HAVIT COMMERCIAL
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Report No.: 001 Test Time: 2019-04-29 19:56

Luminaire Property

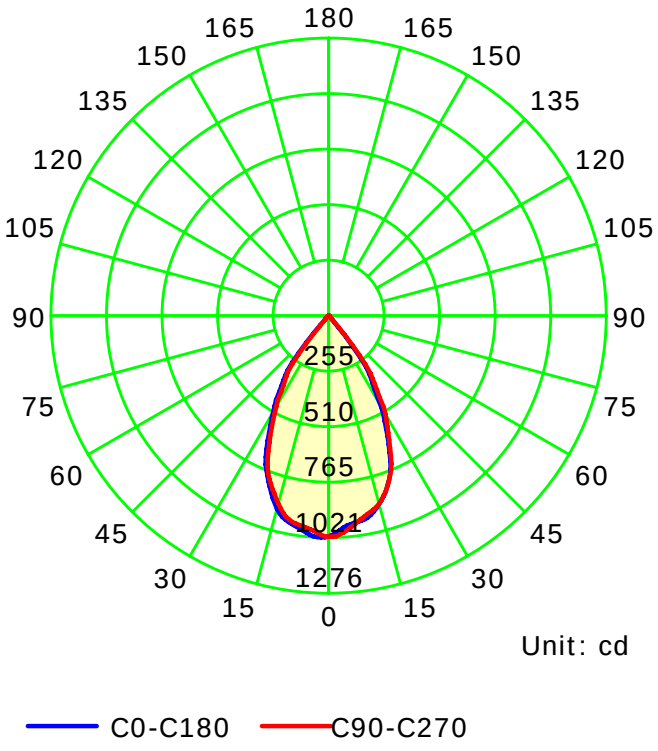
Luminaire Manufacturer:
Luminaire Category: Outdoor lighting
Luminaire Description: HCP-212080,HCP-213080(4000K)
Lamp Catalog: COB Luminous Length (mm): -80
Luminous Width (mm): -80 Luminous Height (mm): 0
Voltage: 230V Current: 0.081A
Power: 8.96W Power Factor: 0.478

Photometric Results

CIE Class: Direct Total Rated Lamp Lumens: 875.6 lm
Measurement Flux: 875.6 lm Efficiency: 100%
Downward Ratio: 100% Upward Ratio: 0%
Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 80.5, 80.5, 80.5, 80.5
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 59.3, 59.6, 58.9, 59.2
Luminaire Efficacy Rating (LER): 97.77 Central Intensity: 1014.98 cd
Max. Intensity: 1021.15 cd Pos of Max. Intensity: H150 V2
S/MH(C0/C180): 0.92 S/MH(C90/C270): 0.91

Picture Of Luminaire

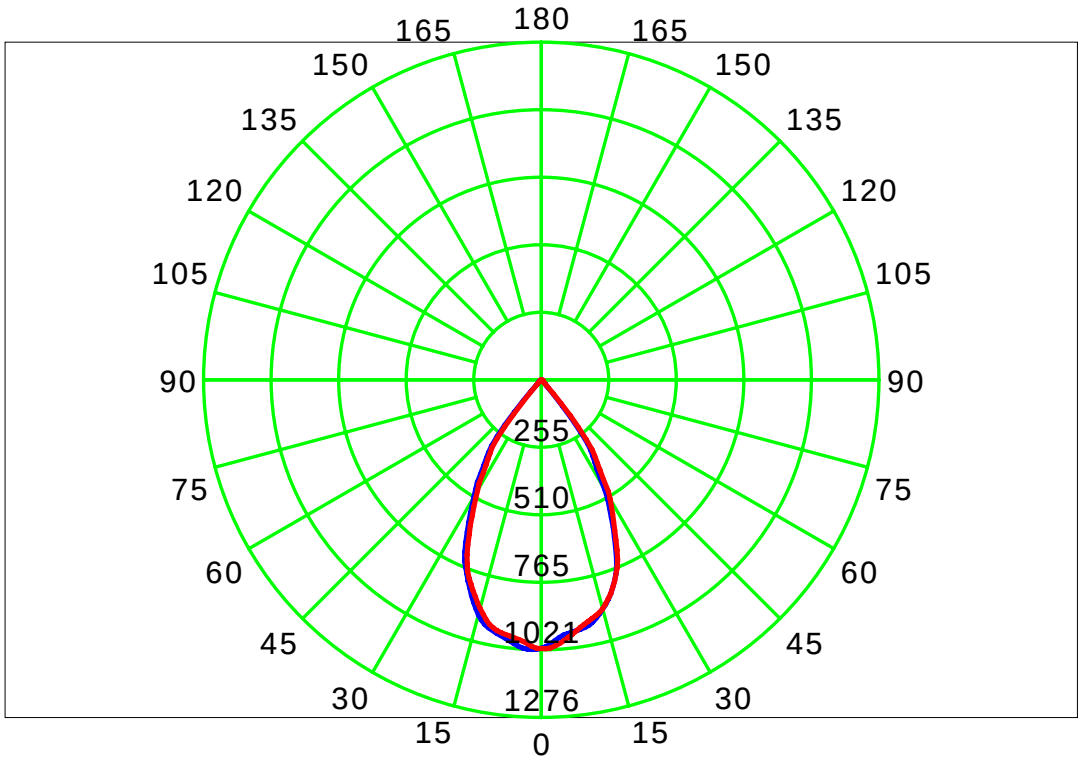
Luminous Intensity Distribution Curve

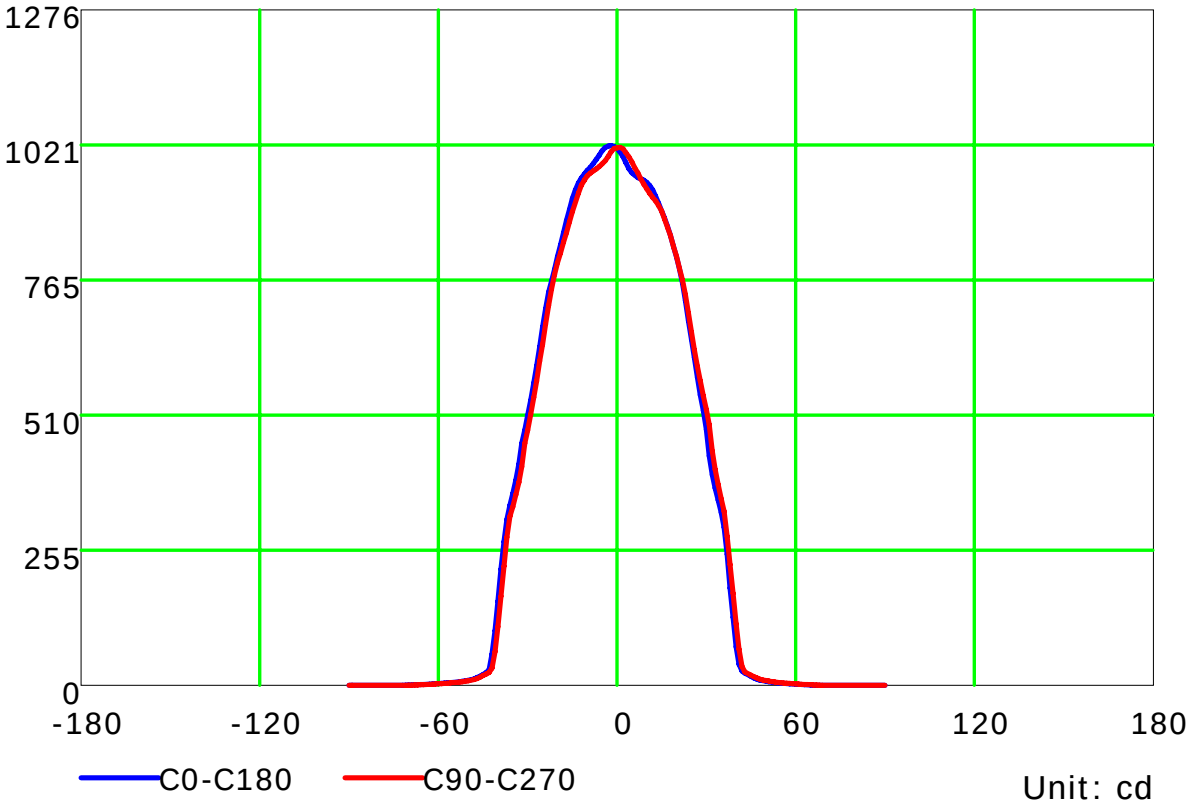


C Plane (°):0.0-360.0: 30.0 Gamma Plane (°):0.0-90.0:1.0
Test Lab: Test Device: GPM-1600L
Test Type: TYPE C Distance: 6.583 m
Temperature: 25°C Humidity:
Operator: DING LI Inspector:

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Luminous Intensity Distribution Curve



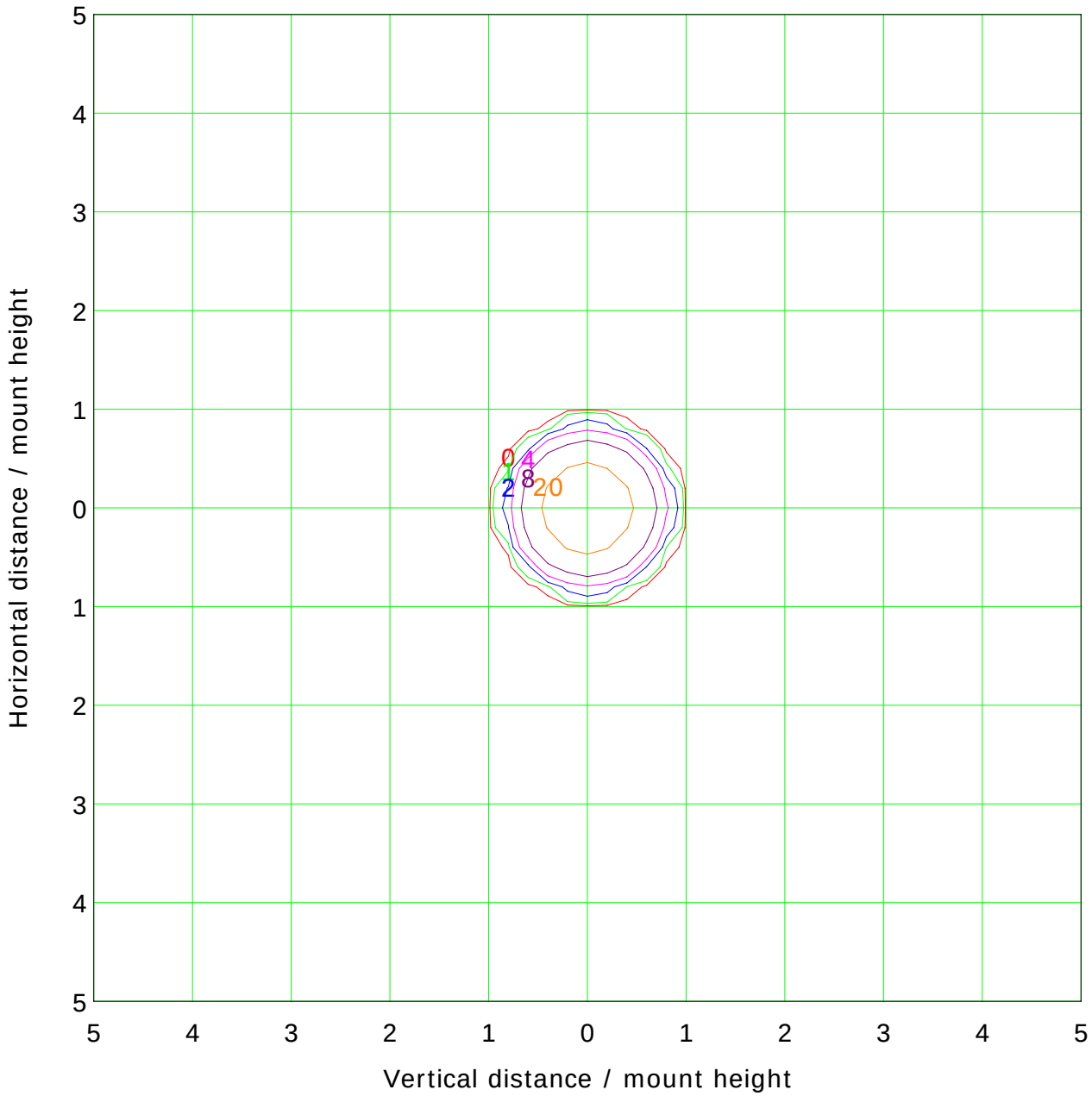


C Plane (°):0.0-360.0: 30.0
Test Lab:
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Gamma Plane (°):0.0-90.0:1.0
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IsoLux Plot



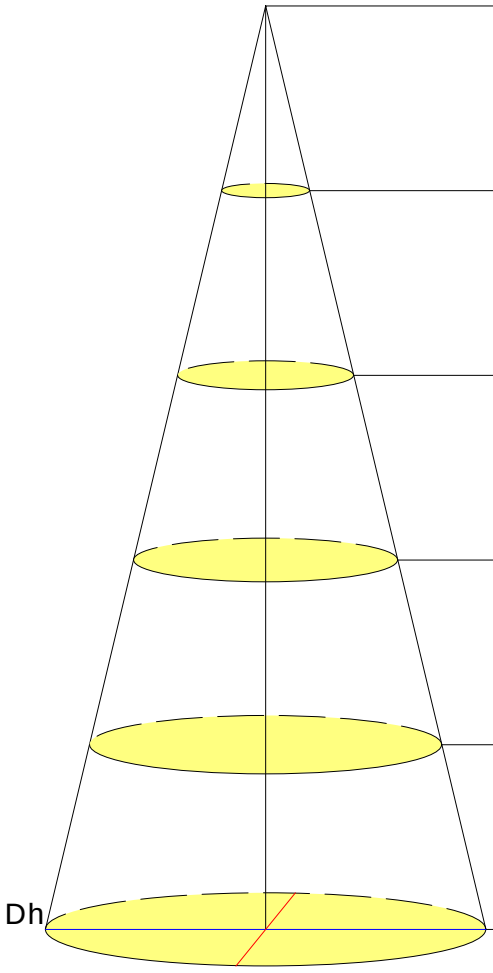
Mounting Height: 5.0m Max Lux(100%): 40.8 lx

(1%): 0.4 lx
(2%): 0.8 lx
(5%): 2.0 lx
(10%): 4.1 lx
(20%): 8.2 lx
(50%): 20.4 lx
(100%): 40.8 lx

C Plane (°):0.0-360.0: 30.0
Gamma Plane (°):0.0-90.0:1.0
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Illuminance at a Distance



Dist(m)	Enadir(lx)	Dh/Dv_B(m)	S_B(sq.m)	Eav_B(lx)
1.0	1014.98	1.14/1.15	1.0	372.17
2.0	253.74	2.28/2.29	4.1	93.04
3.0	112.78	3.41/3.44	9.1	41.35
4.0	63.44	4.55/4.58	16.2	23.26
5.0	40.60	5.69/5.73	25.4	14.89

Beam Angle(B): H59.3 V59.6 Field Angle(F): H80.5 V80.5

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:

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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	17.9	18.8	18.2	19.0	19.2	18.2	19.0	18.5	19.2	19.4
3H	17.8	18.6	18.1	18.8	19.0	18.0	18.8	18.3	19.0	19.3
4H	17.7	18.4	18.0	18.7	19.0	18.0	18.7	18.3	18.9	19.2
6H	17.7	18.3	18.0	18.6	18.9	17.9	18.6	18.2	18.8	19.1
8H	17.6	18.2	18.0	18.5	18.8	17.9	18.5	18.2	18.8	19.1
12H	17.6	18.2	17.9	18.5	18.8	17.8	18.4	18.2	18.7	19.1
X=4H Y=2H	17.7	18.4	18.0	18.7	19.0	18.0	18.7	18.3	18.9	19.2
3H	17.6	18.2	17.9	18.5	18.8	17.8	18.4	18.2	18.7	19.1
4H	17.5	18.0	17.9	18.4	18.7	17.7	18.3	18.1	18.6	19.0
6H	17.4	17.9	17.8	18.3	18.6	17.7	18.1	18.1	18.5	18.9
8H	17.4	17.8	17.8	18.2	18.6	17.6	18.0	18.0	18.4	18.8
12H	17.3	17.7	17.8	18.1	18.6	17.6	18.0	18.0	18.4	18.8
X=8H Y=4H	17.4	17.8	17.8	18.2	18.6	17.6	18.0	18.0	18.4	18.8
6H	17.3	17.6	17.7	18.1	18.5	17.5	17.9	18.0	18.3	18.8
8H	17.2	17.5	17.7	18.0	18.5	17.5	17.8	18.0	18.2	18.7
12H	17.2	17.5	17.7	17.9	18.4	17.4	17.7	17.9	18.2	18.7
X=12H Y=4H	17.3	17.7	17.8	18.1	18.6	17.6	18.0	18.0	18.4	18.8
6H	17.2	17.5	17.7	18.0	18.5	17.5	17.8	18.0	18.2	18.7
8H	17.2	17.5	17.7	17.9	18.4	17.4	17.7	17.9	18.2	18.7
Variations with the observer position at spacings:										
S=1.0H	+5.3/-16.8					+5.3/-16.1				
S=1.5H	+8.1/-21.0					+8.1/-19.3				
S=2.0H	+10.1/-36.3					+10.1/-26.7				

Calculate in accordance with CIE Pub.117. The table is revised with 876lm (8log(F/F0) = -0.5).

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

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	1015.0	1014.4	1014.8	1015.9	1016.0	1017.6	1015.0	1014.4	1014.8	1015.9
G1.0	1008.3	1009.6	1012.5	1016.6	1019.9	1020.7	1018.4	1017.0	1016.0	1014.7
G2.0	999.5	1002.0	1008.5	1014.4	1020.0	1021.1	1020.1	1015.9	1011.4	1008.5
G3.0	987.9	991.5	999.2	1006.9	1015.8	1016.9	1019.1	1013.2	1005.5	999.7
G4.0	976.5	980.7	989.7	999.0	1006.9	1011.0	1016.5	1009.9	1000.2	991.4
G5.0	968.5	970.6	980.2	989.3	998.2	1002.0	1010.4	1005.0	995.0	985.6
G6.0	964.3	963.8	970.5	978.1	986.5	990.8	1002.0	1000.1	990.2	980.6
G7.0	959.5	957.7	962.1	968.5	977.4	981.1	993.8	992.7	985.0	975.9
G8.0	957.3	954.5	954.3	957.5	966.5	972.0	986.1	985.7	981.5	972.3
G9.0	954.7	950.1	945.4	947.4	956.7	963.9	979.0	978.8	976.3	968.1
G10.0	950.6	945.5	935.9	938.5	949.7	958.4	973.1	973.2	971.3	963.0
G11.0	944.8	939.2	928.1	930.1	942.0	953.6	966.3	966.3	964.8	954.7
G12.0	936.3	931.4	922.3	922.2	934.4	945.2	958.7	956.9	952.8	945.1
G13.0	924.4	922.2	915.0	915.7	925.3	935.1	949.7	944.5	936.9	930.4
G14.0	910.9	910.2	907.9	906.7	913.0	920.2	936.2	927.2	917.0	912.6
G15.0	896.4	897.1	899.0	896.4	901.7	902.3	920.0	908.8	897.8	895.0
G16.0	883.2	881.6	888.0	881.1	885.1	878.9	899.0	888.7	876.9	876.1
G17.0	867.0	867.3	872.5	865.4	863.1	856.4	878.2	866.2	857.4	855.3
G18.0	850.1	852.9	858.2	850.1	842.4	836.9	855.5	846.0	835.7	837.8
G19.0	829.2	831.7	841.3	829.3	821.5	814.2	832.1	823.8	812.3	817.3
G20.0	809.2	811.6	821.6	810.4	800.1	791.9	810.3	801.1	790.7	798.6
G21.0	787.2	788.3	800.5	788.2	779.6	767.9	786.4	779.3	768.6	776.7
G22.0	760.2	764.1	775.3	766.0	758.3	747.7	764.0	754.4	743.4	749.0
G23.0	727.5	735.7	747.5	738.9	733.5	722.4	743.3	729.9	714.0	718.4
G24.0	689.4	696.5	710.6	704.0	700.2	686.8	711.8	695.5	672.0	683.0
G25.0	654.0	658.2	671.2	668.1	663.3	647.7	676.9	654.7	636.1	644.4
G26.0	620.0	624.8	632.2	634.5	627.7	611.5	639.9	620.6	604.0	613.3
G27.0	582.8	587.4	598.0	603.0	594.5	577.7	603.7	585.5	568.1	575.4
G28.0	549.1	555.8	567.0	575.8	566.2	549.6	571.5	553.1	535.9	544.2
G29.0	519.8	524.1	539.1	547.5	540.8	522.3	538.9	521.7	504.4	512.7
G30.0	483.9	494.5	508.2	521.3	513.8	496.9	510.5	491.1	475.6	482.3
G31.0	433.9	451.1	480.2	493.0	490.2	474.3	482.7	466.0	451.7	457.4
G32.0	398.2	411.1	428.3	442.8	454.9	441.7	457.5	439.9	415.2	413.4
G33.0	372.7	384.6	398.6	408.0	414.5	400.9	418.6	401.9	386.8	383.6
G34.0	350.1	359.6	372.4	379.5	388.0	374.8	387.9	376.4	364.9	360.3
G35.0	327.0	336.3	344.9	352.6	363.0	350.3	362.4	353.1	343.0	337.5
G36.0	298.8	309.6	322.4	328.9	339.5	329.1	340.4	333.3	325.4	319.6

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	247.8	259.5	280.2	281.9	301.4	287.1	313.4	311.2	286.6	279.8
G38.0	183.9	201.2	222.9	228.5	246.2	235.4	271.9	262.4	236.5	225.3
G39.0	128.7	142.5	164.6	174.1	189.6	181.6	219.7	209.7	178.4	168.2
G40.0	73.0	83.7	103.6	116.2	131.5	120.6	159.0	144.4	118.8	110.8
G41.0	40.1	45.6	59.7	68.6	80.1	75.3	103.6	92.2	71.4	63.8
G42.0	27.1	28.1	31.0	35.5	42.3	39.6	59.2	50.8	38.8	32.4
G43.0	23.1	23.7	24.4	25.3	27.0	27.7	29.5	27.2	26.0	24.5
G44.0	20.0	20.3	21.4	22.1	23.5	23.6	23.9	23.2	22.4	21.2
G45.0	17.2	17.4	19.0	19.2	20.3	20.1	20.3	20.1	19.2	18.5
G46.0	14.2	14.9	16.1	16.6	17.8	17.5	17.4	17.0	16.5	15.6
G47.0	11.6	12.2	13.5	14.1	15.1	14.7	15.0	14.4	13.6	12.9
G48.0	9.9	10.1	11.1	11.6	12.3	12.3	12.2	11.6	11.6	10.9
G49.0	8.8	9.2	9.7	10.2	10.8	10.9	10.6	10.4	10.3	9.7
G50.0	7.9	8.1	8.8	9.2	9.7	9.9	9.6	9.5	9.4	8.8
G51.0	6.9	7.1	7.8	8.2	8.6	8.7	8.7	8.6	8.2	7.9
G52.0	6.2	6.3	6.8	7.2	7.7	7.8	7.8	7.8	7.4	6.9
G53.0	5.5	5.6	6.1	6.4	6.8	6.8	6.9	6.9	6.6	6.3
G54.0	4.8	5.0	5.4	5.7	6.1	6.2	6.2	6.2	5.9	5.6
G55.0	4.3	4.3	4.8	5.1	5.5	5.6	5.7	5.6	5.4	5.2
G56.0	3.8	3.9	4.2	4.5	4.9	5.1	5.2	5.1	4.9	4.6
G57.0	3.4	3.4	3.8	4.1	4.4	4.6	4.7	4.7	4.5	4.1
G58.0	2.9	3.0	3.4	3.7	4.0	4.1	4.3	4.3	4.0	3.8
G59.0	2.6	2.6	3.0	3.1	3.5	3.7	3.8	3.8	3.6	3.3
G60.0	2.2	2.3	2.6	2.8	3.1	3.3	3.5	3.4	3.2	3.0
G61.0	1.9	1.9	2.2	2.5	2.7	2.9	3.1	3.1	2.8	2.6
G62.0	1.6	1.6	2.0	2.1	2.4	2.5	2.7	2.8	2.5	2.3
G63.0	1.3	1.3	1.6	1.7	2.1	2.3	2.4	2.5	2.3	2.0
G64.0	1.0	1.0	1.3	1.5	1.7	1.9	2.1	2.2	2.0	1.7
G65.0	0.8	0.8	1.1	1.2	1.5	1.6	1.8	1.9	1.8	1.4
G66.0	0.6	0.5	0.8	0.9	1.2	1.4	1.5	1.6	1.4	1.2
G67.0	0.2	0.3	0.5	0.7	0.9	1.1	1.2	1.3	1.3	0.9
G68.0	0.1	0.1	0.3	0.4	0.7	0.9	1.0	1.2	1.0	0.8
G69.0	0.0	0.0	0.1	0.1	0.4	0.6	0.8	0.9	0.7	0.5
G70.0	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.7	0.6	0.4
G71.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.5	0.4	0.2
G72.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.0
G73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	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 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G81.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G83.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G85.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	1016.0	1017.6	1015.0							
G1.0	1013.3	1012.9	1008.3							
G2.0	1005.3	1005.5	999.5							
G3.0	994.6	995.9	987.9							
G4.0	984.4	984.9	976.5							
G5.0	976.1	974.2	968.5							
G6.0	971.4	967.7	964.3							
G7.0	968.6	965.6	959.5							
G8.0	964.9	962.9	957.3							
G9.0	960.4	958.1	954.7							
G10.0	956.3	955.2	950.6							
G11.0	950.4	950.7	944.8							
G12.0	941.6	942.9	936.3							
G13.0	929.7	934.3	924.4							
G14.0	913.0	921.6	910.9							
G15.0	898.3	907.4	896.4							
G16.0	880.8	894.2	883.2							
G17.0	867.1	878.4	867.0							
G18.0	853.5	864.3	850.1							
G19.0	833.4	845.4	829.2							
G20.0	814.6	825.5	809.2							
G21.0	792.1	803.6	787.2							
G22.0	763.9	777.9	760.2							
G23.0	731.7	746.9	727.5							
G24.0	690.6	708.8	689.4							
G25.0	655.1	669.3	654.0							
G26.0	620.0	635.1	620.0							
G27.0	581.9	595.3	582.8							
G28.0	547.4	561.8	549.1							
G29.0	513.8	531.2	519.8							
G30.0	484.2	498.1	483.9							
G31.0	452.9	462.3	433.9							
G32.0	404.7	413.7	398.2							
G33.0	378.5	386.0	372.7							
G34.0	354.7	360.9	350.1							
G35.0	332.1	337.5	327.0							
G36.0	310.8	317.5	298.8							

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 4)

Unit: cd

G\C	C300.0	C330.0	C360.0							
G37.0	264.9	279.7	247.8							
G38.0	210.6	222.4	183.9							
G39.0	157.5	167.8	128.7							
G40.0	98.7	108.2	73.0							
G41.0	55.1	64.2	40.1							
G42.0	29.0	33.7	27.1							
G43.0	23.5	25.5	23.1							
G44.0	20.6	22.2	20.0							
G45.0	17.6	19.1	17.2							
G46.0	15.0	16.2	14.2							
G47.0	12.2	13.5	11.6							
G48.0	10.2	10.9	9.9							
G49.0	9.3	9.7	8.8							
G50.0	8.3	8.6	7.9							
G51.0	7.4	7.6	6.9							
G52.0	6.6	6.7	6.2							
G53.0	5.9	6.0	5.5							
G54.0	5.3	5.3	4.8							
G55.0	4.8	4.8	4.3							
G56.0	4.4	4.3	3.8							
G57.0	3.9	3.9	3.4							
G58.0	3.5	3.5	2.9							
G59.0	3.1	3.0	2.6							
G60.0	2.8	2.6	2.2							
G61.0	2.4	2.4	1.9							
G62.0	2.1	2.0	1.6							
G63.0	1.8	1.7	1.3							
G64.0	1.5	1.4	1.0							
G65.0	1.2	1.2	0.8							
G66.0	1.0	0.8	0.6							
G67.0	0.7	0.7	0.2							
G68.0	0.5	0.5	0.1							
G69.0	0.3	0.3	0.0							
G70.0	0.2	0.1	0.0							
G71.0	0.0	0.0	0.0							
G72.0	0.0	0.0	0.0							
G73.0	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:

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Candlepower Table (Continue 5)

Unit: cd

G\C	C300.0	C330.0	C360.0							
G74.0	0.0	0.0	0.0							
G75.0	0.0	0.0	0.0							
G76.0	0.0	0.0	0.0							
G77.0	0.0	0.0	0.0							
G78.0	0.0	0.0	0.0							
G79.0	0.0	0.0	0.0							
G80.0	0.0	0.0	0.0							
G81.0	0.0	0.0	0.0							
G82.0	0.0	0.0	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: