

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: McGRAW-EDISON

Report Number: P821171

Luminaire Tested: **TT-D4-830-24VDC-WQ-HSS**

Issue Date: 12/2/2020



Test Information

Test Method: LM-79-08
Report Number: P821171
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-2)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TT-D4-830-24VDC-WQ-HSS
Description: TOPTIER LED PARKING GARAGE LUMINAIRE
3000K, 80 CRI LEDS AND WIDE DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

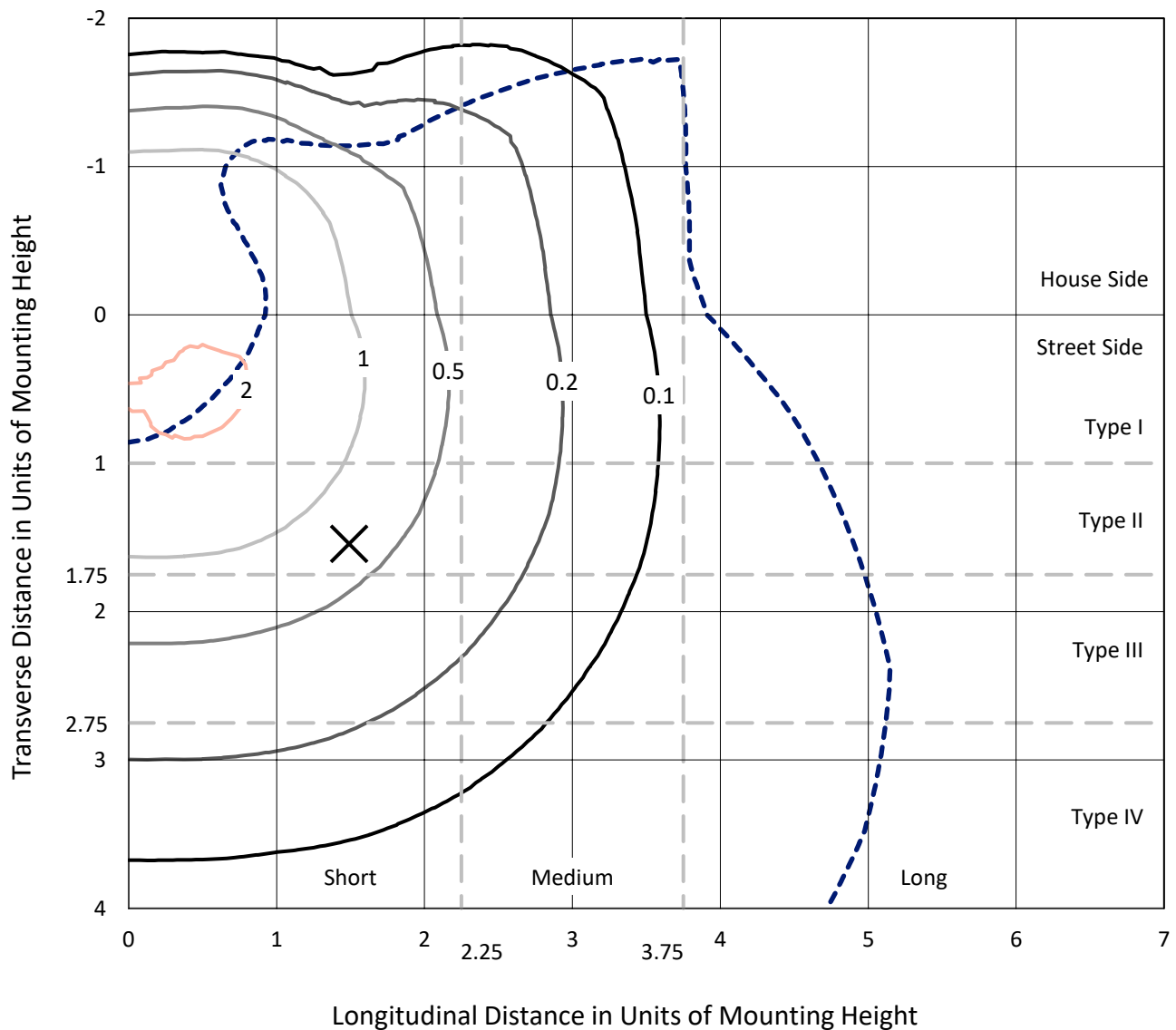
Lumens per Lamp: N/A
Luminaire Lumens: 5428.1 lumens
Efficiency: N/A
Efficacy: 95.2 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U2 - G3

Input Watts (W): 57
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

REPORT NUMBER: P821171
CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

Iso-Footcandle Lines of Horizontal Illumination

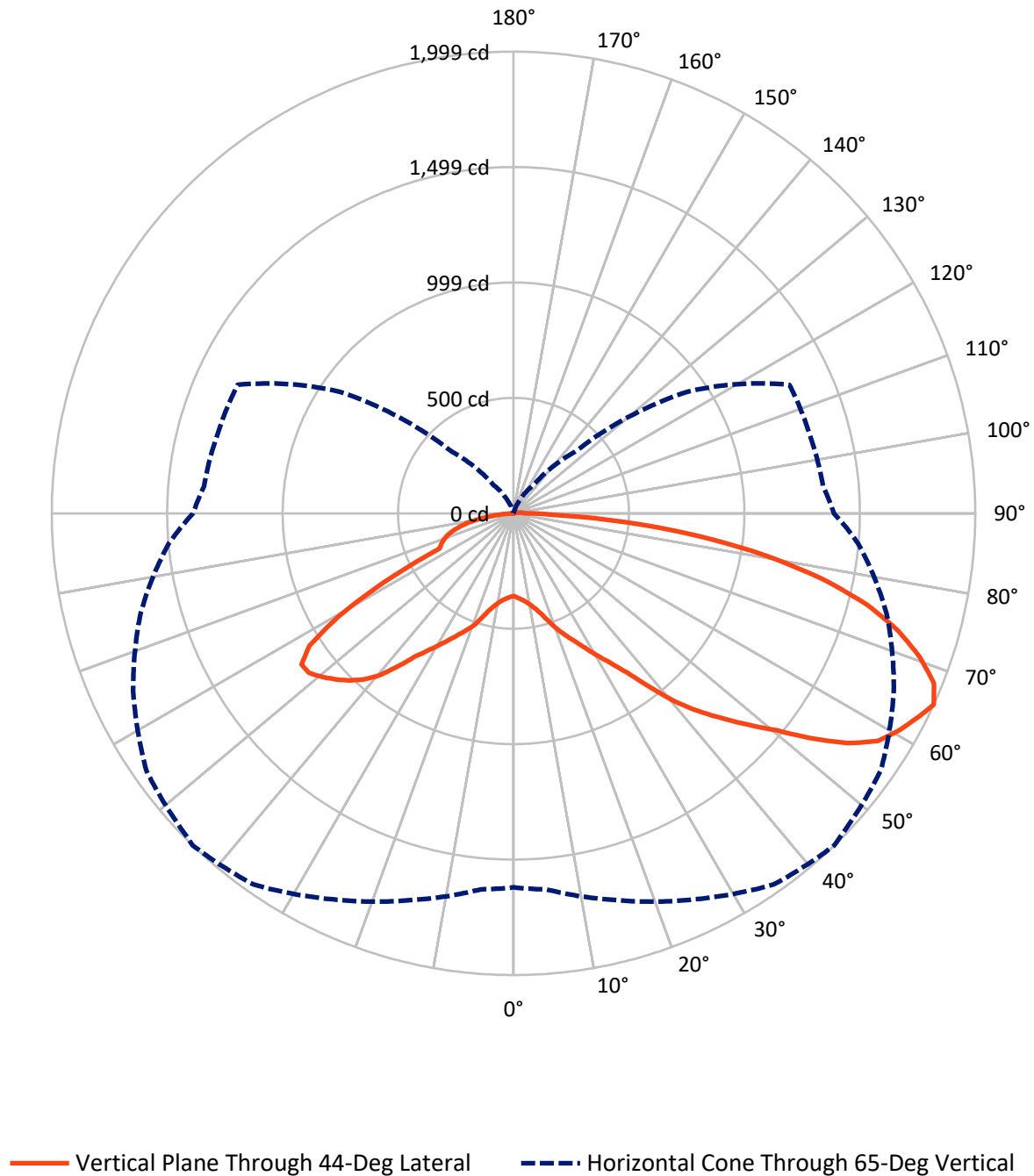
× Max cd
- - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 2.1 fc
Type IV - Short - N/A

REPORT NUMBER: P821171
CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

Luminous Intensity Polar Plot



REPORT NUMBER: P821171

CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

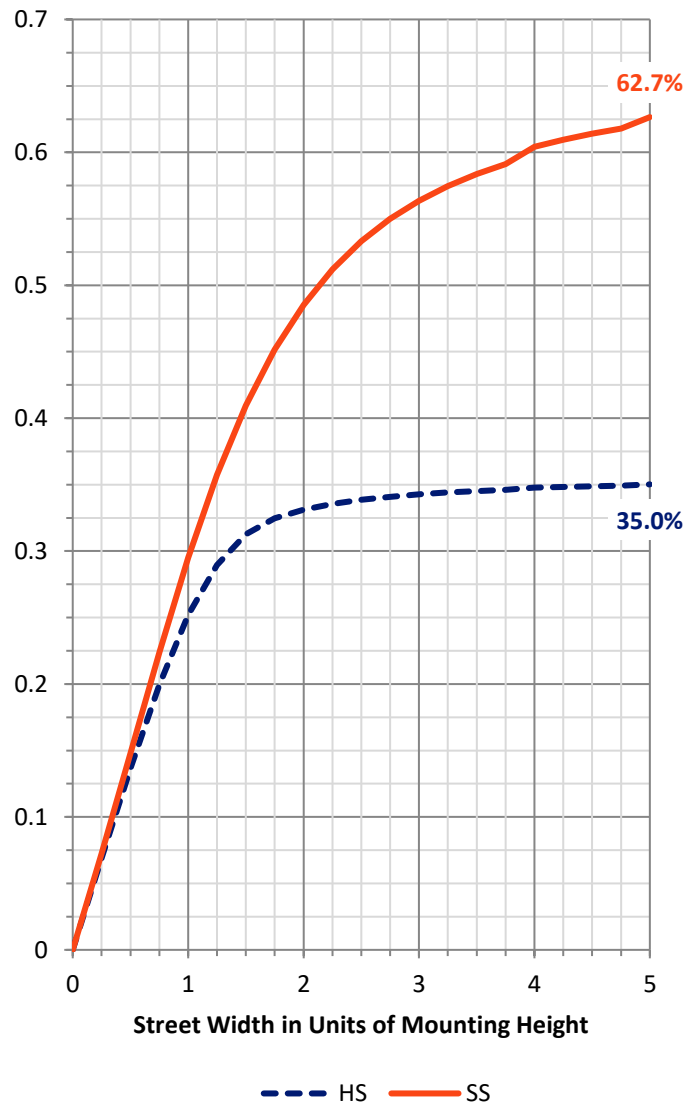
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1911.9	1.3	1913.2
	% Fixture	35.2	0.0	35.2
Street Side	Lumens	3492.9	22.0	3514.9
	% Fixture	64.3	0.4	64.8
Total	Lumens	5404.8	23.3	5428.1
	% Fixture	99.6	0.4	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.3	0.7
10°-20°	128.9	2.4
20°-30°	276.3	5.1
30°-40°	500.4	9.2
40°-50°	834.9	15.4
50°-60°	1156.5	21.3
60°-70°	1198.5	22.1
70°-80°	964.5	17.8
80°-90°	308.5	5.7
90°-100°	15.6	0.3
100°-110°	5.0	0.1
110°-120°	1.0	0.0
120°-130°	0.6	0.0
130°-140°	0.4	0.0
140°-150°	0.3	0.0
150°-160°	0.2	0.0
160°-170°	0.1	0.0
170°-180°	0.0	0.0
0°-90°	5404.8	99.6
0°-180°	5428.1	100.0

Coefficient of Utilization



REPORT NUMBER: P821171

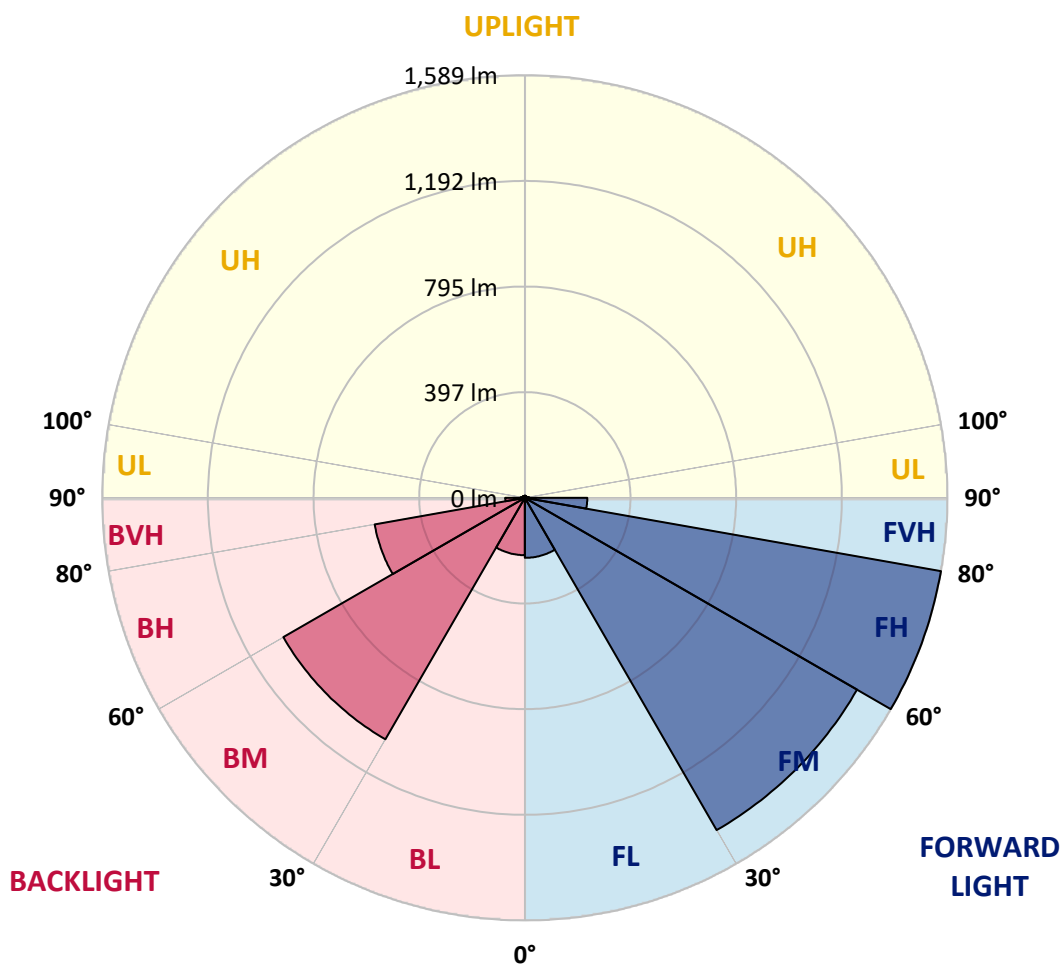
CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	225.7	4.2			
FM	(30°-60°)	1443.1	26.6			
FH	(60°-80°)	1589.4	29.3			G1/1800
FVH	(80°-90°)	234.7	4.3			G3/500
BL	(0°-30°)	215.8	4.0	B1/500		
BM	(30°-60°)	1048.7	19.3	B2/2500		
BH	(60°-80°)	573.6	10.6	B2/1000		G2/1000
BVH	(80°-90°)	73.8	1.4			G1/100
UL	(90°-100°)	15.6	0.3		U2/50	
UH	(100°-180°)	7.7	0.1		U1/10	

BUG Rating: B2-U2-G3

Type IV Short



REPORT NUMBER: P821171

CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2
2.5°	368.8	367.7	367.7	366.7	366.7	366.7	366.7	366.7	365.6	364.5	363.5
5°	378.3	378.3	377.2	377.2	376.2	375.1	376.2	375.1	374.1	373.0	372.0
7.5°	391.0	390.0	390.0	387.8	387.8	386.8	386.8	386.8	385.7	383.6	382.5
10°	409.0	406.9	406.9	404.8	403.7	402.7	402.7	400.6	400.6	399.5	398.4
12.5°	429.2	427.1	429.2	428.1	426.0	423.9	423.9	421.8	420.7	419.6	415.4
15°	455.7	452.5	454.6	454.6	453.5	452.5	452.5	448.2	446.1	444.0	439.8
17.5°	487.5	485.3	486.4	487.5	490.6	490.6	491.7	486.4	482.2	474.7	471.6
20°	527.7	526.7	529.8	529.8	533.0	533.0	534.1	528.8	521.4	516.1	509.7
22.5°	566.9	566.9	571.2	571.2	574.4	572.2	572.2	570.1	561.6	555.3	548.9
25°	607.2	606.1	610.4	613.6	617.8	612.5	614.6	611.4	603.0	594.5	586.0
27.5°	651.7	649.6	651.7	655.9	663.4	659.1	661.2	655.9	647.5	635.8	628.4
30°	700.5	697.3	700.5	706.8	712.1	714.2	713.2	705.8	698.3	681.4	676.1
32.5°	748.1	748.1	755.6	767.2	773.6	772.5	773.6	767.2	756.6	735.4	722.7
35°	806.4	810.7	820.2	837.2	850.9	845.6	845.6	843.5	825.5	800.1	783.1
37.5°	883.8	888.0	907.1	927.2	952.7	950.5	951.6	945.2	910.3	883.8	859.4
40°	973.9	978.1	1006.7	1035.3	1059.7	1067.1	1068.2	1054.4	1016.2	978.1	939.9
42.5°	1056.5	1061.8	1091.5	1131.7	1158.2	1169.9	1172.0	1149.8	1109.5	1066.0	1018.4
45°	1139.2	1145.5	1179.4	1221.8	1260.0	1265.3	1266.3	1247.3	1202.7	1152.9	1091.5
47.5°	1223.9	1229.2	1264.2	1315.1	1356.4	1367.0	1368.1	1350.0	1296.0	1235.6	1163.5
50°	1301.3	1311.9	1359.6	1413.6	1468.7	1477.2	1478.3	1458.1	1394.5	1326.7	1231.4
52.5°	1392.4	1397.7	1448.6	1538.7	1585.3	1618.1	1619.2	1580.0	1512.2	1421.0	1298.1
55°	1498.4	1507.9	1559.9	1649.9	1733.6	1755.9	1762.3	1715.6	1625.6	1527.0	1382.9
57.5°	1559.9	1577.9	1654.2	1740.0	1844.9	1859.8	1862.9	1814.2	1714.6	1606.5	1446.5
60°	1592.7	1603.3	1683.8	1817.4	1899.0	1912.7	1911.7	1874.6	1775.0	1643.6	1476.1
62.5°	1629.8	1647.8	1715.6	1851.3	1922.3	1956.2	1950.9	1912.7	1811.0	1666.9	1504.8
65°	1619.2	1634.0	1733.6	1843.9	1961.5	1998.6	1991.2	1940.3	1816.3	1671.1	1497.3
67.5°	1576.8	1588.5	1687.0	1823.7	1936.1	1962.5	1975.3	1925.5	1786.6	1625.6	1450.7
70°	1489.9	1507.9	1603.3	1743.2	1846.0	1865.1	1867.2	1836.4	1711.4	1541.8	1373.4
72.5°	1370.2	1385.0	1488.9	1630.9	1719.9	1742.1	1744.2	1697.6	1603.3	1427.4	1262.1
75°	1227.1	1240.9	1321.4	1469.8	1557.7	1580.0	1577.9	1534.4	1434.8	1268.4	1114.8
77.5°	1050.2	1075.6	1146.6	1268.4	1354.3	1365.9	1368.1	1320.4	1239.8	1095.7	946.3
80°	828.7	853.0	933.6	1024.7	1096.8	1106.3	1109.5	1069.2	996.1	868.9	741.8
82.5°	589.2	610.4	674.0	748.1	808.5	808.5	810.7	777.8	721.6	612.5	512.9
85°	335.9	351.8	394.2	447.2	490.6	485.3	486.4	456.7	419.6	334.9	271.3
87.5°	110.2	117.6	127.2	147.3	167.4	154.7	161.1	133.5	120.8	90.1	69.9
90°	58.3	58.3	56.2	54.0	49.8	43.4	43.4	35.0	26.5	17.0	6.4
92.5°	53.0	53.0	50.9	48.7	44.5	39.2	39.2	31.8	23.3	14.8	5.3
95°	43.4	43.4	42.4	40.3	37.1	32.9	31.8	26.5	20.1	11.7	4.2
97.5°	33.9	33.9	32.9	31.8	28.6	25.4	25.4	20.1	14.8	9.5	3.2
100°	25.4	25.4	25.4	23.3	22.3	19.1	19.1	15.9	11.7	7.4	2.1
102.5°	18.0	19.1	18.0	17.0	15.9	13.8	13.8	11.7	8.5	5.3	2.1
105°	12.7	12.7	11.7	11.7	10.6	9.5	9.5	7.4	5.3	3.2	1.1
107.5°	7.4	7.4	7.4	7.4	6.4	6.4	6.4	5.3	3.2	2.1	1.1
110°	4.2	4.2	4.2	4.2	3.2	3.2	3.2	2.1	2.1	1.1	1.1



REPORT NUMBER: P821171
 CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
112.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1
115°	1.1	1.1	1.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
117.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
120°	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
122.5°	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
125°	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
127.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
130°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
132.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
135°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
140°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
142.5°	1.1	1.1	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
145°	1.1	1.1	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
147.5°	1.1	1.1	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
150°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
160°	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
162.5°	1.1	1.1	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
165°	1.1	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
167.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
170°	1.1	0.0	0.0	0.0	0.0	1.1	0.0	1.1	1.1	1.1	1.1
172.5°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
175°	1.1	1.1	1.1	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1
177.5°	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P821171

CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2	358.2
2.5°	363.5	363.5	362.4	361.4	361.4	361.4	360.3	360.3	360.3	359.2	359.2
5°	372.0	370.9	370.9	369.8	369.8	368.8	368.8	367.7	366.7	366.7	365.6
7.5°	383.6	382.5	380.4	381.5	379.4	378.3	377.2	377.2	377.2	376.2	376.2
10°	397.4	397.4	395.3	395.3	393.1	392.1	391.0	391.0	392.1	392.1	391.0
12.5°	415.4	414.3	414.3	413.3	412.2	411.2	412.2	412.2	411.2	410.1	409.0
15°	437.7	437.7	437.7	438.7	437.7	437.7	437.7	436.6	434.5	432.4	432.4
17.5°	471.6	470.5	468.4	469.4	471.6	474.7	471.6	468.4	465.2	465.2	464.1
20°	506.5	507.6	507.6	508.7	511.8	515.0	510.8	508.7	506.5	504.4	502.3
22.5°	544.7	545.7	545.7	544.7	546.8	545.7	543.6	541.5	539.4	536.2	534.1
25°	581.8	582.8	581.8	580.7	581.8	578.6	575.4	572.2	566.9	561.6	561.6
27.5°	623.1	622.0	617.8	618.9	616.7	614.6	608.3	600.8	593.4	588.1	588.1
30°	666.5	666.5	658.1	662.3	658.1	657.0	643.2	633.7	623.1	615.7	614.6
32.5°	714.2	712.1	705.8	710.0	705.8	701.5	684.6	671.8	653.8	643.2	642.2
35°	771.5	766.2	760.9	765.1	765.1	753.4	736.5	713.2	687.7	675.0	674.0
37.5°	841.4	838.2	831.9	837.2	841.4	829.7	804.3	770.4	734.4	715.3	714.2
40°	918.7	914.5	911.3	918.7	921.9	910.3	876.4	828.7	779.9	752.4	748.1
42.5°	991.9	982.3	977.0	987.6	984.5	971.7	925.1	870.0	803.2	771.5	766.2
45°	1057.6	1047.0	1039.6	1049.1	1044.9	1019.4	967.5	893.3	812.8	773.6	767.2
47.5°	1122.2	1106.3	1094.7	1107.4	1098.9	1059.7	996.1	905.0	802.2	755.6	745.0
50°	1177.3	1158.2	1150.8	1165.7	1152.9	1097.8	1016.2	899.7	775.7	707.9	690.9
52.5°	1243.0	1214.4	1207.0	1235.6	1207.0	1133.9	1020.5	887.0	715.3	633.7	617.8
55°	1309.8	1278.0	1266.3	1292.8	1249.4	1141.3	999.3	813.8	624.2	537.3	513.9
57.5°	1344.7	1315.1	1304.5	1323.6	1243.0	1069.2	905.0	678.2	487.5	390.0	364.5
60°	1376.5	1324.6	1310.8	1336.3	1177.3	901.8	700.5	486.4	294.6	221.5	202.4
62.5°	1398.8	1349.0	1320.4	1332.0	1056.5	655.9	402.7	234.2	111.3	77.4	76.3
65°	1387.1	1344.7	1325.7	1317.2	917.7	377.2	148.4	59.3	3.2	3.2	2.1
67.5°	1351.1	1304.5	1299.2	1306.6	908.2	362.4	137.8	54.0	0.0	0.0	0.0
70°	1271.6	1238.8	1238.8	1264.2	866.8	343.3	128.2	49.8	0.0	0.0	0.0
72.5°	1164.6	1139.2	1154.0	1192.1	805.4	316.8	115.5	44.5	0.0	0.0	0.0
75°	1036.4	1009.9	1029.0	1071.3	729.1	282.9	100.7	38.1	0.0	0.0	0.0
77.5°	873.2	855.2	884.8	924.0	627.3	238.4	82.7	30.7	0.0	0.0	0.0
80°	680.3	670.8	710.0	745.0	506.5	187.6	62.5	22.3	0.0	0.0	0.0
82.5°	469.4	465.2	503.4	539.4	362.4	131.4	42.4	14.8	0.0	0.0	0.0
85°	245.8	245.8	275.5	308.4	202.4	71.0	21.2	6.4	0.0	0.0	0.0
87.5°	54.0	51.9	56.2	72.1	40.3	13.8	3.2	1.1	0.0	0.0	0.0
90°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
105°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
110°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P821171
 CATALOG NUMBER: TT-D4-830-24VDC-WQ-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
115°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
117.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
120°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
122.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
125°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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)