HAVIT COMMERCIAL
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Report No.: 001 Test Time: 2019-12-05 15:12

Luminaire Property

Luminaire Manufacturer:
Luminaire Category: Outdoor lighting
Luminaire Description: HCP-242012-CW,HCP-241012-CW
Lamp Catalog: COB Luminous Length (mm): -65
Luminous Width (mm): -65 Luminous Height (mm): 0
Voltage: 24.0V Current: 0.50A
Power: 12.0W Power Factor: 0.000

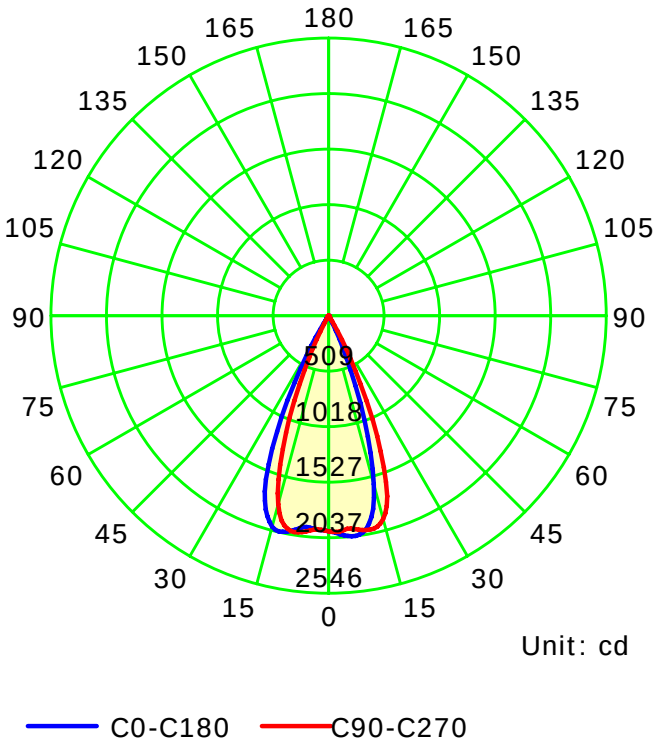
Photometric Results

CIE Class: Direct Total Rated Lamp Lumens: 1003.1 lm
Measurement Flux: 1003.1 lm Efficiency: 100%
Downward Ratio: 100% Upward Ratio: 0%
Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 56.8, 57.1, 57.0, 57.1
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 44.0, 44.2, 43.9, 44.2
Luminaire Efficacy Rating (LER): 83.64 Central Intensity: 1978.24 cd
Max. Intensity: 2037.29 cd Pos of Max. Intensity: H30 V7
S/MH(C0/C180): 0.75 S/MH(C90/C270): 0.76

Picture Of Luminaire



Luminous Intensity Distribution Curve

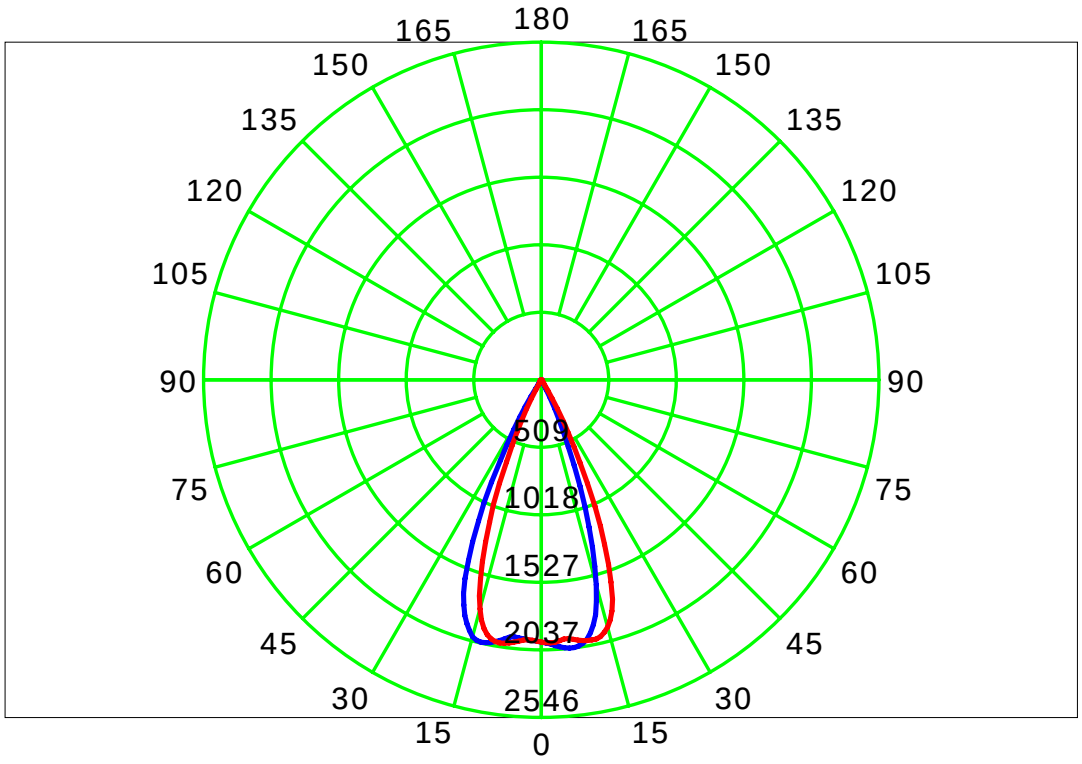


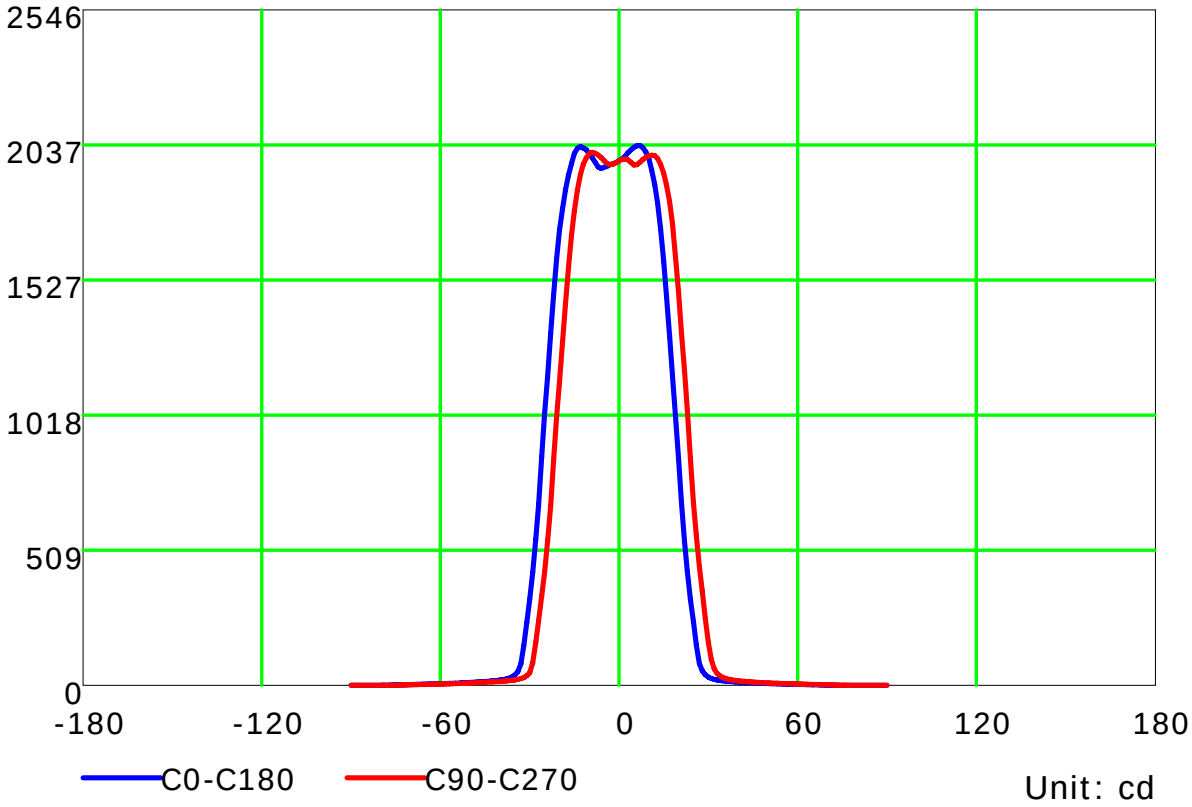
Unit: cd

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



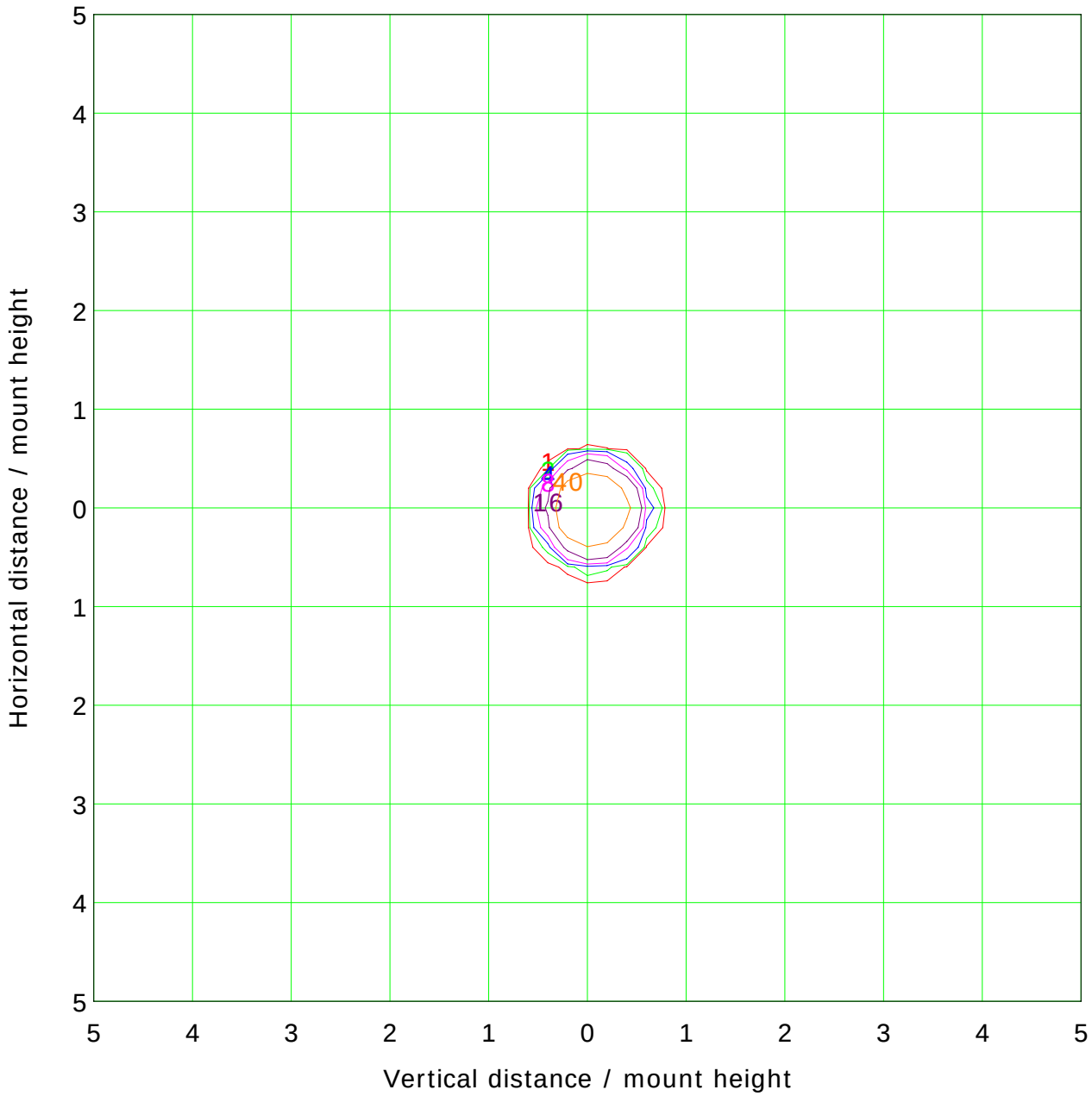


C Plane (°):0.0-360.0: 30.0
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Test Type: TYPE C
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Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
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IsoLux Plot



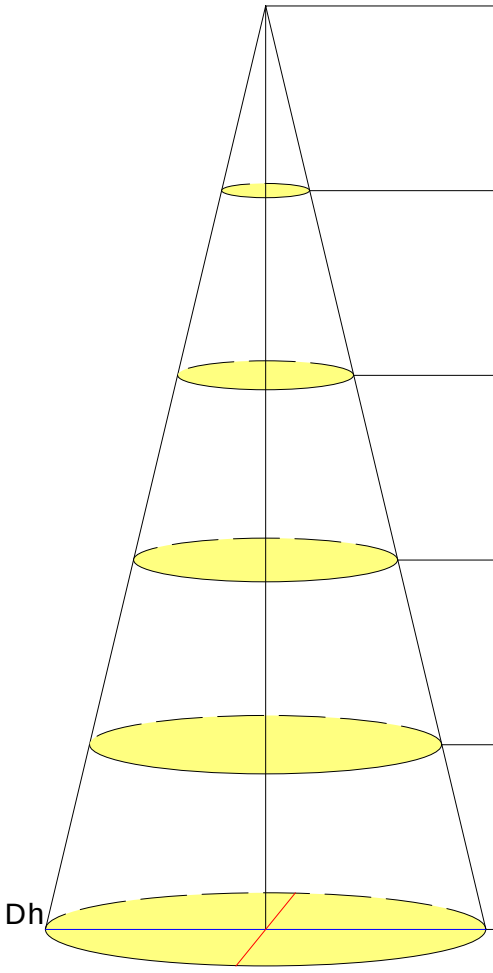
Mounting Height: 5.0m Max Lux(100%): 80.2 lx

(1%): 0.8 lx
(2%): 1.6 lx
(5%): 4.0 lx
(10%): 8.0 lx
(20%): 16.0 lx
(50%): 40.1 lx
(100%): 80.2 lx

C Plane (°):0.0-360.0: 30.0
Gamma Plane (°):0.0-90.0:1.0
Test Lab: NINGBO LED LIGHTING
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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	1978.24	0.81/0.81	0.5	925.15
2.0	494.56	1.62/1.62	2.1	231.29
3.0	219.80	2.42/2.44	4.7	102.79
4.0	123.64	3.23/3.25	8.4	57.82
5.0	79.13	4.04/4.06	13.1	37.01

Beam Angle(B): H44.0 V44.2 Field Angle(F): H56.8 V57.1

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:

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	5.0	5.7	5.2	5.8	6.0	6.6	7.2	6.8	7.4	7.6
3H	5.3	5.9	5.6	6.1	6.4	7.1	7.7	7.4	8.0	8.2
4H	5.2	5.8	5.5	6.1	6.3	7.2	7.7	7.5	8.0	8.3
6H	5.1	5.7	5.5	6.0	6.2	7.1	7.6	7.4	7.9	8.2
8H	5.1	5.6	5.4	5.9	6.2	7.1	7.6	7.4	7.9	8.2
12H	5.1	5.6	5.4	5.9	6.2	7.0	7.5	7.4	7.8	8.1
X=4H Y=2H	5.3	5.9	5.6	6.2	6.4	6.7	7.3	7.0	7.6	7.8
3H	5.7	6.2	6.0	6.5	6.8	7.3	7.8	7.7	8.1	8.5
4H	5.6	6.0	6.0	6.4	6.7	7.4	7.8	7.8	8.2	8.5
6H	5.5	5.9	5.9	6.3	6.7	7.3	7.7	7.7	8.1	8.5
8H	5.5	5.8	5.9	6.2	6.6	7.3	7.6	7.7	8.0	8.4
12H	5.4	5.7	5.9	6.2	6.6	7.2	7.5	7.7	8.0	8.4
X=8H Y=4H	5.5	5.9	6.0	6.3	6.7	7.3	7.7	7.7	8.0	8.4
6H	5.4	5.7	5.9	6.2	6.6	7.2	7.5	7.6	7.9	8.4
8H	5.4	5.6	5.9	6.1	6.6	7.1	7.4	7.6	7.9	8.3
12H	5.3	5.6	5.8	6.0	6.5	7.1	7.3	7.6	7.8	8.3
X=12H Y=4H	5.5	5.8	5.9	6.2	6.6	7.2	7.6	7.7	8.0	8.4
6H	5.4	5.6	5.9	6.1	6.6	7.1	7.4	7.6	7.9	8.3
8H	5.3	5.6	5.8	6.0	6.5	7.1	7.3	7.6	7.8	8.3
Variations with the observer position at spacings:										
S=1.0H	+1.0/-1.1					+0.8/-0.8				
S=1.5H	+2.1/-2.4					+1.9/-1.5				
S=2.0H	+3.4/-4.1					+3.3/-2.7				

Calculate in accordance with CIE Pub.117. The table is revised with 1003lm (8log(F/F0) = 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:

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	1978.2	1980.3	1978.7	1977.3	1973.2	1968.9	1978.2	1980.3	1978.7	1977.3
G1.0	1984.6	1987.7	1985.7	1983.1	1976.9	1969.5	1971.5	1971.5	1970.3	1971.1
G2.0	1993.4	1992.3	1988.3	1984.6	1980.1	1972.3	1967.3	1962.5	1961.1	1965.3
G3.0	2007.8	2001.5	1986.1	1982.2	1979.2	1972.2	1964.2	1953.9	1954.3	1963.6
G4.0	2018.9	2011.4	1984.2	1972.4	1971.0	1967.3	1957.9	1943.5	1950.9	1967.5
G5.0	2028.5	2023.3	1987.7	1962.2	1959.9	1958.5	1953.4	1933.4	1954.7	1978.5
G6.0	2034.9	2033.1	1998.8	1963.2	1950.6	1954.4	1949.1	1937.4	1967.3	1990.1
G7.0	2035.5	2037.3	2007.5	1971.6	1953.3	1959.1	1954.3	1952.1	1979.5	1999.5
G8.0	2027.9	2036.2	2014.3	1982.4	1964.3	1973.8	1971.6	1973.1	1989.4	2006.5
G9.0	2012.3	2026.9	2017.8	1991.0	1978.6	1990.7	1989.6	1988.6	1993.9	2009.9
G10.0	1986.8	2011.6	2017.8	1996.8	1986.5	2002.5	2004.4	1997.9	1997.0	2004.8
G11.0	1943.5	1980.5	2007.6	1998.9	1988.7	2011.1	2019.4	2007.8	1999.6	1989.5
G12.0	1888.7	1941.1	1990.3	1997.9	1994.2	2015.9	2026.2	2012.6	1996.2	1965.3
G13.0	1818.9	1890.6	1962.6	1986.8	1999.9	2018.3	2031.3	2010.2	1975.9	1925.7
G14.0	1720.1	1816.0	1918.2	1963.9	1996.1	2008.5	2025.0	1994.9	1938.5	1867.6
G15.0	1600.3	1723.0	1865.6	1931.6	1976.7	1989.3	2005.5	1964.7	1887.7	1789.3
G16.0	1464.8	1597.4	1792.1	1885.6	1941.4	1953.1	1967.2	1921.6	1815.3	1696.3
G17.0	1316.9	1458.1	1682.0	1824.0	1892.9	1908.6	1923.2	1859.4	1724.7	1572.4
G18.0	1167.6	1321.7	1563.2	1741.0	1836.3	1853.2	1869.0	1788.6	1620.6	1440.6
G19.0	1013.8	1168.6	1406.3	1614.2	1751.3	1771.9	1796.2	1691.6	1485.6	1292.4
G20.0	855.1	1014.3	1256.3	1482.8	1647.9	1684.1	1715.3	1580.2	1347.6	1142.5
G21.0	690.8	838.1	1119.3	1330.6	1523.8	1552.2	1606.9	1449.1	1201.9	1010.8
G22.0	543.7	685.9	944.3	1188.9	1375.8	1416.5	1468.9	1290.5	1050.6	844.6
G23.0	428.2	546.5	780.1	1036.3	1225.8	1272.8	1326.6	1142.2	906.0	676.3
G24.0	324.5	423.2	627.8	855.9	1066.6	1109.3	1164.5	1006.2	721.6	543.8
G25.0	240.7	327.2	503.4	688.3	903.1	958.1	1023.9	831.2	582.2	425.6
G26.0	152.0	244.9	399.4	565.1	733.4	786.4	861.2	681.5	470.3	337.1
G27.0	82.1	154.4	302.5	448.4	588.5	621.5	683.2	533.9	364.6	244.8
G28.0	54.9	92.5	221.3	356.0	467.3	496.9	551.1	421.9	282.1	162.1
G29.0	40.2	57.9	133.1	252.1	362.5	382.0	426.3	320.5	191.0	85.4
G30.0	31.1	42.0	78.4	162.6	269.3	289.4	323.5	228.1	105.8	47.4
G31.0	26.0	33.3	54.2	98.5	188.2	204.0	237.5	149.9	57.4	36.5
G32.0	22.5	27.3	40.3	62.0	105.3	120.8	149.1	79.2	40.0	29.5
G33.0	20.1	23.7	32.1	45.0	62.2	68.2	81.3	50.0	32.4	25.5
G34.0	18.6	21.1	27.4	35.5	45.0	47.9	51.5	38.9	27.7	22.4
G35.0	17.1	19.2	23.8	29.4	34.6	36.3	38.8	31.7	24.2	20.2
G36.0	15.9	17.8	21.5	25.5	29.2	30.2	31.8	27.3	21.9	19.2

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	14.9	16.5	19.9	22.4	25.4	25.8	26.8	24.4	20.3	17.9
G38.0	14.0	15.5	18.3	20.3	22.6	22.9	23.8	21.9	19.0	16.8
G39.0	13.2	14.5	17.0	18.8	20.3	20.7	21.5	20.1	18.0	16.0
G40.0	12.4	13.4	15.9	17.4	18.9	19.2	19.9	19.0	16.9	15.0
G41.0	11.6	12.7	15.0	16.2	17.5	17.8	18.5	17.8	16.0	14.3
G42.0	10.9	12.0	14.1	15.4	16.3	16.6	17.4	16.9	15.3	13.5
G43.0	10.2	11.1	13.1	14.3	15.3	15.6	16.3	15.8	14.4	12.8
G44.0	9.7	10.6	12.4	13.6	14.4	14.7	15.4	15.0	13.6	12.1
G45.0	9.2	9.9	11.6	12.6	13.6	13.8	14.5	14.2	12.8	11.5
G46.0	8.6	9.3	11.0	11.9	12.7	13.0	13.7	13.4	12.2	11.0
G47.0	8.2	8.8	10.4	11.2	12.0	12.3	13.0	12.7	11.6	10.3
G48.0	7.7	8.2	9.7	10.5	11.3	11.5	12.2	11.9	11.0	9.7
G49.0	7.3	7.9	9.1	9.9	10.7	11.0	11.5	11.3	10.5	9.3
G50.0	6.9	7.4	8.6	9.4	10.2	10.3	11.0	10.7	10.0	8.8
G51.0	6.5	6.9	8.1	8.9	9.5	9.7	10.3	10.1	9.4	8.3
G52.0	6.1	6.5	7.6	8.4	9.0	9.2	9.8	9.7	9.0	7.9
G53.0	5.8	6.1	7.2	7.9	8.6	8.7	9.2	9.1	8.4	7.5
G54.0	5.5	5.7	6.8	7.5	8.1	8.1	8.8	8.6	8.1	7.0
G55.0	5.2	5.5	6.4	7.0	7.6	7.8	8.2	8.0	7.7	6.8
G56.0	4.8	5.2	5.9	6.7	7.1	7.2	7.8	7.8	7.3	6.3
G57.0	4.6	4.9	5.7	6.2	6.8	6.8	7.4	7.3	7.0	6.0
G58.0	4.3	4.6	5.3	5.8	6.4	6.5	7.0	7.0	6.6	5.7
G59.0	4.0	4.2	5.1	5.6	6.0	6.1	6.7	6.5	6.1	5.4
G60.0	3.8	4.0	4.7	5.3	5.7	5.8	6.2	6.3	5.9	5.1
G61.0	3.5	3.7	4.5	4.9	5.4	5.5	5.9	5.9	5.5	4.8
G62.0	3.1	3.3	4.1	4.6	5.1	5.2	5.6	5.6	5.2	4.5
G63.0	2.9	3.1	3.9	4.3	4.7	4.9	5.3	5.3	4.8	4.2
G64.0	2.5	2.8	3.5	4.0	4.5	4.5	4.9	4.9	4.5	3.9
G65.0	2.3	2.6	3.3	3.6	4.2	4.3	4.6	4.6	4.3	3.6
G66.0	2.2	2.2	3.0	3.4	3.8	4.0	4.4	4.3	3.9	3.3
G67.0	1.9	2.0	2.6	3.1	3.5	3.7	4.0	4.0	3.7	3.0
G68.0	1.5	1.8	2.4	2.9	3.2	3.4	3.8	3.6	3.3	2.8
G69.0	1.3	1.4	2.2	2.5	2.9	3.0	3.4	3.3	2.9	2.5
G70.0	1.0	1.2	1.8	2.3	2.6	2.7	3.1	3.0	2.7	2.2
G71.0	0.9	0.9	1.5	2.0	2.3	2.5	2.8	2.7	2.5	1.9
G72.0	0.6	0.7	1.3	1.8	2.1	2.2	2.4	2.5	2.0	1.6
G73.0	0.3	0.5	1.0	1.4	1.8	2.0	2.3	2.1	1.9	1.4

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 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	0.1	0.2	0.8	1.2	1.6	1.6	2.0	1.9	1.5	1.1
G75.0	0.0	0.0	0.5	0.9	1.3	1.4	1.7	1.5	1.3	0.9
G76.0	0.0	0.0	0.3	0.7	1.1	1.2	1.4	1.3	1.0	0.7
G77.0	0.0	0.0	0.0	0.4	0.8	0.9	1.1	1.0	0.7	0.1
G78.0	0.0	0.0	0.0	0.2	0.6	0.6	1.0	0.8	0.5	0.1
G79.0	0.0	0.0	0.0	0.0	0.2	0.4	0.7	0.5	0.3	0.0
G80.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.2	0.1	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: 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 3)

Unit: cd

G\C	C300.0	C330.0	C360.0							
G0.0	1973.2	1968.9	1978.2							
G1.0	1971.0	1972.1	1984.6							
G2.0	1971.3	1975.9	1993.4							
G3.0	1976.4	1982.8	2007.8							
G4.0	1985.7	1995.0	2018.9							
G5.0	1997.8	2007.7	2028.5							
G6.0	2009.3	2016.6	2034.9							
G7.0	2016.9	2024.6	2035.5							
G8.0	2018.1	2023.7	2027.9							
G9.0	2011.7	2013.2	2012.3							
G10.0	1992.3	1991.7	1986.8							
G11.0	1963.4	1955.5	1943.5							
G12.0	1922.9	1914.3	1888.7							
G13.0	1865.6	1853.2	1818.9							
G14.0	1785.0	1766.4	1720.1							
G15.0	1685.9	1664.9	1600.3							
G16.0	1557.4	1539.0	1464.8							
G17.0	1422.0	1391.6	1316.9							
G18.0	1285.3	1253.7	1167.6							
G19.0	1125.9	1092.4	1013.8							
G20.0	985.4	944.1	855.1							
G21.0	829.4	776.2	690.8							
G22.0	653.3	613.3	543.7							
G23.0	523.5	484.7	428.2							
G24.0	405.3	381.9	324.5							
G25.0	316.0	285.6	240.7							
G26.0	231.0	198.3	152.0							
G27.0	145.0	114.2	82.1							
G28.0	80.0	65.2	54.9							
G29.0	46.0	45.1	40.2							
G30.0	34.7	34.3	31.1							
G31.0	28.3	28.1	26.0							
G32.0	24.2	23.6	22.5							
G33.0	21.4	20.9	20.1							
G34.0	19.8	19.0	18.6							
G35.0	18.2	17.4	17.1							
G36.0	17.0	16.3	15.9							

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	16.0	15.4	14.9							
G38.0	15.1	14.4	14.0							
G39.0	14.3	13.4	13.2							
G40.0	13.6	12.9	12.4							
G41.0	12.8	12.1	11.6							
G42.0	12.1	11.4	10.9							
G43.0	11.4	10.8	10.2							
G44.0	10.8	10.2	9.7							
G45.0	10.3	9.7	9.2							
G46.0	9.7	9.1	8.6							
G47.0	9.3	8.7	8.2							
G48.0	8.8	8.1	7.7							
G49.0	8.2	7.8	7.3							
G50.0	7.9	7.4	6.9							
G51.0	7.5	7.0	6.5							
G52.0	7.1	6.7	6.1							
G53.0	6.7	6.2	5.8							
G54.0	6.3	5.8	5.5							
G55.0	5.9	5.6	5.2							
G56.0	5.8	5.3	4.8							
G57.0	5.4	5.0	4.6							
G58.0	5.2	4.8	4.3							
G59.0	4.7	4.4	4.0							
G60.0	4.5	4.1	3.8							
G61.0	4.2	3.8	3.5							
G62.0	3.9	3.5	3.1							
G63.0	3.7	3.2	2.9							
G64.0	3.3	2.9	2.5							
G65.0	3.1	2.7	2.3							
G66.0	2.7	2.4	2.2							
G67.0	2.6	2.2	1.9							
G68.0	2.3	1.9	1.5							
G69.0	2.0	1.6	1.3							
G70.0	1.8	1.3	1.0							
G71.0	1.4	1.1	0.9							
G72.0	1.2	0.9	0.6							
G73.0	1.0	0.6	0.3							

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:

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Candlepower Table (Continue 5)

Unit: cd

G\C	C300.0	C330.0	C360.0							
G74.0	0.7	0.3	0.1							
G75.0	0.4	0.1	0.0							
G76.0	0.2	0.0	0.0							
G77.0	0.1	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: