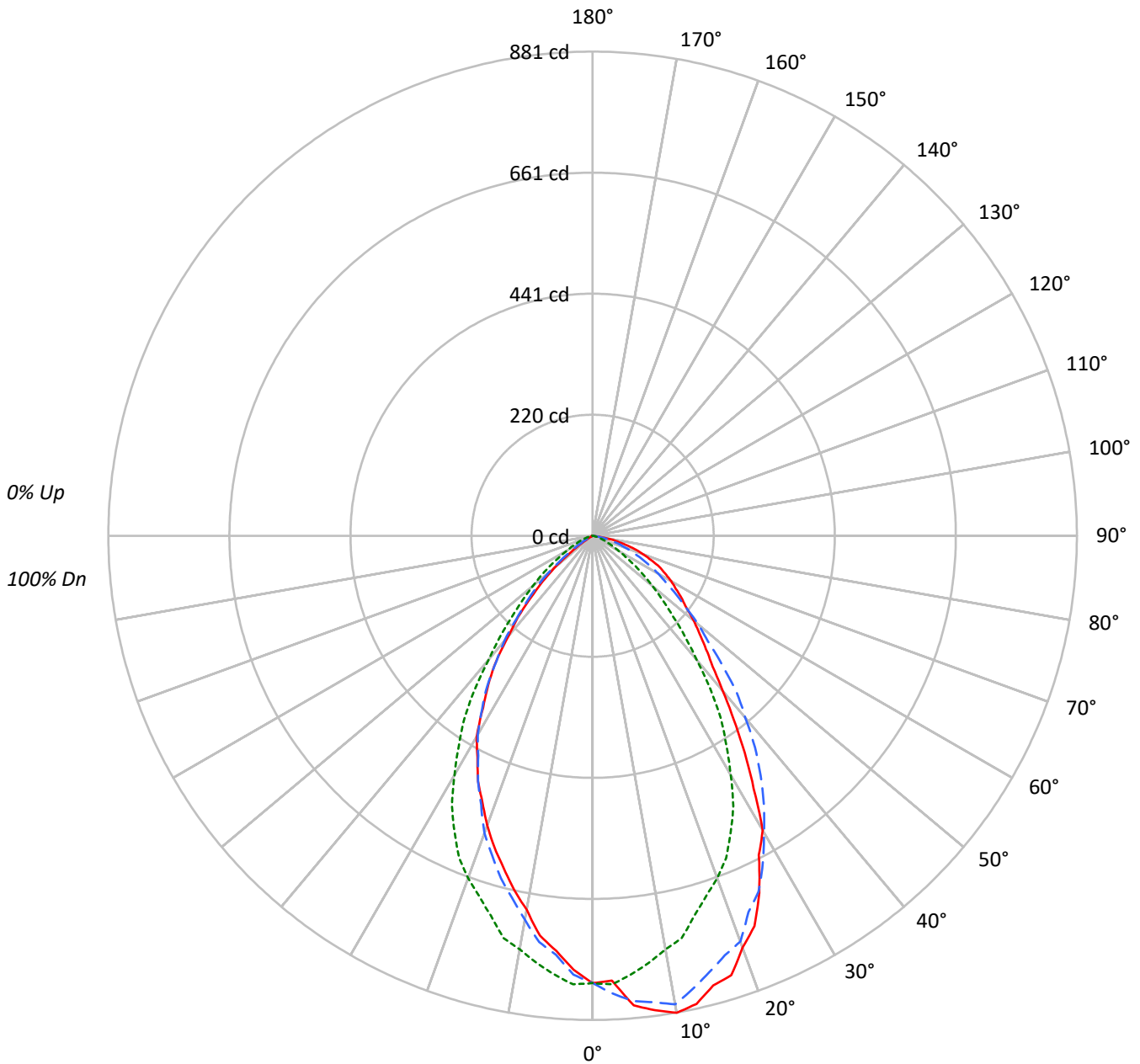
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	78857	78857	78857
5°	83427	77923	73741
10°	86693	75174	67974
15°	84958	71749	62743
20°	82206	68320	57753
25°	76672	63536	52686
30°	69220	56222	47161
35°	57015	48133	39133
40°	46525	37155	30111
45°	39977	28209	21660
50°	36186	21476	13685
55°	33290	15488	4949
60°	31950	10598	756
65°	30877	7152	229
70°	27645	4985	283
75°	22645	2545	0
80°	14170	1116	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.3	6.5
10°-20°	205.5	17.6
20°-30°	274.4	23.5
30°-40°	260.4	22.3
40°-50°	180.0	15.4
50°-60°	99.5	8.5
60°-70°	49.4	4.2
70°-80°	19.5	1.7
80°-90°	1.9	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°	556.1	47.7
0°-40°	816.5	70.0
0°-60°	1096.0	93.9
0°-90°	1166.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1166.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	814	814	814	814	814	
5°	858	850	801	765	758	82
15°	847	822	715	645	626	240
25°	717	714	594	493	493	327
35°	482	533	407	335	331	302
45°	292	335	206	169	158	228
55°	197	185	92	47	29	177
65°	135	98	31	1	1	131
75°	60	37	7	0	0	64
85°	0	1	0	0	0	6
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°	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0
2.5°	810.1	832.5	834.5	832.5	835.4	834.5	839.3	834.5	840.3	831.5	833.5
5°	857.9	849.1	867.6	857.9	857.9	856.9	854.0	853.0	856.9	844.2	850.1
7.5°	870.6	883.2	899.8	879.3	880.3	880.3	874.5	872.5	872.5	849.1	855.9
10°	881.3	873.5	882.3	874.5	881.3	880.3	884.2	871.5	880.3	866.7	865.7
12.5°	872.5	869.6	881.3	868.6	864.7	865.7	860.8	857.9	860.8	845.2	844.2
15°	847.1	850.1	867.6	854.0	852.0	850.1	844.2	834.5	842.3	820.8	821.8
17.5°	838.4	833.5	836.4	824.7	827.6	825.7	824.7	815.9	814.0	800.3	800.3
20°	797.4	808.1	808.1	800.3	800.3	799.3	786.6	794.4	785.7	781.7	785.7
22.5°	769.1	770.0	770.0	763.2	764.2	760.3	753.4	748.6	753.4	748.6	740.8
25°	717.3	719.3	731.0	718.3	716.4	720.3	714.4	711.5	710.5	698.8	714.4
27.5°	654.9	674.4	673.4	668.5	674.4	666.6	663.7	664.6	667.6	666.6	670.5
30°	618.8	621.7	624.6	620.7	621.7	618.8	618.8	619.7	627.5	624.6	623.6
32.5°	545.6	555.3	563.1	563.1	564.1	567.0	566.1	586.6	591.4	581.7	579.7
35°	482.1	489.0	495.8	496.8	509.5	510.4	511.4	517.3	530.9	533.9	532.9
37.5°	421.6	428.4	430.4	439.2	446.0	452.8	460.7	468.5	480.2	489.9	485.1
40°	367.9	370.9	375.7	379.7	393.3	393.3	397.2	412.8	425.5	433.3	432.4
42.5°	323.0	324.0	327.9	334.8	347.4	344.5	347.4	358.2	376.7	377.7	388.4
45°	291.8	290.8	293.8	294.7	302.5	306.5	308.4	316.2	331.8	333.8	334.8
47.5°	263.5	262.5	267.4	269.4	272.3	276.2	276.2	277.2	283.0	287.9	284.0
50°	240.1	240.1	240.1	242.0	246.9	245.9	246.9	250.8	253.8	251.8	250.8
52.5°	214.7	218.6	221.5	222.5	223.5	223.5	224.5	222.5	221.5	218.6	212.8
55°	197.1	201.0	201.0	201.0	201.0	205.0	200.1	201.0	201.0	193.2	185.4
57.5°	179.6	183.5	186.4	182.5	186.4	182.5	180.6	179.6	177.6	169.8	158.1
60°	164.9	166.9	165.9	164.9	166.9	164.0	162.0	158.1	156.2	145.4	137.6
62.5°	148.3	149.3	150.3	148.3	146.4	145.4	141.5	135.7	131.8	123.0	116.1
65°	134.7	131.8	130.8	129.8	127.9	124.9	122.0	115.2	112.2	104.4	97.6
67.5°	114.2	113.2	115.2	112.2	107.4	107.4	104.4	98.6	91.7	86.9	80.0
70°	97.6	96.6	94.7	91.7	90.8	86.9	86.9	80.0	78.1	69.3	63.4
72.5°	80.0	80.0	77.1	74.2	71.2	69.3	68.3	63.4	60.5	55.6	50.8
75°	60.5	60.5	59.5	56.6	54.7	52.7	51.7	47.8	44.9	40.0	37.1
77.5°	42.9	42.9	39.0	37.1	38.1	36.1	34.2	33.2	32.2	29.3	25.4
80°	25.4	24.4	21.5	22.4	21.5	21.5	20.5	19.5	17.6	15.6	13.7
82.5°	6.8	7.8	7.8	7.8	8.8	6.8	6.8	6.8	7.8	7.8	4.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0
87.5°	1.0	2.0	3.9	3.9	3.9	3.9	3.9	2.9	2.9	2.9	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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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0
2.5°	823.7	822.7	823.7	816.9	832.5	820.8	818.8	816.9	823.7	816.9	807.1
5°	841.3	831.5	828.6	825.7	834.5	820.8	817.9	818.8	814.0	801.3	802.2
7.5°	847.1	838.4	829.6	811.0	818.8	815.9	808.1	802.2	794.4	783.7	781.7
10°	849.1	839.3	826.6	820.8	809.1	805.2	802.2	792.5	782.7	764.2	759.3
12.5°	843.2	831.5	815.9	811.0	802.2	789.6	782.7	773.0	764.2	749.5	738.8
15°	817.9	808.1	803.2	786.6	782.7	774.9	761.3	747.6	734.9	715.4	709.5
17.5°	788.6	784.7	779.8	767.1	766.1	758.3	745.6	733.9	717.3	687.1	677.3
20°	758.3	758.3	742.7	737.8	747.6	732.0	722.2	711.5	677.3	662.7	645.1
22.5°	735.9	725.1	716.4	708.6	709.5	699.8	686.1	664.6	651.9	634.4	613.9
25°	692.0	695.9	676.3	673.4	676.3	653.9	647.1	629.5	611.0	594.4	578.7
27.5°	664.6	653.9	641.2	630.5	630.5	621.7	602.2	598.3	570.0	554.3	534.8
30°	623.6	615.8	605.1	589.5	587.5	580.7	565.1	555.3	526.0	502.6	491.9
32.5°	571.9	569.0	560.2	542.6	536.8	529.0	509.5	492.9	479.2	452.8	440.2
35°	534.8	524.1	505.5	490.9	486.0	472.4	456.8	445.0	430.4	407.0	390.4
37.5°	479.2	468.5	450.9	433.3	433.3	419.7	398.2	386.5	366.0	352.3	338.7
40°	430.4	416.7	399.2	378.7	375.7	356.2	347.4	327.9	315.2	293.8	291.8
42.5°	375.7	363.1	347.4	331.8	320.1	310.4	287.9	273.3	259.6	248.9	245.9
45°	326.0	309.4	295.7	276.2	264.5	252.8	238.1	228.4	217.6	205.9	199.1
47.5°	283.0	269.4	249.8	232.3	220.6	214.7	198.1	187.4	178.6	170.8	165.9
50°	239.1	222.5	211.8	192.3	190.3	176.6	163.0	154.2	149.3	142.5	135.7
52.5°	205.9	190.3	175.7	161.0	153.2	148.3	135.7	126.9	120.0	115.2	111.3
55°	173.7	160.1	148.3	133.7	128.8	122.0	107.4	105.4	98.6	91.7	86.9
57.5°	149.3	136.6	123.0	113.2	104.4	99.5	87.8	80.0	76.1	70.3	65.4
60°	126.9	113.2	102.5	90.8	86.9	80.0	71.2	64.4	59.5	54.7	49.8
62.5°	106.4	94.7	83.0	73.2	67.3	63.4	56.6	50.8	45.9	42.0	38.1
65°	87.8	77.1	67.3	57.6	54.7	49.8	44.9	40.0	36.1	31.2	27.3
67.5°	72.2	62.5	52.7	45.9	42.9	41.0	35.1	30.3	27.3	24.4	20.5
70°	56.6	49.8	42.0	36.1	33.2	30.3	26.4	23.4	19.5	17.6	14.6
72.5°	43.9	38.1	31.2	26.4	24.4	22.4	18.5	15.6	13.7	11.7	9.8
75°	31.2	26.4	22.4	17.6	16.6	15.6	12.7	10.7	8.8	6.8	5.9
77.5°	21.5	17.6	13.7	11.7	10.7	8.8	7.8	5.9	4.9	3.9	2.9
80°	11.7	8.8	6.8	5.9	4.9	3.9	3.9	2.9	2.0	2.0	1.0
82.5°	3.9	2.9	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0
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°	1.0	1.0	1.0	1.0	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°	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0
2.5°	813.0	802.2	805.2	805.2	803.2	803.2	801.3	798.3	799.3	793.5	780.8
5°	804.2	790.5	788.6	790.5	782.7	780.8	776.9	782.7	765.2	772.0	764.2
7.5°	778.8	766.1	763.2	770.0	760.3	754.4	753.4	761.3	745.6	737.8	729.0
10°	750.5	745.6	736.9	732.0	729.0	730.0	722.2	712.5	709.5	707.6	699.8
12.5°	725.1	714.4	706.6	700.7	698.8	698.8	686.1	684.2	675.4	673.4	661.7
15°	694.9	682.2	677.3	669.5	662.7	666.6	651.9	648.0	645.1	632.4	634.4
17.5°	668.5	654.9	643.2	638.3	632.4	626.6	612.9	615.8	609.0	609.0	591.4
20°	634.4	619.7	611.0	601.2	601.2	593.4	583.6	584.6	575.8	567.0	551.4
22.5°	598.3	582.7	571.9	568.0	558.3	556.3	544.6	541.7	529.9	530.9	517.3
25°	560.2	544.6	529.9	530.9	522.1	518.2	511.4	497.7	492.9	487.0	483.1
27.5°	515.3	504.6	491.9	490.9	474.3	475.3	466.5	462.6	450.9	453.8	445.0
30°	474.3	458.7	447.0	444.1	437.2	435.3	421.6	415.8	417.7	409.9	405.0
32.5°	432.4	408.9	404.0	398.2	394.3	389.4	379.7	383.6	374.8	376.7	368.9
35°	376.7	367.0	354.3	354.3	350.4	346.5	339.6	343.5	334.8	330.9	323.0
37.5°	329.9	321.1	308.4	312.3	305.5	299.6	293.8	294.7	286.9	286.0	278.2
40°	279.1	274.2	265.5	265.5	260.6	260.6	257.7	254.7	249.8	244.0	235.2
42.5°	231.3	227.4	223.5	224.5	217.6	223.5	215.7	220.6	205.0	204.0	198.1
45°	196.2	187.4	188.4	184.5	180.6	182.5	175.7	177.6	168.8	166.9	161.0
47.5°	159.1	156.2	150.3	148.3	148.3	145.4	142.5	141.5	137.6	132.7	124.9
50°	130.8	120.0	118.1	115.2	113.2	113.2	109.3	103.5	104.4	99.5	91.7
52.5°	102.5	93.7	89.8	88.8	84.9	83.0	78.1	74.2	71.2	69.3	64.4
55°	79.1	71.2	66.4	66.4	60.5	60.5	53.7	50.8	46.8	42.9	40.0
57.5°	59.5	55.6	50.8	46.8	44.9	40.0	36.1	31.2	28.3	22.4	18.5
60°	44.9	41.0	36.1	33.2	31.2	26.4	21.5	17.6	10.7	8.8	7.8
62.5°	33.2	29.3	24.4	22.4	20.5	16.6	11.7	5.9	2.9	2.9	2.9
65°	24.4	19.5	15.6	13.7	11.7	8.8	3.9	2.0	1.0	1.0	1.0
67.5°	16.6	12.7	8.8	7.8	5.9	2.9	1.0	1.0	1.0	1.0	1.0
70°	10.7	7.8	3.9	2.9	2.0	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	6.8	3.9	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.0	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	1.0	1.0	1.0
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°	814.0	814.0	814.0	814.0	814.0	814.0	814.0	814.0
2.5°	794.4	787.6	791.5	782.7	786.6	793.5	788.6	790.5
5°	767.1	763.2	758.3	745.6	755.4	763.2	759.3	758.3
7.5°	737.8	724.2	731.0	727.1	725.1	732.9	724.2	733.9
10°	707.6	697.8	696.8	690.0	690.0	695.9	696.8	691.0
12.5°	662.7	657.8	657.8	656.8	655.8	661.7	662.7	659.8
15°	630.5	628.5	623.6	622.7	616.8	625.6	626.6	625.6
17.5°	591.4	592.4	587.5	587.5	591.4	594.4	586.6	594.4
20°	565.1	560.2	558.3	549.5	554.3	559.2	559.2	560.2
22.5°	527.0	519.2	522.1	517.3	514.3	521.2	521.2	524.1
25°	484.1	484.1	486.0	483.1	485.1	489.0	486.0	492.9
27.5°	443.1	447.0	447.0	443.1	445.0	456.8	461.6	453.8
30°	405.0	406.0	408.9	407.0	412.8	416.7	415.8	421.6
32.5°	362.1	367.0	368.9	366.0	367.9	376.7	371.8	370.9
35°	328.9	320.1	319.1	320.1	324.0	326.0	324.0	330.9
37.5°	281.1	278.2	274.2	275.2	278.2	282.1	284.0	288.9
40°	235.2	231.3	231.3	230.3	227.4	238.1	238.1	238.1
42.5°	195.2	194.2	189.3	189.3	193.2	196.2	194.2	201.0
45°	160.1	156.2	153.2	153.2	156.2	156.2	159.1	158.1
47.5°	125.9	122.0	123.0	120.0	123.0	126.9	122.0	123.0
50°	94.7	94.7	92.7	94.7	93.7	94.7	92.7	90.8
52.5°	64.4	73.2	74.2	70.3	61.5	53.7	48.8	52.7
55°	37.1	33.2	33.2	32.2	30.3	29.3	26.4	29.3
57.5°	18.5	16.6	16.6	16.6	15.6	14.6	12.7	12.7
60°	7.8	6.8	6.8	5.9	4.9	3.9	2.9	3.9
62.5°	2.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
65°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
67.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)