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Report No.: 7 Test Time: 2017/4/14 17:47

Luminaire Property

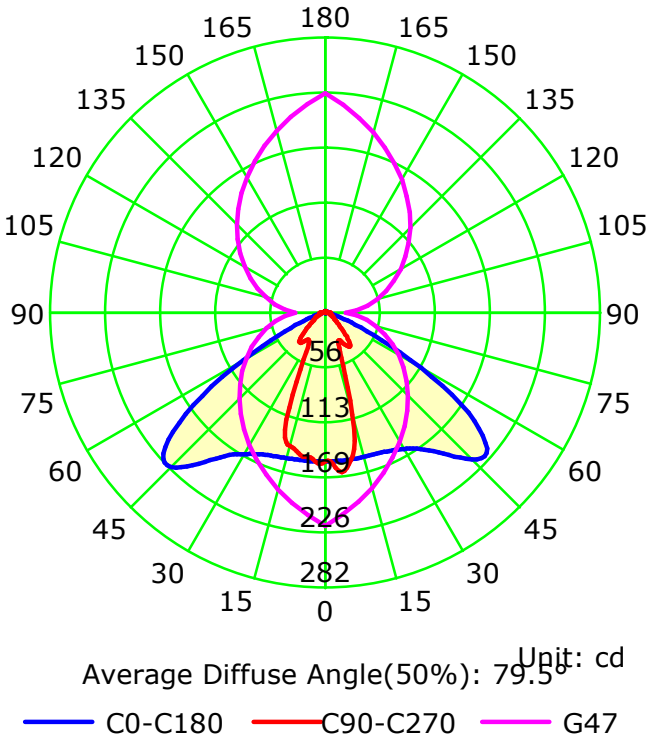
Luminaire Manufacturer:
Luminaire Description: QL-AL2517-60D2 Voltage: 220V
Current: 0.078 A Power: 6.25 W
Power Factor: 0.363

Photometric Results

CIE Class: Direct Total Rated Lamp Lumens: 400.7 lm
Measurement Flux: 400.7 lm Efficiency: 100%
Downward Ratio: 98% Upward Ratio: 2%
Horizontal Diffuse Angle(50%): H119.1
Vertical Diffuse Angle(50%): V39.8
Luminaire Efficacy Rating (LER): 64 Central Intensity: 152.88 cd
Max. Intensity: 226.17 cd Pos of Max. Intensity: H180 V47

Picture Of Luminaire

Luminous Intensity Distribution Curve



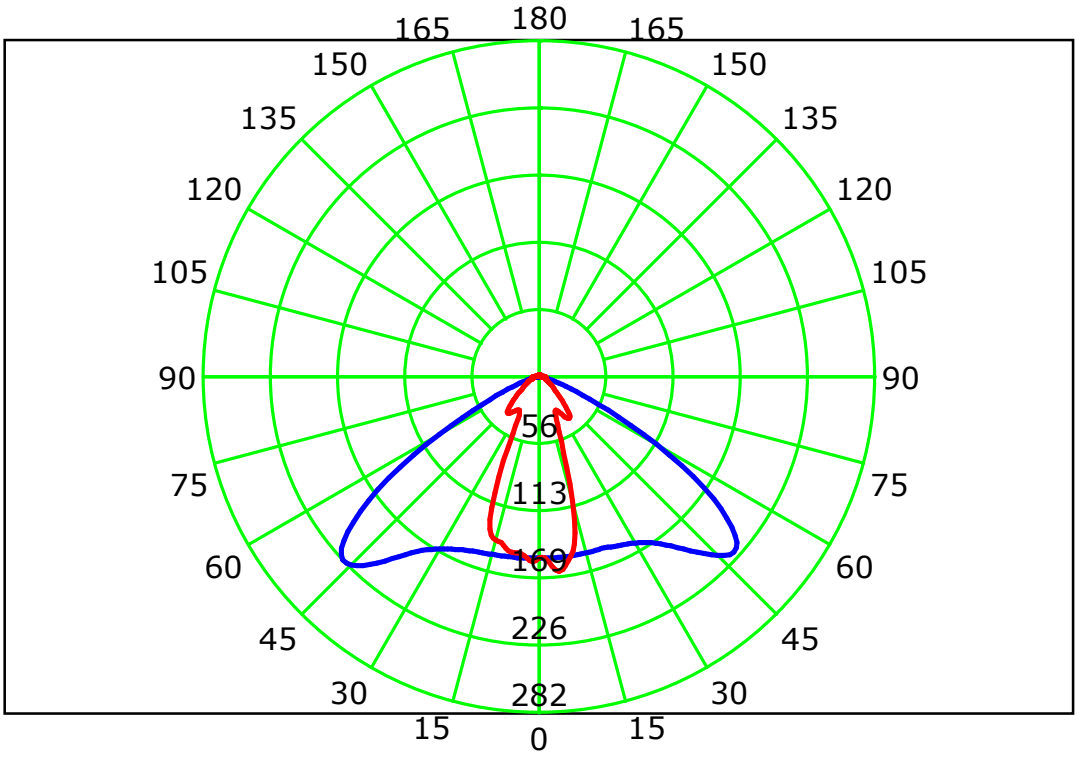
Unit: cd

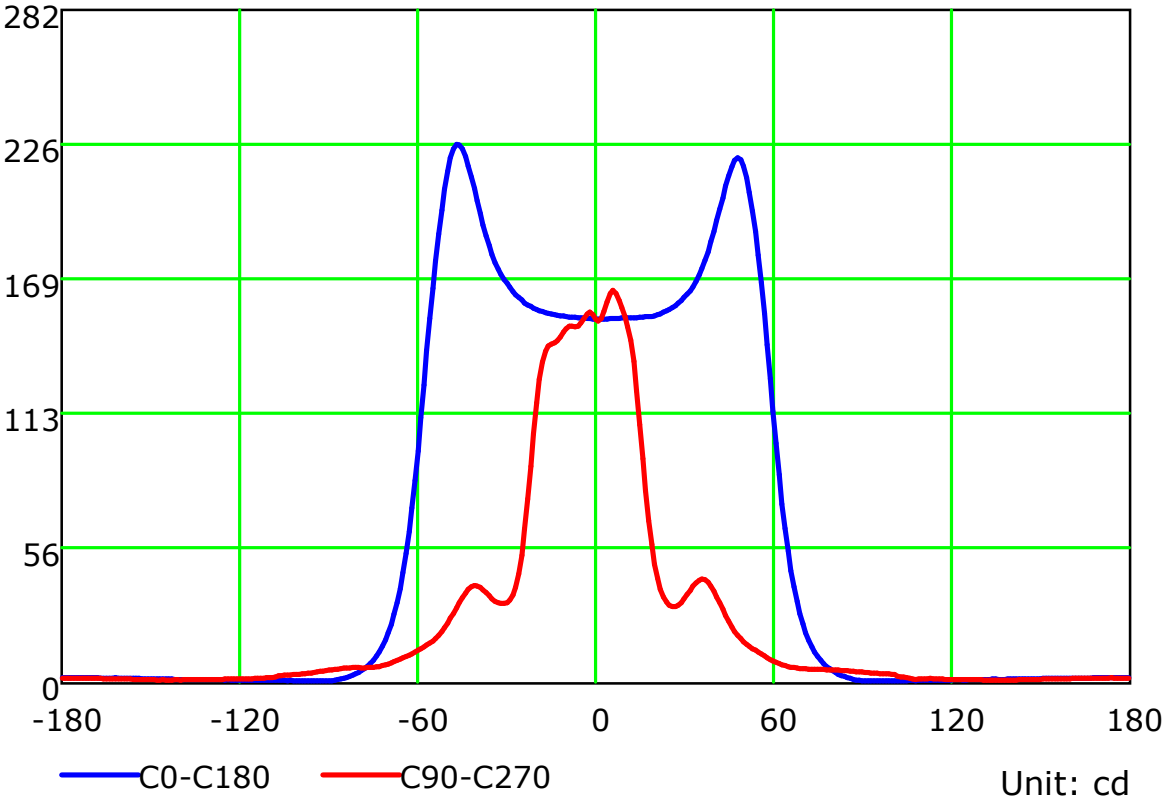
Average Diffuse Angle(50%): 79.5°

C0-C180 C90-C270 G47

C Plane (°):0.0-360.0: 90.0 Gamma Plane (°):0.0-180.0:1.0
Test Lab: Inventfine instrument Test Device: GPM-1800B
Test Type: TYPE C Distance: 8.082 m
Temperature: 28 Humidity: 58
Operator: Jacky tang Inspector:

Luminous Intensity Distribution Curve





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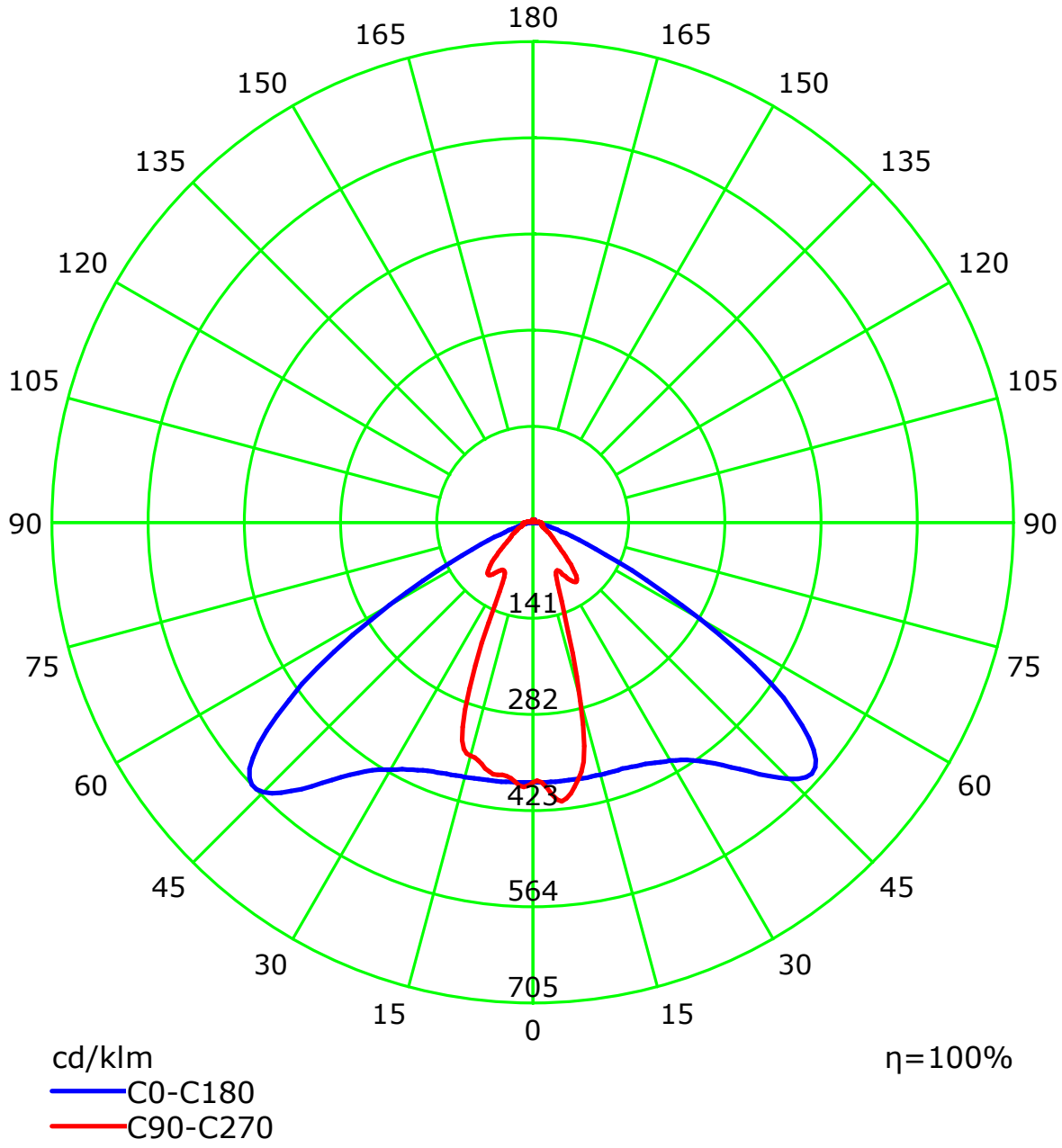
Test Device: GPM-1800B
Distance: 8.082 m
Humidity: 58
Inspector:

Luminous Intensity Distribution Curve(cd/klm)



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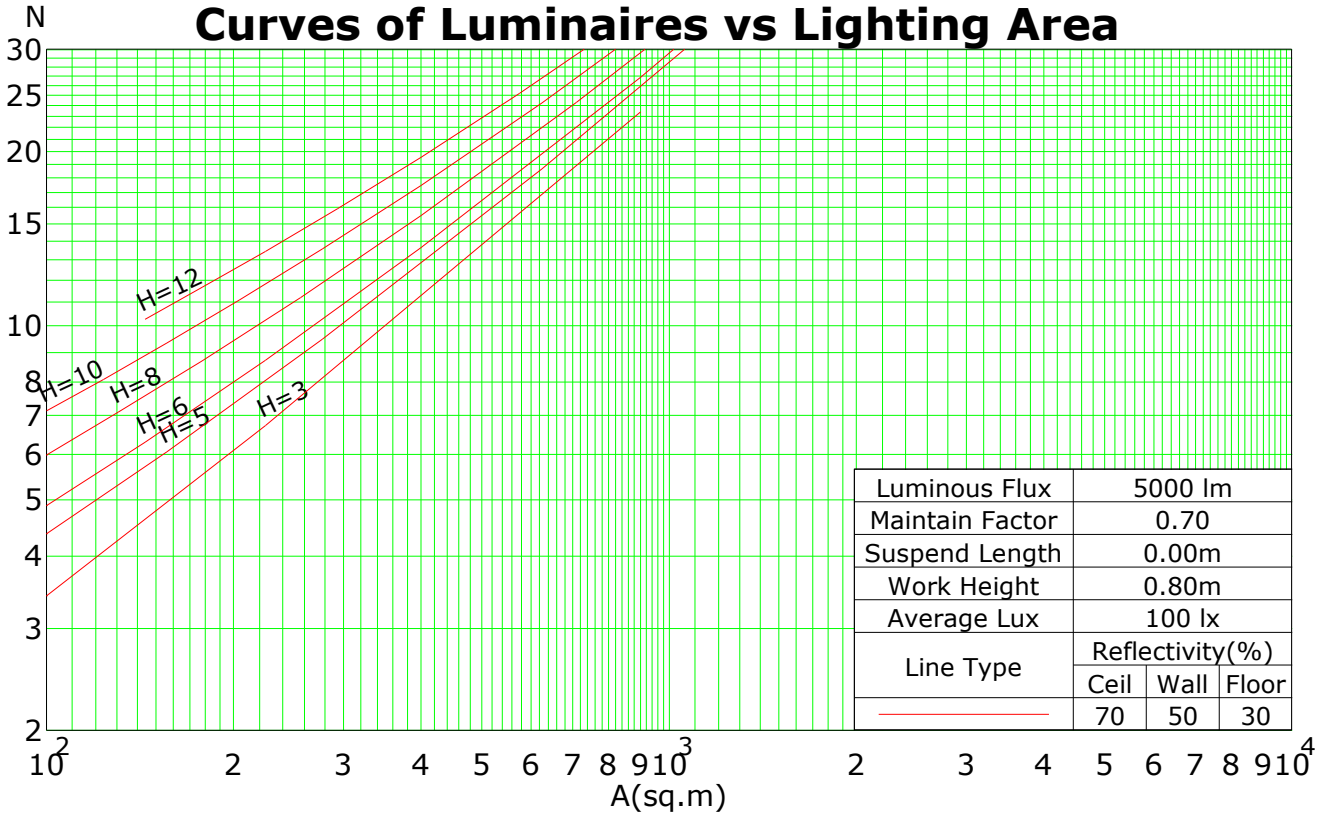
Coefficients Of Utilization - Zonal Cavity Method

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	118	118	118	118	115	115	115	115	110	110	110	105	105	105	100	100	100	98
1	109	105	101	98	106	103	99	96	98	95	93	94	91	89	90	88	86	84
2	100	93	86	81	97	90	85	80	87	82	78	83	79	76	80	76	74	71
3	91	82	74	68	89	80	73	67	77	71	66	74	68	64	71	66	63	61
4	84	72	64	57	81	71	63	57	68	61	56	65	60	55	63	58	54	52
5	77	64	56	49	75	63	55	49	61	54	48	59	52	47	57	51	47	45
6	71	58	49	43	69	57	48	42	55	47	42	53	46	41	51	45	41	39
7	66	52	44	38	64	51	43	37	50	42	37	48	41	36	46	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	32	42	36	32	30
9	57	43	35	30	55	43	35	30	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26	36	30	26	24

Spacing Criteria (0-180): 2.02
Spacing Criteria (90-270): 0.70
Spacing Criteria (Diagonal): 1.54

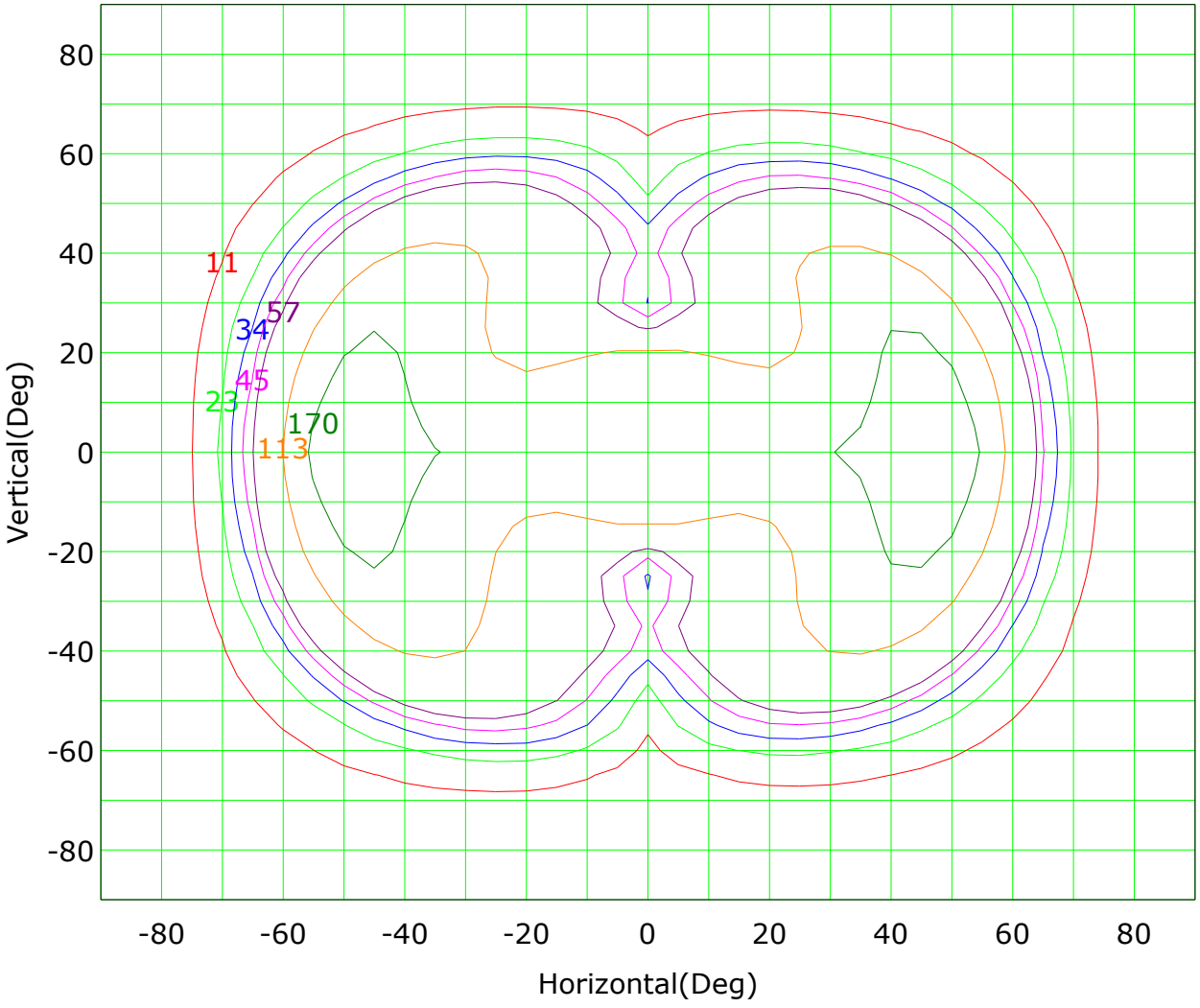
Curves of Luminaires vs Lighting Area



C Plane (°):0.0-360.0: 90.0
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:

Isocandela (rectangle)



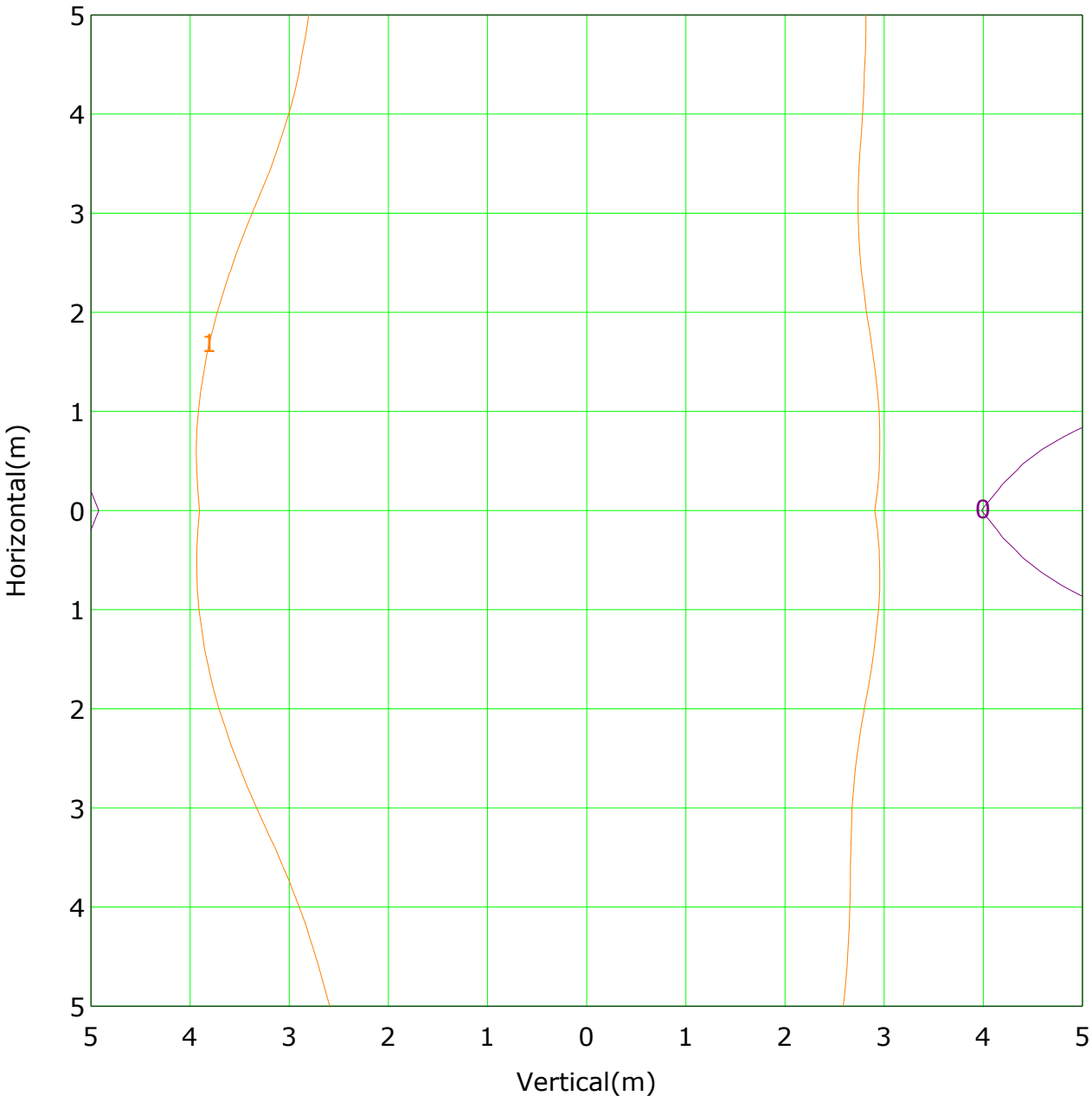
Imax (100%): 226 cd

(5%): 11 cd	(10%): 23 cd
(15%): 34 cd	(20%): 45 cd
(25%): 57 cd	(50%): 113 cd
(75%): 170 cd	(100%): 226 cd

C Plane (°):0.0-360.0: 90.0
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%): 1.6 lx

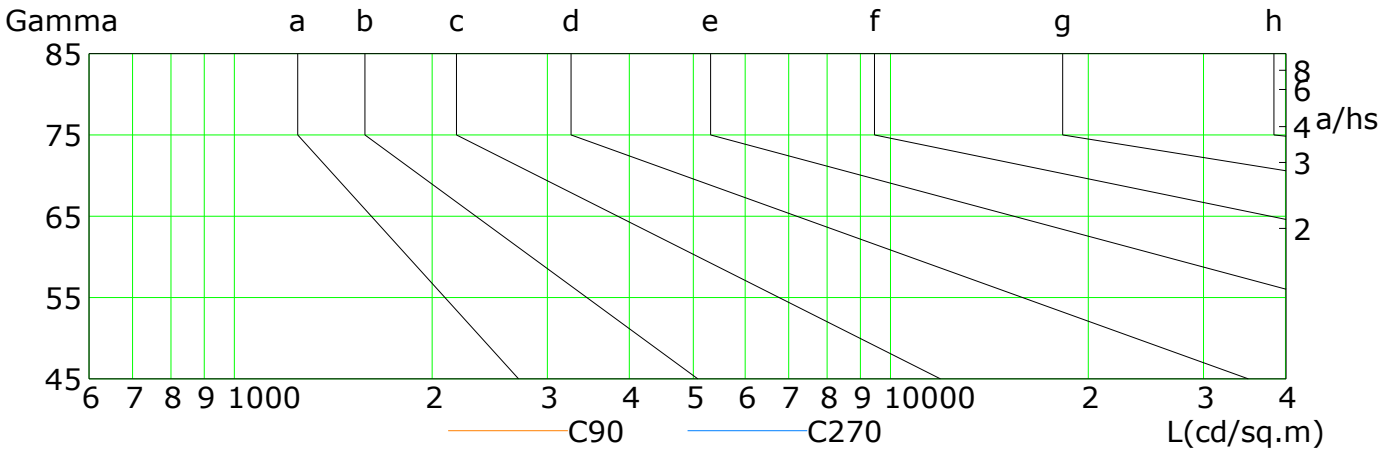
(1%): 0.0 lx	(2%): 0.0 lx
(5%): 0.1 lx	(10%): 0.2 lx
(20%): 0.3 lx	(50%): 0.8 lx
(100%): 1.6 lx	(200%): 3.2 lx

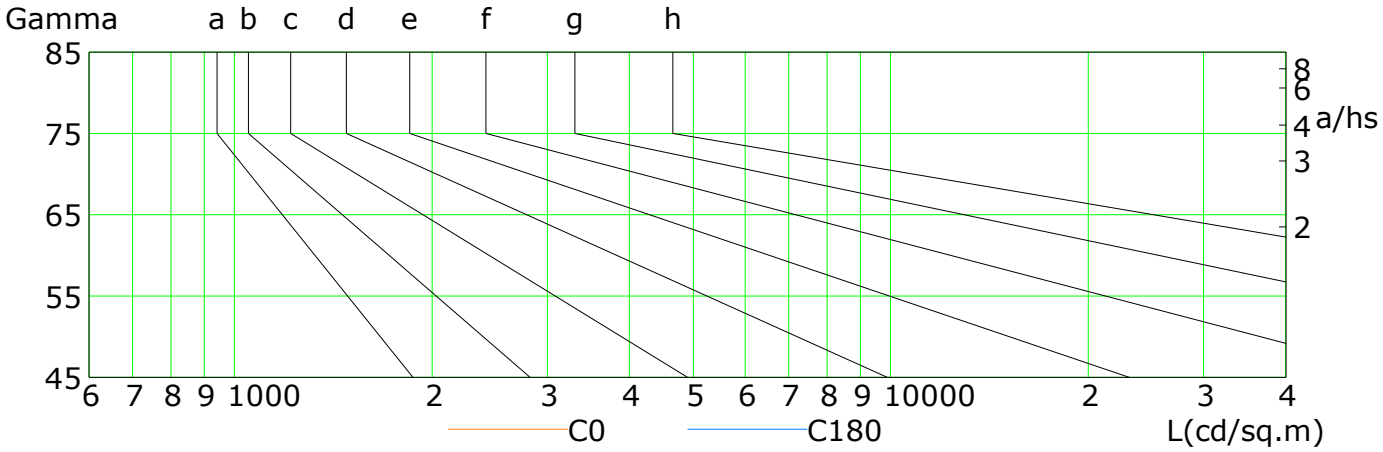
C Plane (°):0.0-360.0: 90.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

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

Lum Limit Curve

Dazzle	Quality	Illuminance (lx)							
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



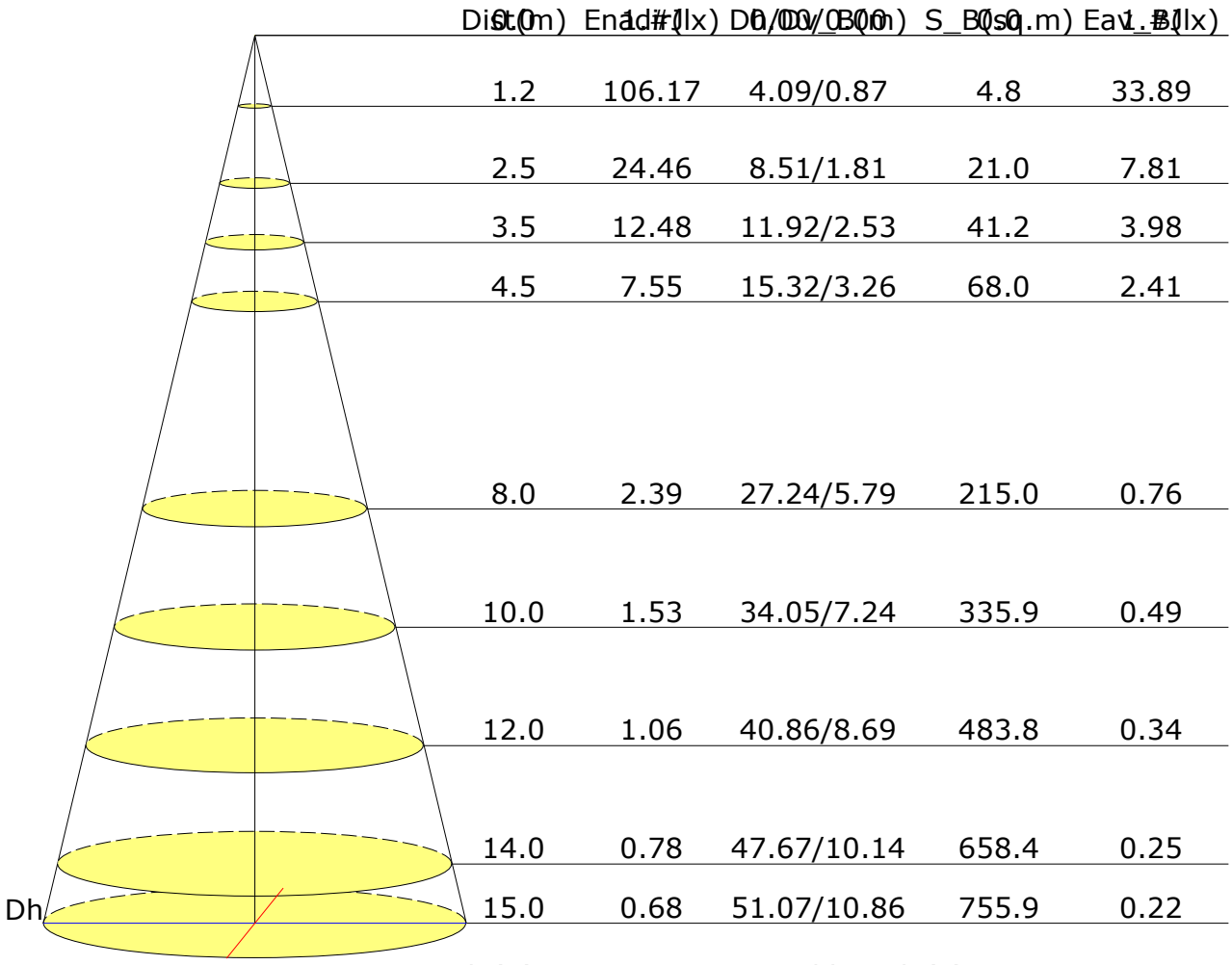


L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	213	217	180	114	55	25	11	5	2
C90	26	17	13	9	7	6	5	5	5
C180	224	215	166	97	46	21	9	4	2
C270	36	25	17	13	10	8	6	6	6

C Plane (°):0.0-360.0: 90.0
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:

Illuminance at a Distance



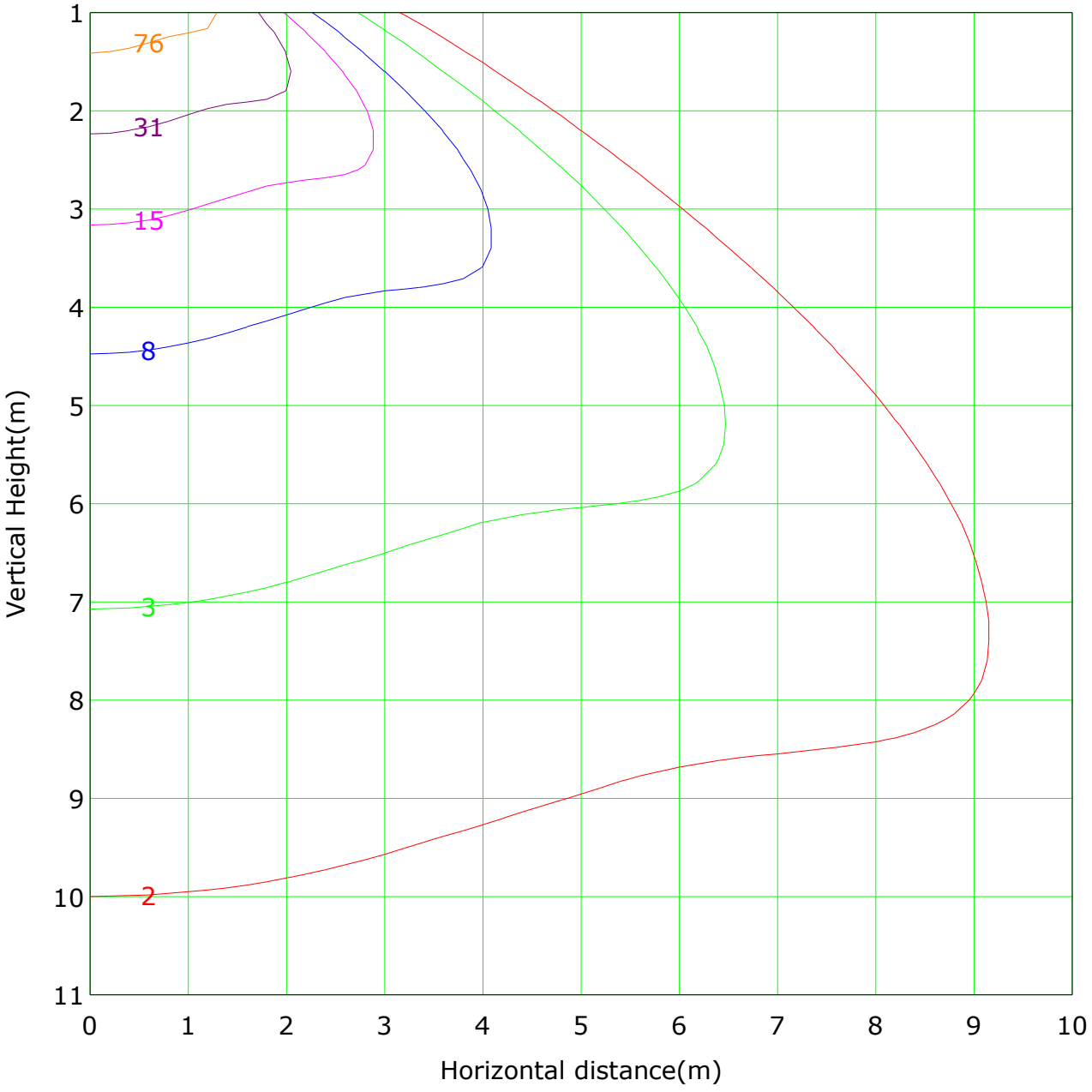
Dist.(m)	End#1(lx)	D/0.01/0.06(m)	S_B(0.m)	Eav_B(lx)
1.2	106.17	4.09/0.87	4.8	33.89
2.5	24.46	8.51/1.81	21.0	7.81
3.5	12.48	11.92/2.53	41.2	3.98
4.5	7.55	15.32/3.26	68.0	2.41
8.0	2.39	27.24/5.79	215.0	0.76
10.0	1.53	34.05/7.24	335.9	0.49
12.0	1.06	40.86/8.69	483.8	0.34
14.0	0.78	47.67/10.14	658.4	0.25
15.0	0.68	51.07/10.86	755.9	0.22

Beam Angle(B): H119.1 V39.8 Field Angle(F): H140.2 V107.7

C Plane (°):0.0-360.0: 90.0
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:

Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 11.0m Max Lux: 152.9 lx

(1%): 1.5 lx	(2%): 3.1 lx
(5%): 7.6 lx	(10%): 15.3 lx
(20%): 30.6 lx	(50%): 76.4 lx
(100%): 152.9 lx	(200%): 305.8 lx

C Plane (°):0.0-360.0: 90.0
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

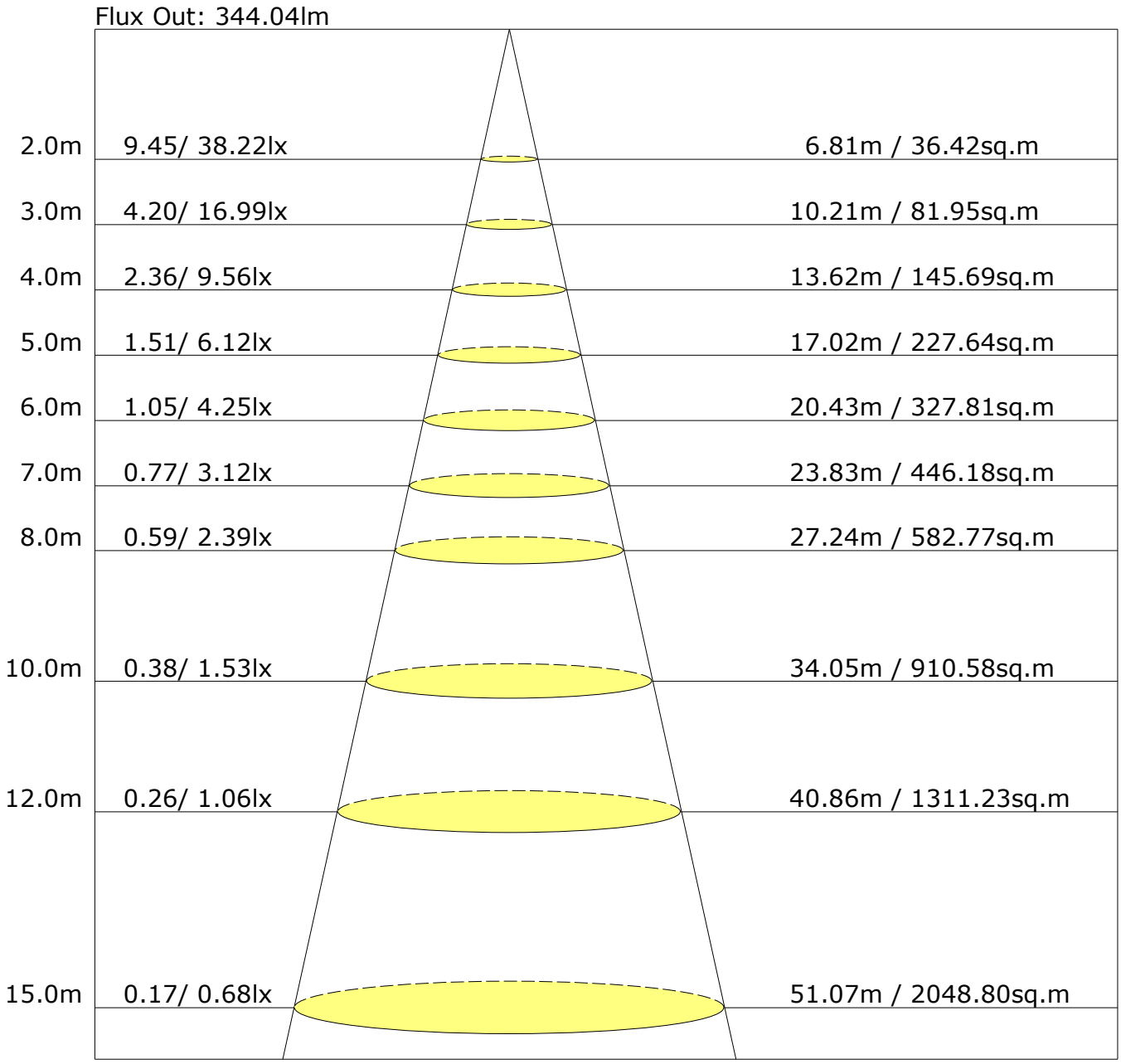
Unit: lm

Horizontal plane	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)
-90	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	1.5	0.0
-80	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	2.1	0.0
-70	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	4.5	0.7
-60	0.1	0.1	0.1	0.1	0.3	0.6	1.0	1.3	1.2	0.8	0.9	1.3	1.5	1.2	0.7	0.3	0.1	0.0	0.0	11.4	10.1
-50	0.1	0.1	0.2	0.4	0.6	1.0	1.3	1.5	1.5	1.5	1.5	2.2	2.6	2.4	1.6	0.7	0.2	0.0	0.0	21.9	21.4
-40	0.1	0.2	0.4	0.5	0.8	1.3	1.5	1.8	1.8	1.8	1.8	2.6	3.0	2.8	2.0	0.9	0.3	0.1	0.0	28.8	28.5
-30	0.1	0.2	0.5	0.6	1.0	1.5	1.8	2.1	2.1	2.1	2.1	2.9	3.3	3.2	2.3	1.1	0.4	0.1	0.0	34.4	34.1
-20	0.2	0.2	0.5	0.7	1.2	1.7	2.1	2.4	2.5	2.5	2.4	3.0	3.4	3.3	2.5	1.3	0.5	0.1	0.0	44.7	44.5
-10	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
0	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
10	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
20	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
30	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
40	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
50	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
60	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
70	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
80	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
90	0.2	0.2	0.6	0.8	1.3	1.8	2.2	2.6	2.8	2.8	2.7	3.4	3.8	3.7	2.9	1.5	0.6	0.1	0.0	50.6	50.4
Flux(T)	0.1	0.8	4.6	17.8	33.8	38.3	36.5	33.3	29.3	29.2	33.1	36.0	37.7	34.3	19.7	5.4	0.9	0.1	391		371
Flux(E)	0.0	0.0	3.3	16.7	32.7	37.1	35.2	31.9	27.4	27.4	31.7	34.8	36.5	33.2	18.7	4.2	0.0	0.0	1.3	0.0	

C Plane (°):0.0-360.0: 90.0
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:

The Average Illuminance Effective Figure



C Plane (°):0.0-360.0: 90.0
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:

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: 90.0
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	0.59	0.69	0.77	0.83	0.90	0.94	0.98	1.02	1.04
	0.30		0.51	0.62	0.70	0.76	0.84	0.89	0.93	0.98	1.01
	0.20		0.46	0.56	0.65	0.71	0.80	0.85	0.89	0.95	0.98
0.50	0.50	0.20	0.57	0.67	0.74	0.80	0.86	0.91	0.94	0.97	1.00
	0.30		0.50	0.60	0.68	0.74	0.82	0.86	0.90	0.94	0.97
	0.20		0.45	0.55	0.64	0.70	0.78	0.83	0.87	0.92	0.95
0.30	0.50	0.20	0.55	0.64	0.72	0.77	0.83	0.87	0.90	0.93	0.95
	0.30		0.49	0.59	0.67	0.72	0.79	0.84	0.87	0.91	0.93
	0.20		0.45	0.54	0.63	0.68	0.76	0.81	0.84	0.89	0.92
0.00	0.00	0.00	0.43	0.52	0.60	0.65	0.72	0.77	0.80	0.84	0.86

Rating:6W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

C Plane (°):0.0-360.0: 90.0
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(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	0.95	0.78	0.65	0.55	0.43	0.36	0.30	0.23	0.19
	0.30		0.79	0.67	0.56	0.49	0.39	0.33	0.28	0.22	0.18
	0.20		0.68	0.58	0.50	0.44	0.36	0.30	0.26	0.21	0.17
0.50	0.50	0.20	0.91	0.75	0.62	0.53	0.41	0.37	0.29	0.22	0.18
	0.30		0.77	0.65	0.54	0.47	0.37	0.31	0.27	0.21	0.17
	0.20		0.67	0.57	0.49	0.43	0.35	0.29	0.25	0.20	0.16
0.30	0.50	0.20	0.88	0.71	0.59	0.50	0.39	0.32	0.27	0.21	0.17
	0.30		0.75	0.63	0.53	0.45	0.36	0.30	0.25	0.20	0.16
	0.20		0.66	0.56	0.48	0.42	0.33	0.28	0.24	0.19	0.16
0.00	0.00	0.00	0.55	0.46	0.38	0.32	0.25	0.21	0.18	0.14	0.11

Rating:6W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

C Plane (°):0.0-360.0: 90.0
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(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	0.18	0.20	0.20	0.21	0.22	0.22	0.23	0.23	0.24
	0.30		0.12	0.13	0.15	0.16	0.17	0.19	0.19	0.21	0.22
	0.20		0.07	0.09	0.10	0.12	0.14	0.15	0.17	0.18	0.19
0.50	0.50	0.20	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23
	0.30		0.12	0.13	0.14	0.15	0.17	0.18	0.19	0.20	0.21
	0.20		0.07	0.09	0.10	0.12	0.14	0.15	0.16	0.18	0.19
0.30	0.50	0.20	0.17	0.18	0.19	0.19	0.20	0.21	0.21	0.21	0.22
	0.30		0.11	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20
	0.20		0.07	0.09	0.10	0.11	0.13	0.15	0.16	0.17	0.18
0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Rating:6W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

C Plane (°):0.0-360.0: 90.0
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: