

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: P251771

Luminaire Tested: **LD4B20D010 EU4B10209030 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251771  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B20D010 EU4B10209030 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1323.0 lumens  
Efficiency: N/A  
Efficacy: 63.6 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

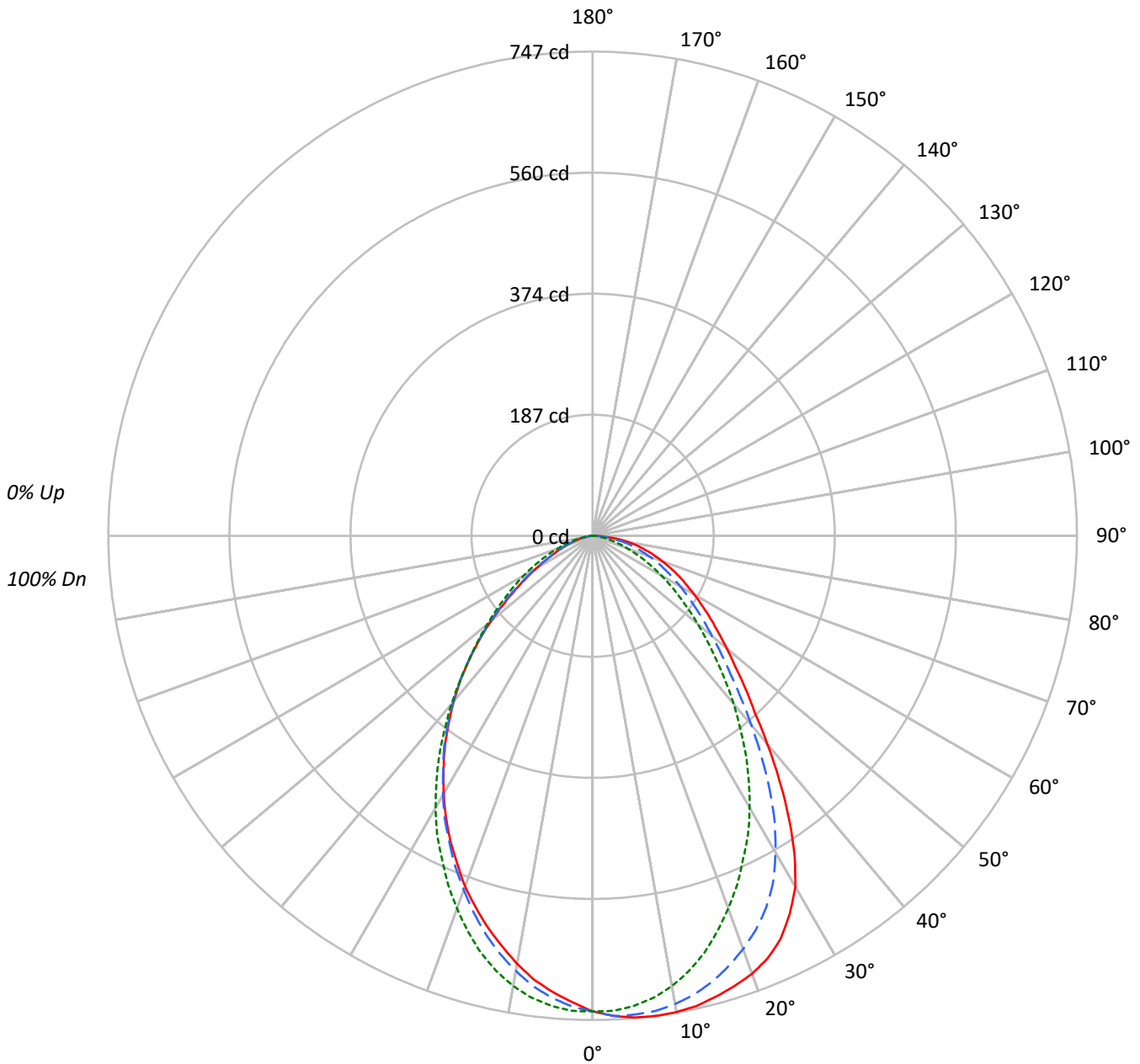
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88																			
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76																			
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67																			
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	71505	71505	71505
5°	72991	71230	69127
10°	73835	69817	66354
15°	74259	67197	63100
20°	74580	63451	59707
25°	73800	59111	55842
30°	70379	54501	51699
35°	62581	49017	47269
40°	53281	43078	42365
45°	45896	37034	36869
50°	40906	32007	30976
55°	37585	27611	24739
60°	35202	23760	19355
65°	33830	20040	15105
70°	32484	16071	12224
75°	31442	12765	9338
80°	31654	8868	5725
85°	26501	6262	2572



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.7	5.2
10°-20°	188.8	14.3
20°-30°	264.1	20.0
30°-40°	271.4	20.5
40°-50°	220.3	16.7
50°-60°	155.1	11.7
60°-70°	95.5	7.2
70°-80°	47.7	3.6
80°-90°	11.3	0.9
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°	521.6	39.4
0°-40°	793.0	59.9
0°-60°	1168.5	88.3
0°-90°	1323.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1323.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	734	734	734	734	734	
5°	746	742	728	716	707	71
15°	736	712	666	637	625	208
25°	686	633	550	523	519	314
35°	526	475	412	400	397	327
45°	333	300	269	269	268	259
55°	221	194	162	149	146	199
65°	147	123	87	67	66	145
75°	84	66	34	25	25	89
85°	24	16	6	3	2	28
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°	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7
2.5°	741.6	742.8	739.4	742.8	738.2	740.5	741.6	739.4	737.1	741.6	741.6
5°	746.1	746.1	742.8	747.3	741.6	742.8	745.0	741.6	738.2	742.8	741.6
7.5°	747.3	747.3	742.8	747.3	741.6	742.8	743.9	740.5	737.1	740.5	739.4
10°	746.1	745.0	741.6	746.1	740.5	740.5	741.6	738.2	732.6	736.0	733.7
12.5°	742.8	742.8	738.2	742.8	734.9	734.9	736.0	731.5	727.0	727.0	724.7
15°	736.0	736.0	731.5	734.9	728.1	728.1	727.0	722.4	716.8	716.8	712.3
17.5°	728.1	728.1	723.6	727.0	719.1	719.1	717.9	711.2	703.2	702.1	696.5
20°	719.1	719.1	713.4	715.7	706.6	706.6	705.5	697.6	688.6	686.3	678.4
22.5°	705.5	705.5	699.9	701.0	692.0	690.8	689.7	680.7	671.6	668.3	658.1
25°	686.3	685.2	680.7	680.7	671.6	669.4	667.1	658.1	649.1	642.3	633.3
27.5°	658.1	659.2	653.6	654.7	643.4	641.2	640.0	628.7	618.6	611.8	602.8
30°	625.4	622.0	616.3	616.3	607.3	606.2	603.9	593.8	582.5	574.6	564.4
32.5°	579.1	578.0	572.3	572.3	562.1	562.1	557.6	547.5	537.3	532.8	522.6
35°	526.0	524.9	520.4	520.4	511.4	512.5	508.0	500.1	489.9	483.1	475.2
37.5°	471.8	470.7	466.2	467.3	459.4	459.4	456.0	448.1	440.2	436.8	426.7
40°	418.8	417.7	412.0	415.4	408.6	406.4	405.2	399.6	390.6	386.1	380.4
42.5°	370.2	371.4	365.7	368.0	362.3	360.1	359.0	354.4	347.7	343.2	337.5
45°	333.0	330.7	328.5	328.5	322.8	321.7	320.6	314.9	310.4	305.9	300.3
47.5°	298.0	295.7	293.5	294.6	290.1	289.0	286.7	282.2	276.6	274.3	268.7
50°	269.8	268.7	265.3	265.3	260.8	259.6	257.4	254.0	248.3	245.0	240.4
52.5°	243.8	243.8	240.4	239.3	235.9	234.8	233.7	229.1	224.6	220.1	215.6
55°	221.2	220.1	217.9	217.9	213.3	212.2	211.1	206.6	202.1	198.7	194.2
57.5°	199.8	199.8	197.5	197.5	194.2	191.9	191.9	187.4	181.7	179.5	173.8
60°	180.6	180.6	178.4	178.4	175.0	175.0	172.7	168.2	164.8	160.3	155.8
62.5°	162.5	163.7	161.4	160.3	156.9	155.8	155.8	152.4	146.7	143.4	138.8
65°	146.7	145.6	144.5	143.4	140.0	138.8	138.8	134.3	130.9	126.4	123.0
67.5°	129.8	129.8	127.6	127.6	125.3	124.2	121.9	118.5	115.1	111.8	108.4
70°	114.0	114.0	112.9	112.9	109.5	108.4	107.2	103.9	100.5	97.1	92.6
72.5°	99.3	98.2	97.1	97.1	94.8	93.7	92.6	89.2	85.8	82.4	79.0
75°	83.5	83.5	82.4	82.4	80.1	79.0	79.0	76.8	72.2	70.0	65.5
77.5°	70.0	70.0	68.9	68.9	66.6	66.6	65.5	62.1	59.8	56.4	54.2
80°	56.4	55.3	55.3	54.2	51.9	51.9	50.8	49.7	46.3	44.0	40.6
82.5°	39.5	39.5	39.5	38.4	37.3	37.3	36.1	33.9	31.6	30.5	27.1
85°	23.7	23.7	22.6	21.4	22.6	21.4	20.3	19.2	18.1	16.9	15.8
87.5°	10.2	10.2	9.0	9.0	9.0	9.0	9.0	7.9	6.8	6.8	5.6
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7
2.5°	734.9	738.2	737.1	736.0	733.7	733.7	733.7	732.6	733.7	733.7	731.5
5°	734.9	737.1	736.0	733.7	731.5	731.5	730.3	728.1	728.1	728.1	723.6
7.5°	731.5	733.7	730.3	728.1	725.8	723.6	723.6	720.2	720.2	719.1	714.5
10°	724.7	725.8	721.3	719.1	715.7	714.5	712.3	707.8	706.6	705.5	701.0
12.5°	714.5	715.7	710.0	705.5	701.0	699.9	697.6	692.0	689.7	687.4	681.8
15°	699.9	699.9	693.1	687.4	682.9	681.8	676.2	670.5	668.3	666.0	658.1
17.5°	682.9	681.8	672.8	667.1	661.5	659.2	653.6	646.8	642.3	640.0	633.3
20°	664.9	661.5	651.3	645.7	638.9	635.5	629.9	620.8	616.3	611.8	605.0
22.5°	643.4	638.9	627.6	619.7	612.9	609.6	601.7	593.8	587.0	582.5	574.6
25°	617.5	611.8	599.4	589.2	583.6	580.2	572.3	563.3	556.5	549.7	543.0
27.5°	587.0	580.2	567.8	557.6	552.0	546.3	540.7	530.5	524.9	519.3	511.4
30°	549.7	541.8	530.5	521.5	514.7	510.2	503.4	494.4	487.6	484.3	476.4
32.5°	509.1	500.1	489.9	480.9	477.5	471.8	466.2	457.2	451.5	448.1	442.5
35°	463.9	457.2	445.9	439.1	433.5	431.2	426.7	417.7	415.4	412.0	405.2
37.5°	416.5	410.9	403.0	397.3	392.8	390.6	386.1	380.4	377.0	373.6	370.2
40°	372.5	368.0	361.2	356.7	351.1	347.7	347.7	340.9	338.6	338.6	335.3
42.5°	329.6	327.4	321.7	314.9	313.8	310.4	309.3	305.9	303.6	302.5	301.4
45°	293.5	290.1	284.5	281.1	277.7	277.7	274.3	270.9	269.8	268.7	267.5
47.5°	261.9	257.4	252.9	249.5	247.2	246.1	242.7	240.4	239.3	239.3	238.2
50°	233.7	230.3	225.8	222.4	220.1	217.9	215.6	213.3	212.2	211.1	211.1
52.5°	210.0	205.4	200.9	197.5	194.2	193.0	190.8	188.5	187.4	186.3	185.1
55°	188.5	185.1	179.5	176.1	172.7	172.7	169.3	165.9	163.7	162.5	161.4
57.5°	168.2	164.8	159.2	155.8	153.5	151.3	149.0	146.7	144.5	142.2	140.0
60°	150.1	146.7	141.1	136.6	135.5	133.2	130.9	126.4	124.2	121.9	119.7
62.5°	133.2	128.7	124.2	119.7	118.5	116.3	112.9	109.5	106.1	103.9	100.5
65°	117.4	114.0	108.4	105.0	101.6	100.5	97.1	92.6	89.2	86.9	83.5
67.5°	102.7	98.2	92.6	89.2	86.9	84.7	81.3	77.9	74.5	71.1	67.7
70°	88.0	84.7	79.0	75.6	73.4	71.1	67.7	63.2	59.8	56.4	54.2
72.5°	74.5	70.0	65.5	62.1	59.8	57.6	54.2	50.8	47.4	45.2	41.8
75°	62.1	57.6	54.2	49.7	48.5	46.3	42.9	39.5	36.1	33.9	31.6
77.5°	49.7	46.3	41.8	39.5	37.3	35.0	32.7	29.3	27.1	23.7	21.4
80°	37.3	33.9	30.5	28.2	26.0	24.8	22.6	20.3	18.1	15.8	14.7
82.5°	24.8	22.6	19.2	18.1	16.9	15.8	13.5	12.4	11.3	10.2	9.0
85°	13.5	12.4	11.3	9.0	9.0	7.9	6.8	6.8	5.6	5.6	4.5
87.5°	5.6	4.5	4.5	3.4	3.4	3.4	2.3	2.3	2.3	1.1	1.1
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°	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7
2.5°	732.6	728.1	728.1	728.1	724.7	725.8	727.0	728.1	727.0	723.6	727.0
5°	724.7	720.2	720.2	717.9	715.7	715.7	715.7	716.8	715.7	712.3	713.4
7.5°	714.5	708.9	707.8	705.5	703.2	702.1	702.1	702.1	701.0	696.5	698.7
10°	698.7	693.1	690.8	689.7	686.3	685.2	684.1	682.9	681.8	677.3	679.5
12.5°	679.5	675.0	670.5	669.4	666.0	663.7	662.6	662.6	660.4	655.8	658.1
15°	657.0	650.2	646.8	644.6	641.2	638.9	636.6	637.8	636.6	632.1	633.3
17.5°	629.9	623.1	619.7	618.6	614.1	611.8	610.7	610.7	609.6	605.0	606.2
20°	600.5	593.8	591.5	589.2	587.0	584.7	583.6	582.5	581.3	576.8	580.2
22.5°	571.2	563.3	559.9	559.9	555.4	554.2	553.1	554.2	553.1	548.6	550.9
25°	540.7	532.8	530.5	527.2	524.9	523.8	523.8	523.8	522.6	520.4	522.6
27.5°	506.8	501.2	497.8	496.7	494.4	493.3	492.2	493.3	493.3	489.9	492.2
30°	473.0	468.5	466.2	465.1	461.7	460.6	461.7	461.7	461.7	458.3	461.7
32.5°	439.1	435.7	434.6	431.2	428.9	428.9	428.9	430.1	428.9	426.7	430.1
35°	405.2	400.7	399.6	398.5	398.5	396.2	398.5	397.3	399.6	396.2	398.5
37.5°	369.1	366.9	365.7	365.7	363.5	364.6	364.6	364.6	366.9	363.5	365.7
40°	335.3	333.0	333.0	333.0	331.9	331.9	331.9	333.0	334.1	331.9	334.1
42.5°	301.4	300.3	300.3	299.1	298.0	299.1	300.3	300.3	301.4	299.1	300.3
45°	268.7	267.5	268.7	267.5	267.5	266.4	267.5	268.7	268.7	267.5	267.5
47.5°	238.2	238.2	237.1	237.1	237.1	237.1	237.1	237.1	237.1	234.8	237.1
50°	211.1	208.8	210.0	208.8	208.8	207.7	207.7	206.6	205.4	204.3	204.3
52.5°	185.1	182.9	182.9	181.7	180.6	180.6	179.5	178.4	177.2	175.0	175.0
55°	160.3	158.0	156.9	155.8	154.6	153.5	152.4	151.3	149.0	147.9	147.9
57.5°	137.7	135.5	133.2	133.2	130.9	129.8	127.6	125.3	124.2	121.9	121.9
60°	117.4	115.1	111.8	110.6	109.5	107.2	103.9	102.7	101.6	99.3	100.5
62.5°	98.2	94.8	91.4	90.3	89.2	86.9	84.7	82.4	81.3	82.4	82.4
65°	80.1	76.8	74.5	72.2	71.1	68.9	67.7	66.6	66.6	66.6	67.7
67.5°	64.3	61.0	58.7	57.6	55.3	54.2	54.2	54.2	54.2	54.2	54.2
70°	50.8	48.5	46.3	44.0	44.0	42.9	42.9	42.9	42.9	42.9	42.9
72.5°	38.4	36.1	35.0	35.0	33.9	33.9	33.9	33.9	32.7	32.7	33.9
75°	28.2	27.1	26.0	26.0	26.0	24.8	24.8	24.8	24.8	24.8	24.8
77.5°	20.3	19.2	19.2	18.1	18.1	18.1	18.1	18.1	18.1	16.9	16.9
80°	13.5	12.4	12.4	12.4	12.4	11.3	11.3	11.3	11.3	11.3	11.3
82.5°	7.9	7.9	7.9	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
85°	4.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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°	733.7	733.7	733.7	733.7	733.7	733.7	733.7	733.7
2.5°	720.2	724.7	725.8	722.4	723.6	721.3	722.4	720.2
5°	707.8	711.2	712.3	710.0	710.0	707.8	708.9	706.6
7.5°	692.0	695.3	696.5	694.2	694.2	692.0	692.0	690.8
10°	673.9	675.0	677.3	673.9	675.0	672.8	672.8	670.5
12.5°	651.3	653.6	655.8	652.5	652.5	651.3	651.3	647.9
15°	627.6	629.9	631.0	628.7	628.7	627.6	626.5	625.4
17.5°	602.8	603.9	606.2	602.8	605.0	602.8	602.8	600.5
20°	574.6	578.0	579.1	575.7	576.8	575.7	575.7	575.7
22.5°	547.5	549.7	550.9	548.6	549.7	547.5	548.6	546.3
25°	519.3	520.4	521.5	519.3	521.5	520.4	519.3	519.3
27.5°	489.9	491.0	492.2	489.9	492.2	491.0	492.2	489.9
30°	458.3	460.6	462.8	460.6	461.7	460.6	460.6	459.4
32.5°	426.7	428.9	431.2	428.9	431.2	428.9	430.1	427.8
35°	397.3	398.5	399.6	397.3	398.5	398.5	398.5	397.3
37.5°	364.6	366.9	366.9	365.7	368.0	366.9	366.9	364.6
40°	333.0	334.1	335.3	333.0	334.1	333.0	334.1	333.0
42.5°	300.3	302.5	303.6	301.4	301.4	301.4	300.3	301.4
45°	266.4	268.7	270.9	267.5	268.7	268.7	268.7	267.5
47.5°	235.9	235.9	237.1	235.9	237.1	234.8	237.1	235.9
50°	204.3	204.3	206.6	204.3	204.3	204.3	204.3	204.3
52.5°	173.8	175.0	175.0	172.7	173.8	172.7	173.8	172.7
55°	145.6	145.6	146.7	145.6	145.6	145.6	145.6	145.6
57.5°	120.8	121.9	121.9	120.8	121.9	120.8	120.8	120.8
60°	100.5	100.5	100.5	99.3	100.5	99.3	100.5	99.3
62.5°	81.3	82.4	82.4	81.3	82.4	81.3	81.3	81.3
65°	66.6	66.6	66.6	66.6	66.6	66.6	66.6	65.5
67.5°	53.1	53.1	54.2	53.1	54.2	54.2	54.2	54.2
70°	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9
72.5°	32.7	32.7	33.9	32.7	32.7	32.7	32.7	32.7
75°	24.8	24.8	24.8	24.8	24.8	23.7	23.7	24.8
77.5°	16.9	16.9	16.9	16.9	16.9	16.9	16.9	18.1
80°	11.3	11.3	11.3	11.3	10.2	10.2	11.3	10.2
82.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
85°	3.4	3.4	2.3	2.3	2.3	2.3	2.3	2.3
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)