

Report No.: 30

Test Time: 2017/3/2 17:10

Luminaire Property

Luminaire Manufacturer:
Voltage: 220 V
Power: 18.62 W

Current: 0.081 A
Power Factor: 0.976

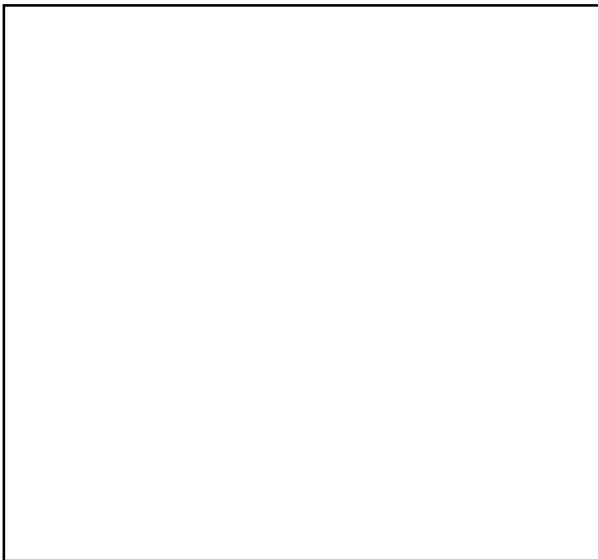
Photometric Results

CIE Class: Semi-Direct
Measurement Flux: 2333 lm
Downward Ratio: 89%
Horizontal Diffuse Angle(50%): H108
Vertical Diffuse Angle(50%): V140.3
Luminaire Efficacy Rating (LER): 125
Max. Intensity: 615.56 cd

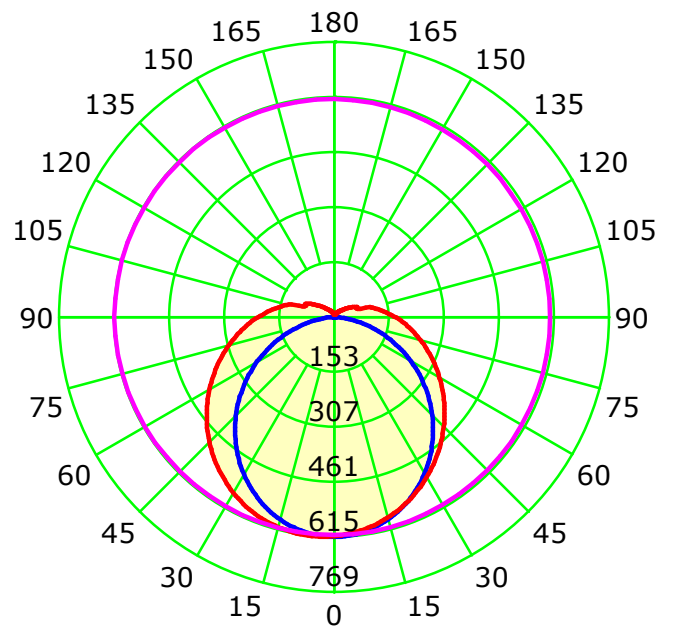
Total Rated Lamp Lumens: 2333.0 lm
Efficiency: 100%
Upward Ratio: 11%

Central Intensity: 614.75 cd
Pos of Max. Intensity: H270 V6

Picture Of Luminaire



Luminous Intensity Distribution Curve



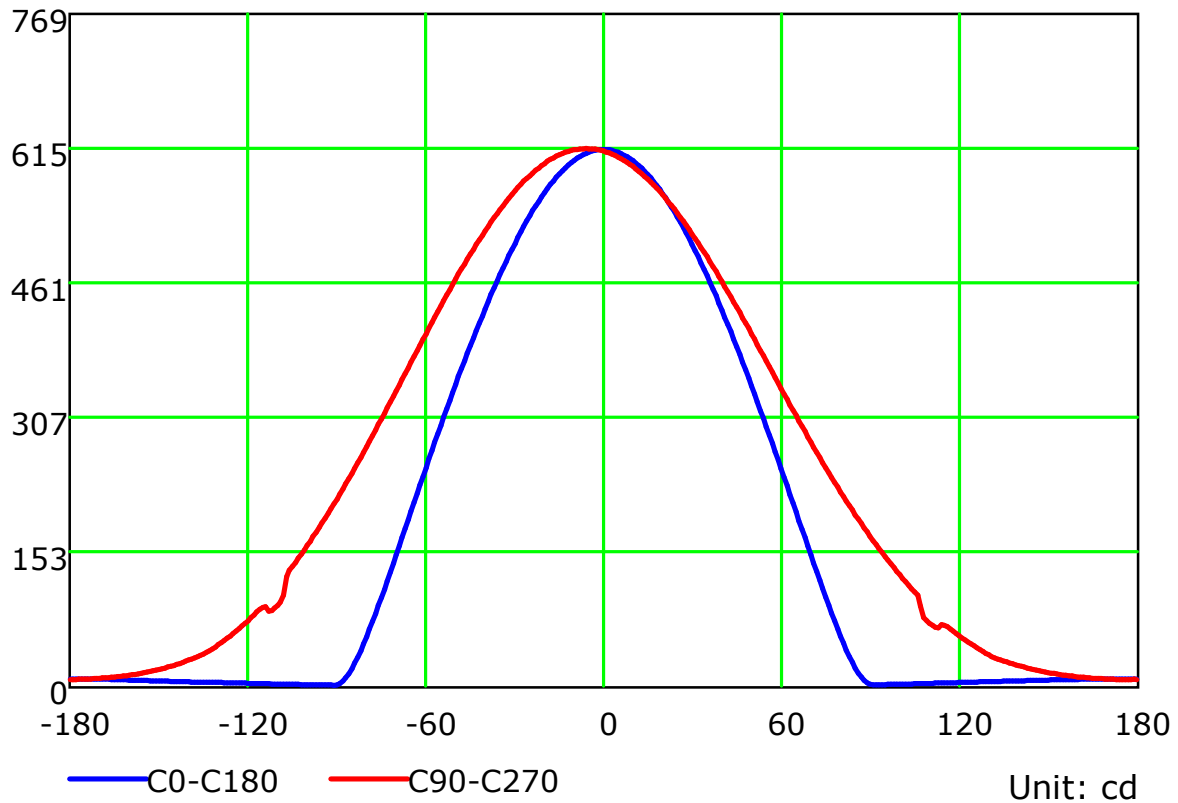
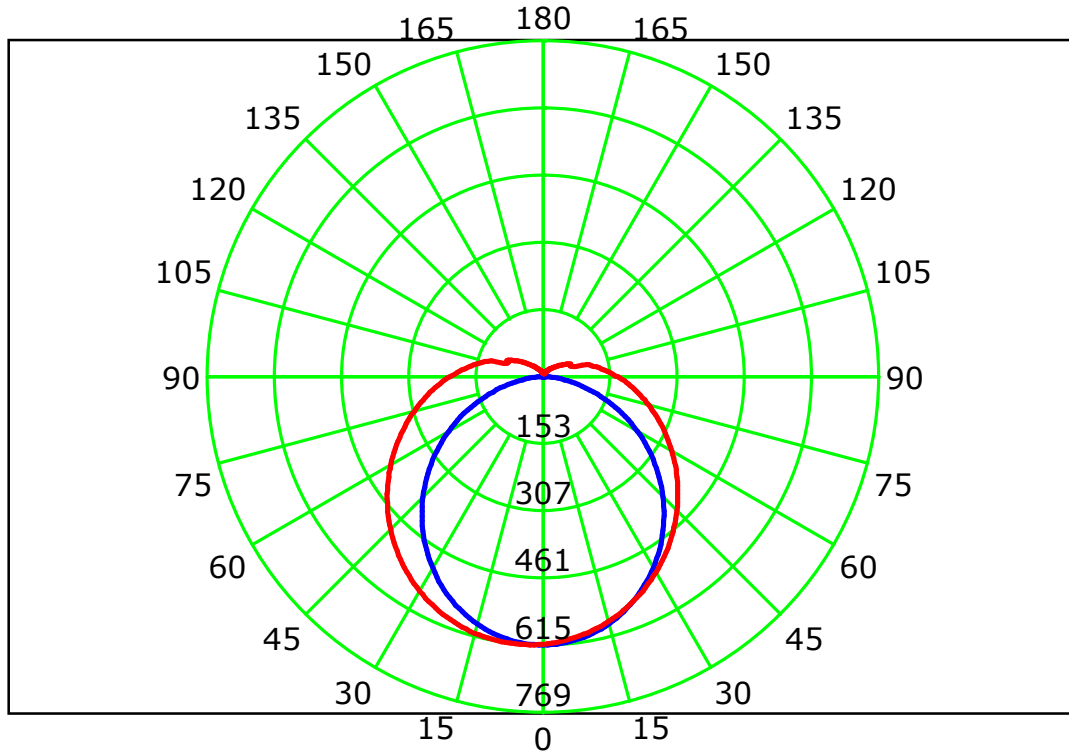
Average Diffuse Angle(50%): 124.2° Unit: cd

— C0-C180 — C90-C270 — G6

C Plane (°):0.0-360.0: 45.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 8.082 m
Humidity: 58
Inspector:

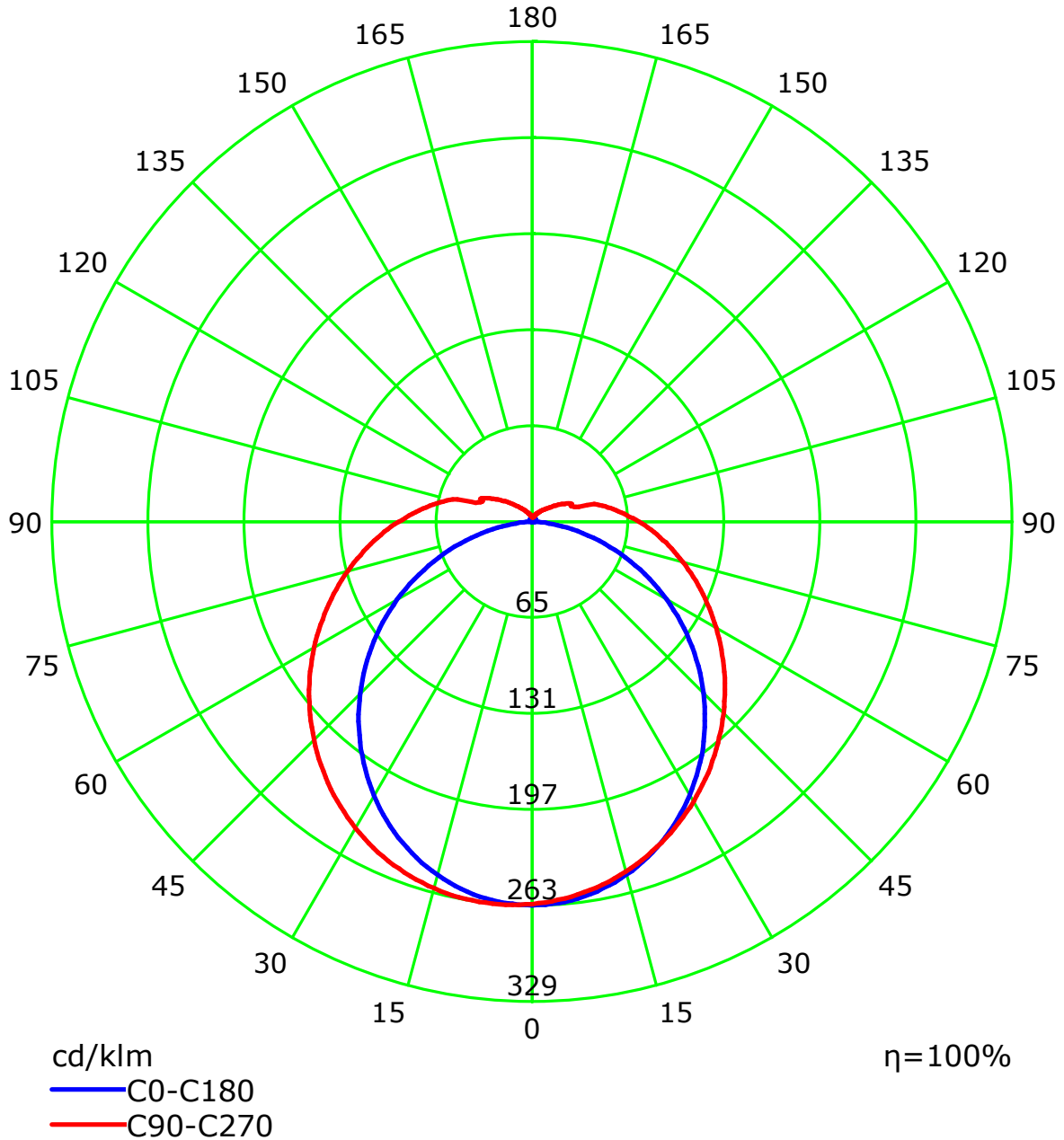
Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 45.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 8.082 m
Humidity: 58
Inspector:

Luminous Intensity Distribution Curve(cd/klm)



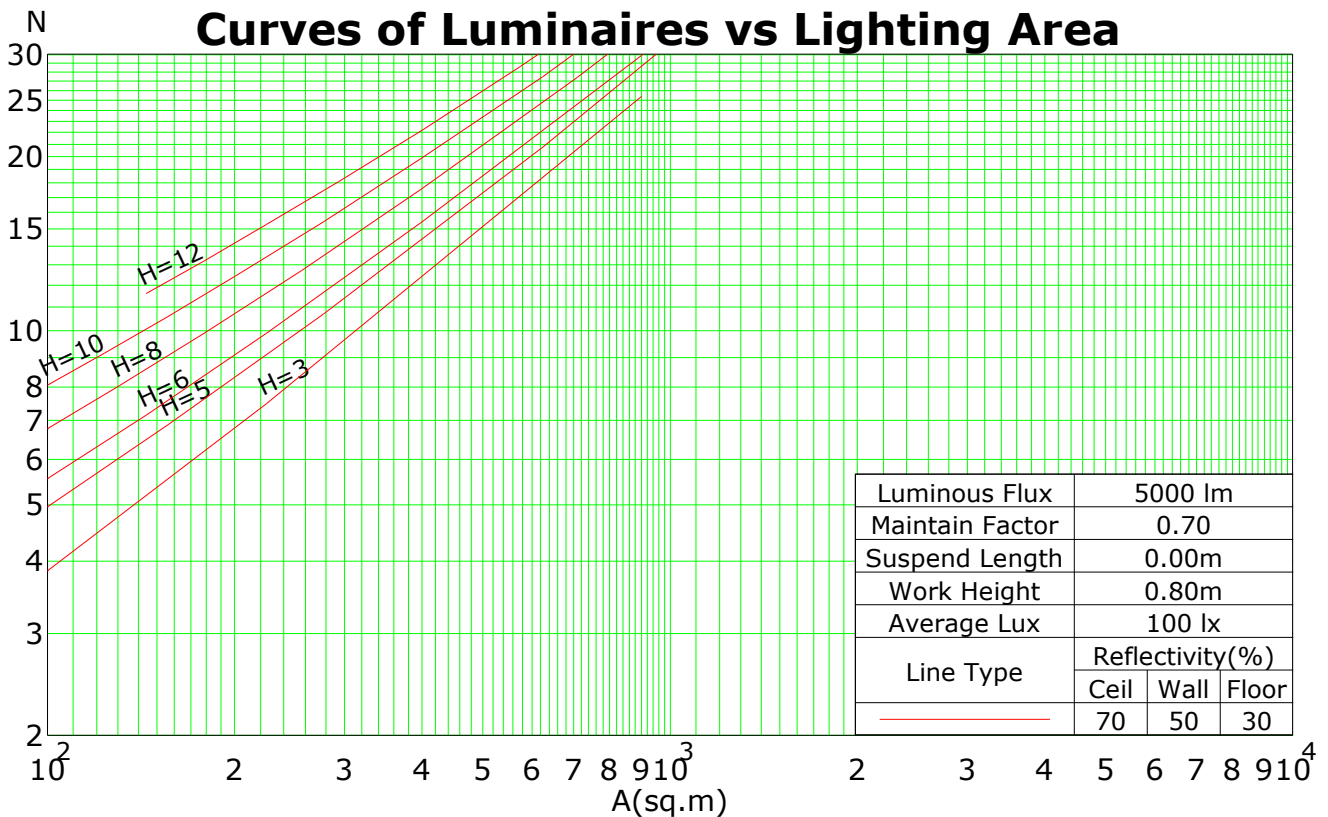
C Plane (°):0.0-360.0: 45.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 8.082 m
Humidity: 58
Inspector:

Coefficients Of Utilization - Zonal Cavity Method

RC	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.3	0.3	0.3	0.1	0.1	0.1	0
RW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0
RCR	RF = 0.2																	
0	116	116	116	116	112	112	112	112	105	105	105	98	98	98	92	92	92	89
1	104	98	93	88	100	95	90	86	88	84	81	82	79	76	77	74	72	69
2	93	84	77	70	90	81	74	68	76	70	65	71	66	62	66	62	59	56
3	85	73	64	57	81	71	63	56	66	59	54	62	56	51	58	53	49	46
4	77	65	55	48	74	62	54	47	58	51	45	55	48	43	51	46	42	39
5	71	57	48	41	68	56	47	40	52	45	39	49	42	37	46	40	36	33
6	65	51	42	36	63	50	41	35	47	39	34	44	38	33	42	36	31	29
7	61	47	37	31	58	45	37	31	43	35	30	40	34	29	38	32	28	25
8	56	42	34	28	54	41	33	27	39	32	26	37	30	26	35	29	25	23
9	52	39	30	25	50	38	30	24	36	29	24	34	28	23	32	26	22	20
10	49	36	28	22	47	35	27	22	33	26	21	31	25	21	30	24	20	18

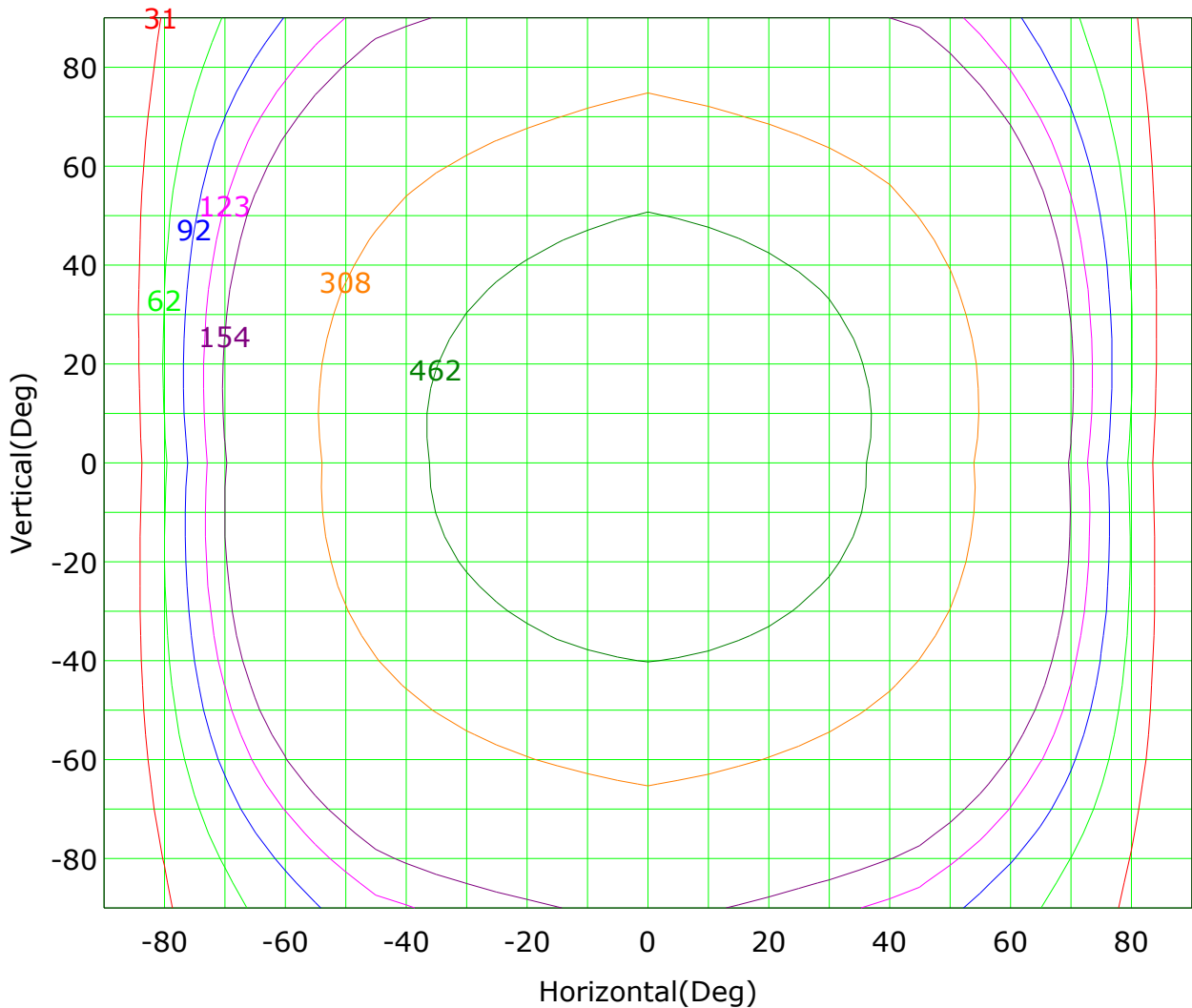
Spacing Criteria (0-180): 1.23
 Spacing Criteria (90-270): 1.32
 Spacing Criteria (Diagonal): 1.40



C Plane (°): 0.0-360.0: 45.0
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 Test Type: TYPE C
 Temperature: 28
 Operator: Jacky tang

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 Test Device: GPM-1800B
 Distance: 8.082 m
 Humidity: 58
 Inspector:

Isocandela (rectangle)



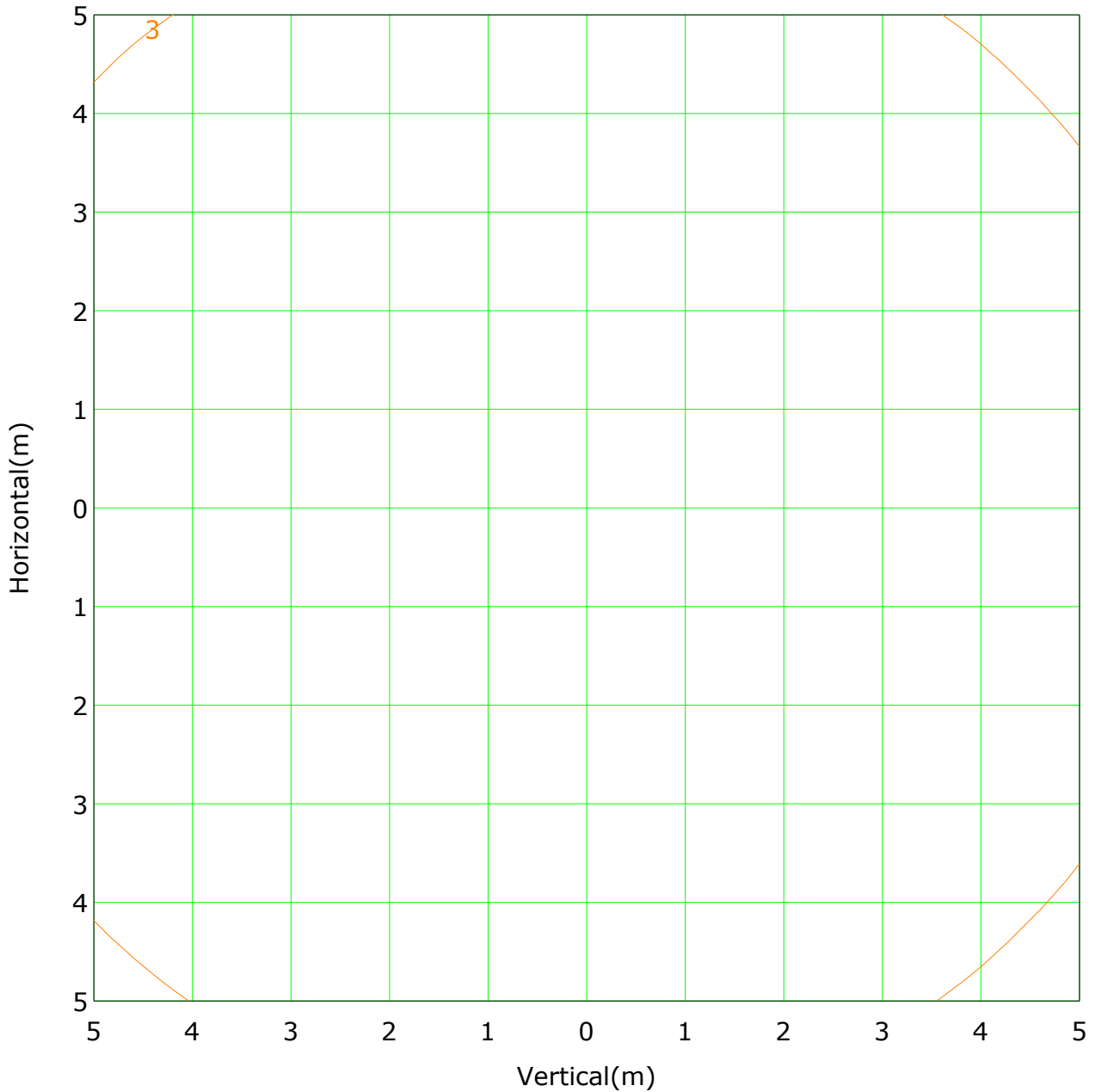
Imax (100%): 616 cd

— (5%):	31 cd	— (10%):	62 cd
— (15%):	92 cd	— (20%):	123 cd
— (25%):	154 cd	— (50%):	308 cd
— (75%):	462 cd	— (100%):	616 cd

C Plane (°):0.0-360.0: 45.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 8.082 m
Humidity: 58
Inspector:

IsoLux Plot



Mounting Height: 10.0m Max Lux(100%): 6.1 lx

— (1%): 0.1 lx	— (2%): 0.1 lx
— (5%): 0.3 lx	— (10%): 0.6 lx
— (20%): 1.2 lx	— (50%): 3.1 lx
— (100%): 6.1 lx	

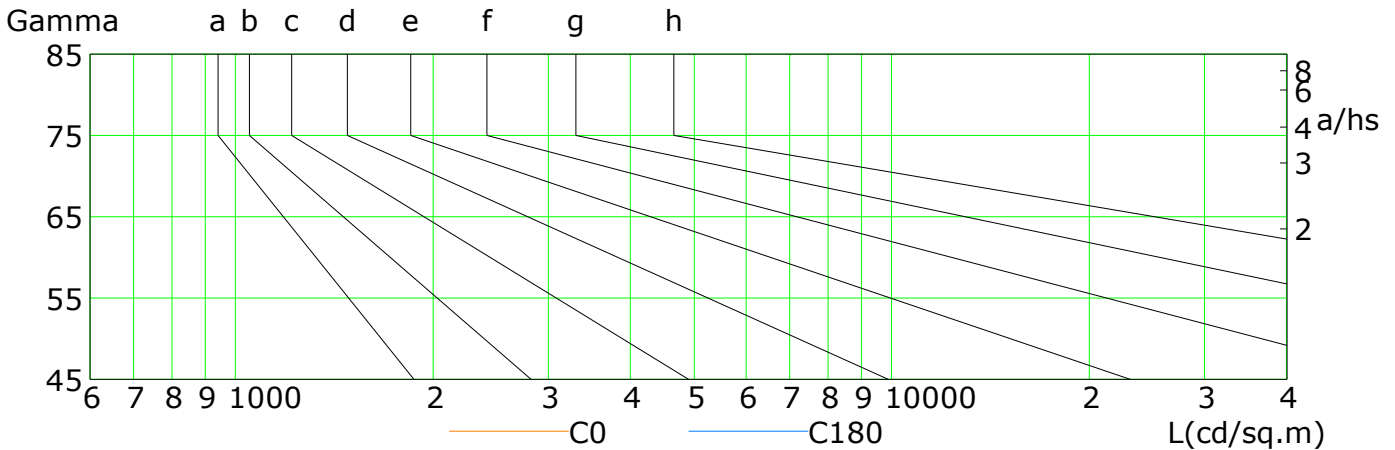
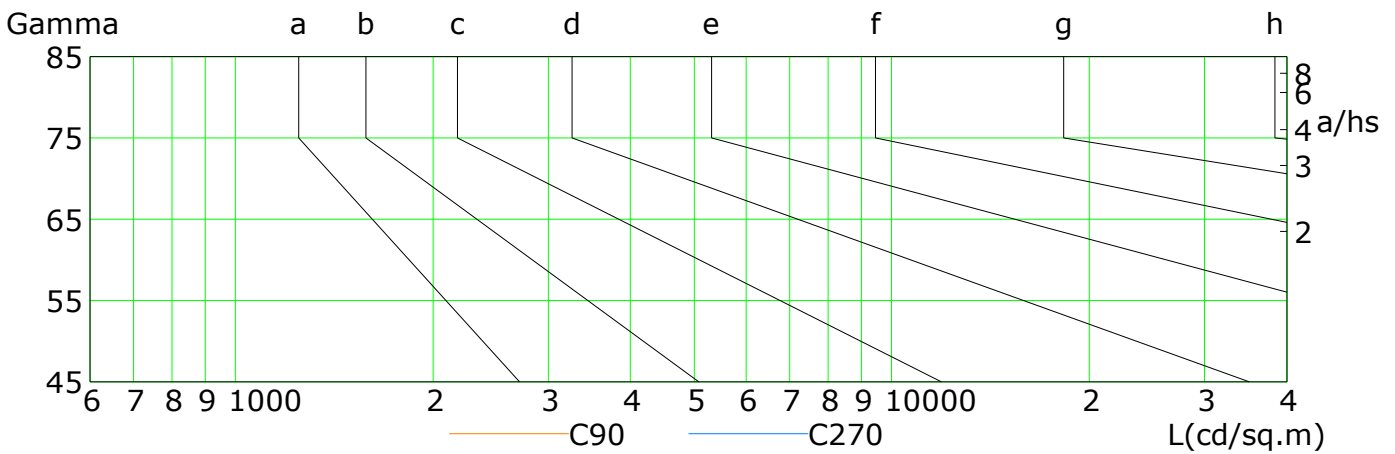
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Test Type: TYPE C
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Test Device: GPM-1800B
Distance: 8.082 m
Humidity: 58
Inspector:

Lum Limit Curve

Dazzle	Quality	Illuminance (lx)							
		2000	1000	500	<=300				
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300

a b c d e f g h

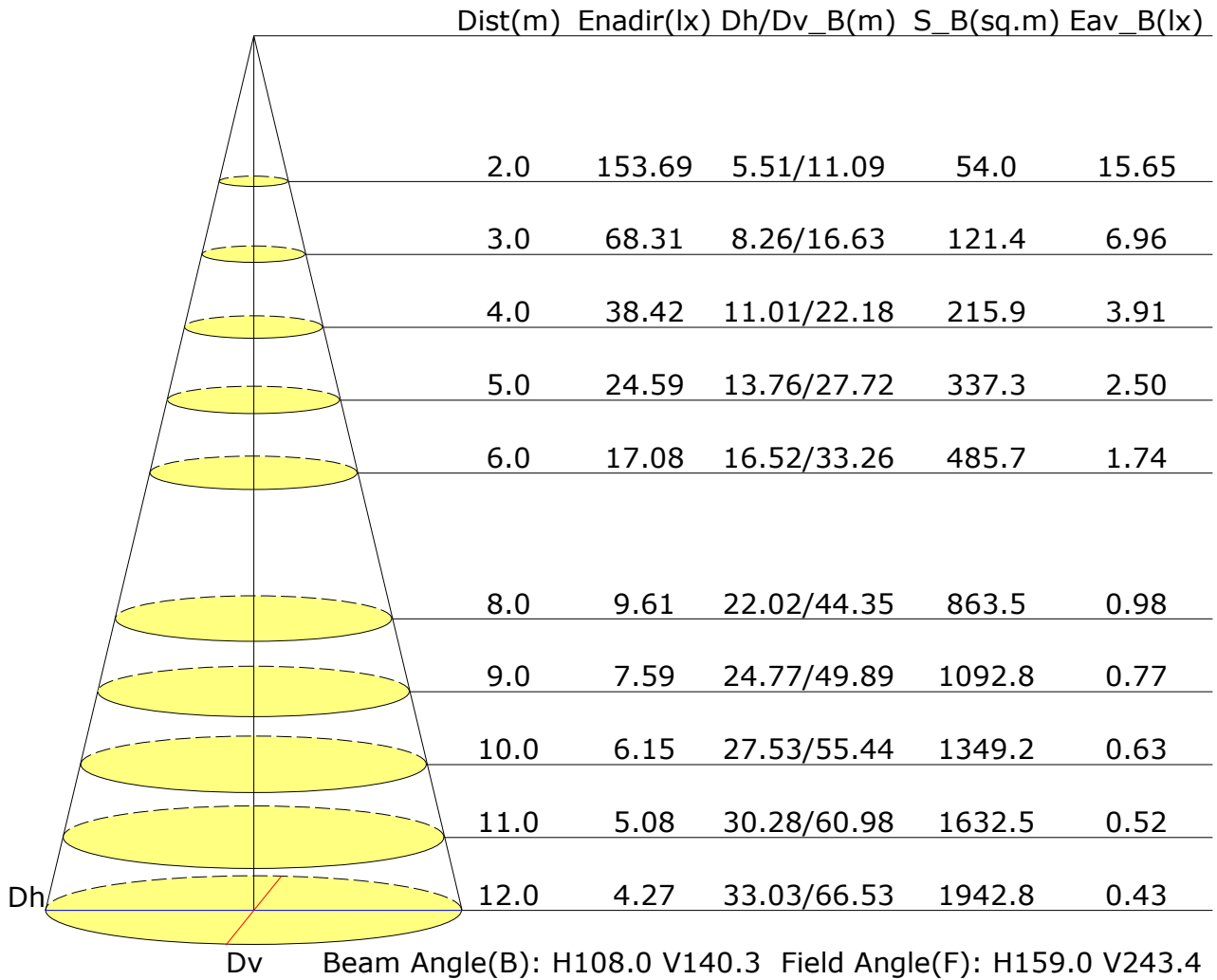


L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	389	344	297	249	200	151	103	58	21
C90	434	403	372	341	310	280	251	223	196
C180	390	346	299	250	201	151	102	57	20
C270	495	466	435	404	371	338	306	274	244

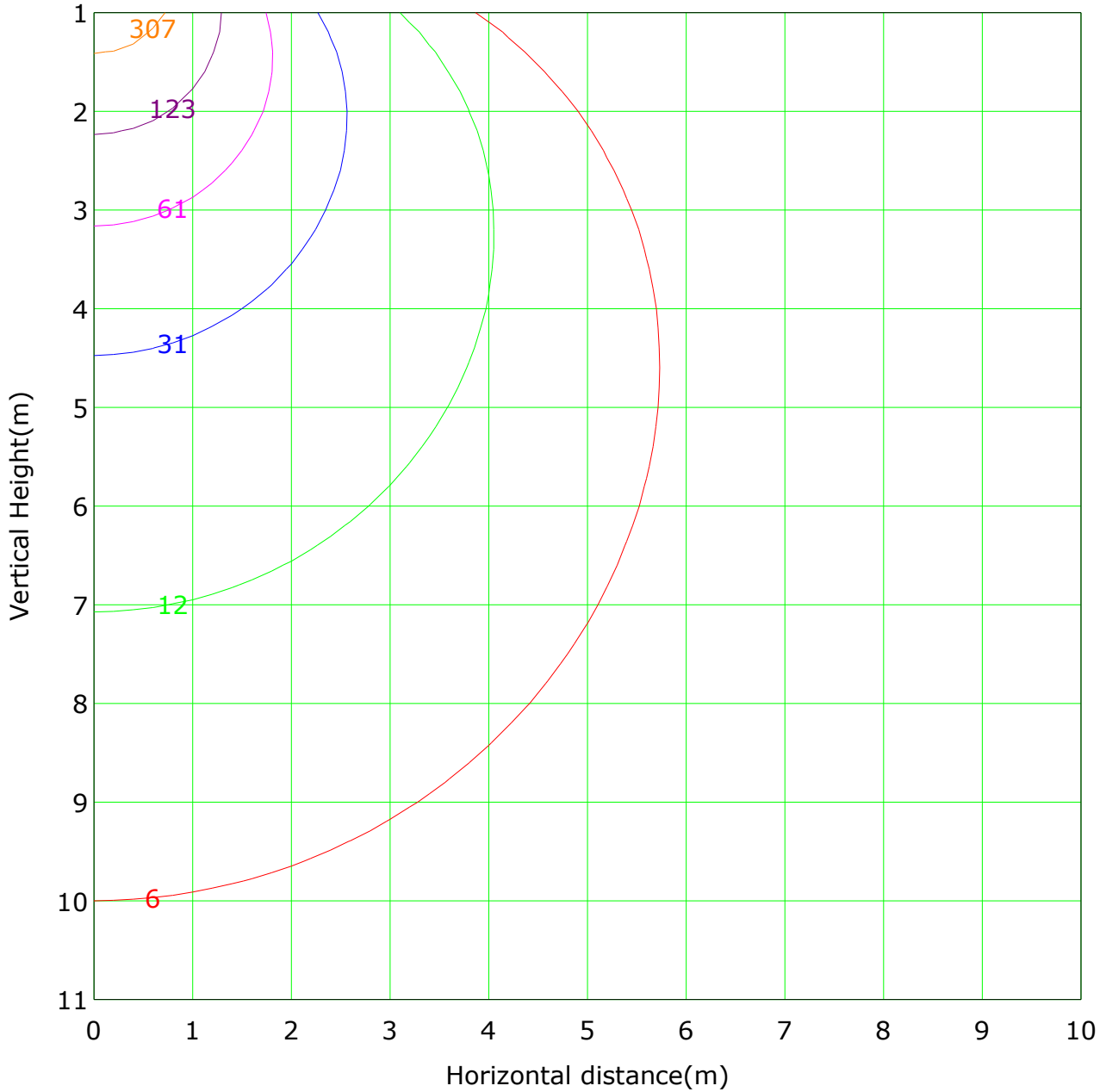
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 Test Type: TYPE C
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 Test Device: GPM-1800B
 Distance: 8.082 m
 Humidity: 58
 Inspector:

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m	Highest(m): 11.0m	Max Lux: 614.8 lx
— (1%): 6.1 lx	— (2%): 12.3 lx	
— (5%): 30.7 lx	— (10%): 61.5 lx	
— (20%): 123.0 lx	— (50%): 307.4 lx	
— (100%): 614.8 lx		

C Plane (°):0.0-360.0: 45.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 8.082 m
Humidity: 58
Inspector:

Area Flux Table

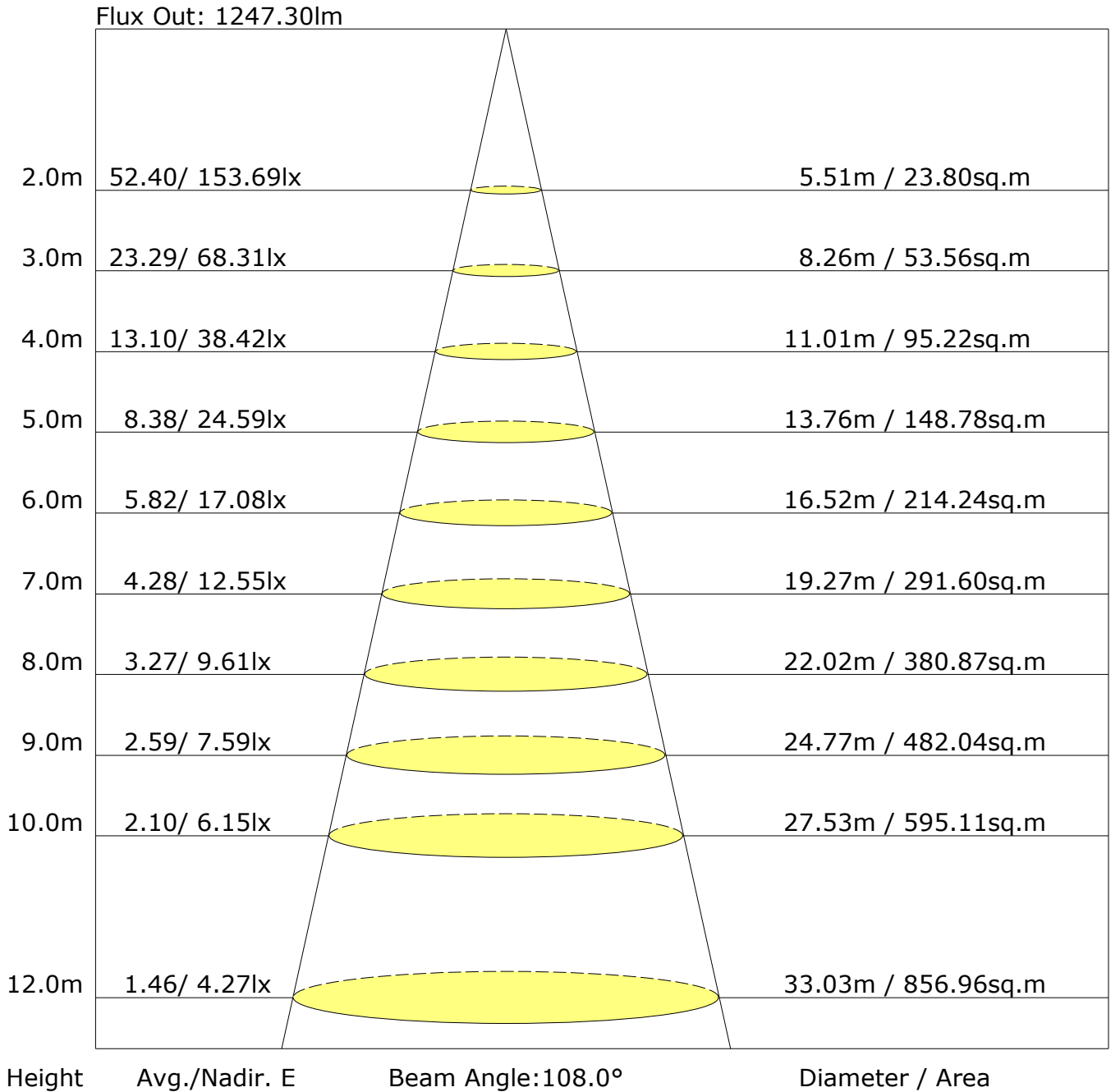
Unit: lm

		Vertical plane																				
		-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	Flux(T)	Flux(E)
Horizontal plane	-90	0.1	0.4	1.2	2.2	3.5	4.6	5.6	6.5	7.2	7.1	6.4	5.4	4.4	3.3	2.1	1.1	0.4	0.1	61.7	61.0	
	-80	0.1	0.5	1.4	2.8	4.4	5.8	7.1	8.2	9.0	9.0	8.1	6.9	5.6	4.2	2.7	1.4	0.5	0.1	77.7	77.2	
	-70	0.1	0.6	1.7	3.4	5.3	7.1	8.7	10.0	11.0	10.9	9.9	8.5	6.9	5.1	3.2	1.7	0.6	0.1	94.7	94.4	
	-60	0.1	0.7	2.0	3.9	6.2	8.4	10.3	11.9	12.9	12.9	11.7	10.1	8.1	5.9	3.8	2.0	0.7	0.1	111.7	111.5	
	-50	0.1	0.8	2.3	4.4	7.0	9.6	11.8	13.6	14.7	14.7	13.5	11.6	9.3	6.8	4.3	2.2	0.8	0.1	127.6	127.4	
	-40	0.1	0.9	2.5	4.9	7.7	10.6	13.2	15.1	16.3	16.2	15.0	12.9	10.3	7.5	4.8	2.5	0.8	0.1	141.4	141.2	
	-30	0.1	0.9	2.7	5.2	8.2	11.3	14.2	16.3	17.5	17.4	16.1	14.0	11.1	8.1	5.1	2.6	0.9	0.1	151.9	151.7	
	-20	0.1	0.9	2.7	5.3	8.5	11.8	14.8	17.1	18.3	18.2	16.9	14.6	11.7	8.4	5.3	2.7	0.9	0.1	158.2	158.0	
	-10	0.1	0.9	2.7	5.3	8.5	11.9	14.9	17.3	18.5	18.5	17.2	14.9	11.8	8.5	5.3	2.7	0.9	0.1	159.8	159.6	
	0	0.1	0.9	2.6	5.3	8.4	11.7	14.7	17.0	18.2	18.2	17.0	14.7	11.7	8.4	5.2	2.6	0.9	0.1	157.8	157.6	
	10	0.1	0.9	2.6	5.2	8.2	11.3	14.2	16.3	17.5	17.5	16.3	14.1	11.3	8.1	5.1	2.6	0.9	0.1	152.2	152.0	
	20	0.1	0.8	2.5	4.9	7.7	10.6	13.2	15.2	16.3	16.3	15.1	13.1	10.5	7.6	4.9	2.5	0.8	0.1	142.2	142.0	
	30	0.1	0.8	2.3	4.5	7.0	9.6	11.9	13.7	14.7	14.7	13.7	11.8	9.5	7.0	4.5	2.3	0.8	0.1	129.0	128.7	
	40	0.1	0.7	2.1	4.0	6.2	8.4	10.4	12.0	13.0	13.0	12.0	10.4	8.3	6.1	4.0	2.1	0.7	0.1	113.5	113.2	
	50	0.1	0.6	1.8	3.4	5.3	7.2	8.9	10.2	11.1	11.1	10.2	8.8	7.1	5.3	3.4	1.8	0.6	0.1	96.8	96.5	
	60	0.1	0.5	1.5	2.8	4.4	5.9	7.3	8.4	9.2	9.2	8.4	7.3	5.9	4.4	2.8	1.5	0.5	0.1	80.0	79.6	
	70	0.1	0.4	1.2	2.2	3.5	4.7	5.8	6.7	7.4	7.4	6.7	5.8	4.7	3.5	2.3	1.2	0.4	0.1	64.0	63.3	
	80	0.1	0.3	0.9	1.7	2.7	3.6	4.4	5.1	5.7	5.8	5.2	4.5	3.7	2.8	1.8	0.9	0.4	0.1	49.6	48.5	
90	1.5	12.6	36.7	71.4	112.5	153.9	191.3	220.7	238.6	238.0	219.2	189.4	151.9	111.0	70.6	36.4	12.5	1.5	2070			
	0.0	11.0	36.5	71.4	112.5	153.9	191.3	220.7	238.6	238.0	219.2	189.4	151.9	111.0	70.6	36.3	11.0	0.0		2063		

C Plane (°): 0.0-360.0: 45.0
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 Test Device: GPM-1800B
 Distance: 8.082 m
 Humidity: 58
 Inspector:

The Average Illuminance Effective Figure



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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	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
3H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
4H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
6H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
8H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
12H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
X=4H Y=2H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
3H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
4H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
6H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
8H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
12H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
X=8H Y=4H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
6H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
8H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
12H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
X=12H Y=4H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
6H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$
8H	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$	1.\$

Calculate in accordance with CIE 190:2010

C Plane (°):0.0-360.0: 45.0
 Test Lab: Inventfine instrument
 Test Type: TYPE C
 Temperature: 28
 Operator: Jacky tang

Gamma Plane (°):0.0-180.0:1.0
 Test Device: GPM-1800B
 Distance: 8.082 m
 Humidity: 58
 Inspector:

Utilisation Factor Table(Floor cavity)

Utilisation Factors UF(F)			SHR NOM = 1.50									
Room Reflectance			Room Index(RI)									
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	
0.70	0.50	0.20	0.53	0.60	0.68	0.73	0.80	0.85	0.88	0.93	0.96	
	0.30		0.45	0.52	0.60	0.65	0.73	0.78	0.82	0.88	0.92	
	0.20		0.39	0.46	0.54	0.59	0.67	0.73	0.77	0.84	0.88	
0.50	0.50	0.20	0.50	0.57	0.64	0.68	0.75	0.79	0.82	0.87	0.90	
	0.30		0.43	0.50	0.57	0.62	0.69	0.74	0.78	0.83	0.86	
	0.20		0.38	0.45	0.52	0.57	0.64	0.70	0.74	0.79	0.83	
0.30	0.50	0.20	0.47	0.54	0.60	0.64	0.70	0.74	0.77	0.81	0.84	
	0.30		0.41	0.48	0.54	0.59	0.65	0.70	0.73	0.78	0.81	
	0.20		0.37	0.43	0.50	0.55	0.61	0.66	0.70	0.75	0.79	
0.00	0.00	0.00	0.34	0.40	0.46	0.50	0.56	0.60	0.64	0.68	0.72	
<p>Rating:19W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980</p>												

Utilisation Factor Table(Wall)

Utilisation Factors UF(W)			SHR NOM = 1.50									
Room Reflectance			Room Index(RI)									
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	
0.70	0.50	0.20	1.00	0.86	0.74	0.66	0.54	0.46	0.40	0.32	0.26	
	0.30		0.83	0.74	0.65	0.58	0.49	0.42	0.37	0.30	0.25	
	0.20		0.71	0.64	0.57	0.52	0.44	0.39	0.34	0.28	0.24	
0.50	0.50	0.20	0.94	0.81	0.70	0.62	0.51	0.46	0.37	0.30	0.25	
	0.30		0.79	0.70	0.62	0.55	0.46	0.40	0.35	0.28	0.24	
	0.20		0.69	0.62	0.55	0.50	0.43	0.37	0.33	0.27	0.23	
0.30	0.50	0.20	0.89	0.76	0.65	0.58	0.47	0.40	0.35	0.28	0.23	
	0.30		0.76	0.67	0.59	0.53	0.44	0.38	0.33	0.27	0.23	
	0.20		0.67	0.60	0.53	0.48	0.41	0.35	0.31	0.26	0.22	
0.00	0.00	0.00	0.55	0.49	0.43	0.39	0.33	0.28	0.25	0.21	0.17	
<p>Rating:19W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980</p>												

Utilisation Factor Table(Ceiling cavity)

Utilisation Factors UF(C)			SHR NOM = 1.50								
Room Reflectance			Room Index(RI)								
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.27	0.29	0.30	0.30	0.31	0.32	0.32	0.32	0.33
	0.30		0.20	0.22	0.23	0.24	0.26	0.27	0.28	0.29	0.30
	0.20		0.15	0.17	0.18	0.19	0.21	0.23	0.24	0.26	0.27
0.50	0.50	0.20	0.26	0.28	0.28	0.29	0.30	0.30	0.31	0.31	0.31
	0.30		0.20	0.21	0.23	0.24	0.25	0.26	0.27	0.28	0.29
	0.20		0.15	0.17	0.18	0.19	0.21	0.22	0.23	0.25	0.26
0.30	0.50	0.20	0.25	0.27	0.27	0.28	0.29	0.29	0.30	0.30	0.30
	0.30		0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.27
	0.20		0.15	0.16	0.18	0.19	0.20	0.22	0.23	0.24	0.25
0.00	0.00	0.00	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
<p>Rating:19W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980</p>											