HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

Report No.: 001 Test Time: 2019-04-29 21:46

Luminaire Property

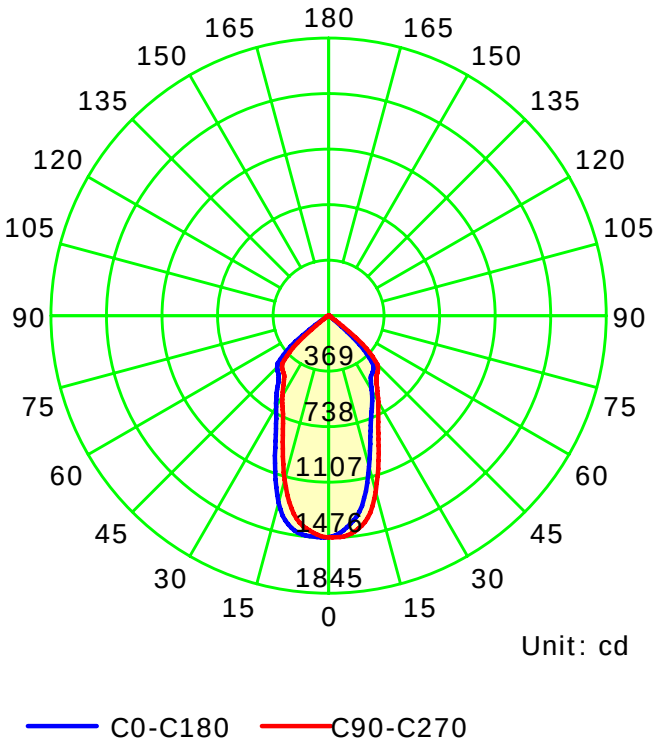
Luminaire Manufacturer:
Luminaire Category: Outdoor lighting
Luminaire Description: HCP-8921501,HCP-8931501(NW)
Lamp Catalog: COB
Luminous Length (mm): -110
Luminous Width (mm): -110
Luminous Height (mm): 0
Voltage: 230V
Current: 0.063A
Power: 13.85W
Power Factor: 0.953

Photometric Results

CIE Class: Direct
Total Rated Lamp Lumens: 1555.0 lm
Measurement Flux: 1555 lm
Efficiency: 100%
Downward Ratio: 100%
Upward Ratio: 0%
Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 103.6, 103.5, 103.6, 103.6
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 50.8, 51.0, 51.0, 50.9
Luminaire Efficacy Rating (LER): 112.33
Central Intensity: 1471.56 cd
Max. Intensity: 1476.19 cd
Pos of Max. Intensity: H120 V2
S/MH(C0/C180): 0.76
S/MH(C90/C270): 0.76

Picture Of Luminaire

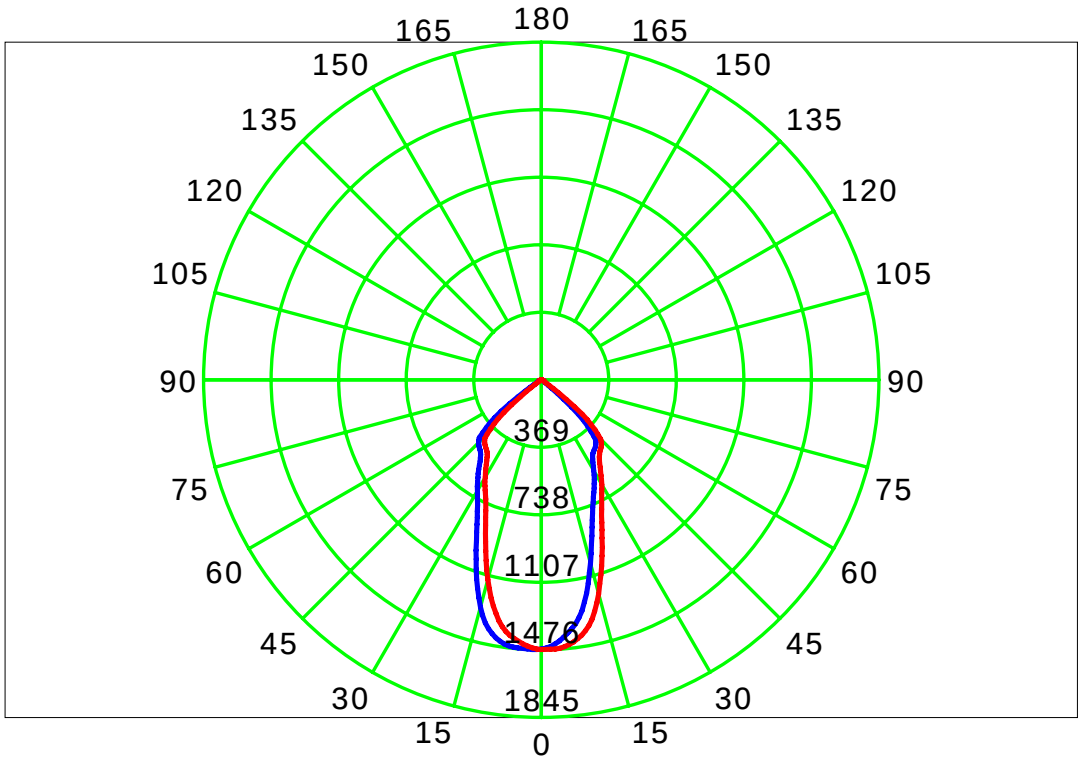
Luminous Intensity Distribution Curve

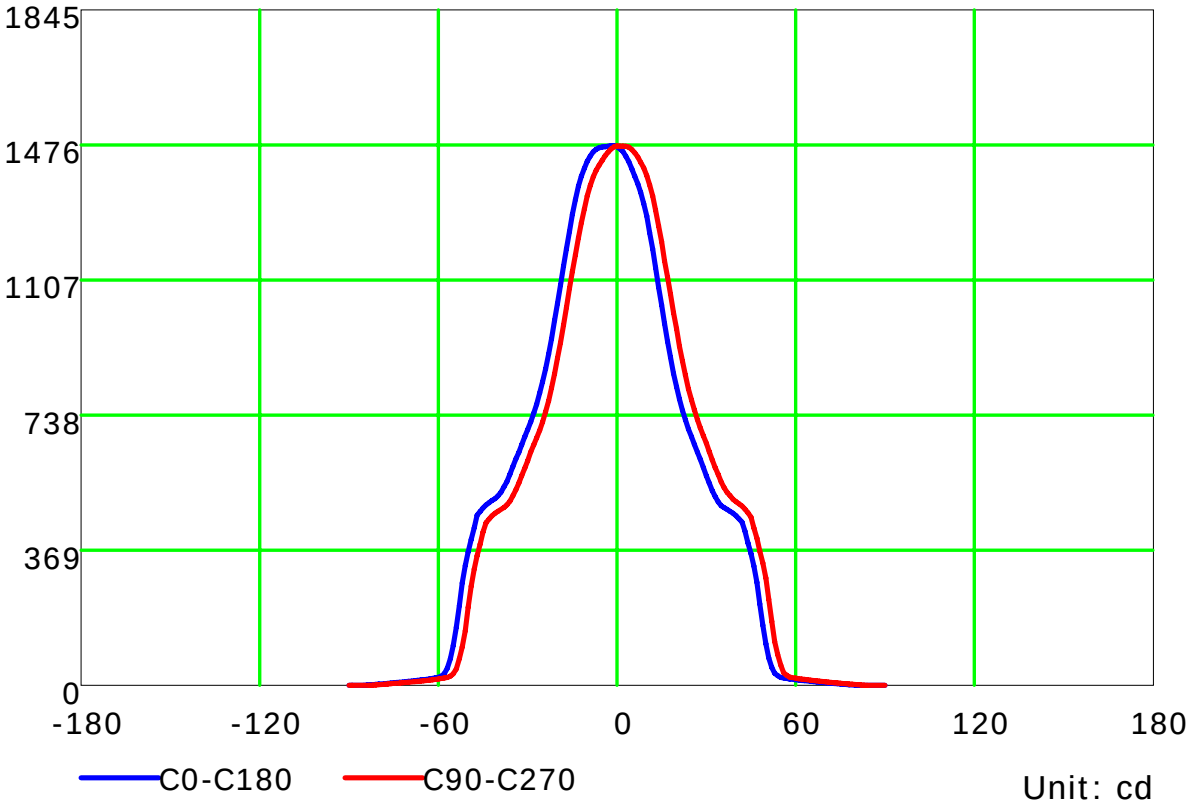


C Plane (°):0.0-360.0: 30.0
Gamma Plane (°):0.0-90.0:1.0
Test Lab:
Test Device: GPM-1600L
Test Type: TYPE C
Distance: 6.583 m
Temperature: 25°C
Humidity:
Operator: DING LI
Inspector:

HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

Luminous Intensity Distribution Curve



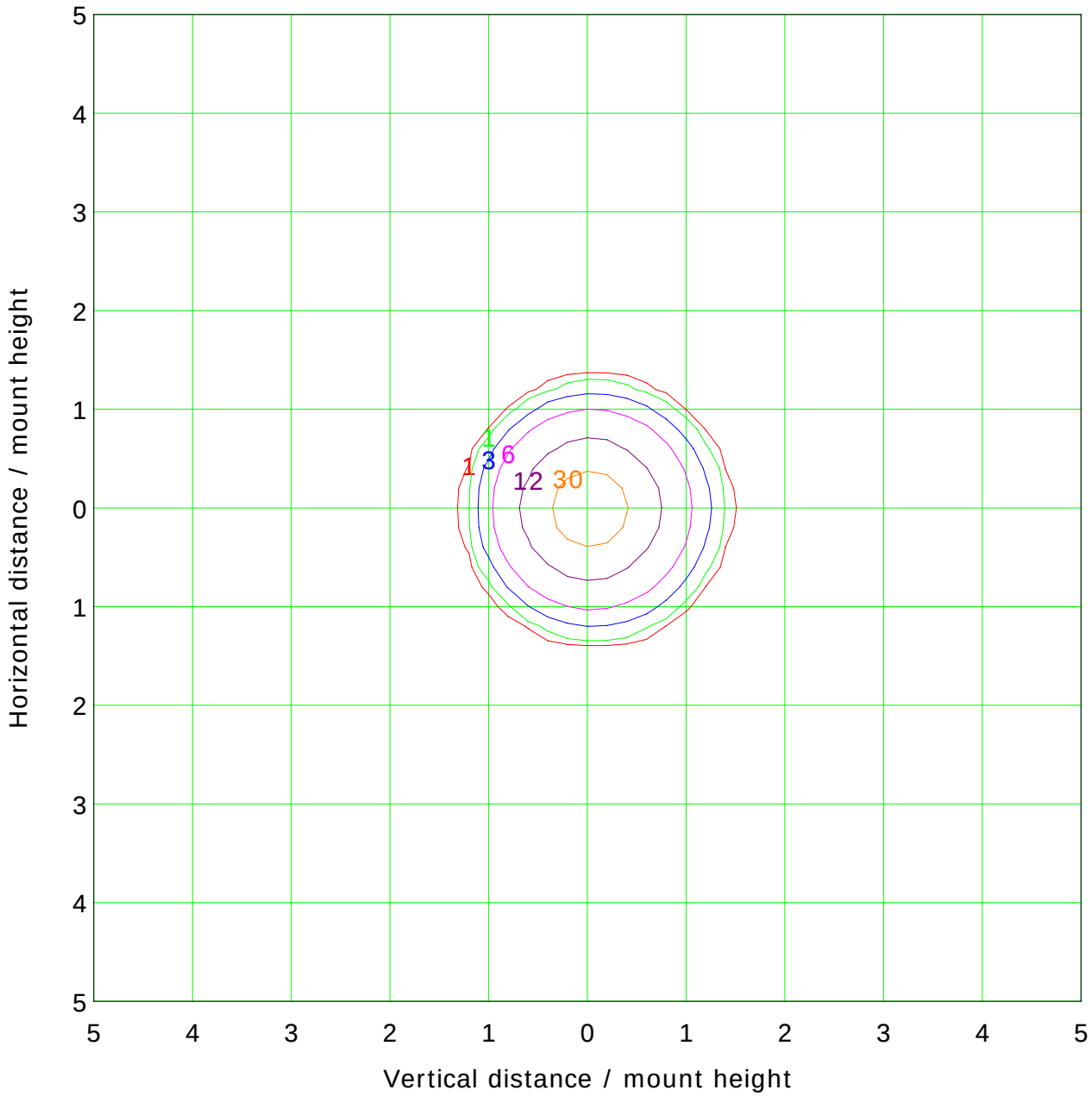


C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

IsoLux Plot



Mounting Height: 5.0m Max Lux(100%): 59.0 lx

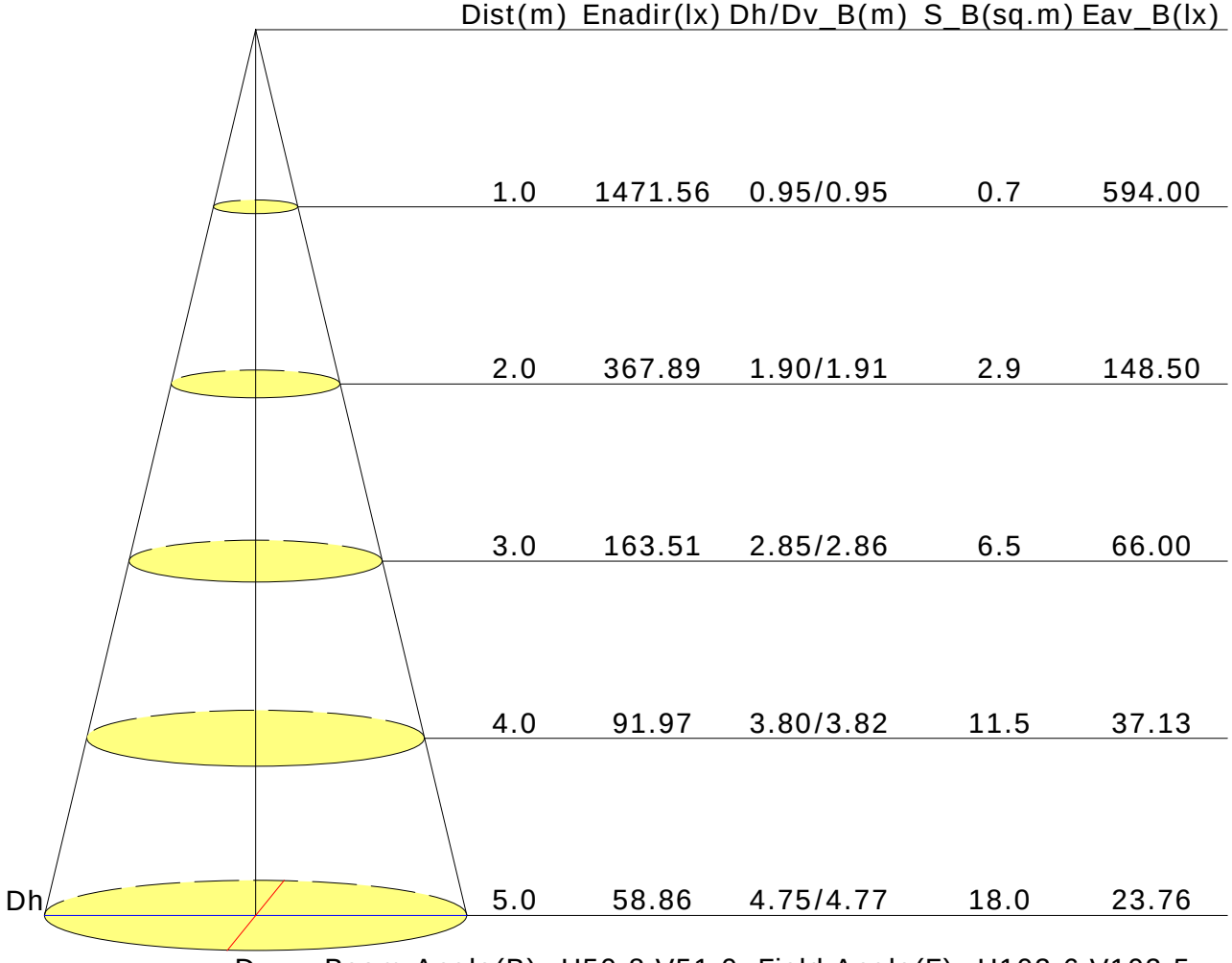
(1%): 0.6 lx
(2%): 1.2 lx
(5%): 3.0 lx
(10%): 5.9 lx
(20%): 11.8 lx
(50%): 29.5 lx
(100%): 59.0 lx

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

Illuminance at a Distance



Beam Angle(B): H50.8 V51.0 Field Angle(F): H103.6 V103.5

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

UGR Table

Reflectance:										
Ceiling (cavity)	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
X=2H Y=2H	21.5	22.5	21.8	22.7	22.9	22.3	23.3	22.6	23.6	23.8
3H	21.4	22.3	21.7	22.5	22.8	22.2	23.1	22.5	23.4	23.6
4H	21.3	22.1	21.6	22.4	22.7	22.1	23.0	22.5	23.3	23.5
6H	21.2	22.0	21.6	22.3	22.6	22.1	22.9	22.4	23.1	23.5
8H	21.2	21.9	21.5	22.2	22.5	22.0	22.8	22.4	23.1	23.4
12H	21.1	21.9	21.5	22.2	22.5	22.0	22.7	22.4	23.0	23.4
X=4H Y=2H	21.3	22.1	21.6	22.4	22.7	22.1	23.0	22.4	23.2	23.5
3H	21.2	21.9	21.5	22.2	22.5	22.0	22.7	22.4	23.0	23.4
4H	21.1	21.7	21.5	22.1	22.4	22.0	22.6	22.3	22.9	23.3
6H	21.0	21.6	21.4	22.0	22.3	21.9	22.4	22.3	22.8	23.2
8H	21.0	21.5	21.4	21.9	22.3	21.8	22.4	22.3	22.7	23.2
12H	20.9	21.4	21.4	21.8	22.2	21.8	22.3	22.2	22.7	23.1
X=8H Y=4H	21.0	21.5	21.4	21.9	22.3	21.8	22.3	22.3	22.7	23.2
6H	20.9	21.3	21.4	21.8	22.2	21.8	22.2	22.2	22.6	23.1
8H	20.9	21.2	21.4	21.7	22.2	21.7	22.1	22.2	22.5	23.0
12H	20.8	21.1	21.3	21.6	22.1	21.7	22.0	22.2	22.5	23.0
X=12H Y=4H	21.0	21.4	21.4	21.8	22.3	21.8	22.3	22.2	22.7	23.1
6H	20.9	21.2	21.4	21.7	22.2	21.7	22.1	22.2	22.5	23.0
8H	20.8	21.1	21.3	21.6	22.1	21.7	22.0	22.2	22.5	23.0
Variations with the observer position at spacings:										
S=1.0H	+2.9/-10.4					+2.8/-9.8				
S=1.5H	+4.5/-11.7					+4.2/-11.2				
S=2.0H	+6.4/-12.5					+6.2/-11.9				

Calculate in accordance with CIE Pub.117. The table is revised with 1555lm (8log(F/F0) = 1.5).

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

Candlepower Table

Unit: cd

G\C	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0
G0.0	1471.6	1471.8	1472.8	1473.8	1474.2	1475.5	1471.6	1471.8	1472.8	1473.8
G1.0	1466.0	1468.7	1471.4	1473.3	1475.9	1475.8	1474.4	1473.7	1472.4	1471.8
G2.0	1458.7	1463.9	1469.7	1473.2	1476.2	1475.4	1474.6	1472.7	1468.3	1465.5
G3.0	1445.6	1455.0	1466.8	1473.0	1474.9	1473.8	1472.9	1469.0	1461.7	1457.0
G4.0	1430.6	1441.3	1459.0	1470.2	1473.1	1473.9	1471.7	1464.4	1454.6	1447.0
G5.0	1410.8	1425.5	1447.3	1463.9	1472.0	1473.8	1470.8	1461.1	1446.1	1434.2
G6.0	1390.8	1409.3	1432.1	1455.2	1467.7	1469.0	1469.1	1455.2	1434.5	1421.7
G7.0	1370.4	1396.4	1420.2	1443.8	1459.4	1462.1	1464.8	1446.3	1424.3	1407.2
G8.0	1346.7	1376.4	1408.4	1428.7	1447.6	1451.1	1457.9	1436.9	1409.2	1389.8
G9.0	1316.1	1351.5	1388.2	1413.7	1433.1	1437.7	1446.3	1421.7	1391.3	1365.6
G10.0	1282.1	1319.8	1362.6	1392.3	1418.8	1422.2	1431.7	1404.0	1370.2	1337.5
G11.0	1236.6	1275.8	1327.1	1367.1	1397.2	1400.9	1412.5	1380.6	1341.0	1301.3
G12.0	1192.0	1233.3	1289.2	1336.8	1371.2	1374.6	1390.7	1354.3	1309.7	1263.6
G13.0	1140.9	1186.0	1249.0	1298.2	1339.6	1345.3	1364.2	1324.3	1272.8	1222.6
G14.0	1087.2	1129.1	1201.2	1254.8	1298.6	1309.4	1327.0	1283.8	1231.5	1175.9
G15.0	1038.6	1080.1	1155.5	1211.8	1257.5	1268.1	1286.6	1242.9	1185.5	1130.4
G16.0	988.3	1028.7	1106.1	1159.4	1210.4	1220.2	1239.7	1197.4	1135.1	1084.5
G17.0	939.1	979.6	1053.8	1114.8	1160.7	1171.7	1192.7	1147.7	1086.6	1032.2
G18.0	896.6	935.5	1008.6	1069.5	1115.9	1124.6	1146.0	1099.1	1038.3	984.7
G19.0	852.2	889.0	959.5	1018.1	1064.1	1069.9	1093.4	1047.5	988.9	936.4
G20.0	815.6	851.5	915.4	974.6	1018.2	1022.9	1043.2	1001.0	942.3	893.9
G21.0	781.9	813.4	876.6	926.1	974.5	972.6	997.7	955.2	900.4	851.4
G22.0	751.2	780.2	837.4	885.5	927.1	929.8	947.0	909.7	857.2	812.5
G23.0	726.1	752.0	802.5	848.2	884.4	888.6	905.5	868.6	818.4	777.8
G24.0	700.3	725.2	770.0	810.1	843.2	848.5	864.6	833.8	783.0	747.8
G25.0	679.6	703.3	742.5	780.2	810.7	814.7	829.5	797.7	753.4	719.6
G26.0	658.9	681.7	717.9	753.4	779.2	785.4	799.1	769.7	728.7	696.9
G27.0	637.2	660.1	694.9	726.6	750.5	754.9	768.2	742.0	706.3	676.3
G28.0	618.0	638.6	674.2	703.9	727.5	732.1	743.8	720.5	685.8	657.4
G29.0	595.7	613.8	651.8	682.2	707.4	709.3	719.8	700.7	664.4	638.0
G30.0	572.6	593.9	626.5	661.7	685.8	688.5	699.2	679.5	644.3	613.9
G31.0	552.9	572.9	603.7	638.8	666.3	668.6	679.8	660.9	624.6	593.5
G32.0	531.8	553.7	582.4	616.0	644.4	645.1	658.0	639.7	603.8	573.5
G33.0	516.3	534.9	564.3	595.5	624.0	625.2	636.8	620.7	583.5	553.1
G34.0	501.2	521.8	545.0	576.4	604.4	606.6	618.4	602.6	562.0	534.1
G35.0	491.0	509.4	531.3	555.6	580.6	584.6	597.6	578.2	541.8	517.7
G36.0	485.4	501.0	519.3	540.3	562.3	566.0	576.8	558.4	527.9	502.9

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

Candlepower Table (Continue 1)

Unit: cd

G\C	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0
G37.0	480.7	494.6	510.8	527.0	546.5	547.1	556.4	542.6	511.1	492.9
G38.0	475.6	489.2	502.6	518.4	532.9	532.0	542.6	526.6	501.9	486.1
G39.0	470.5	482.9	497.2	508.4	523.5	521.9	527.8	517.3	496.2	481.0
G40.0	463.3	475.0	490.9	501.9	513.0	512.7	517.4	508.1	490.8	475.7
G41.0	455.0	466.1	483.6	496.2	507.5	507.5	510.2	502.4	485.8	470.1
G42.0	446.4	456.1	475.1	489.8	501.6	502.7	505.1	497.2	479.5	463.2
G43.0	421.6	443.1	464.6	481.5	494.1	496.6	499.3	490.8	471.4	454.5
G44.0	389.0	408.5	452.5	471.6	485.8	489.6	492.9	482.7	462.5	444.6
G45.0	360.0	380.5	423.5	459.8	476.5	480.6	484.7	473.0	452.1	419.1
G46.0	326.1	348.2	392.0	430.2	464.1	470.8	475.0	461.4	423.5	386.0
G47.0	281.6	321.4	362.2	402.1	433.0	448.4	465.0	439.1	392.1	354.5
G48.0	222.5	266.2	326.7	366.5	401.9	411.5	430.4	400.1	356.9	317.9
G49.0	164.1	208.3	282.2	334.3	368.7	379.6	398.4	367.5	322.4	270.8
G50.0	113.7	150.1	229.7	293.3	338.8	343.6	364.4	337.4	274.7	213.1
G51.0	75.1	100.8	166.5	234.9	290.9	299.4	327.3	290.5	216.4	148.9
G52.0	48.7	73.1	117.4	174.7	234.1	243.2	279.5	231.1	160.4	104.8
G53.0	33.1	43.0	81.3	119.4	172.3	180.8	217.6	172.5	107.0	73.0
G54.0	26.6	32.3	50.8	83.9	113.4	126.5	158.6	115.6	74.5	44.8
G55.0	21.9	26.2	34.5	55.2	82.6	86.2	109.1	84.3	48.3	31.7
G56.0	20.3	22.4	27.0	34.3	51.2	55.0	73.0	53.0	31.7	25.0
G57.0	19.0	21.0	22.4	27.7	34.2	35.9	47.0	33.8	25.3	21.7
G58.0	17.5	19.4	21.3	22.3	27.5	28.4	32.5	27.0	21.9	20.5
G59.0	16.2	17.9	19.6	21.0	22.5	23.0	25.1	22.3	20.3	18.9
G60.0	15.4	16.9	18.2	19.7	21.2	21.5	22.3	21.2	19.0	17.4
G61.0	14.5	15.8	17.0	18.3	19.7	19.8	20.7	19.8	17.3	16.2
G62.0	13.4	15.0	16.1	17.2	18.2	18.2	19.1	18.1	16.3	15.3
G63.0	12.8	13.8	15.1	16.4	17.2	17.0	17.7	16.9	15.5	14.3
G64.0	11.9	12.9	14.1	15.4	16.2	16.1	16.5	16.0	14.5	13.4
G65.0	11.0	12.0	13.3	14.4	15.3	15.2	15.6	15.0	13.6	12.5
G66.0	10.5	11.1	12.3	13.5	14.3	14.2	14.7	14.2	12.9	11.6
G67.0	9.5	10.3	11.4	12.5	13.5	13.3	13.7	13.4	11.8	10.8
G68.0	8.7	9.3	10.7	11.6	12.3	12.3	13.0	12.3	10.9	10.1
G69.0	8.0	8.6	9.6	10.7	11.4	11.3	11.7	11.3	10.1	9.4
G70.0	7.2	8.0	8.9	9.8	10.6	10.6	11.0	10.6	9.5	8.6
G71.0	6.4	7.0	8.2	9.1	9.5	9.6	10.1	9.7	8.8	8.1
G72.0	5.8	6.5	7.2	8.2	8.9	8.9	9.1	8.9	8.0	7.2
G73.0	5.1	5.9	6.7	7.4	8.2	8.1	8.6	8.2	7.2	6.5

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

Candlepower Table (Continue 2)

Unit: cd

G\C	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0
G74.0	4.4	4.9	6.1	6.7	7.2	7.2	7.9	7.5	6.5	6.0
G75.0	3.8	4.3	5.3	6.0	6.7	6.5	6.8	6.7	6.0	5.3
G76.0	3.3	3.8	4.5	5.2	6.0	5.9	6.3	6.1	5.3	4.5
G77.0	2.3	3.0	4.0	4.4	5.1	5.0	5.7	5.4	4.4	3.9
G78.0	1.7	2.3	3.3	3.8	4.4	4.4	4.7	4.5	3.9	3.5
G79.0	1.3	1.6	2.3	3.2	3.9	3.8	4.2	3.9	3.3	2.4
G80.0	0.5	1.1	1.9	2.3	3.0	3.0	3.7	3.2	2.3	1.8
G81.0	0.0	0.4	1.2	1.8	2.3	2.3	3.0	2.4	1.8	1.2
G82.0	0.0	0.0	0.4	1.2	1.8	1.8	2.1	1.8	1.2	0.5
G83.0	0.0	0.0	0.0	0.5	1.1	1.1	1.5	1.3	0.3	0.0
G84.0	0.0	0.0	0.0	0.0	0.4	0.4	1.0	0.5	0.1	0.0
G85.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
G86.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G87.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G88.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G89.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

Candlepower Table (Continue 3)

Unit: cd

G\C	C300.0	C330.0	C360.0							
G0.0	1474.2	1475.5	1471.6							
G1.0	1471.1	1471.8	1466.0							
G2.0	1463.8	1465.9	1458.7							
G3.0	1453.3	1455.5	1445.6							
G4.0	1441.9	1441.1	1430.6							
G5.0	1425.2	1423.3	1410.8							
G6.0	1407.9	1403.5	1390.8							
G7.0	1387.8	1384.8	1370.4							
G8.0	1363.9	1362.7	1346.7							
G9.0	1337.7	1335.8	1316.1							
G10.0	1306.6	1304.8	1282.1							
G11.0	1267.4	1262.7	1236.6							
G12.0	1228.3	1220.3	1192.0							
G13.0	1182.8	1175.4	1140.9							
G14.0	1130.1	1122.0	1087.2							
G15.0	1079.9	1070.1	1038.6							
G16.0	1027.9	1020.8	988.3							
G17.0	981.5	969.5	939.1							
G18.0	935.5	924.5	896.6							
G19.0	889.9	880.6	852.2							
G20.0	851.1	841.1	815.6							
G21.0	813.3	804.4	781.9							
G22.0	777.6	770.2	751.2							
G23.0	746.8	742.1	726.1							
G24.0	718.1	717.6	700.3							
G25.0	695.9	690.7	679.6							
G26.0	675.0	669.8	658.9							
G27.0	653.5	648.5	637.2							
G28.0	633.1	628.6	618.0							
G29.0	611.2	606.4	595.7							
G30.0	590.6	582.9	572.6							
G31.0	571.2	560.9	552.9							
G32.0	550.3	540.9	531.8							
G33.0	530.0	522.6	516.3							
G34.0	514.5	506.7	501.2							
G35.0	498.0	493.7	491.0							
G36.0	488.8	484.6	485.4							

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

Candlepower Table (Continue 4)

Unit: cd

G\C	C300.0	C330.0	C360.0							
G37.0	481.9	479.3	480.7							
G38.0	476.8	474.8	475.6							
G39.0	471.8	471.2	470.5							
G40.0	466.3	465.9	463.3							
G41.0	460.3	460.0	455.0							
G42.0	452.5	452.4	446.4							
G43.0	442.3	441.9	421.6							
G44.0	416.9	410.1	389.0							
G45.0	384.7	382.5	360.0							
G46.0	353.0	347.2	326.1							
G47.0	324.3	312.0	281.6							
G48.0	271.8	259.0	222.5							
G49.0	211.2	203.4	164.1							
G50.0	154.4	145.2	113.7							
G51.0	102.4	95.4	75.1							
G52.0	73.0	63.9	48.7							
G53.0	44.0	41.2	33.1							
G54.0	31.3	30.2	26.6							
G55.0	26.0	24.6	21.9							
G56.0	21.5	21.2	20.3							
G57.0	20.3	20.0	19.0							
G58.0	18.8	18.3	17.5							
G59.0	17.2	16.9	16.2							
G60.0	16.0	15.8	15.4							
G61.0	14.9	14.9	14.5							
G62.0	14.1	14.0	13.4							
G63.0	13.2	13.2	12.8							
G64.0	12.3	12.4	11.9							
G65.0	11.4	11.5	11.0							
G66.0	10.7	10.8	10.5							
G67.0	10.1	10.1	9.5							
G68.0	9.3	9.3	8.7							
G69.0	8.6	8.6	8.0							
G70.0	8.0	7.9	7.2							
G71.0	7.3	7.1	6.4							
G72.0	6.5	6.3	5.8							
G73.0	5.9	5.9	5.1							

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

HAVIT COMMERCIAL
http://www.havitcommercial.com.au
Tel: 02 9381 8383
E-mail:sales@havitcommercial.com.au

Candlepower Table (Continue 5)

Unit: cd

G\C	C300.0	C330.0	C360.0							
G74.0	5.4	5.1	4.4							
G75.0	4.5	4.3	3.8							
G76.0	4.1	3.8	3.3							
G77.0	3.5	3.1	2.3							
G78.0	2.4	2.2	1.7							
G79.0	1.9	1.6	1.3							
G80.0	1.3	1.2	0.5							
G81.0	0.6	0.5	0.0							
G82.0	0.1	0.1	0.0							
G83.0	0.0	0.0	0.0							
G84.0	0.0	0.0	0.0							
G85.0	0.0	0.0	0.0							
G86.0	0.0	0.0	0.0							
G87.0	0.0	0.0	0.0							
G88.0	0.0	0.0	0.0							
G89.0	0.0	0.0	0.0							
G90.0	0.0	0.0	0.0							

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector: