HAVIT COMMERCIAL
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Report No.: 001 Test Time: 2019-12-04 13:00

Luminaire Property

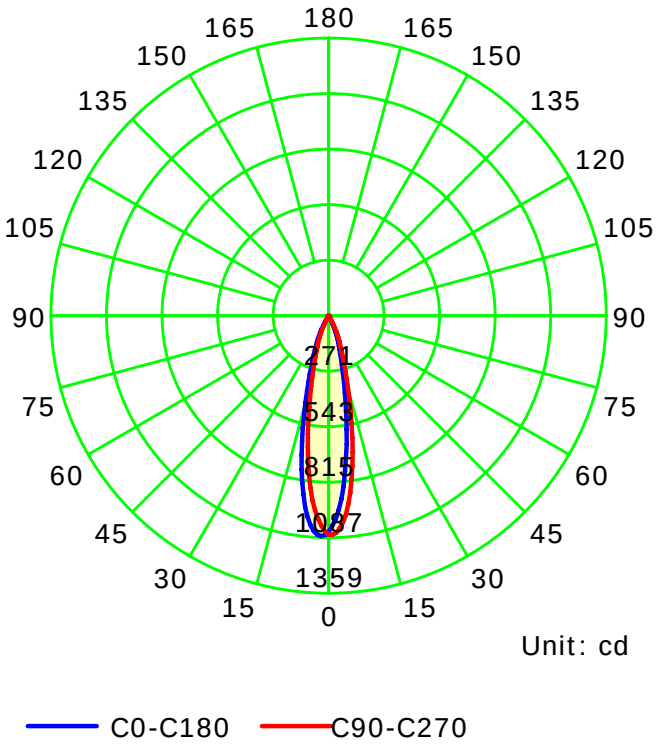
Luminaire Manufacturer:
Luminaire Category: Outdoor lighting
Luminaire Description: HCP-242034,HCP241034
Lamp Catalog: COB
Luminous Length (mm): -30
Luminous Width (mm): -30
Luminous Height (mm): 0
Voltage: 24.0V
Current: 0.13A
Power: 3.12W
Power Factor: 0.000

Photometric Results

CIE Class: Direct
Total Rated Lamp Lumens: 223.3 lm
Measurement Flux: 223.3 lm
Efficiency: 100%
Downward Ratio: 100%
Upward Ratio: 0%
Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 47.8, 48.0, 47.8, 47.5
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 22.8, 22.8, 23.1, 22.6
Luminaire Efficacy Rating (LER): 71.61
Central Intensity: 1058.16 cd
Max. Intensity: 1087.22 cd
Pos of Max. Intensity: H150 V1
S/MH(C0/C180): 0.39
S/MH(C90/C270): 0.39

Picture Of Luminaire

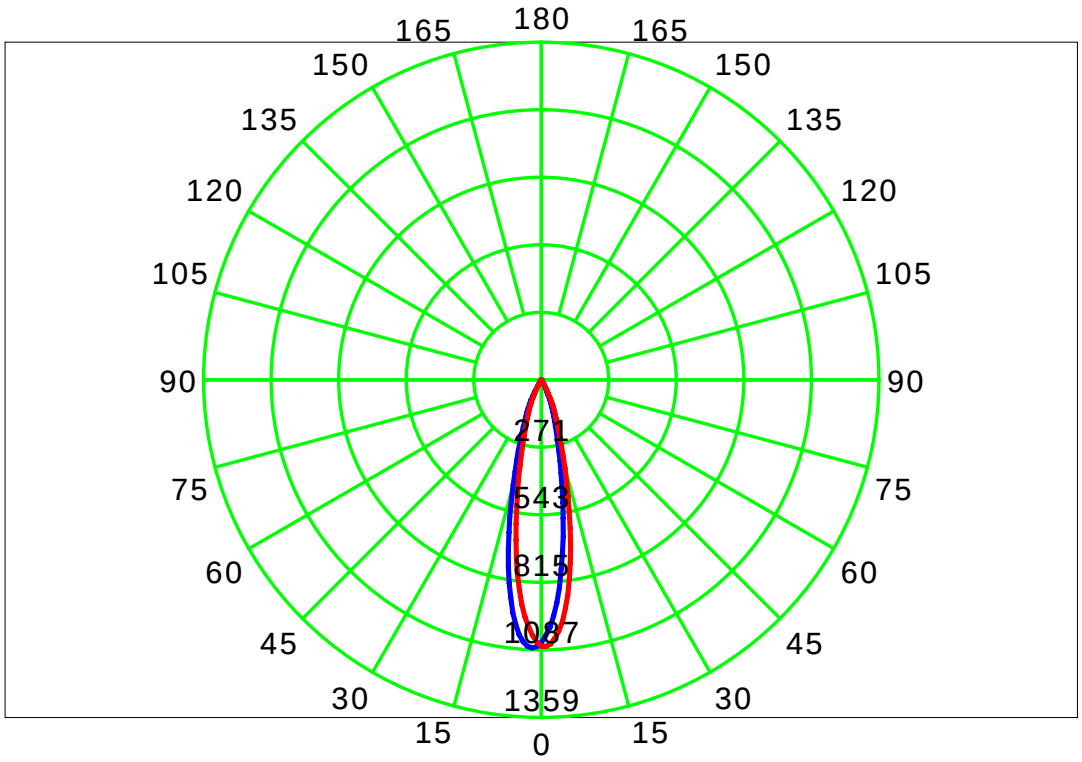
Luminous Intensity Distribution Curve

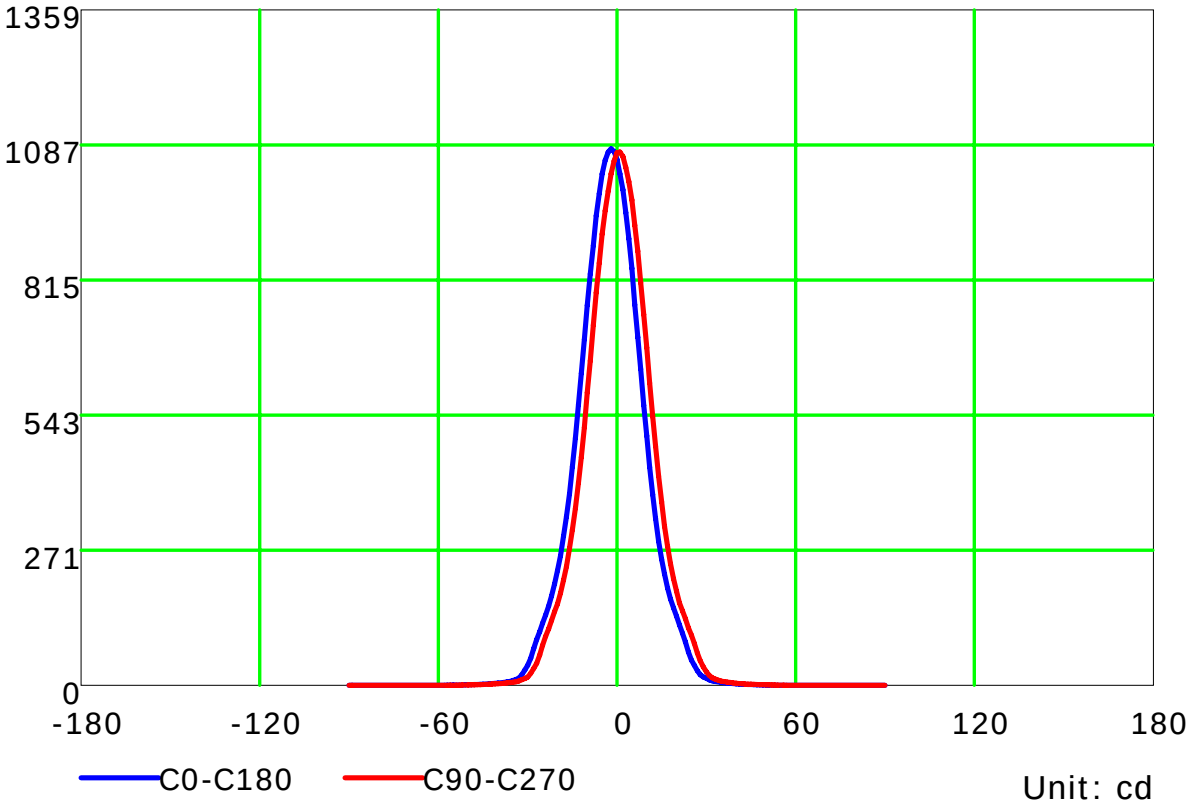


C Plane (°):0.0-360.0: 30.0
Gamma Plane (°):0.0-90.0:1.0
Test Lab: NINGBO LED LIGHTING
Test Device: GPM-1600L
Test Type: TYPE C
Distance: 6.583 m
Temperature: 25°C
Humidity:
Operator: DING LI
Inspector:

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Luminous Intensity Distribution Curve



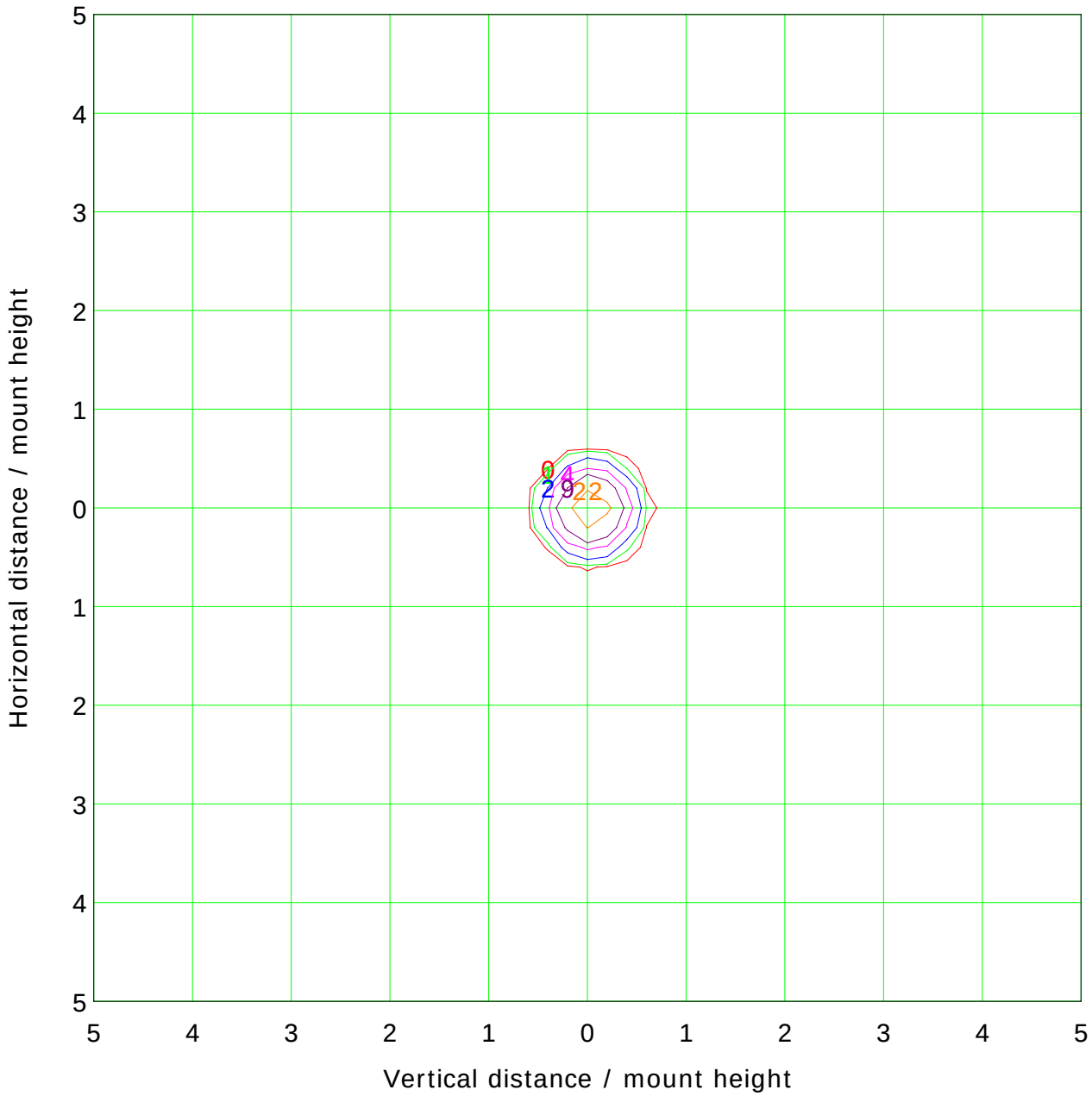


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IsoLux Plot



Mounting Height: 5.0m Max Lux(100%): 43.5 lx

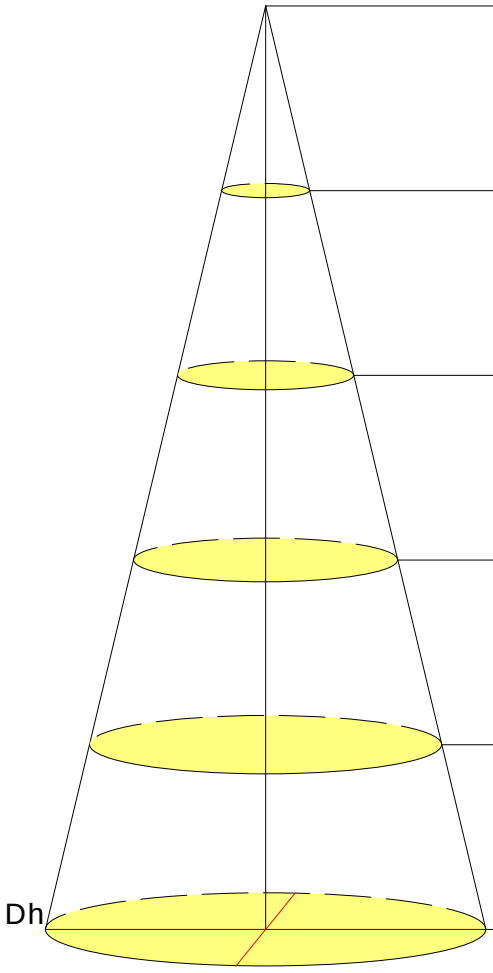
(1%): 0.4 lx	(2%): 0.9 lx
(5%): 2.2 lx	(10%): 4.3 lx
(20%): 8.7 lx	(50%): 21.7 lx
(100%): 43.5 lx	

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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	1058.16	0.40/0.40	0.1	698.50
2.0	264.54	0.80/0.81	0.5	174.63
3.0	117.57	1.21/1.21	1.2	77.61
4.0	66.14	1.61/1.61	2.1	43.66
5.0	42.33	2.01/2.02	3.3	27.94

Beam Angle(B): H22.8 V22.8 Field Angle(F): H47.8 V48.0

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Temperature: 25°C
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Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
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Humidity:
Inspector:

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	3.9	4.4	4.1	4.6	4.8	5.1	5.7	5.3	5.8	6.0
3H	3.7	4.3	4.0	4.5	4.7	4.9	5.5	5.2	5.7	5.9
4H	3.6	4.2	3.9	4.4	4.7	4.9	5.4	5.2	5.6	5.9
6H	3.6	4.0	3.9	4.3	4.6	4.8	5.3	5.1	5.5	5.8
8H	3.5	4.0	3.9	4.3	4.6	4.7	5.2	5.1	5.5	5.8
12H	3.5	3.9	3.8	4.2	4.5	4.7	5.1	5.0	5.4	5.8
X=4H Y=2H	3.7	4.2	4.0	4.4	4.7	4.9	5.4	5.2	5.6	5.9
3H	3.5	3.9	3.8	4.2	4.6	4.7	5.1	5.0	5.4	5.8
4H	3.4	3.8	3.8	4.1	4.5	4.6	5.0	5.0	5.3	5.7
6H	3.3	3.7	3.7	4.0	4.4	4.5	4.9	4.9	5.2	5.6
8H	3.3	3.6	3.7	4.0	4.4	4.5	4.8	4.9	5.2	5.6
12H	3.2	3.5	3.7	3.9	4.3	4.4	4.7	4.9	5.1	5.6
X=8H Y=4H	3.3	3.6	3.7	4.0	4.4	4.5	4.8	4.9	5.2	5.6
6H	3.2	3.4	3.6	3.9	4.3	4.4	4.6	4.8	5.1	5.5
8H	3.1	3.4	3.6	3.8	4.3	4.3	4.6	4.8	5.0	5.5
12H	3.1	3.3	3.6	3.7	4.2	4.3	4.5	4.8	4.9	5.4
X=12H Y=4H	3.2	3.5	3.7	3.9	4.3	4.4	4.7	4.9	5.1	5.6
6H	3.1	3.4	3.6	3.8	4.3	4.3	4.6	4.8	5.0	5.5
8H	3.1	3.3	3.6	3.7	4.2	4.3	4.5	4.8	4.9	5.4
Variations with the observer position at spacings:										
S=1.0H	+4.6/-15.4					+4.9/-11.5				
S=1.5H	+7.4/-1.$					+7.6/-1.$				
S=2.0H	+9.4/-1.$					+9.6/-1.$				

Calculate in accordance with CIE Pub.117. The table is revised with 223lm (8log(F/F0) = -5.2).

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Test Lab: NINGBO LED LIGHTING
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	1058.2	1059.0	1066.5	1071.8	1072.9	1076.6	1058.2	1059.0	1066.5	1071.8
G1.0	1029.3	1040.3	1057.3	1073.1	1084.8	1087.2	1074.0	1067.2	1059.4	1055.6
G2.0	997.3	1013.0	1039.8	1064.1	1083.5	1084.6	1079.5	1062.7	1043.3	1029.5
G3.0	951.3	972.8	1012.1	1042.1	1070.4	1070.1	1073.4	1047.9	1016.8	994.7
G4.0	898.8	927.6	975.7	1013.6	1046.0	1043.4	1056.4	1025.9	983.8	955.1
G5.0	839.2	874.1	932.8	976.7	1011.7	1010.6	1029.1	995.6	945.5	907.9
G6.0	765.6	810.5	876.8	925.6	968.3	967.6	989.3	951.7	894.5	849.6
G7.0	700.2	746.0	823.5	873.6	920.1	916.2	945.1	908.1	842.5	790.2
G8.0	636.3	676.7	763.0	810.2	860.2	854.3	884.7	856.1	776.7	724.6
G9.0	563.5	611.0	691.5	745.9	792.2	791.6	828.0	788.2	713.4	652.9
G10.0	501.9	551.3	626.6	679.5	726.3	723.9	764.8	723.3	645.3	589.2
G11.0	438.7	482.3	556.0	608.1	649.6	652.2	696.0	647.5	574.8	519.0
G12.0	383.8	425.3	490.7	541.0	585.0	587.5	627.9	582.4	513.2	459.1
G13.0	335.4	372.4	432.9	481.0	522.3	521.1	564.5	516.8	453.8	407.1
G14.0	289.6	320.1	372.9	420.6	455.6	457.8	497.5	452.8	397.1	356.0
G15.0	253.4	280.5	325.4	368.8	401.9	405.7	439.9	401.0	348.9	312.7
G16.0	223.6	243.0	284.6	319.5	353.9	353.2	384.8	352.9	304.7	275.4
G17.0	195.5	214.3	247.5	279.3	306.0	312.4	339.3	308.8	267.2	238.7
G18.0	173.7	188.2	217.1	245.0	268.9	274.1	300.6	272.8	236.4	211.9
G19.0	155.9	167.1	189.1	214.7	234.5	239.3	260.8	235.8	206.6	185.8
G20.0	138.8	151.4	169.0	189.2	208.5	213.2	230.6	209.4	183.6	163.9
G21.0	121.8	132.7	152.1	166.0	185.1	186.5	204.2	185.6	161.9	148.6
G22.0	104.9	114.8	133.3	150.1	163.1	165.9	180.0	163.4	144.5	130.7
G23.0	87.8	97.2	115.3	134.3	146.9	149.0	159.7	145.4	129.0	113.9
G24.0	67.3	77.6	95.3	115.9	129.6	131.9	141.6	130.5	110.4	98.8
G25.0	50.8	63.3	78.5	101.0	112.6	116.2	125.1	112.1	92.8	80.8
G26.0	40.5	48.1	64.3	84.4	96.1	98.4	108.2	94.0	75.8	61.1
G27.0	29.5	35.3	49.1	65.0	76.8	79.1	92.3	76.1	59.7	44.3
G28.0	21.5	25.3	36.3	49.4	59.5	62.2	74.5	61.7	45.4	34.3
G29.0	17.0	17.6	24.9	37.3	43.7	45.8	54.6	47.3	31.1	24.4
G30.0	14.2	14.3	17.6	27.6	31.3	33.3	40.5	32.3	20.3	16.5
G31.0	11.1	11.9	13.9	20.1	21.6	23.1	30.8	21.4	13.3	13.6
G32.0	9.1	9.4	11.6	15.2	15.2	16.0	20.9	13.9	10.4	11.4
G33.0	8.0	8.2	9.4	12.8	12.3	12.6	14.7	10.6	9.0	8.9
G34.0	6.9	7.2	8.2	10.3	10.6	10.9	11.8	9.3	7.5	7.3
G35.0	6.0	6.2	7.2	8.5	8.7	9.1	9.9	7.7	6.2	6.4
G36.0	5.3	5.5	6.2	7.6	7.5	7.8	8.0	6.4	5.5	5.6

C Plane (°):0.0-360.0: 30.0
Test Lab: NINGBO LED LIGHTING
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	4.6	4.8	5.4	6.5	6.7	6.9	6.8	5.6	4.9	5.0
G38.0	4.0	4.2	4.7	5.8	5.8	6.0	5.9	4.9	4.3	4.3
G39.0	3.6	3.8	4.2	5.1	5.2	5.4	5.3	4.3	3.8	3.8
G40.0	3.1	3.1	3.6	4.2	4.5	4.7	4.5	3.8	3.3	3.3
G41.0	2.8	2.8	3.2	3.7	4.0	4.2	4.0	3.3	3.0	3.0
G42.0	2.4	2.5	2.8	3.3	3.6	3.8	3.6	2.9	2.7	2.6
G43.0	2.1	2.2	2.4	2.8	3.2	3.3	3.2	2.6	2.3	2.3
G44.0	1.8	1.9	2.1	2.5	2.9	3.0	2.8	2.4	2.1	2.1
G45.0	1.6	1.6	1.9	2.3	2.5	2.6	2.4	2.1	1.9	1.8
G46.0	1.3	1.5	1.6	2.0	2.3	2.3	2.1	1.9	1.6	1.6
G47.0	1.2	1.2	1.5	1.6	1.9	2.1	1.9	1.6	1.4	1.4
G48.0	1.0	1.1	1.3	1.5	1.7	1.8	1.7	1.4	1.3	1.2
G49.0	0.9	0.9	1.1	1.3	1.5	1.6	1.5	1.2	1.1	1.0
G50.0	0.7	0.8	0.9	1.1	1.3	1.5	1.3	1.0	0.9	0.9
G51.0	0.6	0.6	0.7	1.0	1.1	1.2	1.1	1.0	0.8	0.8
G52.0	0.5	0.5	0.6	0.8	1.0	1.1	0.9	0.9	0.6	0.7
G53.0	0.4	0.4	0.5	0.7	0.9	0.9	0.8	0.7	0.5	0.6
G54.0	0.3	0.4	0.4	0.5	0.8	0.8	0.8	0.6	0.4	0.3
G55.0	0.2	0.1	0.3	0.5	0.6	0.7	0.7	0.4	0.3	0.3
G56.0	0.1	0.1	0.1	0.4	0.5	0.6	0.5	0.4	0.3	0.3
G57.0	0.1	0.1	0.1	0.3	0.4	0.5	0.4	0.3	0.2	0.2
G58.0	0.0	0.0	0.1	0.1	0.3	0.5	0.3	0.2	0.2	0.1
G59.0	0.0	0.1	0.1	0.2	0.2	0.4	0.2	0.1	0.1	0.1
G60.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1
G61.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0
G62.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0
G63.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
G64.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G66.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Test Type: TYPE C
Temperature: 25°C
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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

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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	1072.9	1076.6	1058.2							
G1.0	1049.7	1053.8	1029.3							
G2.0	1018.9	1021.2	997.3							
G3.0	979.3	982.6	951.3							
G4.0	933.5	937.7	898.8							
G5.0	881.9	884.6	839.2							
G6.0	817.3	816.3	765.6							
G7.0	750.4	749.2	700.2							
G8.0	677.4	678.2	636.3							
G9.0	608.2	605.9	563.5							
G10.0	543.0	538.7	501.9							
G11.0	473.6	472.5	438.7							
G12.0	417.5	413.6	383.8							
G13.0	365.0	363.4	335.4							
G14.0	316.5	311.0	289.6							
G15.0	275.4	271.4	253.4							
G16.0	239.3	238.1	223.6							
G17.0	210.1	206.2	195.5							
G18.0	185.8	182.2	173.7							
G19.0	163.5	160.4	155.9							
G20.0	146.5	143.0	138.8							
G21.0	132.1	126.6	121.8							
G22.0	113.5	109.2	104.9							
G23.0	97.5	91.8	87.8							
G24.0	80.1	75.6	67.3							
G25.0	62.5	58.4	50.8							
G26.0	47.2	43.8	40.5							
G27.0	33.0	31.4	29.5							
G28.0	23.3	22.6	21.5							
G29.0	16.3	17.0	17.0							
G30.0	13.2	13.6	14.2							
G31.0	11.3	11.7	11.1							
G32.0	9.0	9.4	9.1							
G33.0	7.7	8.2	8.0							
G34.0	6.8	7.2	6.9							
G35.0	5.9	6.3	6.0							
G36.0	5.2	5.5	5.3							

C Plane (°):0.0-360.0: 30.0
Test Lab: NINGBO LED LIGHTING
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	4.6	4.9	4.6							
G38.0	4.2	4.3	4.0							
G39.0	3.6	3.9	3.6							
G40.0	3.3	3.3	3.1							
G41.0	2.9	3.0	2.8							
G42.0	2.5	2.6	2.4							
G43.0	2.2	2.3	2.1							
G44.0	2.0	2.1	1.8							
G45.0	1.7	1.9	1.6							
G46.0	1.5	1.6	1.3							
G47.0	1.4	1.4	1.2							
G48.0	1.1	1.2	1.0							
G49.0	1.0	1.0	0.9							
G50.0	0.9	0.9	0.7							
G51.0	0.6	0.8	0.6							
G52.0	0.6	0.6	0.5							
G53.0	0.5	0.6	0.4							
G54.0	0.3	0.4	0.3							
G55.0	0.3	0.3	0.2							
G56.0	0.1	0.1	0.1							
G57.0	0.1	0.1	0.1							
G58.0	0.1	0.1	0.0							
G59.0	0.1	0.0	0.0							
G60.0	0.1	0.1	0.0							
G61.0	0.0	0.0	0.0							
G62.0	0.0	0.0	0.0							
G63.0	0.0	0.0	0.0							
G64.0	0.0	0.0	0.0							
G65.0	0.0	0.0	0.0							
G66.0	0.0	0.0	0.0							
G67.0	0.0	0.0	0.0							
G68.0	0.0	0.0	0.0							
G69.0	0.0	0.0	0.0							
G70.0	0.0	0.0	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: NINGBO LED LIGHTING
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: NINGBO LED LIGHTING
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: