

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: P197156

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-8030-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197156
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-SL4-8030-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 CRI, 3000K, 1200mA 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: 10402 lumens
Efficiency: N/A
Efficacy: 80.6 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

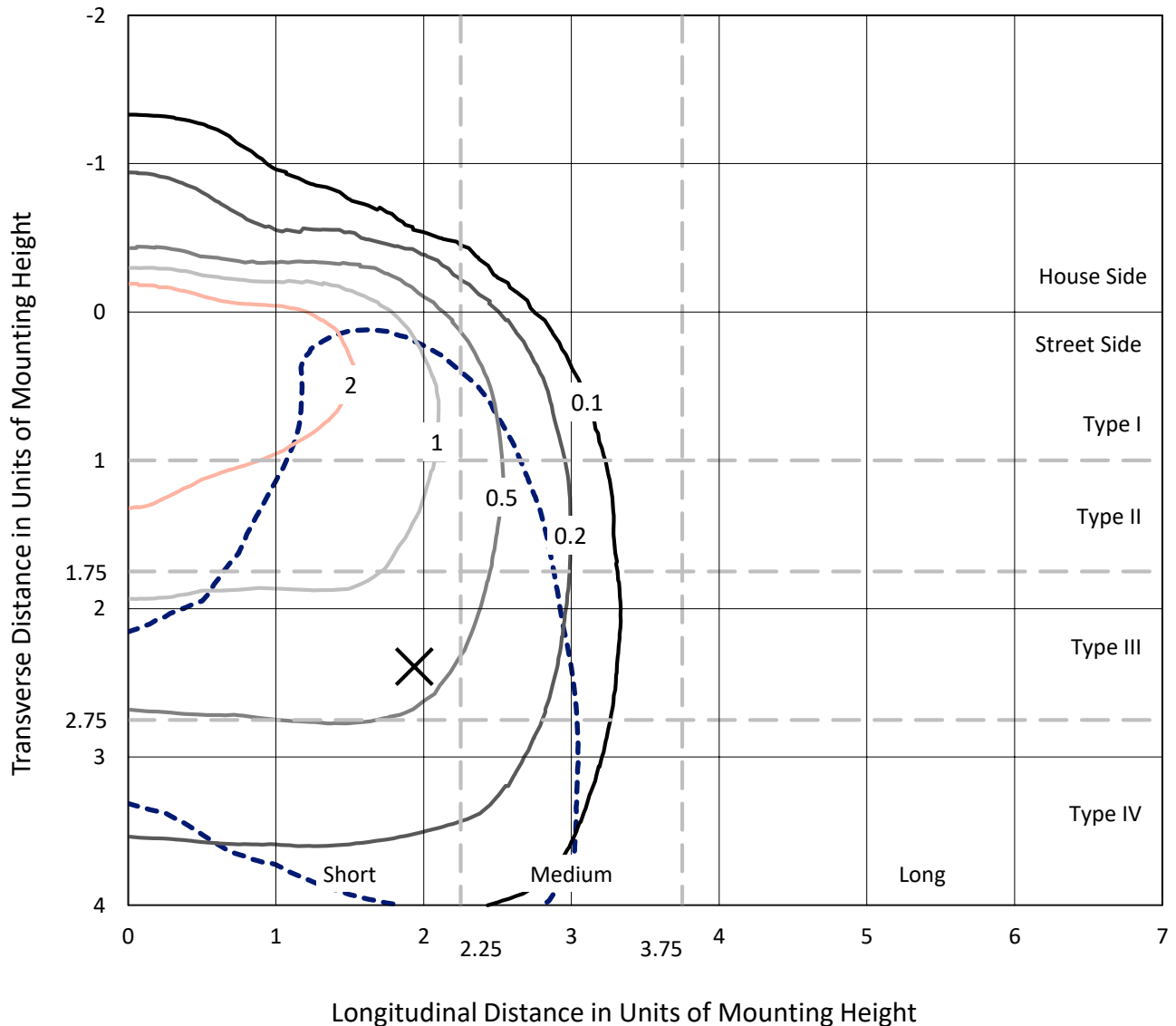
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

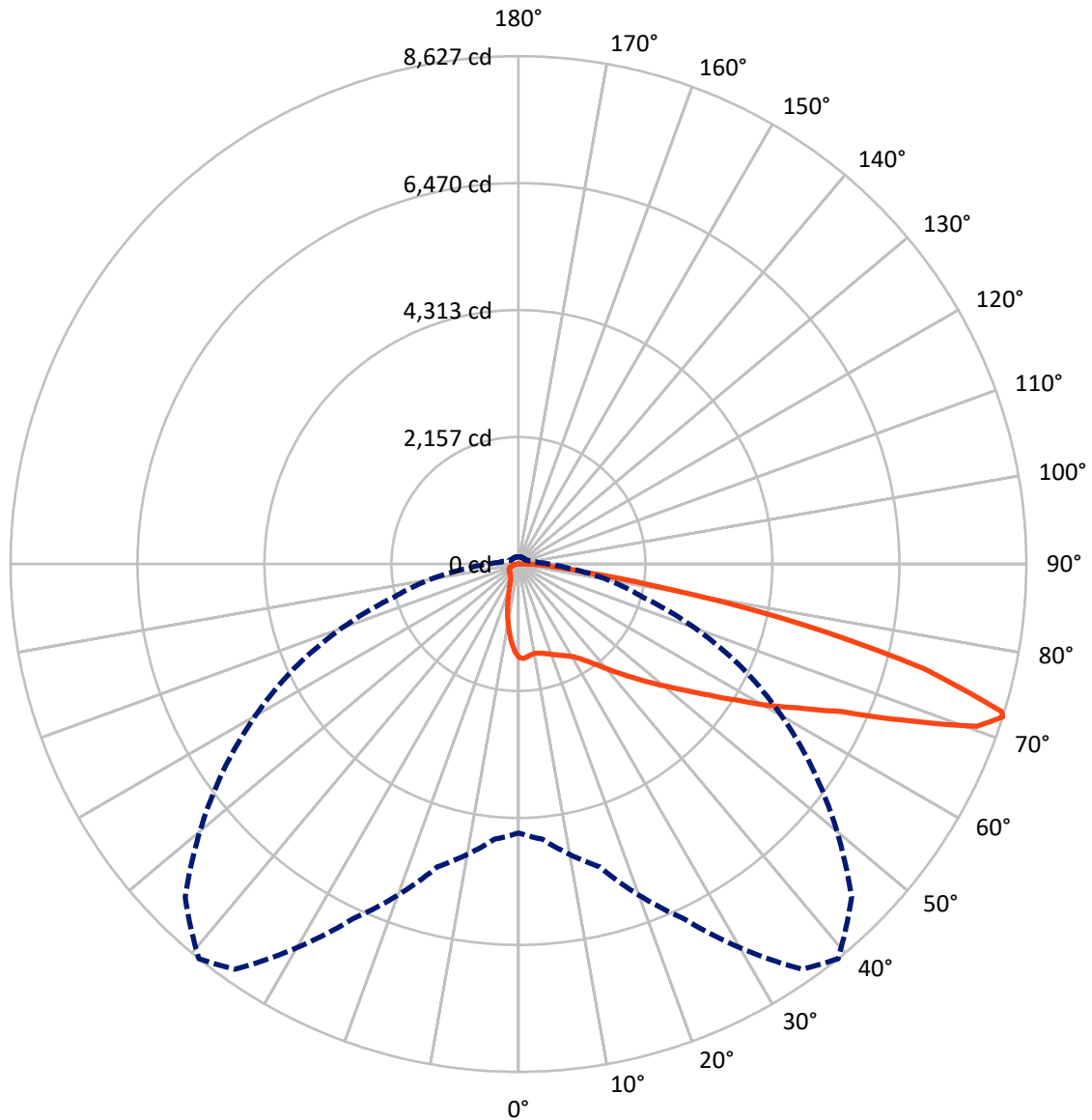
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4 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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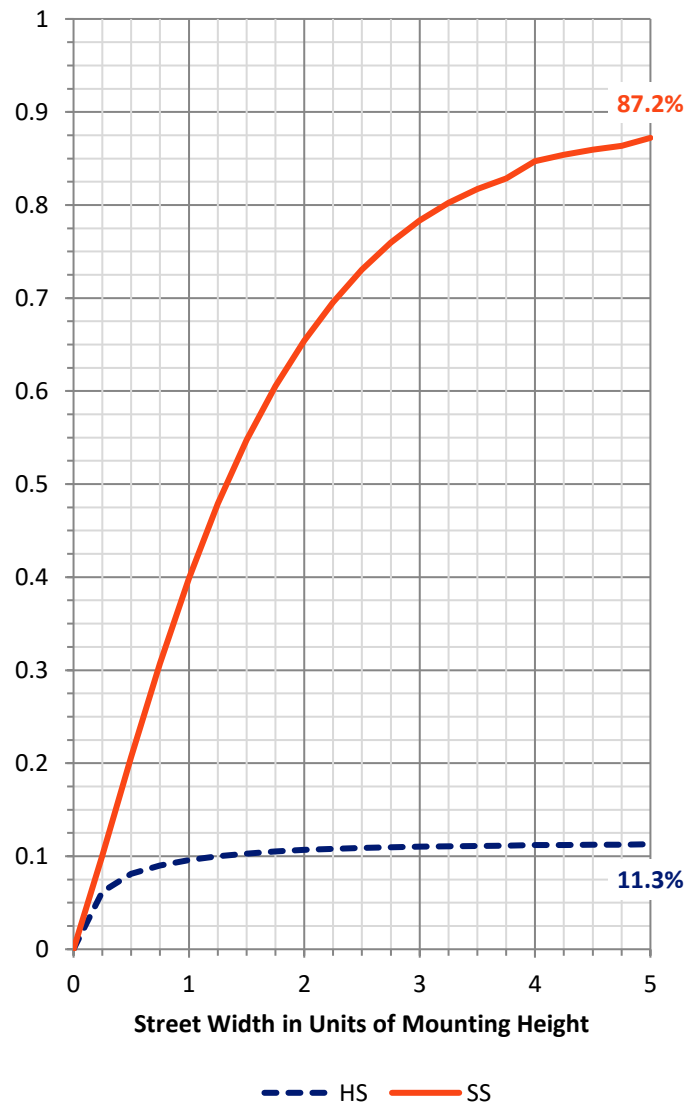
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1192.7	0.0	1192.7
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	9209.3	0.0	9209.3
	% Fixture	88.5	0.0	88.5
Total	Lumens	10402.0	0.0	10402.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.5	1.3
10°-20°	343.0	3.3
20°-30°	534.6	5.1
30°-40°	823.1	7.9
40°-50°	1341.8	12.9
50°-60°	2085.0	20.0
60°-70°	2790.7	26.8
70°-80°	2007.0	19.3
80°-90°	340.2	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°	10402.0	100.0
0°-180°	10402.0	100.0



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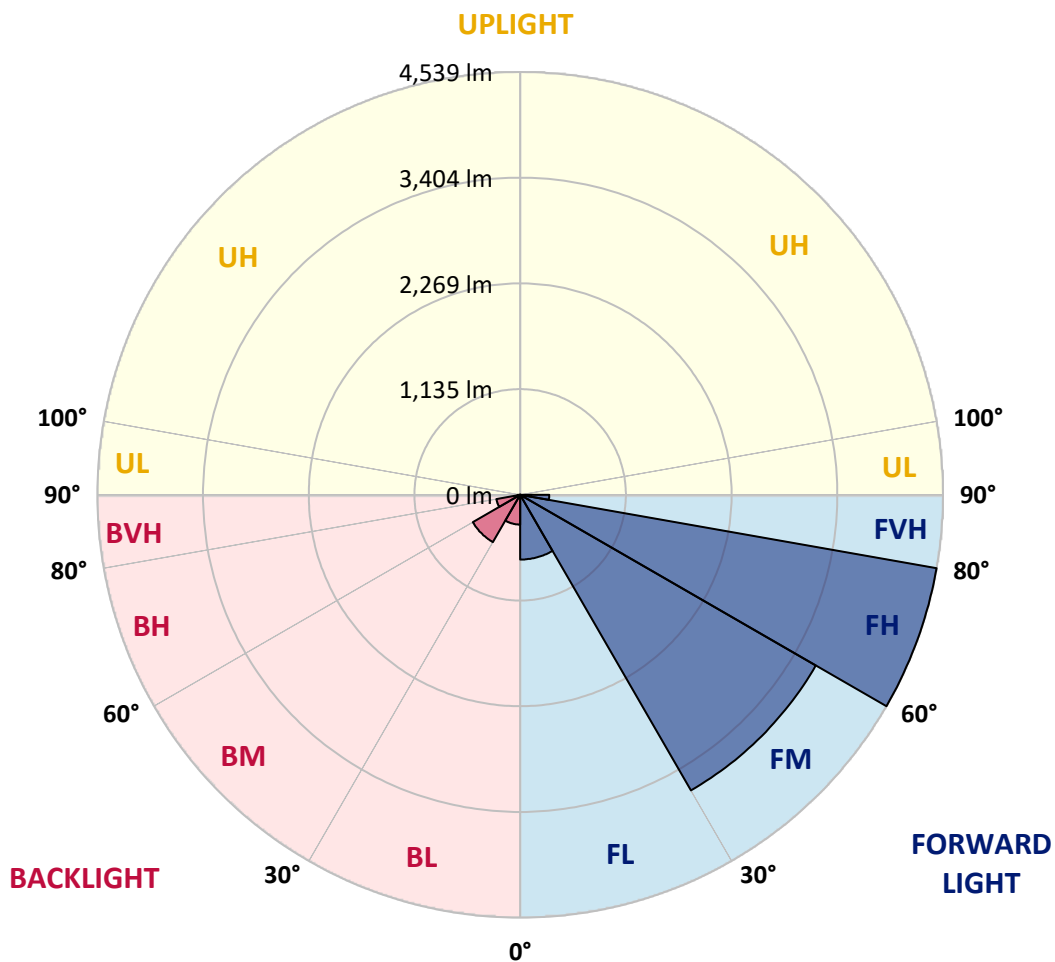
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	694.8	6.7			
FM	(30°-60°)	3663.8	35.2			
FH	(60°-80°)	4538.6	43.6			G2/5000
FVH	(80°-90°)	312.1	3.0			G3/500
BL	(0°-30°)	319.3	3.1	B1/500		
BM	(30°-60°)	586.2	5.6	B1/1000		
BH	(60°-80°)	259.1	2.5	B1/500		G1/500
BVH	(80°-90°)	28.1	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°	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6
2.5°	1622.8	1623.5	1621.4	1615.1	1609.5	1606.7	1601.8	1593.5	1582.3	1574.6	1568.3
5°	1607.4	1609.5	1608.1	1597.6	1587.9	1582.3	1574.6	1562.7	1548.1	1541.8	1527.1
7.5°	1595.6	1597.0	1592.8	1580.9	1562.0	1555.1	1541.1	1525.7	1512.5	1503.4	1485.9
10°	1587.2	1588.6	1585.1	1573.2	1552.3	1543.9	1527.1	1510.4	1492.9	1481.7	1462.2
12.5°	1575.3	1578.1	1578.1	1572.5	1558.5	1553.0	1536.2	1518.0	1502.0	1490.1	1465.7
15°	1573.2	1576.7	1583.0	1582.3	1578.1	1573.9	1560.6	1542.5	1528.5	1514.6	1484.5
17.5°	1590.7	1598.3	1610.9	1615.1	1612.3	1603.2	1587.9	1571.1	1555.8	1542.5	1505.5
20°	1634.7	1638.8	1657.7	1666.1	1652.1	1638.8	1618.6	1597.0	1583.0	1572.5	1525.0
22.5°	1701.0	1706.6	1721.9	1722.6	1693.3	1677.3	1651.4	1624.9	1611.6	1607.4	1551.6
25°	1807.1	1805.7	1809.9	1792.5	1739.4	1720.5	1689.1	1658.4	1649.3	1657.7	1590.7
27.5°	1934.2	1930.7	1917.5	1872.1	1791.8	1767.3	1729.6	1702.4	1702.4	1721.9	1643.7
30°	2080.9	2077.4	2034.1	1958.0	1853.9	1826.0	1786.2	1757.6	1772.2	1809.9	1715.7
32.5°	2235.9	2223.3	2162.6	2060.6	1942.6	1911.9	1873.5	1844.1	1872.1	1936.3	1819.0
35°	2381.8	2374.8	2300.1	2179.3	2057.1	2031.3	2004.7	1968.4	2013.1	2113.0	1964.9
37.5°	2532.6	2527.1	2435.6	2307.1	2196.8	2179.3	2157.0	2131.8	2203.8	2335.0	2162.6
40°	2700.9	2689.7	2574.5	2446.1	2359.5	2351.1	2339.2	2332.2	2448.1	2643.7	2412.5
42.5°	2891.6	2869.9	2721.2	2599.0	2536.8	2543.8	2537.5	2565.5	2742.8	2999.8	2710.0
45°	3109.4	3066.1	2867.1	2761.7	2733.0	2761.0	2774.2	2845.5	3091.3	3411.1	3042.4
47.5°	3313.3	3257.4	3027.0	2938.3	2954.4	3002.6	3040.3	3166.0	3473.2	3817.5	3381.7
50°	3501.1	3438.3	3198.1	3121.3	3199.5	3267.9	3346.1	3523.5	3879.6	4235.7	3693.2
52.5°	3640.1	3594.7	3369.2	3321.0	3480.9	3571.7	3696.7	3920.8	4290.2	4634.4	3971.1
55°	3747.6	3723.2	3536.1	3550.0	3799.3	3929.2	4080.7	4338.4	4724.5	4992.0	4194.5
57.5°	3871.9	3853.8	3726.7	3826.5	4194.5	4357.9	4536.7	4823.0	5137.9	5306.9	4369.8
60°	4003.2	4003.2	3939.0	4159.6	4688.9	4876.0	5054.1	5276.9	5549.9	5590.4	4441.0
62.5°	4102.4	4128.2	4151.2	4514.3	5158.1	5390.7	5586.2	5799.9	5976.5	5730.0	4273.4
65°	4246.2	4301.4	4431.2	4924.2	5739.1	6043.6	6307.5	6487.0	6322.2	5619.0	3726.7
67.5°	4493.4	4575.1	4851.6	5534.5	6628.7	7084.7	7340.9	7030.9	6254.4	4920.0	2854.5
70°	4716.1	4831.4	5304.1	6308.9	7785.1	8258.5	8140.5	6904.5	5447.2	3606.6	1756.2
72°	4568.1	4693.8	5325.0	6646.2	8403.0	8626.5	8004.3	6119.0	4209.2	2201.0	865.9
72.5°	4471.0	4601.6	5257.3	6637.8	8419.8	8579.7	7815.1	5806.8	3821.0	1925.8	700.4
75°	3735.1	3846.8	4520.6	5883.0	7419.9	7126.6	6098.7	3758.1	1756.2	622.2	360.3
77.5°	2439.1	2524.3	3117.1	4075.8	5197.2	4915.1	3712.0	1759.6	658.5	377.8	270.9
80°	1225.5	1286.2	1668.2	2143.0	2805.0	2580.8	1713.6	851.2	440.6	273.0	213.0
82.5°	852.6	908.5	1148.7	1094.2	1172.4	1134.7	805.8	710.1	329.6	172.5	111.7
85°	715.0	773.0	950.4	780.0	638.2	581.7	577.5	671.0	217.9	85.2	94.3
87.5°	623.6	711.5	784.2	569.8	437.8	386.1	425.2	615.2	69.1	46.8	28.6
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6	1588.6
2.5°	1557.8	1555.8	1545.3	1529.2	1517.3	1509.7	1495.0	1494.3	1495.7	1483.1	1488.0
5°	1513.9	1505.5	1478.2	1441.2	1411.2	1382.6	1351.2	1340.7	1331.6	1312.8	1314.8
7.5°	1467.8	1453.1	1405.6	1344.9	1286.9	1233.8	1181.5	1155.6	1136.1	1111.7	1111.7
10°	1440.5	1417.5	1344.9	1256.2	1164.0	1086.5	1008.3	961.5	927.3	895.9	893.8
12.5°	1439.1	1404.2	1303.0	1180.8	1054.4	945.5	838.6	766.7	715.7	678.7	675.2
15°	1450.3	1401.4	1268.1	1110.3	951.0	809.3	677.3	585.9	520.9	479.7	475.5
17.5°	1460.1	1397.9	1230.4	1036.2	850.5	678.0	531.4	436.4	375.0	341.5	338.0
20°	1469.2	1390.3	1182.2	958.0	739.5	555.1	415.5	338.7	298.2	279.3	277.2
22.5°	1482.4	1383.3	1131.9	870.0	630.5	451.8	342.9	287.7	266.0	257.0	255.6
25°	1504.1	1384.0	1083.0	780.0	530.7	376.4	296.8	262.6	250.7	244.4	244.4
27.5°	1535.5	1392.4	1034.8	688.5	446.2	324.7	269.5	249.3	241.6	236.7	235.3
30°	1581.6	1407.7	983.9	601.9	379.2	289.1	253.5	240.9	234.6	230.4	229.7
32.5°	1648.6	1435.0	930.1	523.0	328.2	263.9	241.6	233.9	229.0	225.5	224.8
35°	1748.5	1483.1	877.7	456.0	291.9	245.8	231.8	225.5	222.7	221.4	220.7
37.5°	1895.1	1560.6	828.2	403.6	268.1	233.9	222.1	218.6	217.2	217.2	217.2
40°	2079.5	1662.6	783.5	366.6	254.9	224.8	215.1	212.3	212.3	213.0	213.0
42.5°	2303.6	1790.4	745.1	341.5	247.2	218.6	210.2	208.8	208.1	208.1	208.8
45°	2564.1	1941.2	721.3	321.9	241.6	215.1	206.7	206.0	203.2	201.8	201.8
47.5°	2825.9	2102.5	719.9	310.7	234.6	210.9	203.2	203.2	197.6	194.8	195.5
50°	3070.3	2247.0	735.3	307.9	230.4	204.6	199.7	200.4	192.7	189.2	188.5
52.5°	3267.2	2357.4	754.1	311.4	230.4	199.0	193.4	196.9	188.5	184.3	183.6
55°	3419.4	2434.2	761.1	319.1	233.2	194.1	187.8	193.4	187.1	181.6	181.6
57.5°	3528.4	2458.6	731.1	322.6	237.4	193.4	182.2	192.7	189.2	182.2	182.2
60°	3488.6	2316.9	619.4	309.3	236.7	192.0	178.1	194.1	196.2	188.5	188.5
62.5°	3177.8	1938.4	497.2	279.3	224.8	187.1	173.2	192.7	201.1	198.3	196.9
65°	2587.1	1421.7	385.4	243.7	204.6	176.7	162.7	180.2	189.9	192.7	193.4
67.5°	1823.2	900.1	299.6	207.4	179.5	161.3	150.8	159.2	162.7	164.1	166.9
70°	997.1	487.4	238.1	174.6	153.6	145.9	138.3	139.0	137.6	136.2	137.6
72°	500.7	318.4	201.1	151.5	136.2	131.3	127.8	125.7	125.7	123.6	124.3
72.5°	430.8	296.1	194.1	145.9	132.0	127.8	125.0	122.9	122.2	120.8	121.5
75°	287.0	234.6	162.0	122.2	112.4	109.6	111.0	108.9	109.6	108.2	108.9
77.5°	231.8	201.8	137.6	103.3	96.4	92.2	95.0	95.7	97.1	95.7	95.0
80°	194.1	171.8	115.2	85.2	80.3	76.8	78.2	83.1	83.8	79.6	78.9
82.5°	125.7	138.3	90.8	66.3	61.4	60.1	63.5	68.4	69.8	64.2	62.8
85°	105.4	111.0	65.6	45.4	40.5	39.1	46.1	51.0	54.5	48.9	47.5
87.5°	29.3	54.5	32.1	21.6	18.2	18.2	22.3	26.5	31.4	32.1	32.1
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)