

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: P196177

Luminaire Tested: **NAV-AF-01-D-UNV-SL4-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196177  
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-01-D-UNV-SL4-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(1) 70 CRI, 4000K, 615mA LIGHTSQUARE 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: 3928.1 lumens  
Efficiency: N/A  
Efficacy: 115.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G2

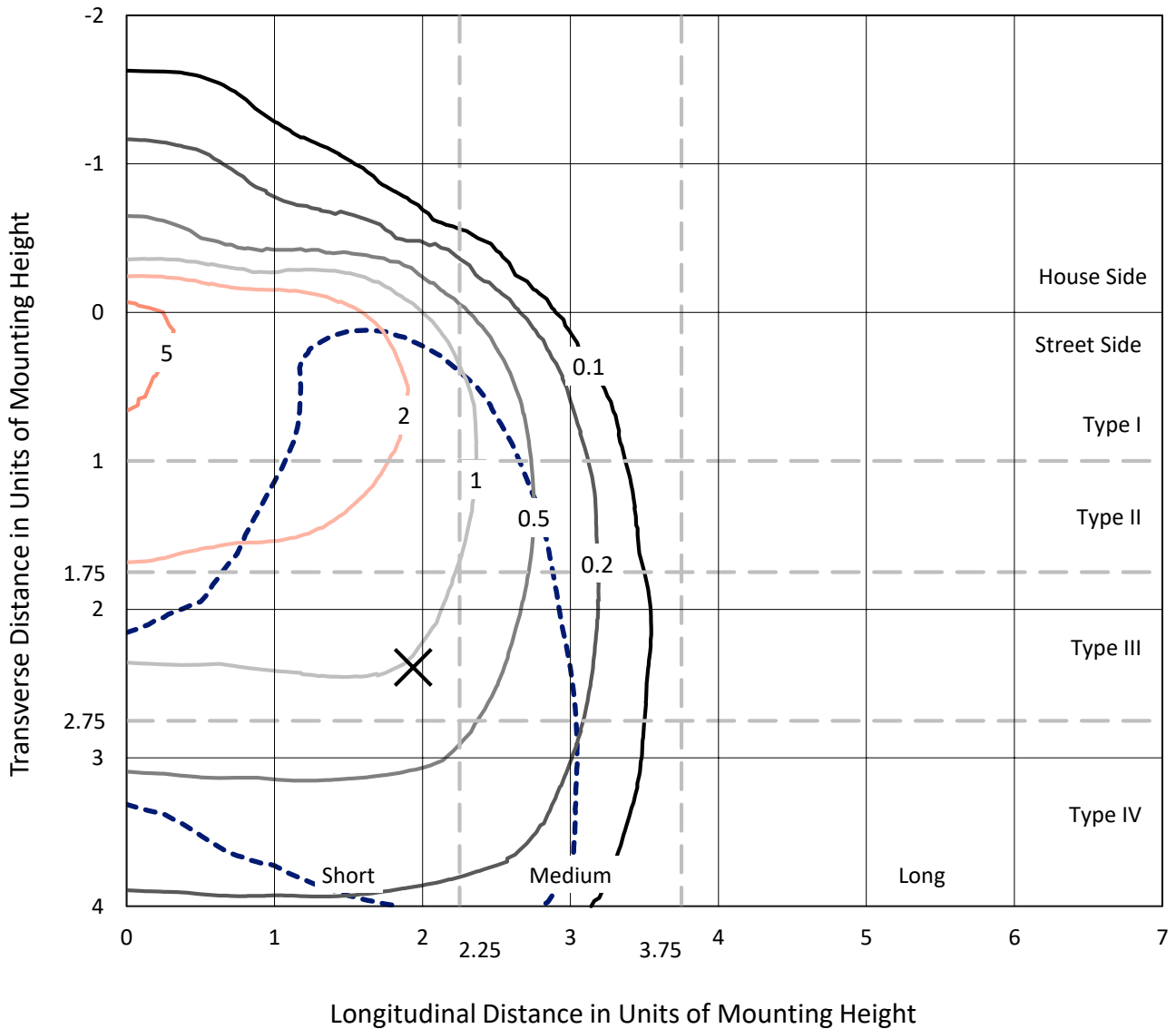
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

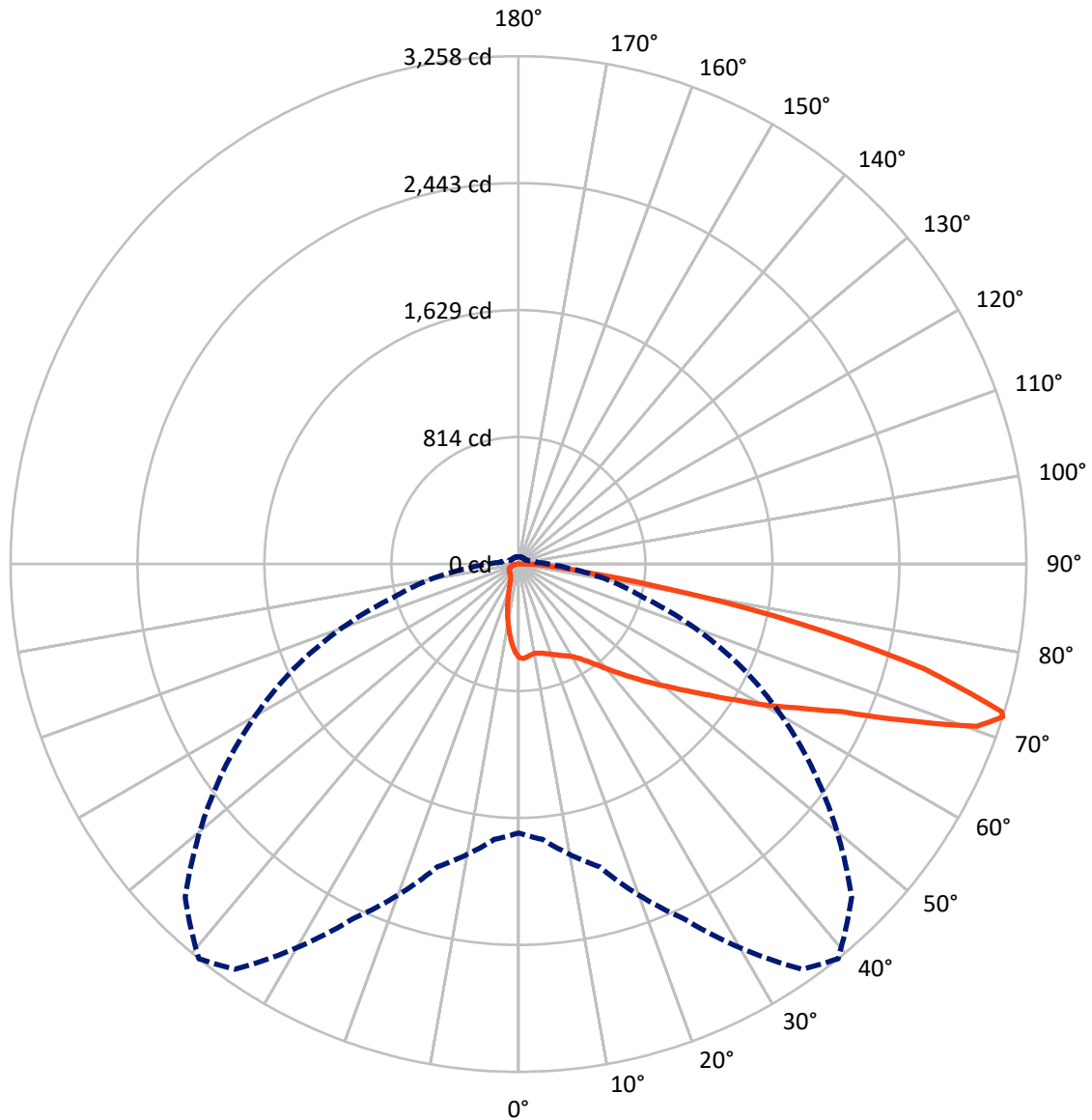
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6 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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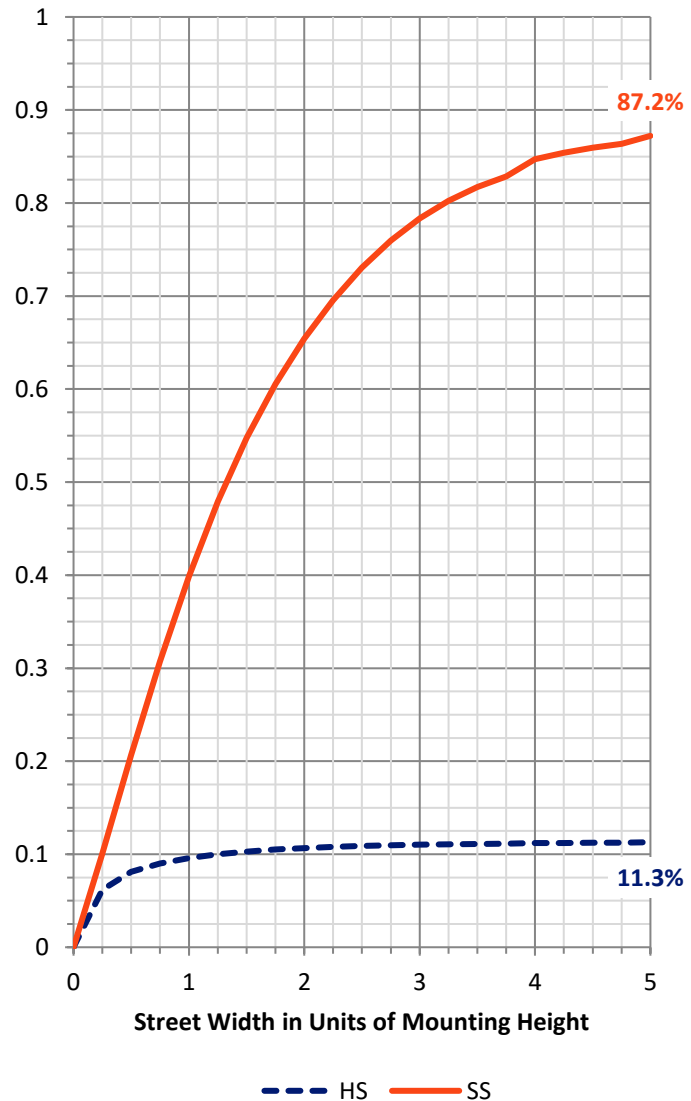
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	450.4	0.0	450.4
	% Fixture	11.5	0.0	11.5
<b>Street Side</b>	Lumens	3477.7	0.0	3477.7
	% Fixture	88.5	0.0	88.5
<b>Total</b>	Lumens	3928.1	0.0	3928.1
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.6	1.3
10°-20°	129.5	3.3
20°-30°	201.9	5.1
30°-40°	310.8	7.9
40°-50°	506.7	12.9
50°-60°	787.4	20.0
60°-70°	1053.9	26.8
70°-80°	757.9	19.3
80°-90°	128.5	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°	3928.1	100.0
0°-180°	3928.1	100.0



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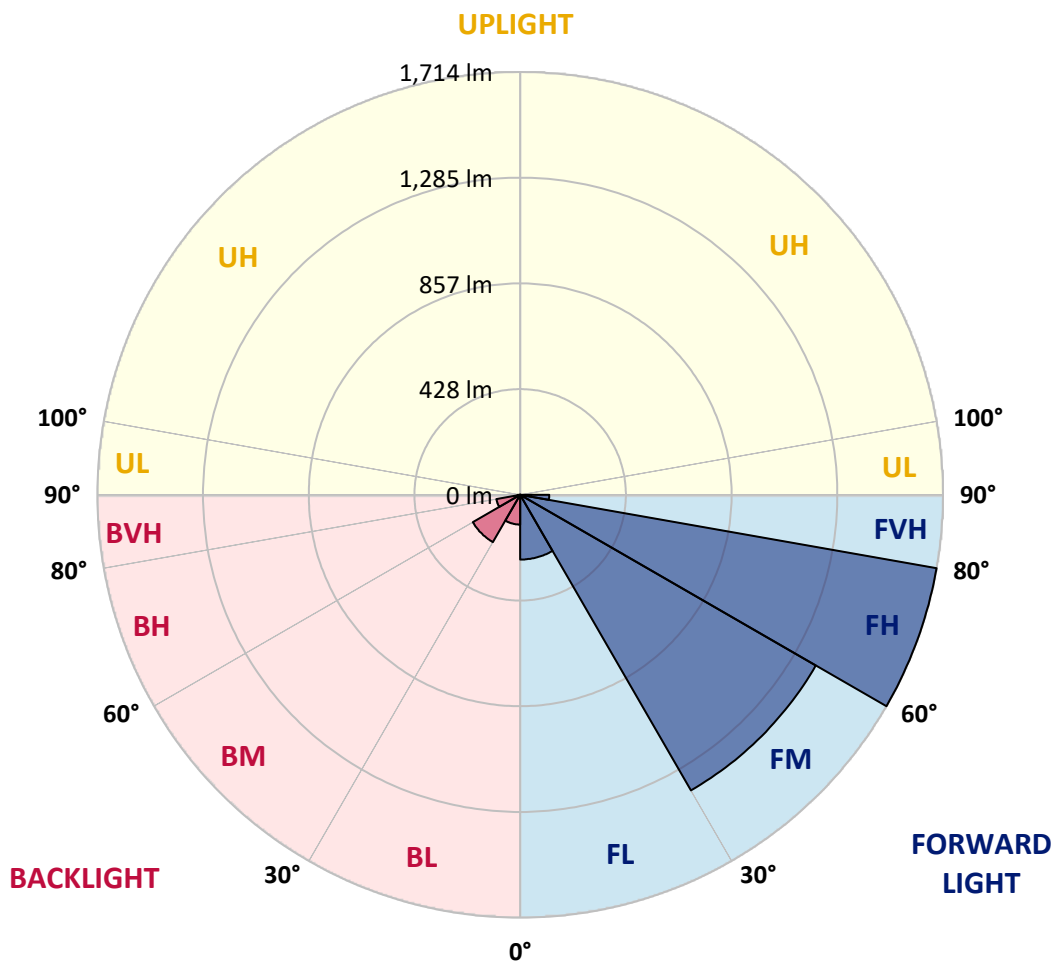
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	262.4	6.7			
FM	(30°-60°)	1383.6	35.2			
FH	(60°-80°)	1713.9	43.6			G1/1800
FVH	(80°-90°)	117.9	3.0			G2/225
BL	(0°-30°)	120.6	3.1	B1/500		
BM	(30°-60°)	221.4	5.6	B1/1000		
BH	(60°-80°)	97.9	2.5	B0/110		G0/110
BVH	(80°-90°)	10.6	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-G2**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9
2.5°	612.8	613.1	612.3	609.9	607.8	606.7	604.9	601.7	597.5	594.6	592.3
5°	607.0	607.8	607.3	603.3	599.7	597.5	594.6	590.1	584.6	582.3	576.7
7.5°	602.5	603.0	601.5	597.0	589.8	587.3	582.0	576.1	571.1	567.7	561.1
10°	599.3	599.9	598.5	594.1	586.2	583.0	576.7	570.4	563.7	559.6	552.2
12.5°	594.8	596.0	596.0	593.8	588.6	586.5	580.1	573.3	567.2	562.7	553.5
15°	594.1	595.5	597.8	597.5	596.0	594.3	589.3	582.5	577.3	571.9	560.6
17.5°	600.7	603.5	608.3	609.9	608.9	605.5	599.7	593.3	587.5	582.5	568.6
20°	617.4	618.9	626.0	629.1	623.9	618.9	611.2	603.0	597.8	593.8	575.9
22.5°	642.3	644.5	650.3	650.5	639.4	633.4	623.6	613.6	608.6	607.0	585.9
25°	682.4	681.9	683.5	676.9	656.8	649.8	637.9	626.3	622.9	626.0	600.7
27.5°	730.4	729.1	724.0	707.0	676.6	667.4	653.2	642.9	642.9	650.3	620.7
30°	785.8	784.5	768.1	739.4	700.1	689.6	674.5	663.7	669.2	683.5	647.9
32.5°	844.3	839.6	816.6	778.2	733.6	722.0	707.5	696.4	707.0	731.2	686.9
35°	899.5	896.8	868.6	823.0	776.8	767.1	757.1	743.4	760.3	797.9	742.0
37.5°	956.4	954.3	919.7	871.2	829.6	823.0	814.6	805.1	832.2	881.8	816.6
40°	1020.0	1015.7	972.2	923.7	891.0	887.8	883.3	880.8	924.5	998.3	911.0
42.5°	1091.9	1083.8	1027.6	981.4	958.0	960.7	958.3	968.8	1035.7	1132.8	1023.4
45°	1174.2	1157.9	1082.7	1042.9	1032.1	1042.6	1047.6	1074.5	1167.4	1288.1	1148.9
47.5°	1251.2	1230.1	1143.1	1109.6	1115.6	1133.8	1148.2	1195.5	1311.6	1441.6	1277.1
50°	1322.2	1298.4	1207.7	1178.7	1208.2	1234.1	1263.7	1330.6	1465.1	1599.6	1394.7
52.5°	1374.6	1357.5	1272.3	1254.1	1314.5	1348.8	1396.0	1480.6	1620.1	1750.1	1499.6
55°	1415.3	1406.0	1335.4	1340.6	1434.8	1483.8	1541.0	1638.4	1784.1	1885.1	1584.0
57.5°	1462.2	1455.4	1407.3	1445.0	1584.0	1645.7	1713.2	1821.3	1940.2	2004.1	1650.2
60°	1511.7	1511.7	1487.5	1570.8	1770.7	1841.3	1908.6	1992.7	2095.8	2111.1	1677.0
62.5°	1549.2	1559.0	1567.7	1704.7	1947.9	2035.7	2109.5	2190.2	2256.9	2163.8	1613.8
65°	1603.5	1624.3	1673.3	1859.5	2167.2	2282.2	2381.9	2449.7	2387.5	2121.9	1407.3
67.5°	1696.9	1727.7	1832.1	2090.0	2503.3	2675.4	2772.2	2655.1	2361.9	1858.0	1078.0
70°	1781.0	1824.4	2003.0	2382.5	2939.9	3118.7	3074.1	2607.4	2057.1	1362.0	663.2
72°	1725.1	1772.6	2010.9	2509.8	3173.3	3257.6	3022.7	2310.7	1589.6	831.1	326.9
72.5°	1688.4	1737.7	1985.3	2506.6	3179.5	3240.0	2951.2	2192.9	1442.9	727.2	264.4
75°	1410.4	1452.7	1707.1	2221.6	2802.0	2691.2	2303.1	1419.1	663.2	235.0	136.1
77.5°	921.1	953.3	1177.1	1539.1	1962.6	1856.1	1401.7	664.5	248.7	142.7	102.3
80°	462.8	485.7	629.9	809.3	1059.3	974.6	647.1	321.4	166.4	103.1	80.4
82.5°	321.9	343.1	433.7	413.2	442.7	428.5	304.3	268.2	124.5	65.2	42.1
85°	270.1	292.0	358.9	294.5	241.0	219.6	218.1	253.4	82.2	32.1	35.6
87.5°	235.5	268.7	296.1	215.1	165.3	145.8	160.6	232.3	26.1	17.7	10.8
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°	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9	599.9
2.5°	588.3	587.5	583.6	577.5	573.0	570.1	564.6	564.3	564.9	560.1	561.9
5°	571.7	568.6	558.2	544.2	533.0	522.1	510.2	506.3	502.9	495.7	496.5
7.5°	554.2	548.7	530.8	507.9	486.0	466.0	446.2	436.4	429.0	419.8	419.8
10°	544.0	535.3	507.9	474.3	439.6	410.3	380.7	363.1	350.2	338.3	337.6
12.5°	543.5	530.3	492.0	445.9	398.1	357.0	316.7	289.5	270.3	256.4	255.0
15°	547.7	529.3	478.8	419.3	359.2	305.7	255.7	221.3	196.7	181.2	179.5
17.5°	551.4	527.9	464.6	391.3	321.2	256.0	200.7	164.8	141.6	129.0	127.7
20°	554.8	525.0	446.4	361.8	279.3	209.6	156.9	127.9	112.6	105.5	104.6
22.5°	559.9	522.4	427.5	328.6	238.1	170.6	129.5	108.6	100.5	97.1	96.5
25°	567.9	522.6	409.0	294.5	200.4	142.1	112.1	99.1	94.6	92.3	92.3
27.5°	579.8	525.8	390.8	260.0	168.5	122.7	101.8	94.1	91.2	89.4	88.9
30°	597.3	531.6	371.5	227.3	143.2	109.1	95.7	90.9	88.6	87.1	86.7
32.5°	622.6	541.9	351.3	197.5	124.0	99.6	91.2	88.4	86.5	85.2	84.9
35°	660.3	560.1	331.4	172.2	110.2	92.8	87.6	85.2	84.1	83.6	83.4
37.5°	715.7	589.3	312.7	152.4	101.3	88.4	83.9	82.6	82.0	82.0	82.0
40°	785.3	627.9	295.8	138.4	96.3	84.9	81.2	80.2	80.2	80.4	80.4
42.5°	869.9	676.1	281.3	129.0	93.4	82.6	79.4	78.9	78.6	78.6	78.9
45°	968.2	733.0	272.4	121.5	91.2	81.2	78.1	77.7	76.7	76.2	76.2
47.5°	1067.1	794.0	271.9	117.3	88.6	79.6	76.7	76.7	74.7	73.6	73.9
50°	1159.4	848.5	277.6	116.3	87.1	77.2	75.4	75.7	72.7	71.5	71.2
52.5°	1233.8	890.2	284.8	117.6	87.1	75.2	73.0	74.4	71.2	69.7	69.4
55°	1291.3	919.2	287.4	120.5	88.1	73.3	70.9	73.0	70.7	68.5	68.5
57.5°	1332.4	928.4	276.1	121.8	89.6	73.0	68.8	72.7	71.5	68.8	68.8
60°	1317.4	874.9	233.8	116.8	89.4	72.5	67.2	73.3	74.1	71.2	71.2
62.5°	1200.0	732.0	187.7	105.5	84.9	70.7	65.4	72.7	75.9	74.9	74.4
65°	977.0	536.8	145.6	92.1	77.2	66.7	61.5	68.0	71.7	72.7	73.0
67.5°	688.4	339.9	113.1	78.4	67.7	60.9	57.0	60.1	61.5	62.0	63.0
70°	376.5	184.0	89.9	65.9	58.0	55.1	52.2	52.5	52.0	51.5	52.0
72°	189.0	120.2	75.9	57.2	51.5	49.6	48.3	47.5	47.5	46.6	47.0
72.5°	162.6	111.8	73.3	55.1	49.8	48.3	47.2	46.4	46.1	45.6	45.9
75°	108.3	88.6	61.2	46.1	42.5	41.4	41.9	41.1	41.4	40.9	41.1
77.5°	87.6	76.2	52.0	39.1	36.4	34.8	35.9	36.1	36.6	36.1	35.9
80°	73.3	64.9	43.5	32.1	30.3	29.1	29.6	31.4	31.6	30.1	29.8
82.5°	47.5	52.2	34.3	25.1	23.2	22.7	24.0	25.9	26.4	24.2	23.7
85°	39.8	41.9	24.8	17.2	15.3	14.7	17.4	19.2	20.6	18.4	17.9
87.5°	11.0	20.6	12.2	8.2	6.9	6.9	8.4	10.0	11.9	12.2	12.2
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)