

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P270361

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270361
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-SL4-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10095.5 lumens
Efficiency: N/A
Efficacy: 89.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

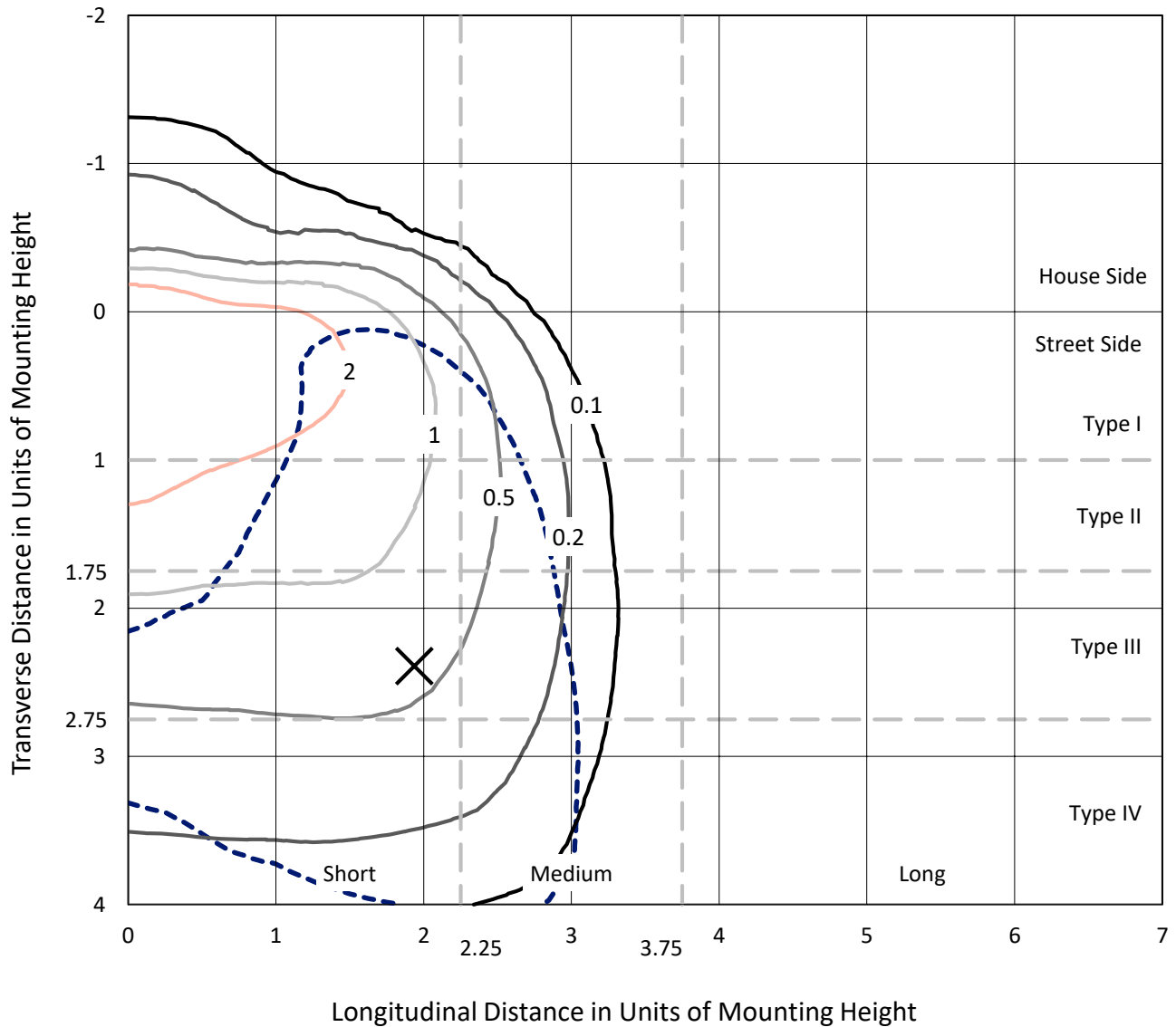
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

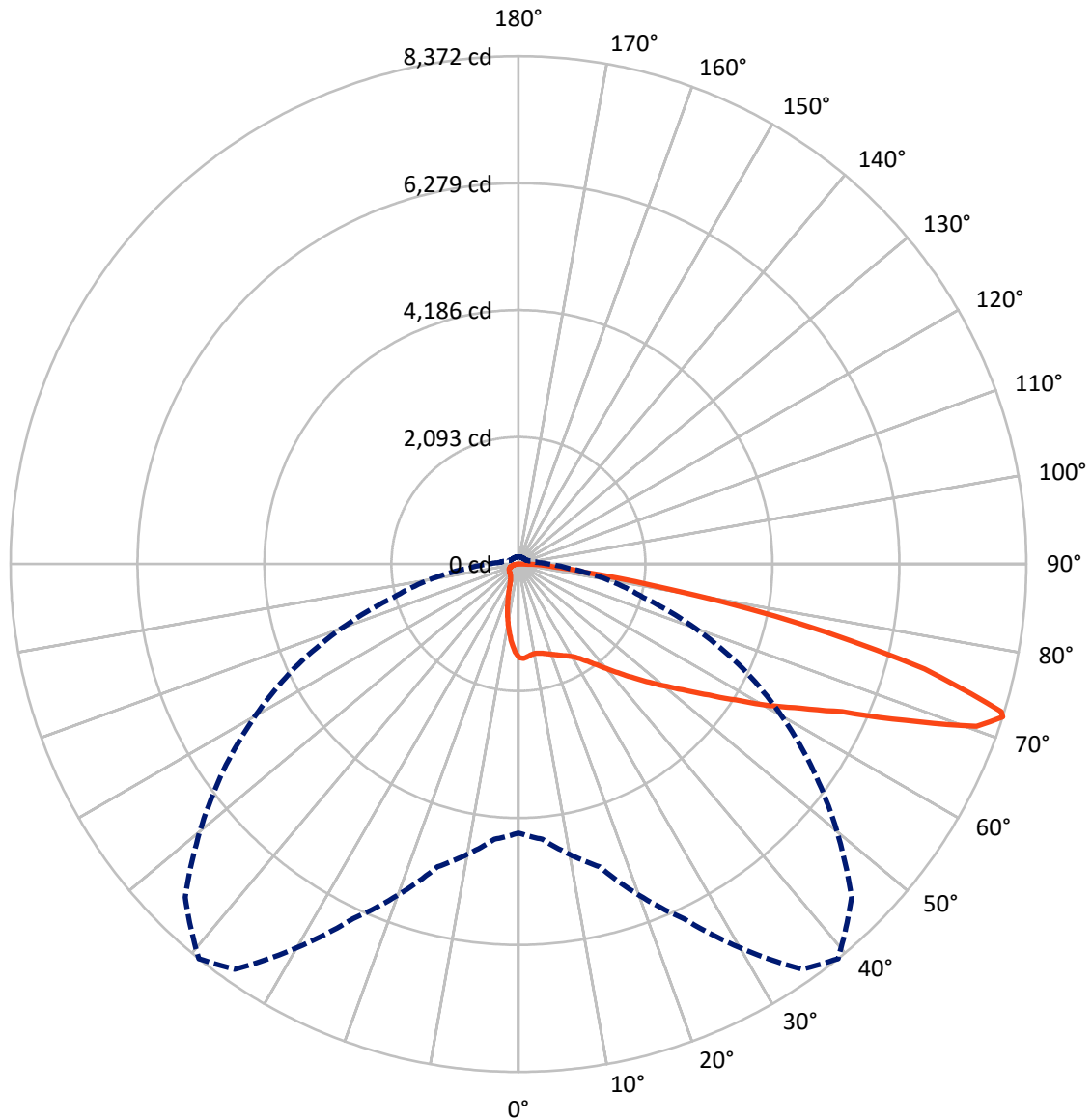
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.9 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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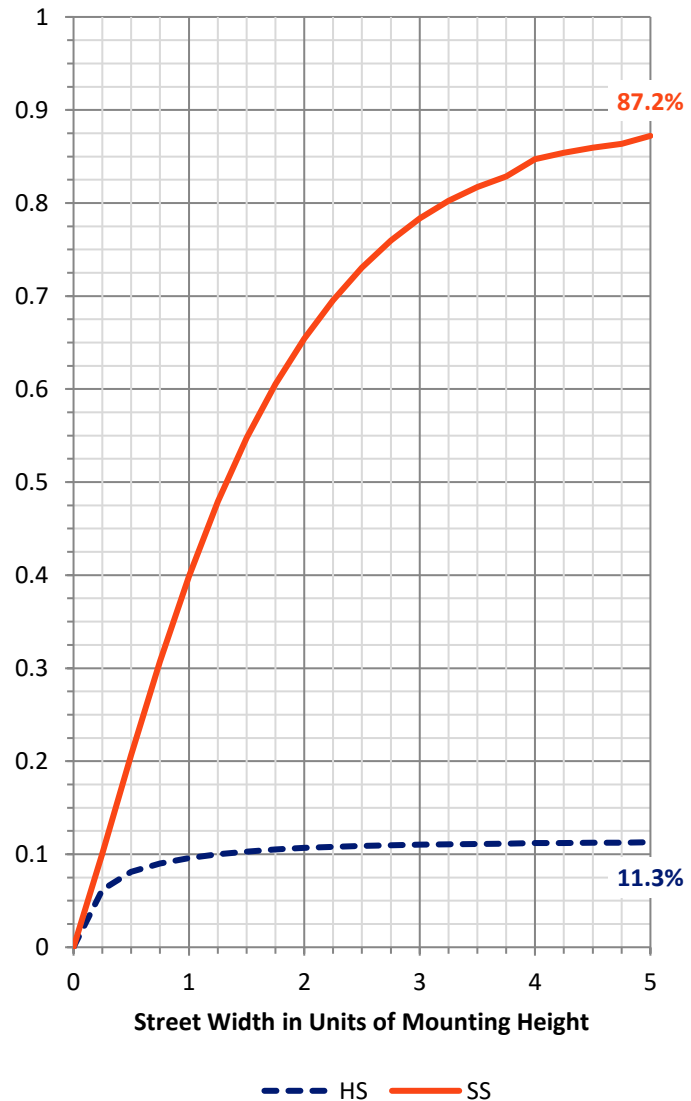
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1157.6	0.0	1157.6
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	8937.9	0.0	8937.9
	% Fixture	88.5	0.0	88.5
Total	Lumens	10095.5	0.0	10095.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.5	1.3
10°-20°	332.9	3.3
20°-30°	518.8	5.1
30°-40°	798.8	7.9
40°-50°	1302.3	12.9
50°-60°	2023.6	20.0
60°-70°	2708.5	26.8
70°-80°	1947.8	19.3
80°-90°	330.2	3.3
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°-90°	10095.5	100.0
0°-180°	10095.5	100.0



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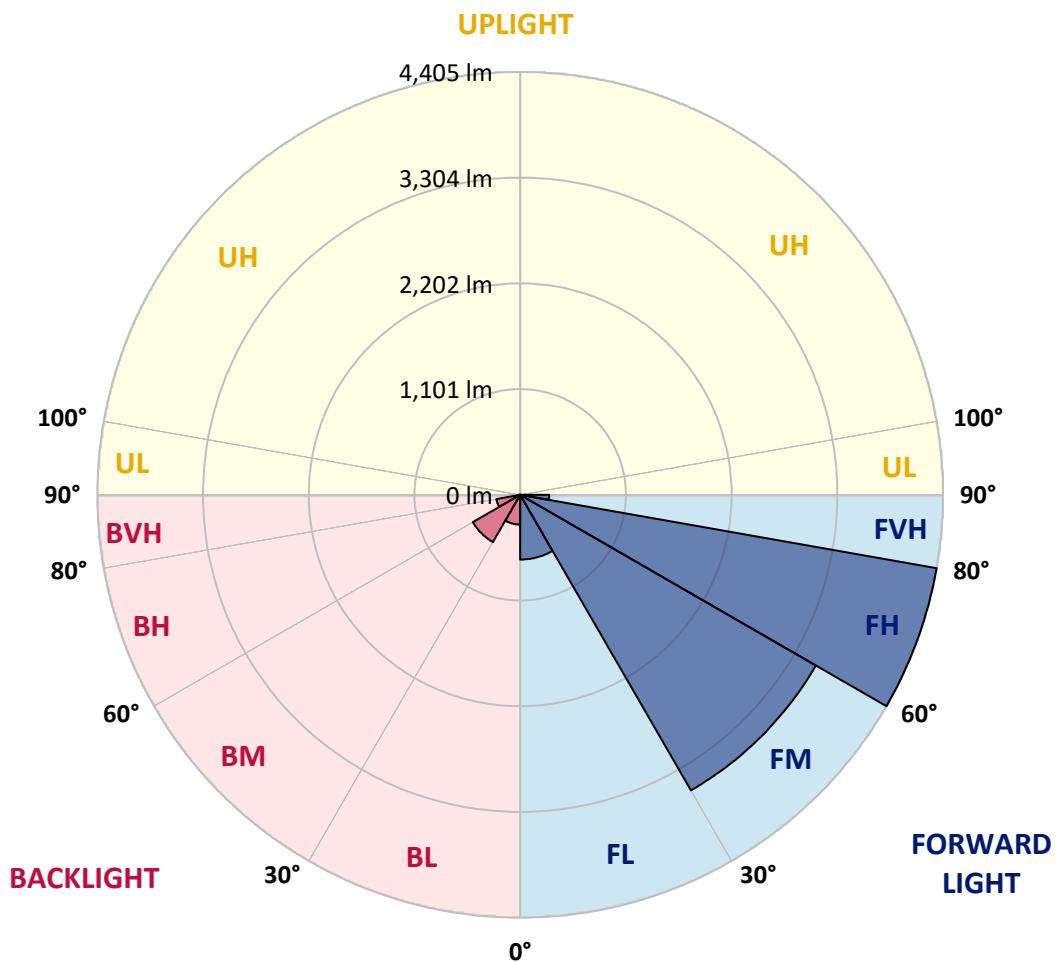
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	674.4	6.7			
FM	(30°-60°)	3555.8	35.2			
FH	(60°-80°)	4404.8	43.6			G2/5000
FVH	(80°-90°)	302.9	3.0			G3/500
BL	(0°-30°)	309.9	3.1	B1/500		
BM	(30°-60°)	568.9	5.6	B1/1000		
BH	(60°-80°)	251.5	2.5	B1/500		G1/500
BVH	(80°-90°)	27.3	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9
2.5°	1575.0	1575.6	1573.7	1567.5	1562.2	1559.4	1554.6	1546.5	1535.7	1528.1	1522.1
5°	1560.0	1562.2	1560.7	1550.6	1541.1	1535.7	1528.1	1516.7	1502.4	1496.3	1482.2
7.5°	1548.6	1549.8	1545.9	1534.3	1516.0	1509.2	1495.7	1480.8	1467.9	1459.0	1442.1
10°	1540.5	1541.9	1538.3	1526.8	1506.5	1498.5	1482.2	1465.9	1449.0	1438.0	1419.1
12.5°	1528.8	1531.6	1531.6	1526.2	1512.7	1507.1	1490.9	1473.3	1457.7	1446.2	1422.5
15°	1526.8	1530.3	1536.3	1535.7	1531.6	1527.6	1514.6	1497.0	1483.6	1469.9	1440.8
17.5°	1543.7	1551.3	1563.5	1567.5	1564.8	1556.0	1541.1	1524.9	1510.0	1497.0	1461.2
20°	1586.4	1590.5	1608.9	1616.9	1603.5	1590.5	1570.9	1549.8	1536.3	1526.2	1480.0
22.5°	1650.8	1656.2	1671.1	1671.8	1643.4	1627.8	1602.8	1577.1	1564.0	1560.0	1505.9
25°	1753.9	1752.6	1756.5	1739.7	1688.2	1669.9	1639.3	1609.6	1600.7	1608.9	1543.7
27.5°	1877.2	1873.9	1861.0	1816.9	1738.9	1715.3	1678.7	1652.3	1652.3	1671.1	1595.3
30°	2019.5	2016.2	1974.1	1900.3	1799.2	1772.1	1733.5	1705.8	1720.1	1756.5	1665.1
32.5°	2169.9	2157.8	2098.8	1999.8	1885.4	1855.5	1818.3	1789.9	1816.9	1879.3	1765.3
35°	2311.6	2304.8	2232.4	2115.1	1996.6	1971.4	1945.6	1910.4	1953.9	2050.7	1907.0
37.5°	2458.0	2452.6	2363.8	2239.1	2132.0	2115.1	2093.4	2069.1	2138.9	2266.2	2098.8
40°	2621.3	2610.6	2498.6	2374.0	2290.0	2281.9	2270.2	2263.5	2375.9	2565.7	2341.4
42.5°	2806.3	2785.4	2640.9	2522.4	2462.1	2468.8	2462.8	2489.8	2661.9	2911.3	2630.1
45°	3017.8	2975.7	2782.6	2680.4	2652.5	2679.6	2692.5	2761.6	3000.2	3310.6	2952.6
47.5°	3215.8	3161.4	2937.8	2851.8	2867.3	2914.1	2950.8	3072.7	3370.9	3705.0	3282.0
50°	3398.0	3337.1	3103.9	3029.4	3105.3	3171.6	3247.6	3419.7	3765.2	4111.0	3584.3
52.5°	3532.9	3488.7	3269.9	3223.2	3378.3	3466.4	3587.7	3805.3	4163.7	4498.0	3854.1
55°	3637.1	3613.5	3431.9	3445.4	3687.4	3813.5	3960.4	4210.5	4585.3	4844.9	4070.9
57.5°	3757.8	3740.3	3616.8	3713.9	4070.9	4229.5	4403.0	4680.9	4986.5	5150.5	4241.1
60°	3885.3	3885.3	3822.8	4037.1	4550.8	4732.5	4905.1	5121.3	5386.3	5425.7	4310.2
62.5°	3981.5	4006.6	4028.9	4381.4	5006.2	5231.9	5421.6	5629.0	5800.4	5561.1	4147.6
65°	4121.1	4174.7	4300.6	4779.2	5570.0	5865.6	6121.7	6295.9	6136.0	5453.4	3616.8
67.5°	4361.0	4440.3	4708.6	5371.4	6433.4	6875.9	7124.6	6823.7	6070.1	4775.1	2770.5
70°	4577.1	4689.1	5147.7	6122.9	7555.6	8015.1	7900.7	6701.0	5286.7	3500.3	1704.4
72°	4433.6	4555.6	5168.2	6450.4	8155.4	8372.4	7768.5	5938.6	4085.2	2136.1	840.4
72.5°	4339.4	4466.1	5102.5	6442.3	8171.7	8326.8	7584.7	5635.7	3708.4	1869.2	679.7
75°	3625.0	3733.4	4387.4	5709.5	7201.3	6916.6	5919.0	3647.4	1704.4	603.8	349.7
77.5°	2367.3	2449.9	3025.2	3955.7	5044.2	4770.3	3602.7	1707.8	639.1	366.7	262.9
80°	1189.4	1248.4	1619.0	2079.8	2722.4	2504.7	1663.1	826.1	427.7	265.0	206.7
82.5°	827.5	881.6	1114.8	1061.9	1137.9	1101.2	782.1	689.2	319.8	167.4	108.4
85°	694.0	750.3	922.4	757.0	619.4	564.6	560.5	651.4	211.5	82.6	91.4
87.5°	605.2	690.5	761.0	552.9	424.9	374.8	412.7	597.1	67.2	45.5	27.8
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9	1541.9
2.5°	1511.9	1510.0	1499.7	1484.2	1472.6	1465.1	1450.9	1450.3	1451.7	1439.4	1444.1
5°	1469.3	1461.2	1434.8	1398.8	1369.6	1341.9	1311.3	1301.1	1292.4	1274.1	1276.1
7.5°	1424.5	1410.2	1364.2	1305.2	1249.1	1197.5	1146.6	1121.7	1102.6	1079.0	1079.0
10°	1398.1	1375.8	1305.2	1219.2	1129.7	1054.5	978.7	933.2	900.0	869.5	867.5
12.5°	1396.8	1362.9	1264.5	1146.0	1023.3	917.6	814.0	744.2	694.6	658.7	655.4
15°	1407.6	1360.2	1230.7	1077.5	923.0	785.5	657.4	568.5	505.6	465.6	461.5
17.5°	1417.0	1356.8	1194.0	1005.7	825.5	658.1	515.7	423.6	364.0	331.4	328.1
20°	1425.9	1349.3	1147.3	929.7	717.7	538.8	403.2	328.7	289.3	271.1	269.0
22.5°	1438.7	1342.5	1098.5	844.3	611.9	438.5	332.7	279.3	258.3	249.4	248.0
25°	1459.7	1343.1	1051.0	757.0	515.1	365.3	288.0	254.8	243.4	237.2	237.2
27.5°	1490.3	1351.3	1004.3	668.2	433.1	315.1	261.5	242.0	234.5	229.7	228.3
30°	1535.1	1366.2	954.9	584.2	367.9	280.6	246.0	233.7	227.7	223.7	223.0
32.5°	1600.1	1392.6	902.6	507.6	318.4	256.1	234.5	227.0	222.3	218.8	218.2
35°	1697.0	1439.4	851.9	442.5	283.2	238.6	224.9	218.8	216.2	214.9	214.2
37.5°	1839.3	1514.6	803.8	391.8	260.1	227.0	215.6	212.1	210.7	210.7	210.7
40°	2018.2	1613.5	760.3	355.8	247.4	218.2	208.8	206.0	206.0	206.7	206.7
42.5°	2235.7	1737.6	723.0	331.4	239.8	212.1	203.9	202.7	201.9	201.9	202.7
45°	2488.6	1884.0	700.0	312.4	234.5	208.8	200.6	200.0	197.2	195.9	195.9
47.5°	2742.6	2040.6	698.7	301.7	227.7	204.6	197.2	197.2	191.8	189.1	189.7
50°	2979.9	2180.8	713.7	298.9	223.7	198.5	193.9	194.6	187.0	183.7	183.0
52.5°	3170.9	2288.0	731.8	302.3	223.7	193.1	187.7	191.1	183.0	178.9	178.3
55°	3318.7	2362.5	738.6	309.7	226.4	188.5	182.3	187.7	181.6	176.2	176.2
57.5°	3424.3	2386.2	709.5	313.1	230.4	187.7	176.8	187.0	183.7	176.8	176.8
60°	3385.8	2248.5	601.1	300.3	229.7	186.4	172.8	188.5	190.4	183.0	183.0
62.5°	3084.2	1881.3	482.5	271.1	218.2	181.6	168.1	187.0	195.2	192.4	191.1
65°	2510.9	1379.7	374.1	236.6	198.5	171.4	157.9	174.8	184.3	187.0	187.7
67.5°	1769.5	873.5	290.7	201.3	174.2	156.6	146.3	154.5	157.9	159.3	162.0
70°	967.7	473.0	231.1	169.4	149.1	141.7	134.1	134.8	133.5	132.1	133.5
72°	486.0	309.0	195.2	147.1	132.1	127.4	124.1	122.0	122.0	120.0	120.6
72.5°	418.2	287.4	188.5	141.7	128.1	124.1	121.4	119.3	118.5	117.3	117.9
75°	278.6	227.7	157.3	118.5	109.1	106.4	107.7	105.7	106.4	105.0	105.7
77.5°	224.9	195.9	133.5	100.3	93.6	89.4	92.2	92.9	94.2	92.9	92.2
80°	188.5	166.7	111.7	82.6	78.0	74.6	75.8	80.7	81.3	77.3	76.5
82.5°	122.0	134.1	88.2	64.4	59.6	58.3	61.7	66.5	67.7	62.3	60.9
85°	102.3	107.7	63.7	44.0	39.3	38.0	44.7	49.4	52.9	47.4	46.2
87.5°	28.4	52.9	31.3	21.0	17.6	17.6	21.6	25.7	30.5	31.3	31.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)