

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: P196184

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196184
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-SL4-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 800mA 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: 9603.5 lumens
Efficiency: N/A
Efficacy: 113.0 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

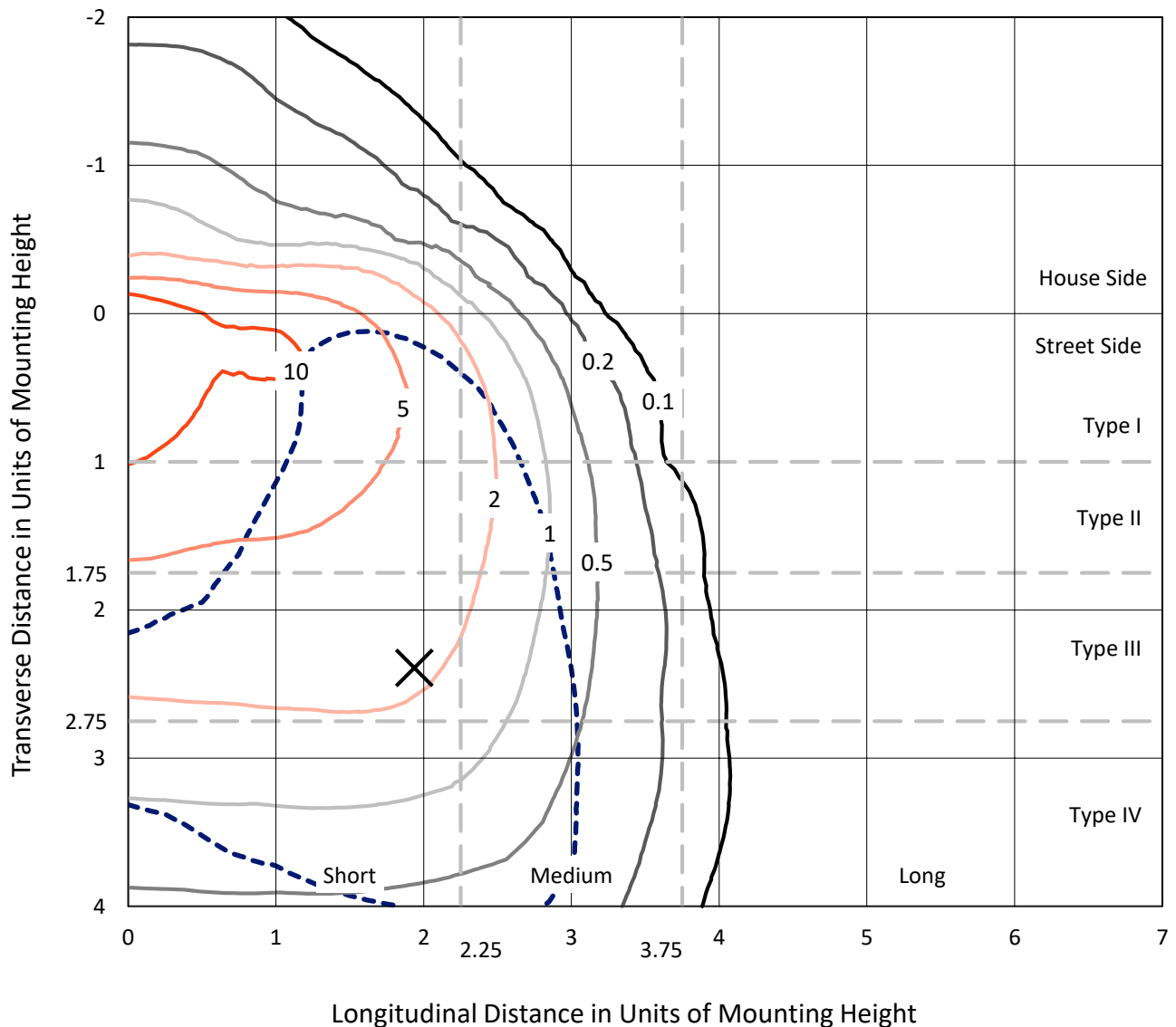
Input Watts (W): 85
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

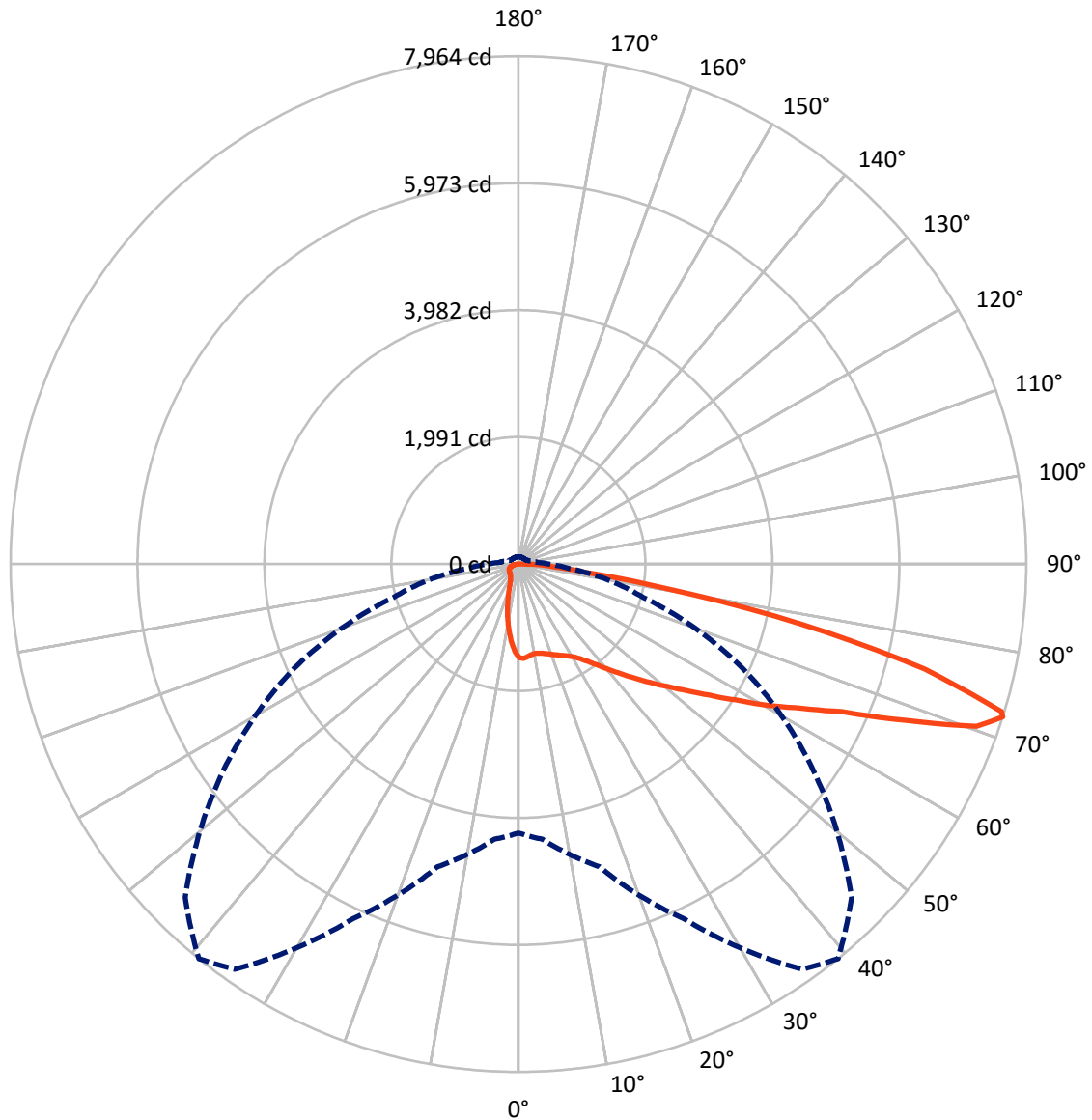
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.7 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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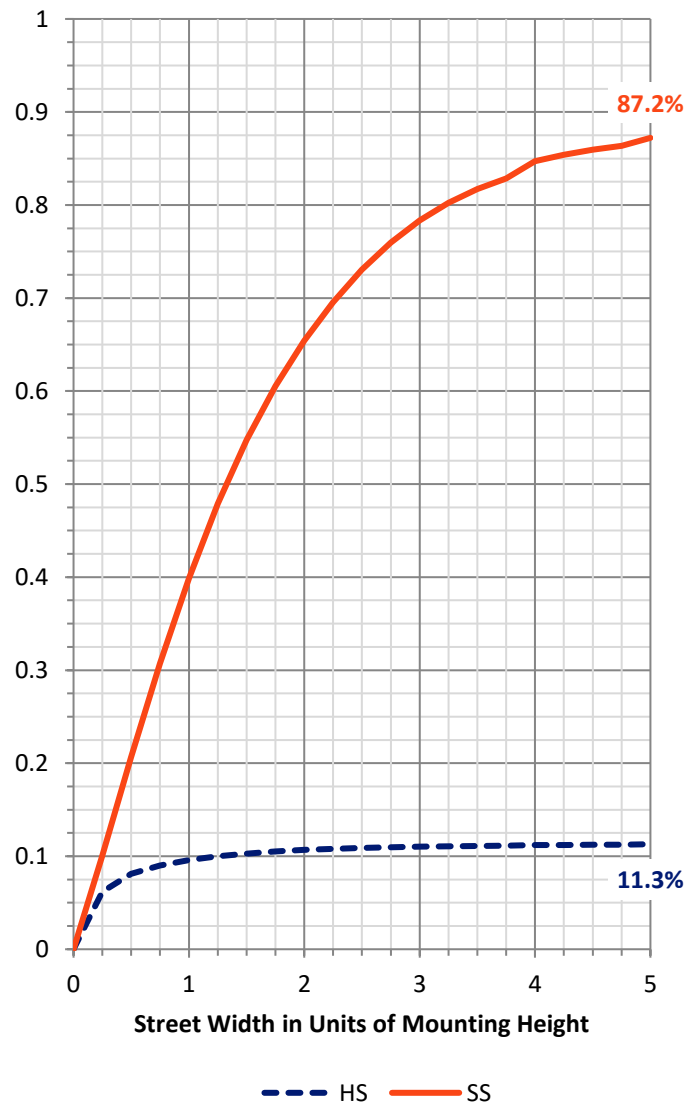
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1101.2	0.0	1101.2
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	8502.3	0.0	8502.3
	% Fixture	88.5	0.0	88.5
Total	Lumens	9603.5	0.0	9603.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.0	1.3
10°-20°	316.7	3.3
20°-30°	493.5	5.1
30°-40°	759.9	7.9
40°-50°	1238.8	12.9
50°-60°	1925.0	20.0
60°-70°	2576.5	26.8
70°-80°	1852.9	19.3
80°-90°	314.1	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°	9603.5	100.0
0°-180°	9603.5	100.0



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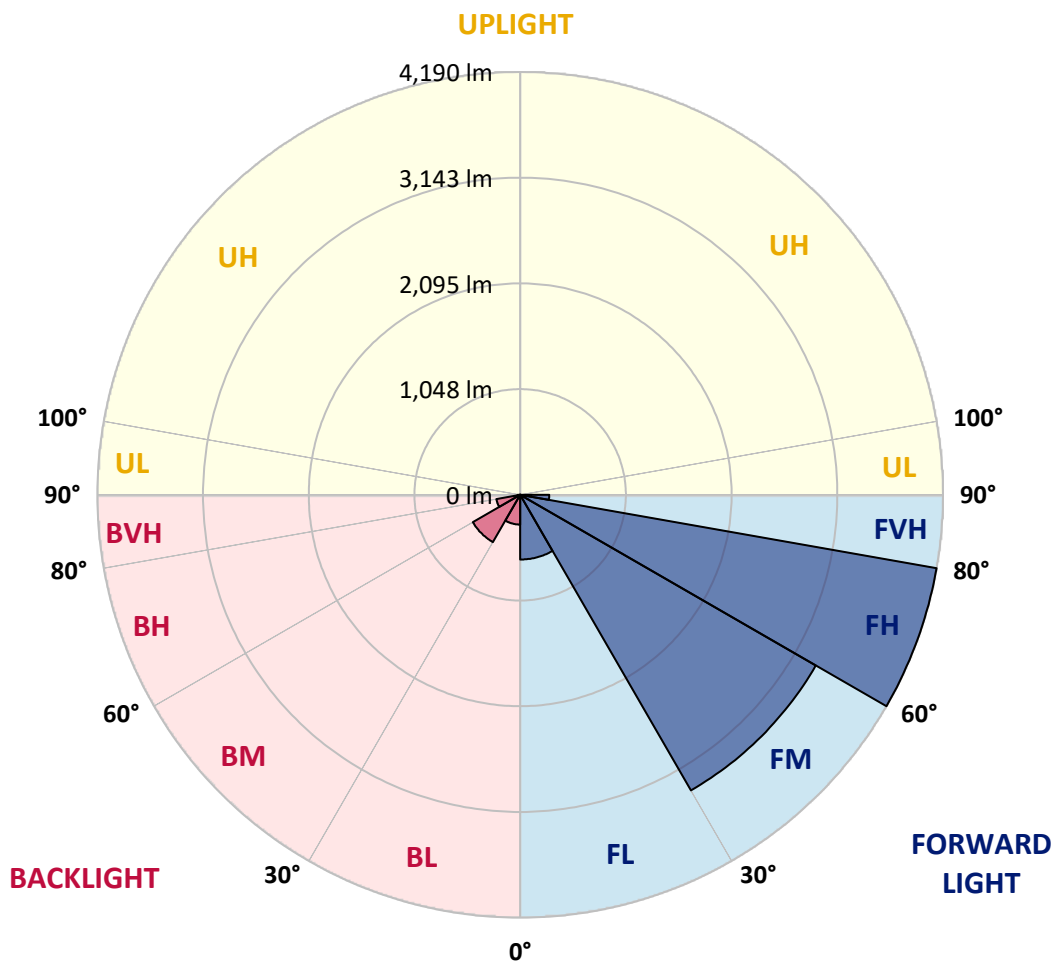
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	641.5	6.7			
FM (30°-60°)	3382.5	35.2			
FH (60°-80°)	4190.1	43.6			G2/5000
FVH (80°-90°)	288.1	3.0			G3/500
BL (0°-30°)	294.8	3.1	B1/500		
BM (30°-60°)	541.2	5.6	B1/1000		
BH (60°-80°)	239.2	2.5	B1/500		G1/500
BVH (80°-90°)	26.0	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°	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6
2.5°	1498.2	1498.8	1496.9	1491.2	1485.9	1483.4	1478.9	1471.1	1460.8	1453.7	1447.9
5°	1484.0	1485.9	1484.7	1475.0	1466.0	1460.8	1453.7	1442.8	1429.3	1423.4	1409.9
7.5°	1473.0	1474.4	1470.5	1459.5	1442.2	1435.7	1422.8	1408.6	1396.3	1387.9	1371.9
10°	1465.4	1466.6	1463.4	1452.5	1433.1	1425.4	1409.9	1394.4	1378.3	1368.0	1349.9
12.5°	1454.3	1457.0	1457.0	1451.8	1438.9	1433.8	1418.3	1401.5	1386.7	1375.8	1353.2
15°	1452.5	1455.7	1461.5	1460.8	1457.0	1453.1	1440.8	1424.0	1411.2	1398.3	1370.5
17.5°	1468.5	1475.6	1487.3	1491.2	1488.5	1480.2	1466.0	1450.5	1436.3	1424.0	1389.9
20°	1509.2	1513.0	1530.4	1538.2	1525.3	1513.0	1494.3	1474.4	1461.5	1451.8	1408.0
22.5°	1570.4	1575.5	1589.8	1590.4	1563.3	1548.5	1524.6	1500.2	1487.9	1484.0	1432.4
25°	1668.4	1667.1	1671.0	1654.8	1605.8	1588.4	1559.5	1531.1	1522.7	1530.4	1468.5
27.5°	1785.8	1782.5	1770.2	1728.4	1654.2	1631.6	1596.8	1571.7	1571.7	1589.8	1517.5
30°	1921.1	1917.9	1877.9	1807.7	1711.6	1685.8	1649.1	1622.6	1636.2	1671.0	1583.9
32.5°	2064.2	2052.7	1996.5	1902.4	1793.4	1765.1	1729.6	1702.6	1728.4	1787.7	1679.4
35°	2198.9	2192.5	2123.5	2012.0	1899.2	1875.4	1850.8	1817.3	1858.6	1950.8	1814.1
37.5°	2338.3	2333.0	2248.7	2130.0	2028.1	2012.0	1991.4	1968.2	2034.5	2155.8	1996.5
40°	2493.5	2483.2	2376.9	2258.3	2178.4	2170.6	2159.7	2153.2	2260.2	2440.8	2227.4
42.5°	2669.6	2649.5	2512.3	2399.4	2342.0	2348.5	2342.8	2368.5	2532.2	2769.5	2501.9
45°	2870.7	2830.7	2647.0	2549.7	2523.2	2549.0	2561.3	2627.0	2853.9	3149.3	2808.8
47.5°	3058.9	3007.4	2794.6	2712.8	2727.6	2772.1	2806.9	2922.9	3206.5	3524.4	3122.1
50°	3232.3	3174.3	2952.5	2881.7	2953.9	3017.1	3089.2	3253.0	3581.8	3910.5	3409.7
52.5°	3360.7	3318.8	3110.5	3066.1	3213.7	3297.5	3412.9	3619.8	3960.9	4278.7	3666.3
55°	3459.9	3437.4	3264.6	3277.5	3507.6	3627.6	3767.4	4005.4	4361.9	4608.7	3872.5
57.5°	3574.7	3557.9	3440.6	3532.8	3872.5	4023.4	4188.4	4452.7	4743.4	4899.5	4034.3
60°	3695.9	3695.9	3636.6	3840.3	4328.9	4501.7	4666.1	4871.8	5123.9	5161.2	4100.1
62.5°	3787.5	3811.3	3832.6	4167.8	4762.1	4976.9	5157.3	5354.6	5517.7	5290.2	3945.4
65°	3920.3	3971.2	4091.1	4546.2	5298.6	5579.6	5823.2	5989.0	5836.9	5187.7	3440.6
67.5°	4148.5	4223.9	4479.2	5109.6	6119.8	6540.8	6777.4	6491.1	5774.3	4542.3	2635.4
70°	4354.1	4460.5	4896.9	5824.6	7187.5	7624.5	7515.5	6374.5	5029.0	3329.7	1621.4
72°	4217.4	4333.4	4916.2	6136.0	7758.0	7964.3	7389.8	5649.2	3886.1	2032.0	799.4
72.5°	4127.8	4248.4	4853.7	6128.2	7773.4	7921.0	7215.2	5361.1	3527.6	1778.0	646.6
75°	3448.4	3551.5	4173.5	5431.4	6850.3	6579.5	5630.5	3469.6	1621.4	574.4	332.7
77.5°	2251.8	2330.5	2877.8	3762.9	4798.3	4537.8	3427.1	1624.5	607.9	348.7	250.1
80°	1131.4	1187.4	1540.2	1978.5	2589.6	2382.7	1582.0	785.8	406.8	252.1	196.6
82.5°	787.2	838.7	1060.5	1010.2	1082.4	1047.6	744.0	655.6	304.3	159.3	103.1
85°	660.1	713.6	877.4	720.1	589.2	537.0	533.2	619.5	201.1	78.7	87.1
87.5°	575.7	656.9	723.9	526.0	404.2	356.5	392.6	567.9	63.8	43.2	26.4
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°	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6	1466.6
2.5°	1438.3	1436.3	1426.6	1411.8	1400.8	1393.8	1380.3	1379.6	1380.9	1369.3	1373.8
5°	1397.7	1389.9	1364.7	1330.6	1302.8	1276.4	1247.4	1237.8	1229.4	1212.0	1213.9
7.5°	1355.1	1341.6	1297.7	1241.7	1188.2	1139.2	1090.8	1066.9	1048.8	1026.3	1026.3
10°	1329.9	1308.7	1241.7	1159.7	1074.7	1003.1	930.9	887.7	856.1	827.2	825.2
12.5°	1328.7	1296.4	1203.0	1090.2	973.4	872.9	774.3	707.9	660.8	626.7	623.4
15°	1338.9	1293.8	1170.8	1025.0	878.0	747.2	625.3	540.8	480.9	442.9	439.1
17.5°	1348.0	1290.7	1135.9	956.7	785.2	625.9	490.6	402.9	346.2	315.3	312.0
20°	1356.4	1283.5	1091.4	884.4	682.7	512.5	383.6	312.6	275.3	257.9	255.9
22.5°	1368.6	1277.1	1045.0	803.2	582.2	417.1	316.5	265.6	245.6	237.2	236.0
25°	1388.7	1277.8	999.8	720.1	490.0	347.5	273.9	242.4	231.4	225.7	225.7
27.5°	1417.6	1285.4	955.4	635.7	411.9	299.7	248.9	230.2	223.1	218.5	217.3
30°	1460.2	1299.7	908.4	555.7	350.1	266.9	234.1	222.4	216.6	212.8	212.1
32.5°	1522.0	1324.8	858.7	482.8	303.0	243.7	223.1	215.9	211.4	208.3	207.6
35°	1614.2	1369.3	810.4	420.9	269.4	226.9	214.0	208.3	205.6	204.4	203.7
37.5°	1749.7	1440.8	764.6	372.7	247.6	215.9	205.0	201.8	200.5	200.5	200.5
40°	1919.9	1534.9	723.3	338.5	235.3	207.6	198.6	196.0	196.0	196.6	196.6
42.5°	2126.7	1652.9	687.8	315.3	228.2	201.8	194.1	192.7	192.1	192.1	192.7
45°	2367.2	1792.2	665.9	297.2	223.1	198.6	190.8	190.2	187.6	186.3	186.3
47.5°	2608.9	1941.0	664.6	286.8	216.6	194.7	187.6	187.6	182.4	179.8	180.6
50°	2834.6	2074.5	678.8	284.3	212.8	188.9	184.3	185.1	177.9	174.7	174.1
52.5°	3016.4	2176.4	696.2	287.6	212.8	183.7	178.6	181.8	174.1	170.2	169.5
55°	3156.9	2247.3	702.7	294.6	215.3	179.2	173.4	178.6	172.8	167.7	167.7
57.5°	3257.5	2269.9	674.9	297.9	219.2	178.6	168.3	177.9	174.7	168.3	168.3
60°	3220.8	2139.0	571.8	285.6	218.5	177.3	164.4	179.2	181.2	174.1	174.1
62.5°	2933.9	1789.6	459.0	257.9	207.6	172.8	159.9	177.9	185.7	183.1	181.8
65°	2388.5	1312.5	355.9	224.9	188.9	163.1	150.2	166.3	175.3	177.9	178.6
67.5°	1683.3	830.9	276.6	191.5	165.7	148.9	139.2	147.0	150.2	151.5	154.1
70°	920.6	450.0	219.8	161.2	141.8	134.7	127.7	128.3	127.1	125.7	127.1
72°	462.3	294.0	185.7	139.9	125.7	121.2	117.9	116.0	116.0	114.1	114.8
72.5°	397.7	273.3	179.2	134.7	121.8	117.9	115.4	113.4	112.8	111.5	112.2
75°	264.9	216.6	149.6	112.8	103.8	101.2	102.5	100.6	101.2	99.9	100.6
77.5°	214.0	186.3	127.1	95.4	89.0	85.1	87.7	88.3	89.6	88.3	87.7
80°	179.2	158.6	106.4	78.7	74.2	70.9	72.2	76.7	77.3	73.4	72.8
82.5°	116.0	127.7	83.8	61.3	56.8	55.4	58.6	63.2	64.4	59.3	58.0
85°	97.4	102.5	60.6	41.9	37.4	36.1	42.6	47.1	50.3	45.1	43.9
87.5°	27.1	50.3	29.7	19.9	16.8	16.8	20.7	24.4	29.1	29.7	29.7
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)