

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: P196154

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196154
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)
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-SL4-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6688 lumens
Efficiency: N/A
Efficacy: 101.3 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 - G2

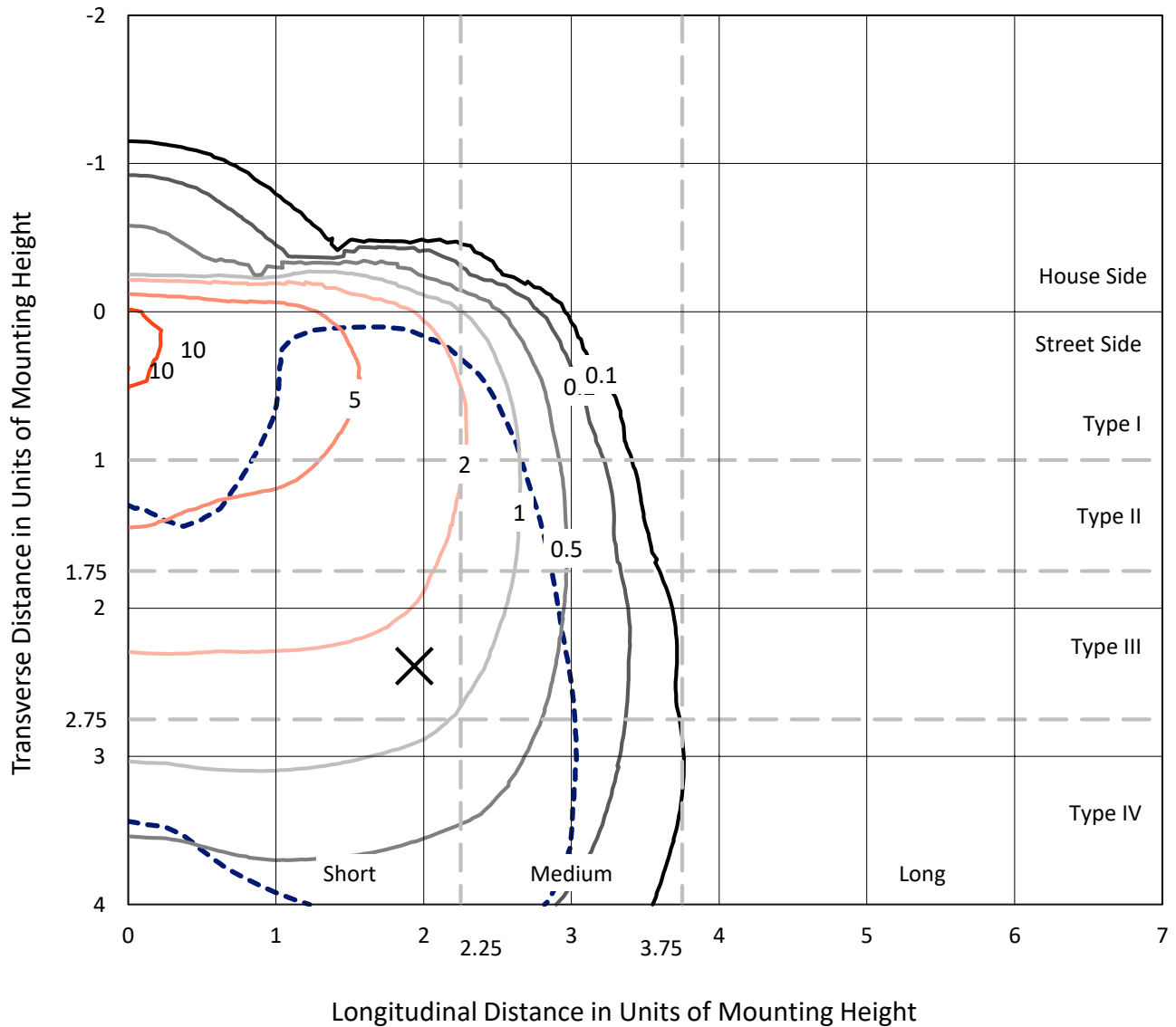
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

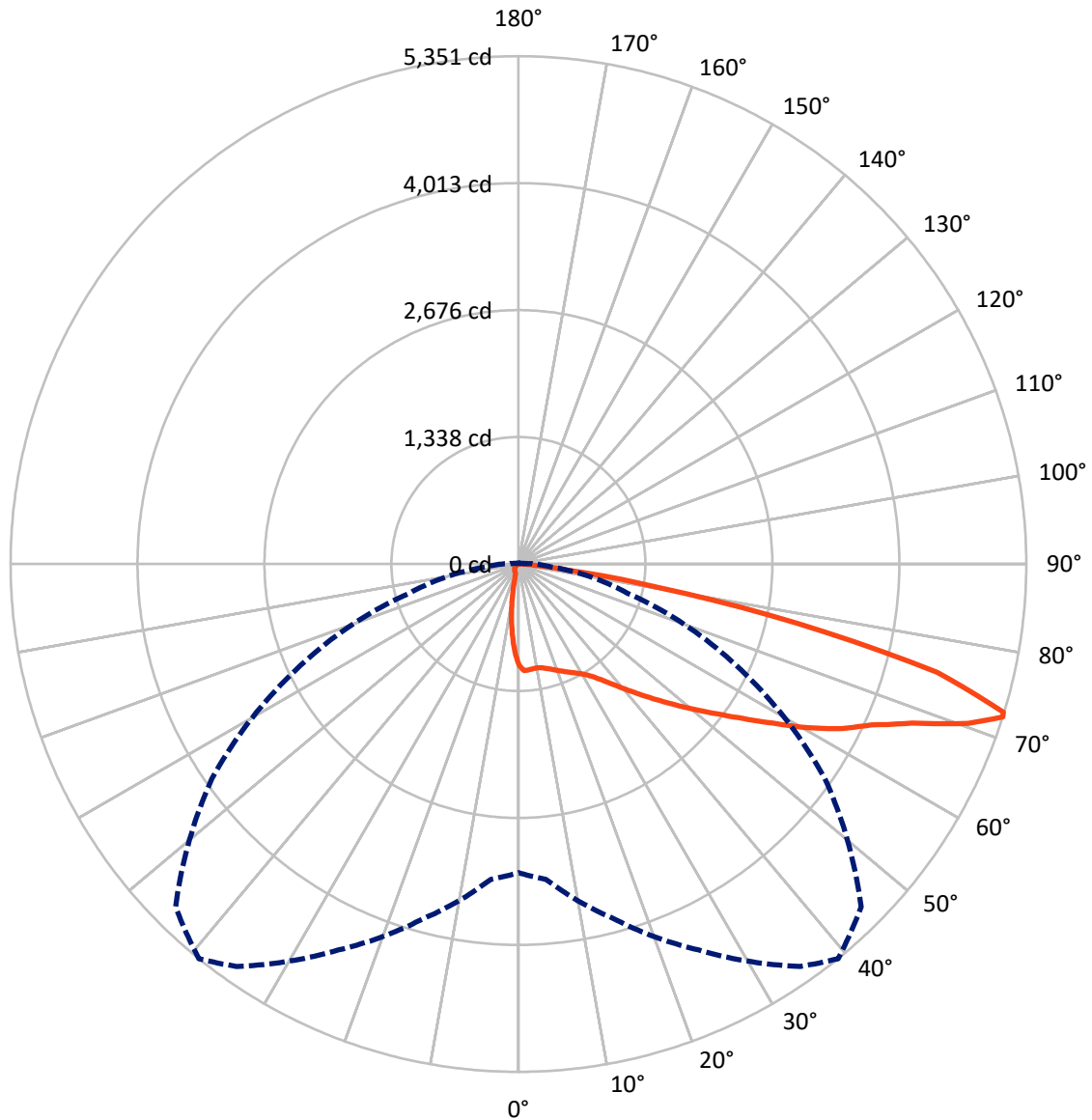
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.2 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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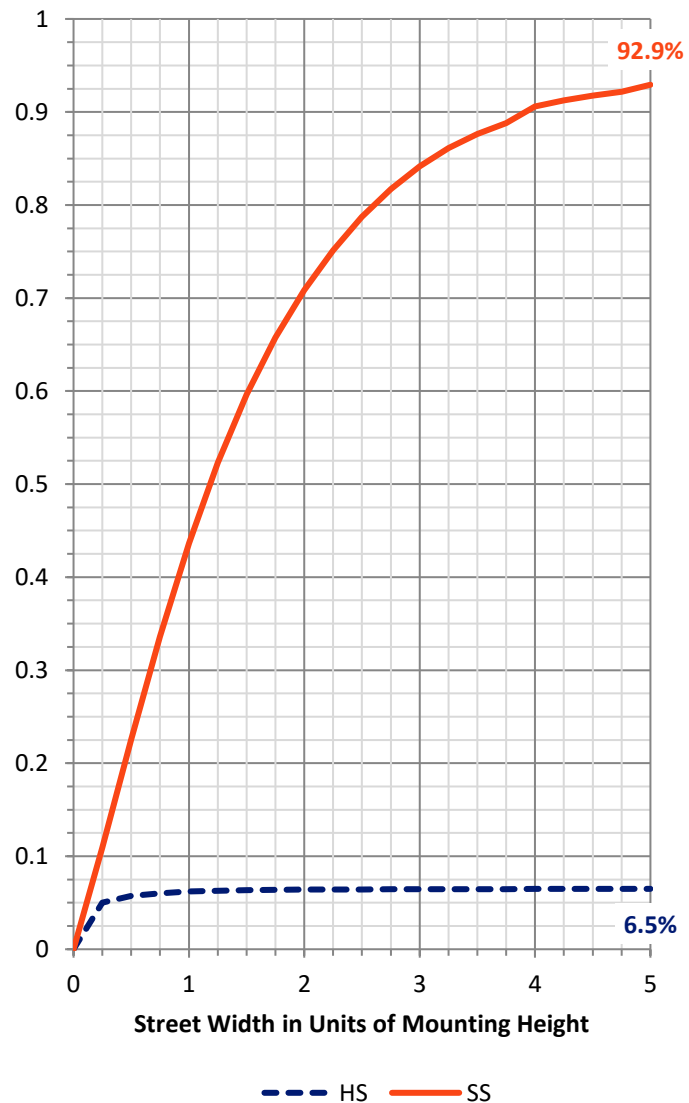
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	438.3	0.0	438.3
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	6249.7	0.0	6249.7
	% Fixture	93.4	0.0	93.4
Total	Lumens	6688.0	0.0	6688.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.1	1.3
10°-20°	210.8	3.2
20°-30°	350.1	5.2
30°-40°	558.0	8.3
40°-50°	921.0	13.8
50°-60°	1390.9	20.8
60°-70°	1811.9	27.1
70°-80°	1224.3	18.3
80°-90°	134.1	2.0
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°	6688.0	100.0
0°-180°	6688.0	100.0

Coefficient of Utilization



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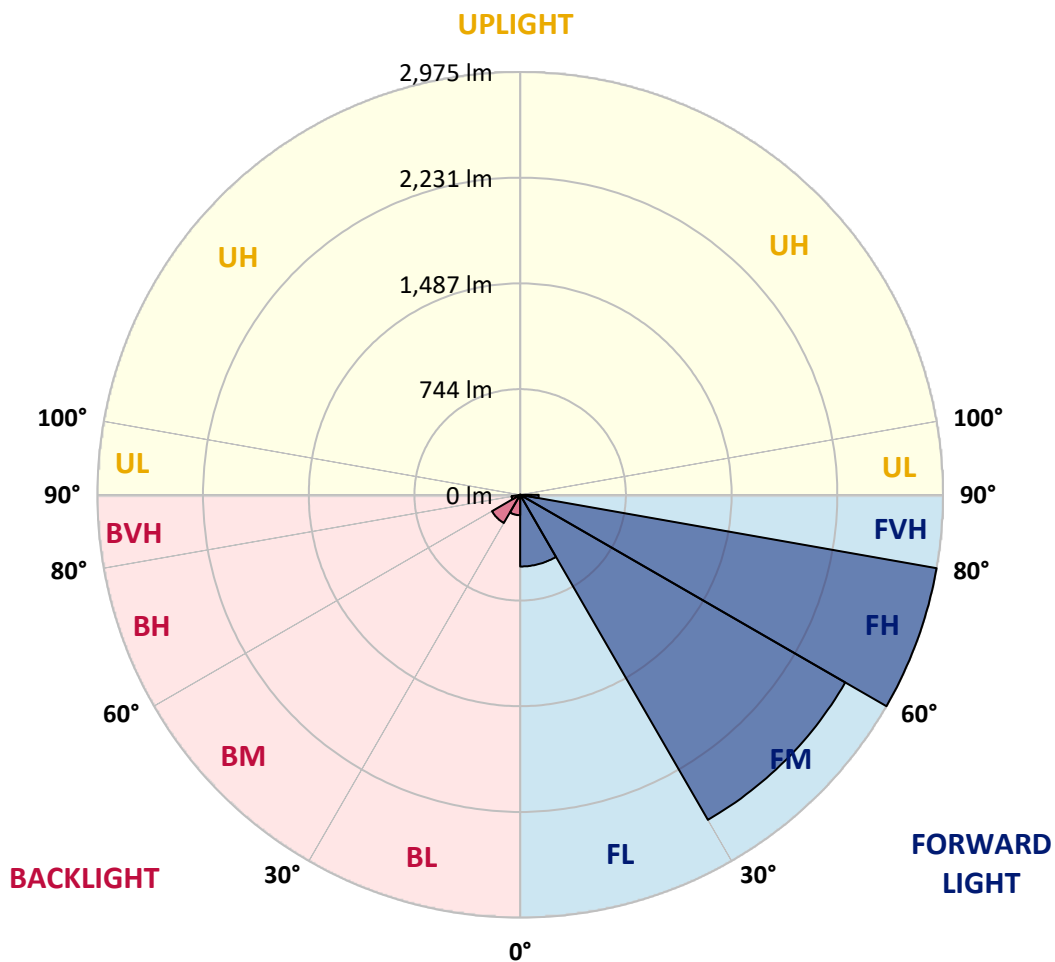
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	504.4	7.5			
FM	(30°-60°)	2640.5	39.5			
FH	(60°-80°)	2974.5	44.5			G2/5000
FVH	(80°-90°)	130.2	1.9			G2/225
BL	(0°-30°)	143.5	2.1	B1/500		
BM	(30°-60°)	229.3	3.4	B1/1000		
BH	(60°-80°)	61.6	0.9	B0/110		G0/110
BVH	(80°-90°)	3.9	0.1			G0/10
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°	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4
2.5°	1139.9	1141.9	1139.4	1134.7	1127.8	1123.6	1117.8	1105.2	1089.4	1075.7	1060.0
5°	1148.8	1149.9	1146.7	1137.7	1127.3	1121.5	1114.1	1100.4	1084.1	1065.2	1036.9
7.5°	1151.4	1150.9	1147.2	1136.2	1119.9	1112.6	1099.9	1083.1	1066.2	1048.9	1016.8
10°	1150.4	1150.4	1147.8	1137.2	1118.8	1112.0	1097.8	1079.9	1058.9	1041.6	1007.4
12.5°	1146.7	1148.8	1147.2	1141.4	1127.8	1122.5	1109.9	1092.0	1072.1	1054.2	1017.9
15°	1151.4	1154.6	1157.8	1155.6	1147.8	1143.0	1131.5	1113.1	1096.7	1077.8	1038.9
17.5°	1170.4	1177.2	1184.6	1185.1	1176.7	1168.2	1155.1	1136.2	1120.4	1103.0	1061.0
20°	1206.2	1211.4	1225.1	1227.6	1210.9	1198.8	1180.4	1158.3	1142.5	1127.8	1081.5
22.5°	1259.3	1265.0	1276.0	1272.3	1244.0	1229.8	1206.7	1181.4	1165.1	1156.7	1105.2
25°	1339.7	1341.2	1343.9	1327.6	1280.7	1265.0	1236.6	1208.2	1195.1	1194.0	1138.9
27.5°	1434.3	1436.4	1424.9	1388.6	1321.8	1301.3	1269.2	1243.4	1237.2	1245.0	1181.4
30°	1542.6	1543.1	1511.1	1452.2	1369.1	1346.5	1313.4	1285.0	1290.8	1310.2	1236.1
32.5°	1653.5	1648.3	1604.1	1527.4	1433.8	1406.5	1378.0	1349.7	1366.5	1405.9	1316.0
35°	1755.0	1752.9	1700.9	1611.5	1517.9	1493.7	1473.3	1443.3	1470.6	1534.7	1424.9
37.5°	1856.5	1854.9	1795.5	1702.4	1621.5	1604.1	1588.8	1565.7	1610.4	1704.5	1570.4
40°	1968.5	1965.8	1892.8	1803.4	1741.9	1732.4	1723.5	1713.4	1789.8	1920.6	1751.9
42.5°	2106.8	2095.2	1995.8	1913.2	1874.4	1877.0	1877.5	1887.5	2006.8	2177.8	1965.8
45°	2265.5	2239.8	2099.4	2031.1	2020.0	2035.8	2051.5	2093.1	2259.8	2473.7	2202.4
47.5°	2419.6	2378.1	2218.8	2157.7	2180.3	2212.9	2250.8	2331.8	2543.7	2783.4	2416.9
50°	2552.1	2509.5	2337.0	2286.6	2358.6	2407.0	2474.3	2596.8	2843.4	3045.2	2552.1
52.5°	2656.2	2622.5	2462.1	2428.5	2556.3	2622.5	2728.2	2889.1	3126.2	3217.7	2646.7
55°	2732.9	2716.1	2582.0	2586.7	2776.1	2871.7	3003.2	3185.1	3364.9	3351.8	2717.7
57.5°	2819.7	2806.6	2707.8	2773.4	3040.5	3164.1	3316.0	3462.2	3538.4	3459.5	2787.1
60°	2908.6	2912.8	2860.2	2999.5	3367.6	3504.2	3636.8	3673.0	3687.2	3568.9	2860.2
62.5°	2975.9	2993.8	2998.5	3243.5	3703.0	3819.7	3877.0	3851.3	3848.1	3715.6	2854.4
65°	3053.1	3100.0	3177.8	3511.1	4007.9	4084.7	4125.7	4163.0	4084.1	3759.2	2573.6
67.5°	3186.7	3260.2	3435.4	3839.1	4360.2	4473.8	4590.0	4550.5	4119.4	3316.0	1960.6
70°	3366.5	3456.4	3765.6	4267.6	4838.1	5028.4	5125.7	4519.5	3497.4	2291.3	1034.2
72°	3253.0	3334.4	3867.6	4486.4	5176.7	5351.3	5107.8	3942.2	2535.3	1187.7	346.5
72.5°	3142.5	3226.7	3834.9	4483.8	5210.4	5343.9	4991.7	3714.5	2243.4	924.3	238.7
75°	2180.3	2286.6	3287.7	4030.5	4705.1	4558.4	3819.2	2249.3	812.8	158.8	78.9
77.5°	1127.3	1209.2	1994.2	2848.1	3279.3	3003.2	2257.1	975.8	225.0	84.1	52.1
80°	698.8	739.2	932.7	1403.3	1703.5	1490.0	995.8	394.3	144.0	49.9	41.5
82.5°	361.7	392.7	587.3	566.2	629.3	523.1	367.5	330.2	88.9	31.0	42.6
85°	118.9	126.2	360.7	376.4	269.2	180.9	163.0	315.0	25.8	19.9	36.3
87.5°	15.8	18.4	126.7	215.5	132.5	82.0	97.8	110.9	8.9	11.0	10.0
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4	1070.4
2.5°	1049.4	1042.6	1021.0	999.5	974.8	952.2	934.3	922.7	928.0	910.6	913.3
5°	1019.5	1002.1	954.8	903.8	848.6	797.1	756.1	725.6	719.7	693.5	694.6
7.5°	990.5	962.2	885.4	801.3	709.8	635.7	568.4	509.4	488.5	466.9	454.3
10°	974.8	935.9	827.1	704.5	575.7	466.9	372.3	298.1	267.1	244.5	233.4
12.5°	979.5	928.0	783.4	616.7	447.4	309.1	210.3	156.2	137.2	126.7	123.1
15°	995.3	929.6	744.0	531.0	325.4	187.2	123.6	105.7	104.1	103.6	103.0
17.5°	1010.0	931.1	702.5	441.6	217.7	119.4	99.3	97.8	97.8	97.8	97.8
20°	1025.2	931.7	656.7	348.1	143.0	97.8	93.6	92.6	93.6	93.6	93.6
22.5°	1043.1	935.4	612.5	257.1	105.7	92.0	89.4	88.9	89.4	89.4	88.9
25°	1065.2	943.3	564.7	184.0	95.6	88.3	85.7	85.2	85.7	85.2	85.2
27.5°	1094.7	953.7	508.9	132.0	91.5	84.6	82.0	82.0	82.0	81.5	81.5
30°	1132.5	966.4	434.2	104.1	87.3	81.0	78.9	78.9	78.4	77.8	77.8
32.5°	1186.6	986.8	352.8	94.1	82.6	76.2	74.2	74.7	74.2	73.7	73.0
35°	1263.4	1019.0	272.3	88.9	77.8	71.5	69.4	69.4	69.4	68.3	68.3
37.5°	1372.3	1067.9	204.0	83.6	73.0	66.8	64.1	64.1	63.6	62.6	63.1
40°	1506.8	1129.3	147.7	78.9	68.3	61.5	59.4	58.4	57.3	56.3	56.3
42.5°	1668.8	1189.3	110.9	74.2	63.6	57.3	54.7	53.6	51.6	50.4	49.9
45°	1850.2	1252.9	92.0	68.3	58.4	52.6	50.4	48.4	45.7	44.2	43.7
47.5°	2003.1	1291.8	82.0	62.6	53.1	47.9	45.7	42.6	39.4	38.4	38.4
50°	2095.2	1275.5	73.7	56.8	47.9	43.1	40.5	36.3	34.2	33.1	32.6
52.5°	2146.8	1227.1	66.8	52.1	43.1	37.8	34.2	30.5	29.5	28.4	28.4
55°	2182.0	1157.3	59.4	47.4	38.9	33.1	28.9	26.3	25.3	24.8	24.1
57.5°	2215.6	1072.1	52.6	43.1	34.7	29.5	24.8	23.6	21.6	21.1	21.1
60°	2225.5	954.8	46.2	38.4	31.0	25.8	21.6	19.9	17.9	17.4	17.4
62.5°	2098.4	759.7	41.0	32.6	27.3	22.1	18.9	16.8	14.7	14.7	14.7
65°	1753.4	515.8	35.2	28.4	24.1	18.9	16.3	13.7	12.6	12.6	12.6
67.5°	1221.4	287.6	30.0	24.1	20.5	15.8	13.7	11.6	11.0	11.6	11.6
70°	550.4	114.1	25.3	19.9	16.8	13.1	11.6	10.0	11.0	11.0	11.0
72°	165.1	61.0	21.1	16.3	13.7	11.6	10.0	9.5	10.5	11.0	11.0
72.5°	122.5	54.7	19.9	15.8	13.7	11.0	9.5	9.5	10.5	11.0	11.0
75°	63.1	37.3	15.2	11.6	10.0	8.9	7.9	8.9	10.5	10.5	10.5
77.5°	49.4	30.5	12.6	8.9	8.4	7.9	7.4	8.4	9.5	9.5	9.5
80°	46.2	19.9	10.0	8.4	7.4	6.9	6.9	7.4	8.4	8.9	8.9
82.5°	46.7	16.3	8.9	7.9	6.9	6.3	6.3	6.9	7.9	8.4	8.4
85°	30.0	11.0	7.9	6.9	6.3	5.8	5.8	6.3	7.4	7.9	7.9
87.5°	10.0	8.4	6.9	6.3	5.2	5.2	5.2	5.2	6.3	6.9	7.4
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)