

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: P196091

Luminaire Tested: **NAV-AF-05-D-UNV-SL2-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196091
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-SL2-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24363.6 lumens
Efficiency: N/A
Efficacy: 116.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G4

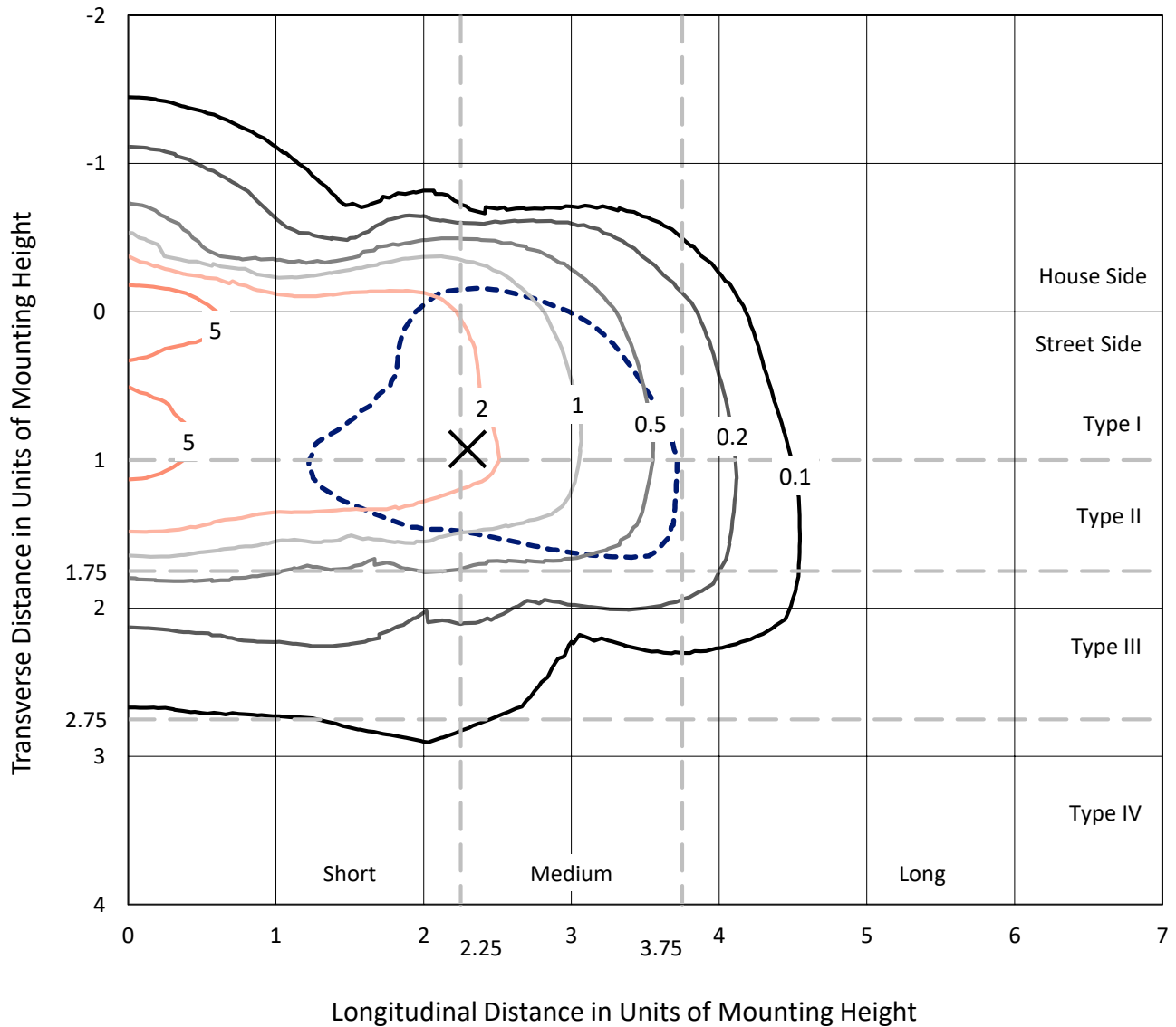
Input Watts (W): 210
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

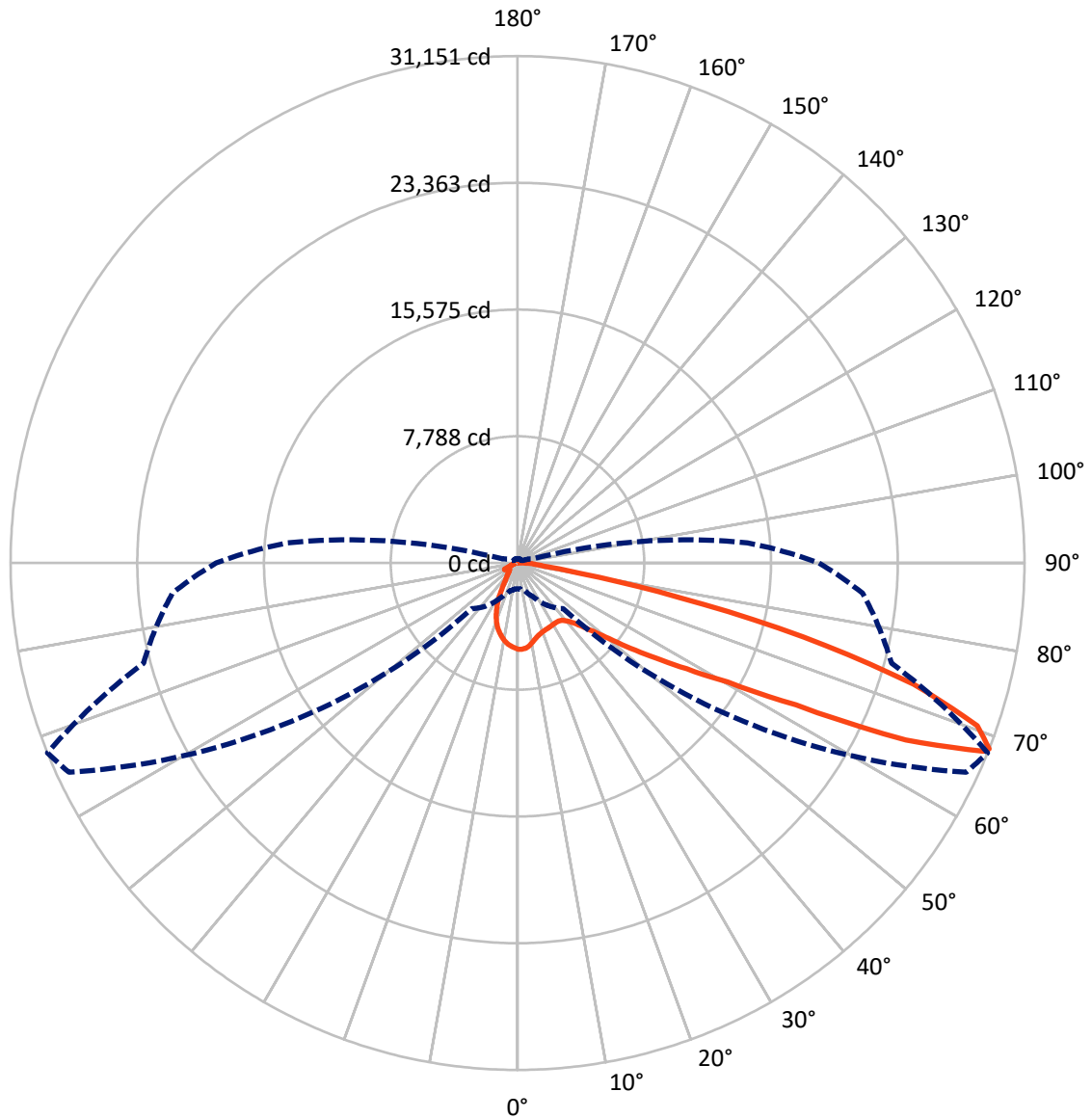
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.5 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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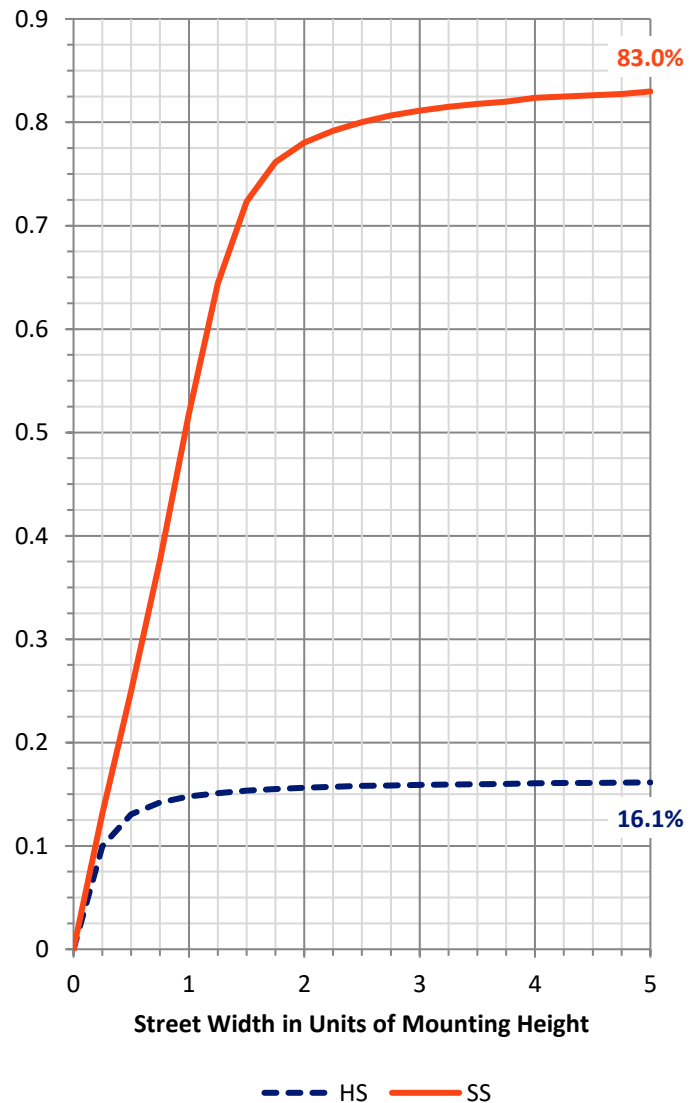
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3986.0	0.0	3986.0
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	20377.7	0.0	20377.7
	% Fixture	83.6	0.0	83.6
Total	Lumens	24363.6	0.0	24363.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	454.2	1.9
10°-20°	1053.5	4.3
20°-30°	1424.9	5.8
30°-40°	2009.0	8.2
40°-50°	3303.5	13.6
50°-60°	5120.8	21.0
60°-70°	6639.5	27.3
70°-80°	3810.1	15.6
80°-90°	548.2	2.2
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°	24363.6	100.0
0°-180°	24363.6	100.0



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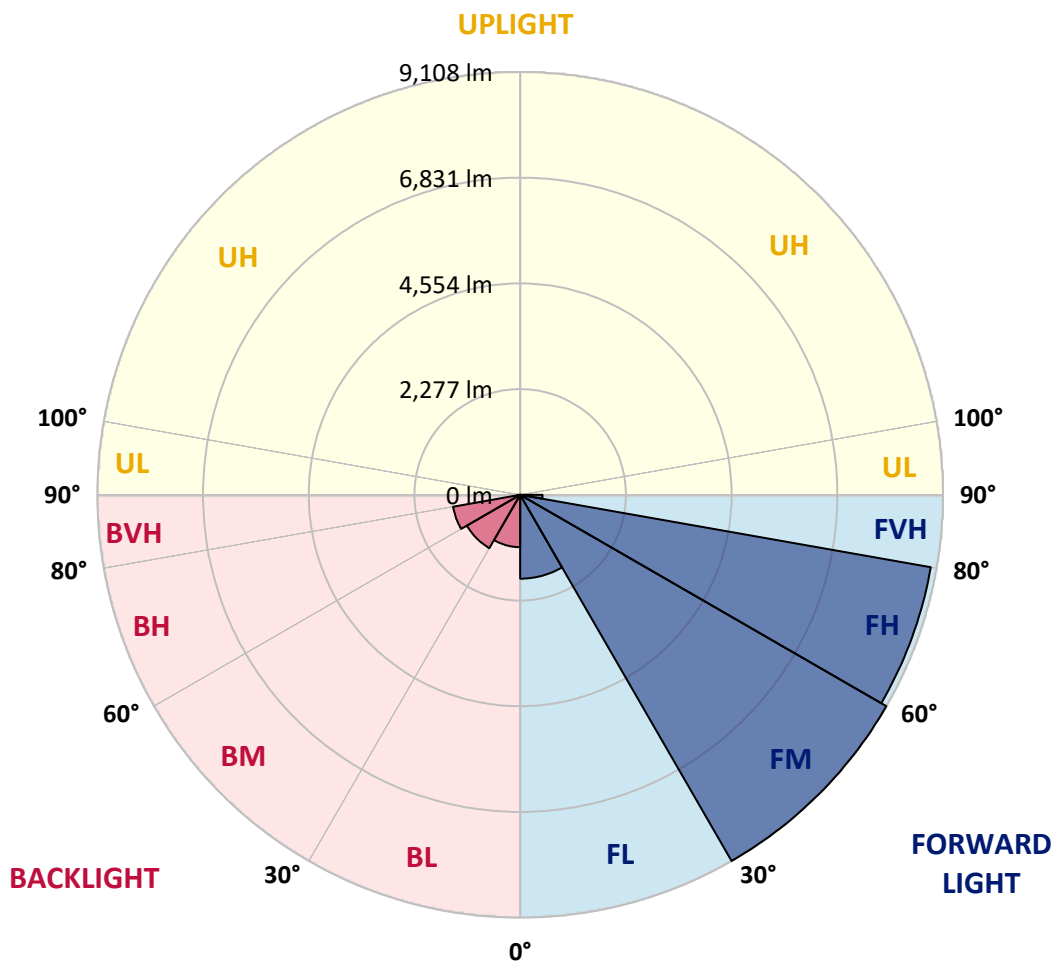
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1805.7	7.4			
FM	(30°-60°)	9107.5	37.4			
FH	(60°-80°)	8981.5	36.9			G4/12000
FVH	(80°-90°)	482.8	2.0			G3/500
BL	(0°-30°)	1126.9	4.6	B3/2500		
BM	(30°-60°)	1325.8	5.4	B2/2500		
BH	(60°-80°)	1468.0	6.0	B3/2500		G3/2500
BVH	(80°-90°)	65.3	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3
2.5°	5159.7	5201.1	5201.1	5231.3	5258.4	5280.6	5299.7	5299.7	5299.7	5287.0	5275.9
5°	4617.0	4672.6	4680.6	4757.0	4857.3	4979.8	5116.7	5237.6	5261.5	5306.0	5323.5
7.5°	4239.7	4257.3	4287.5	4340.1	4441.9	4593.0	4808.0	5078.5	5143.7	5283.8	5357.0
10°	3972.4	3986.7	4012.2	4064.7	4157.0	4293.8	4505.6	4857.3	4965.5	5213.8	5358.6
12.5°	3776.6	3787.8	3811.6	3859.4	3953.3	4075.8	4292.3	4658.3	4792.0	5143.7	5380.9
15°	3623.9	3642.9	3662.1	3708.2	3803.7	3921.5	4141.1	4513.5	4658.3	5088.1	5422.3
17.5°	3563.3	3573.0	3576.1	3600.0	3685.9	3805.3	4024.9	4411.7	4561.2	5043.5	5454.1
20°	3601.6	3603.1	3571.3	3555.5	3604.8	3714.5	3927.8	4335.3	4488.1	5003.7	5466.9
22.5°	3768.7	3768.7	3685.9	3615.9	3582.5	3650.9	3862.6	4282.8	4448.3	4973.5	5466.9
25°	4087.0	4072.7	3943.8	3805.3	3657.3	3628.6	3821.2	4249.3	4418.0	4957.5	5446.1
27.5°	4505.6	4492.8	4328.9	4123.6	3856.2	3676.4	3806.9	4222.2	4387.7	4933.7	5401.6
30°	5014.8	5003.7	4817.5	4548.6	4153.8	3827.6	3840.3	4203.2	4363.9	4893.9	5326.8
32.5°	5522.5	5516.2	5368.1	5092.9	4564.4	4083.8	3927.8	4200.0	4351.2	4846.1	5236.1
35°	6033.4	6033.4	5942.7	5710.3	5116.7	4469.0	4110.8	4258.9	4375.1	4820.7	5158.0
37.5°	6787.8	6757.5	6588.8	6348.5	5812.2	4968.7	4406.9	4383.0	4467.3	4863.6	5132.7
40°	7955.9	7868.4	7446.7	7042.4	6571.3	5608.4	4839.8	4623.3	4674.3	5010.1	5193.1
42.5°	9178.2	9039.7	8481.2	7835.0	7355.9	6397.8	5407.9	5013.3	5011.6	5293.4	5385.6
45°	10227.1	10155.4	9550.7	8731.0	8251.9	7285.9	6125.7	5592.6	5535.3	5732.6	5756.5
47.5°	10836.5	10788.9	10424.4	9679.6	9315.1	8334.7	7036.1	6396.3	6288.1	6405.8	6369.2
50°	10667.8	10714.0	10609.0	10228.6	10457.8	9808.5	8196.3	7497.6	7292.3	7410.1	7321.0
52.5°	9779.8	9903.9	9997.8	10071.1	11115.1	11780.3	9654.1	8872.7	8702.3	8681.7	8595.8
55°	8180.3	8377.7	8673.7	9211.7	10938.4	13363.8	12200.5	10535.8	10287.5	10157.0	10190.4
57.5°	5567.1	5866.3	6504.5	7527.8	10020.1	14038.7	15966.0	12684.3	12264.2	11799.4	11907.7
60°	3066.8	3316.7	4075.8	5107.2	7924.1	13938.4	19303.4	16176.0	14853.6	13621.7	13844.5
62.5°	1984.6	2038.7	2603.7	3488.6	4863.6	12305.5	21157.5	22012.2	19209.5	16024.8	16338.4
65°	1594.7	1632.8	1909.8	2813.8	3388.3	7916.1	21240.2	28066.2	26218.4	19290.6	19300.2
67.5°	1558.1	1575.5	1736.4	2366.6	3178.2	4309.8	18359.6	30453.5	30881.6	23145.3	21281.6
68°	1580.4	1601.0	1763.4	2293.4	3176.7	3972.4	16968.6	30416.8	31150.6	23789.8	21281.6
70°	1394.2	1419.7	1798.4	2372.9	3041.3	3415.3	11619.6	28801.5	29982.4	25271.5	20193.0
72.5°	729.0	708.2	889.7	1873.2	3423.3	3558.6	6138.4	24062.0	25440.2	23404.7	17446.1
75°	568.1	517.2	498.2	740.0	3011.2	3690.7	3565.0	17102.3	18143.2	16871.5	11660.9
77.5°	534.7	472.7	436.1	437.6	1325.7	3840.3	2883.8	10064.7	10064.7	8048.3	3721.0
80°	429.7	372.5	348.5	397.8	639.8	3539.5	3009.5	4586.7	3912.0	2080.1	1024.9
82.5°	283.3	253.1	254.6	323.0	485.4	2363.4	3485.4	2264.7	1701.3	921.5	603.1
85°	179.8	154.4	171.9	226.0	362.8	1053.5	3450.4	1574.0	1126.8	517.2	300.7
87.5°	90.7	70.1	85.9	117.7	221.3	302.4	2840.8	1405.3	835.5	214.8	163.9
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°	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3	5301.3
2.5°	5275.9	5240.8	5223.3	5194.6	5159.7	5124.7	5100.7	5089.6	5083.2	5086.4	5084.9
5°	5314.0	5267.9	5193.1	5086.4	4976.7	4860.4	4771.3	4702.9	4660.0	4647.2	4644.0
7.5°	5342.7	5275.9	5135.8	4941.7	4753.9	4550.1	4376.6	4238.2	4144.3	4101.3	4099.7
10°	5338.0	5251.9	5030.8	4744.2	4469.0	4169.8	3897.6	3665.2	3496.5	3415.3	3412.2
12.5°	5342.7	5224.9	4901.9	4513.5	4118.8	3690.7	3286.4	2925.2	2673.7	2554.4	2549.6
15°	5361.8	5196.3	4769.7	4255.7	3709.8	3105.1	2527.3	2073.7	1844.6	1766.5	1766.5
17.5°	5360.2	5148.5	4617.0	3956.5	3224.3	2414.3	1725.2	1445.1	1422.8	1494.4	1505.6
20°	5328.3	5072.1	4419.7	3601.6	2654.7	1671.1	1169.7	1130.0	1308.3	1505.6	1527.9
22.5°	5279.0	4973.5	4192.1	3189.4	1991.0	1088.6	902.3	962.9	1204.7	1449.8	1484.9
25°	5210.6	4854.1	3931.0	2710.3	1324.1	783.1	752.8	827.6	997.9	1161.8	1187.2
27.5°	5110.4	4702.9	3646.1	2191.5	845.1	644.6	655.7	708.2	781.4	851.5	865.8
30°	4984.6	4526.3	3335.8	1617.0	641.4	576.1	595.3	627.1	658.9	703.5	713.0
32.5°	4857.3	4346.4	3012.7	1110.8	560.2	539.5	558.6	576.1	603.1	633.4	639.8
35°	4742.7	4179.3	2680.1	775.1	525.2	515.7	525.2	536.3	563.4	593.6	596.8
37.5°	4660.0	4042.4	2333.1	612.7	504.5	495.0	499.7	504.5	536.3	580.9	585.6
40°	4648.8	3951.7	1981.5	550.7	488.6	475.9	472.7	475.9	517.2	568.1	573.0
42.5°	4757.0	3956.5	1637.6	525.2	475.9	461.6	448.8	455.2	491.7	531.5	534.7
45°	5013.3	4067.9	1340.1	514.0	464.7	453.6	434.4	437.6	455.2	475.9	479.0
47.5°	5465.2	4311.4	1112.5	507.7	455.2	445.6	421.8	412.2	413.8	424.9	424.9
50°	6187.7	4718.8	974.0	501.3	447.2	429.7	402.6	383.5	378.8	385.1	386.8
52.5°	7265.2	5417.4	907.2	488.6	432.9	409.0	378.8	359.7	351.7	358.1	358.1
55°	8721.5	6533.2	875.3	471.1	415.4	383.5	356.5	340.5	334.2	339.0	339.0
57.5°	10381.4	7983.0	929.5	447.2	393.1	356.5	337.4	326.2	321.5	326.2	327.9
60°	12353.3	9880.1	1301.8	417.0	369.2	332.7	321.5	315.1	311.9	316.7	316.7
62.5°	14974.5	12404.2	2014.8	393.1	343.8	310.4	307.2	304.0	300.7	305.6	305.6
65°	17804.2	14700.7	2073.7	378.8	321.5	291.2	292.9	292.9	289.7	294.4	294.4
67.5°	18705.0	14501.8	1158.6	361.3	294.4	272.1	278.5	278.5	276.9	281.7	280.1
68°	18514.0	14186.7	1009.0	356.5	289.7	267.4	273.7	275.4	273.7	278.5	276.9
70°	17091.2	12455.1	663.7	329.5	268.9	251.4	261.1	262.6	261.1	267.4	265.8
72.5°	14108.7	9342.1	490.2	288.1	243.5	230.8	240.3	241.9	243.5	249.9	248.3
75°	8960.1	5159.7	386.8	245.1	218.0	206.9	216.5	221.3	224.4	233.9	229.1
77.5°	2454.1	1566.0	313.5	208.5	187.8	183.0	189.3	195.8	199.0	210.1	202.1
80°	859.4	692.3	261.1	176.7	156.0	154.4	160.7	167.2	170.3	179.8	170.3
82.5°	522.0	451.9	208.5	138.5	122.5	120.9	128.9	135.2	138.5	138.5	132.1
85°	272.1	238.8	152.8	97.1	84.4	79.6	93.9	101.9	103.4	101.9	97.1
87.5°	152.8	135.2	81.1	46.1	38.2	39.8	49.3	60.5	65.3	63.6	60.5
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)