

Report No.: 8

Test Time: 2017/4/14 15:52

Luminaire Property

Luminaire Manufacturer:

Luminaire Description: HDL-10612

Current: 0.061 A

Power Factor: 0.907

Voltage: 220V

Power: 12.25 W

Photometric Results

CIE Class: Direct

Measurement Flux: 1373.5 lm

Downward Ratio: 99%

Horizontal Diffuse Angle(50%): H94.4

Vertical Diffuse Angle(50%): V93.7

Luminaire Efficacy Rating (LER): 112

Max. Intensity: 737.33 cd

Total Rated Lamp Lumens: 1373.5 lm

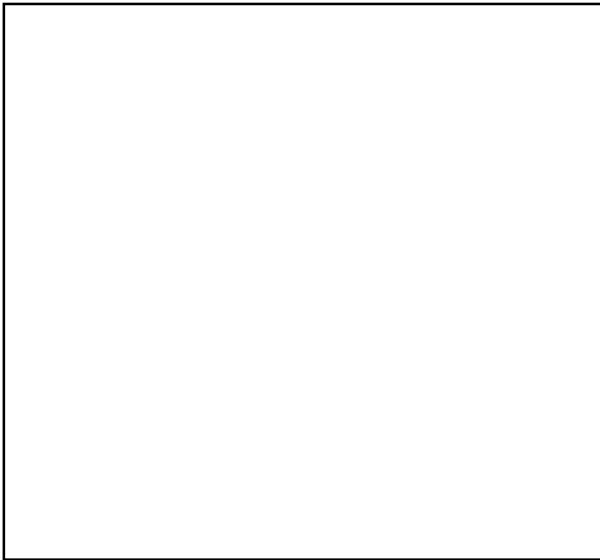
Efficiency: 100%

Upward Ratio: 1%

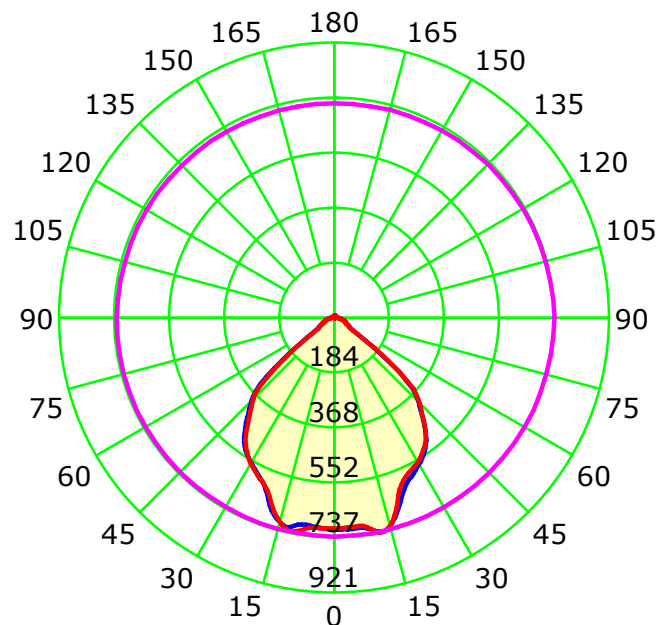
Central Intensity: 709.86 cd

Pos of Max. Intensity: H90 V12

Picture Of Luminaire



Luminous Intensity Distribution Curve



Average Diffuse Angle(50%): 94.1° Unit: cd

— C0-C180 — C90-C270 — G12

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

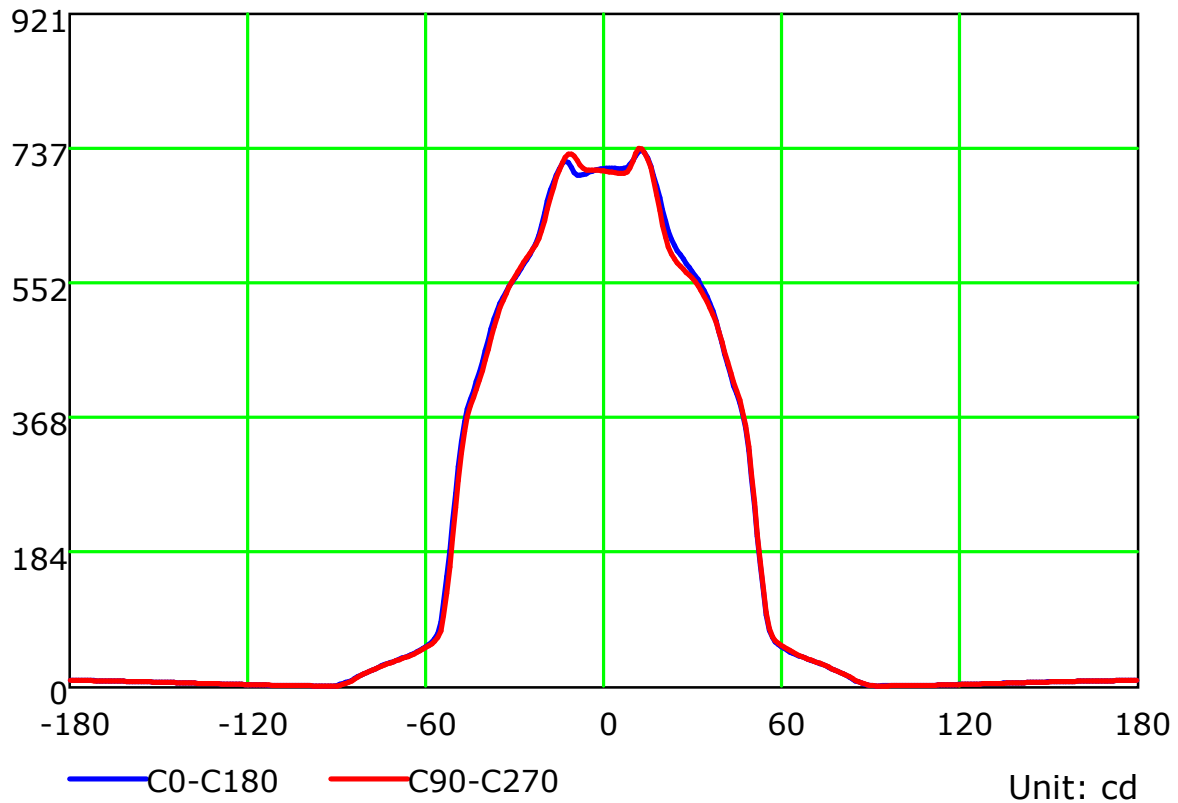
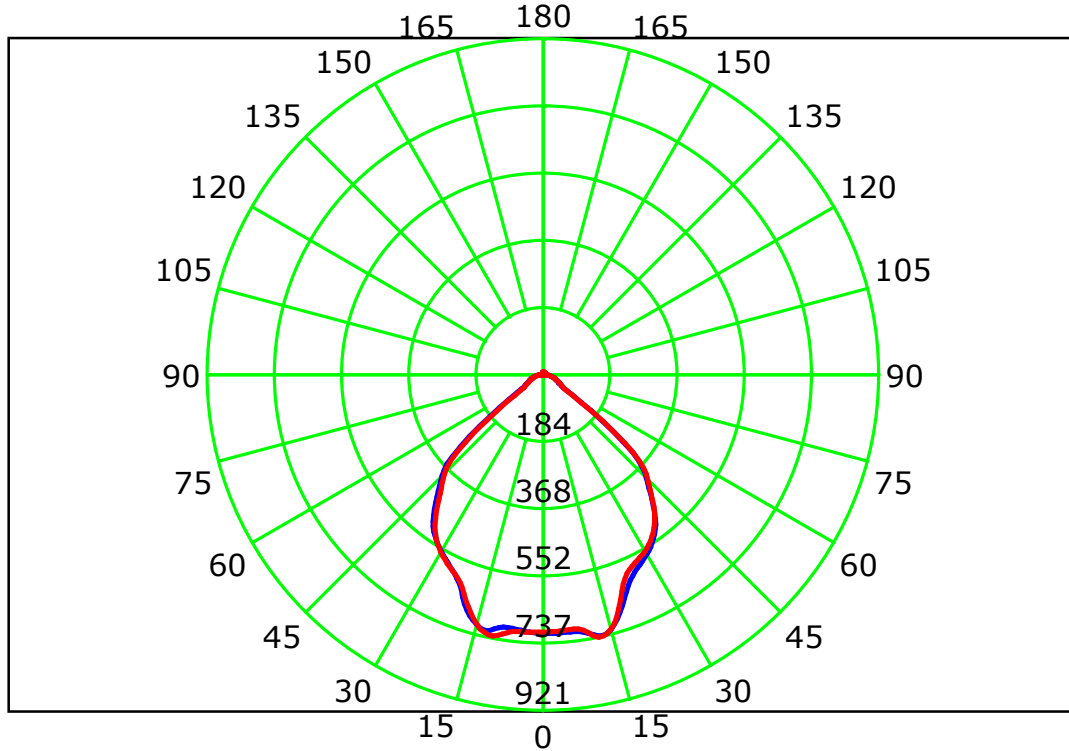
Test Device: GPM-1800B

Distance: 8.082 m

Humidity: 58

Inspector:

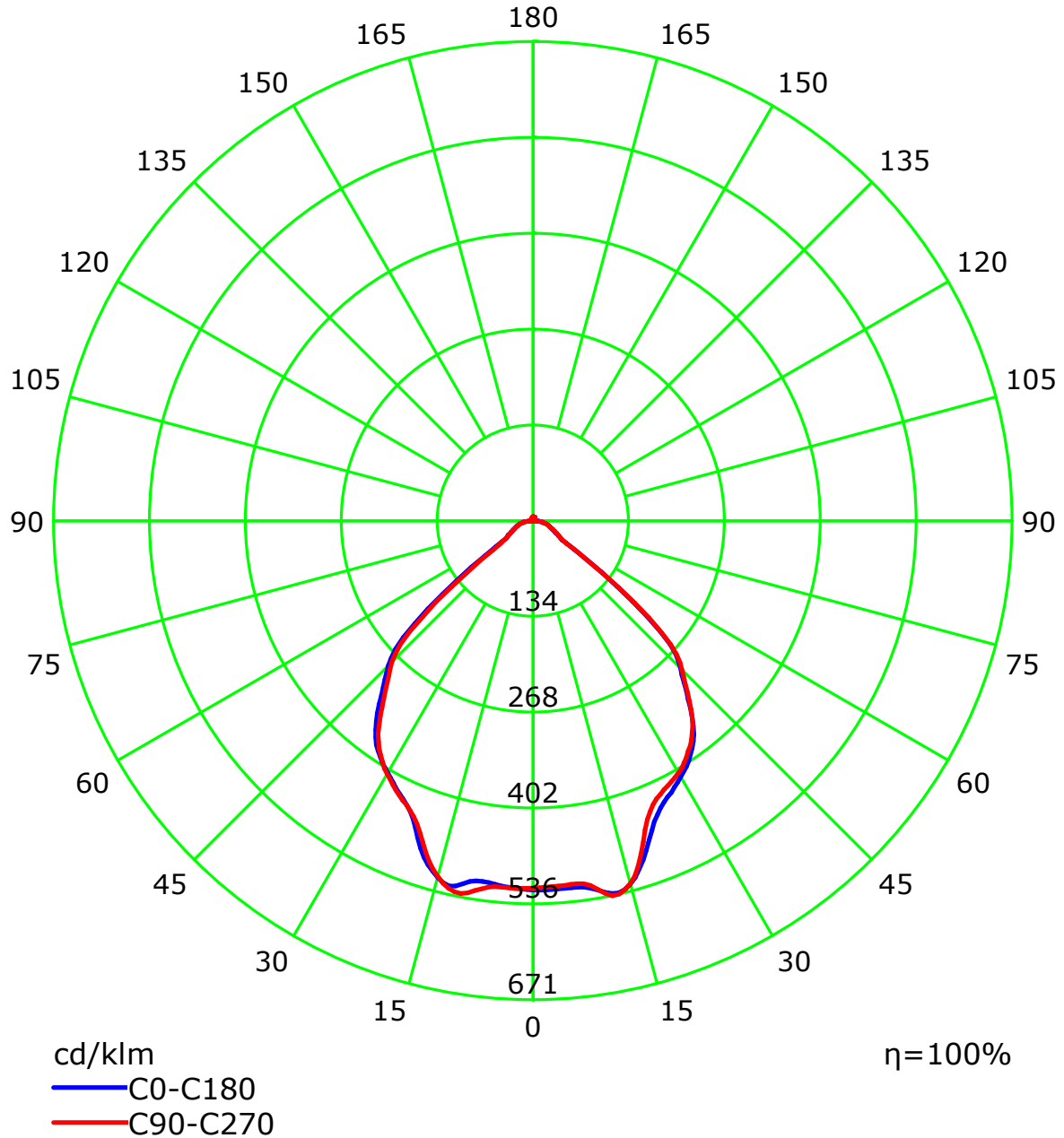
Luminous Intensity Distribution Curve



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:

Luminous Intensity Distribution Curve(cd/klm)



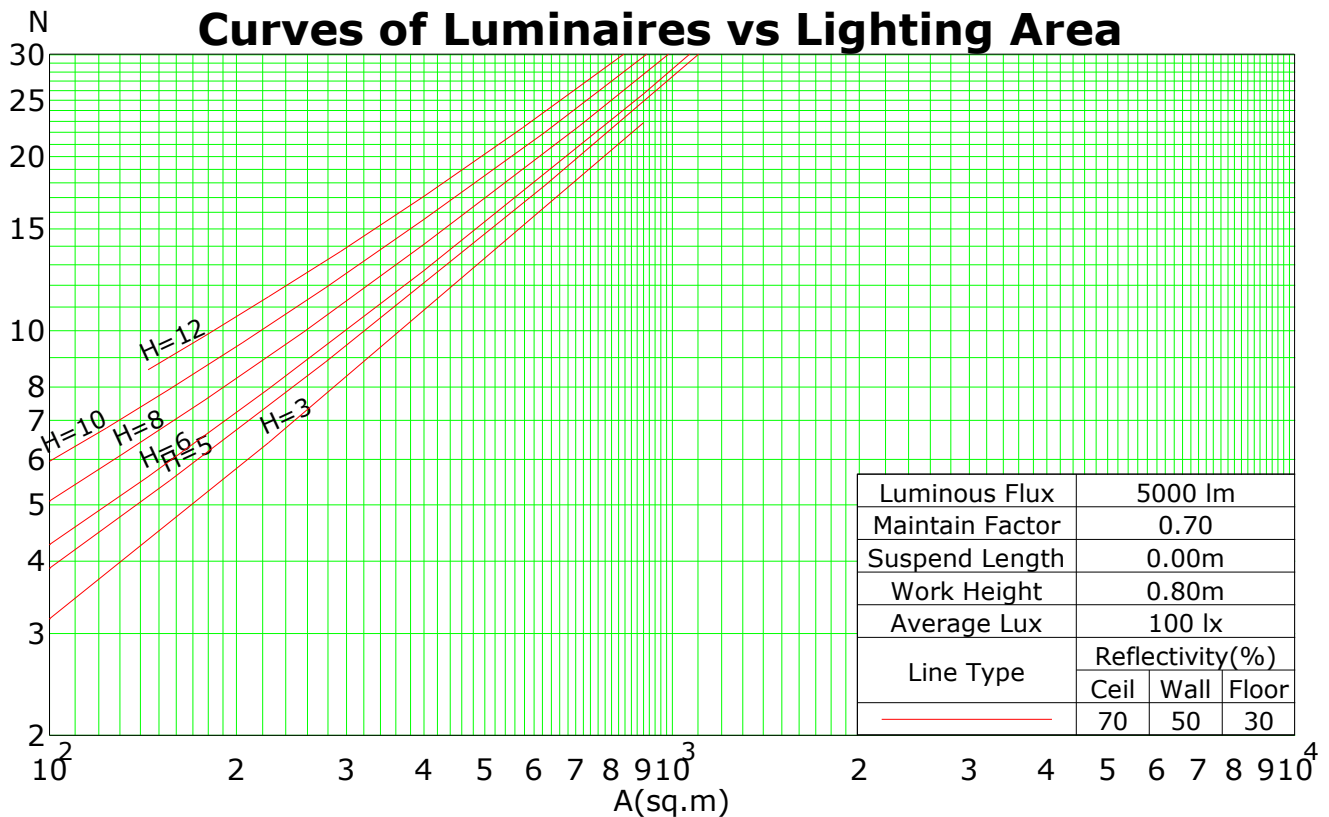
Coefficients Of Utilization - Zonal Cavity Method

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	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101	99
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	91	90	88
2	103	97	91	87	101	95	90	86	91	87	84	88	84	82	85	82	80	78
3	96	87	81	76	94	86	80	75	83	78	73	80	76	72	77	74	71	69
4	89	79	72	66	87	78	71	66	75	70	65	73	68	64	71	67	63	61
5	83	72	64	59	81	71	64	59	69	63	58	67	61	57	65	60	56	55
6	77	66	58	53	75	65	58	52	63	57	52	61	56	51	60	55	51	49
7	72	60	53	47	71	60	52	47	58	52	47	57	51	46	55	50	46	44
8	68	56	48	43	66	55	48	43	54	47	42	52	46	42	51	46	42	40
9	63	51	44	39	62	51	44	39	50	43	39	48	43	38	47	42	38	37
10	60	48	41	36	58	47	40	36	46	40	35	45	39	35	44	39	35	33

Spacing Criteria (0-180): 1.19

Spacing Criteria (90-270): 1.19

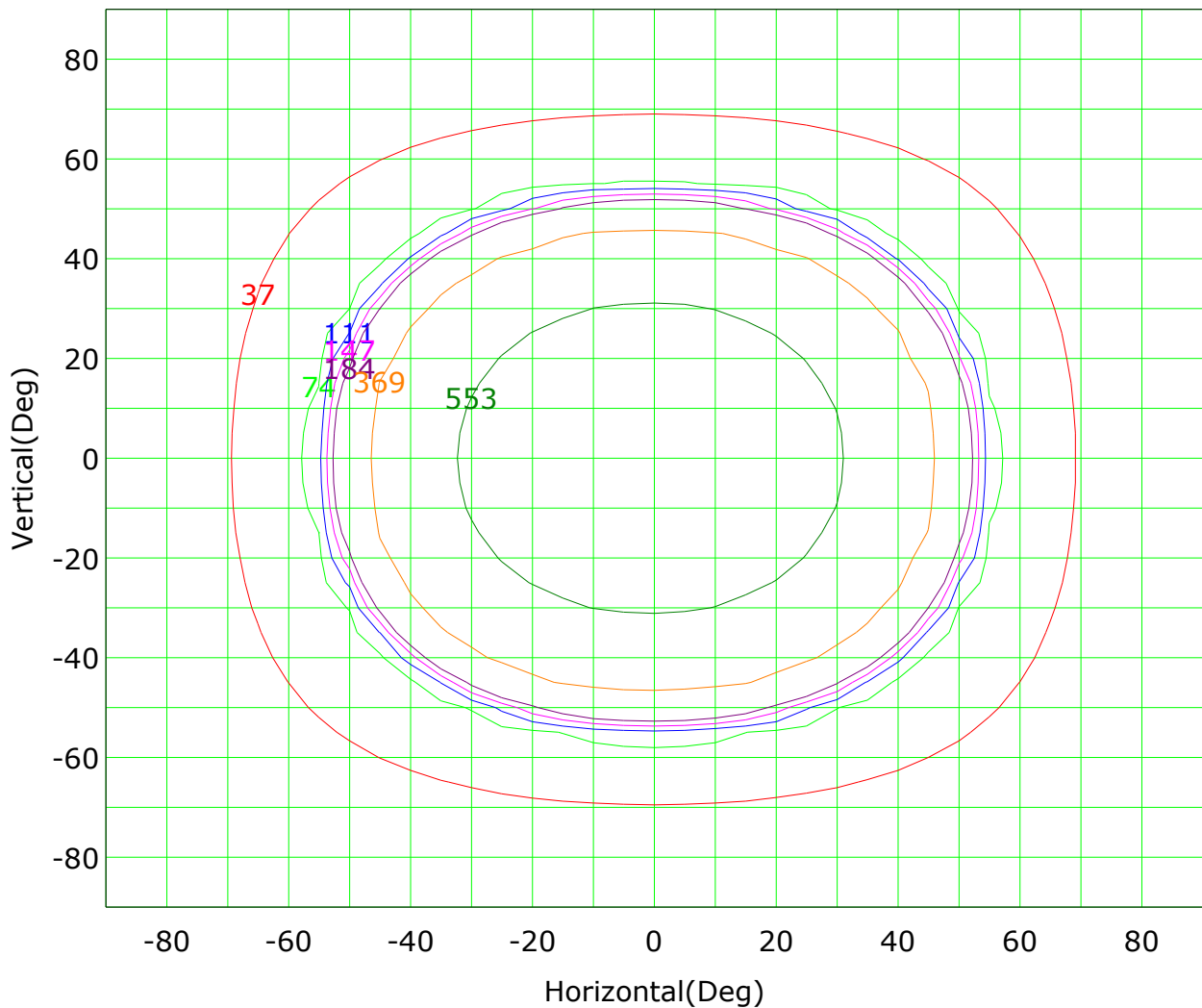
Spacing Criteria (Diagonal): 1.28



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)



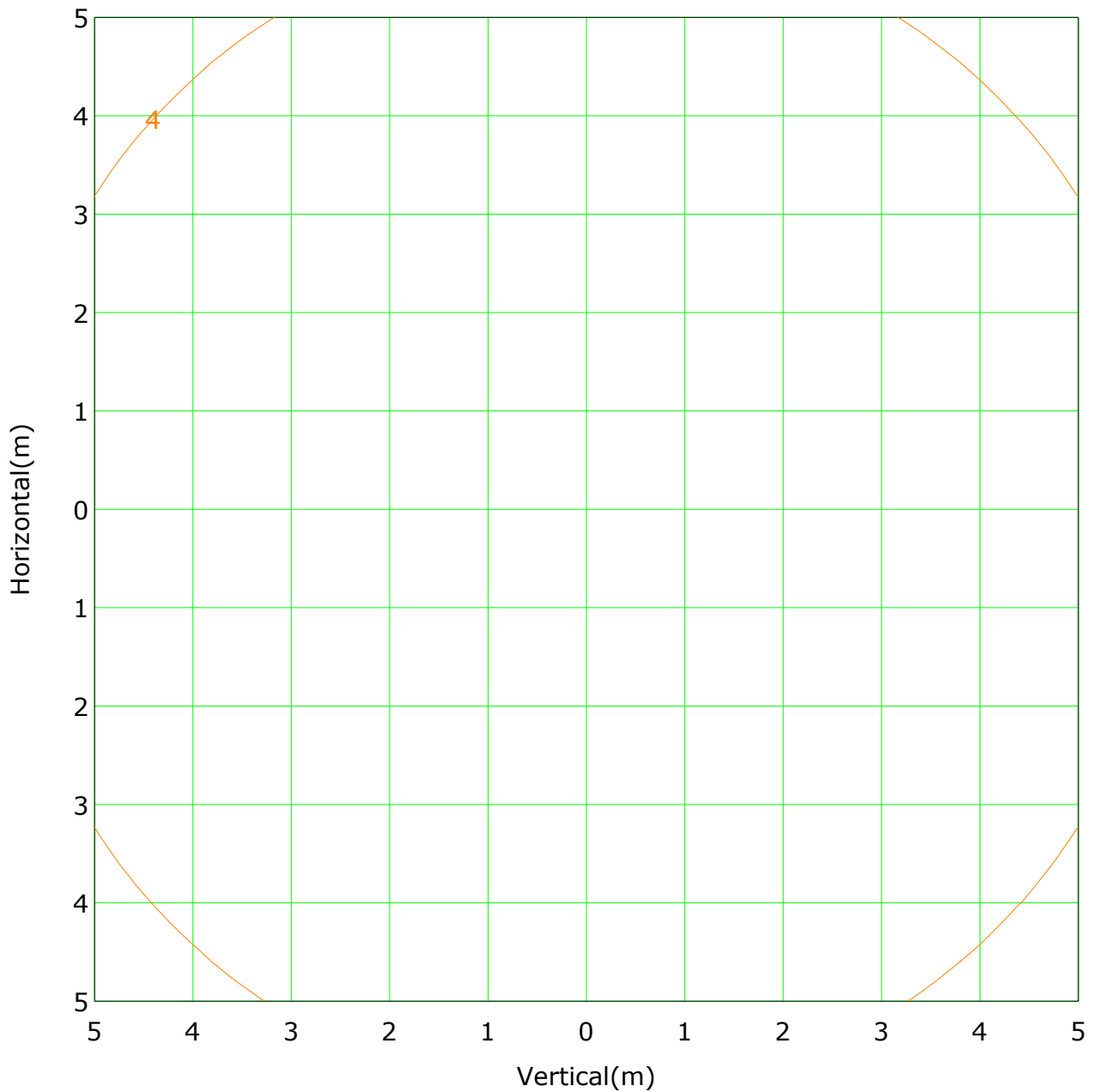
Imax (100%): 737 cd

(5%): 37 cd	(10%): 74 cd
(15%): 111 cd	(20%): 147 cd
(25%): 184 cd	(50%): 369 cd
(75%): 553 cd	(100%): 737 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%): 7.1 lx

(1%): 0.1 lx	(2%): 0.1 lx
(5%): 0.4 lx	(10%): 0.7 lx
(20%): 1.4 lx	(50%): 3.5 lx
(100%): 7.1 lx	(200%): 14.2 lx

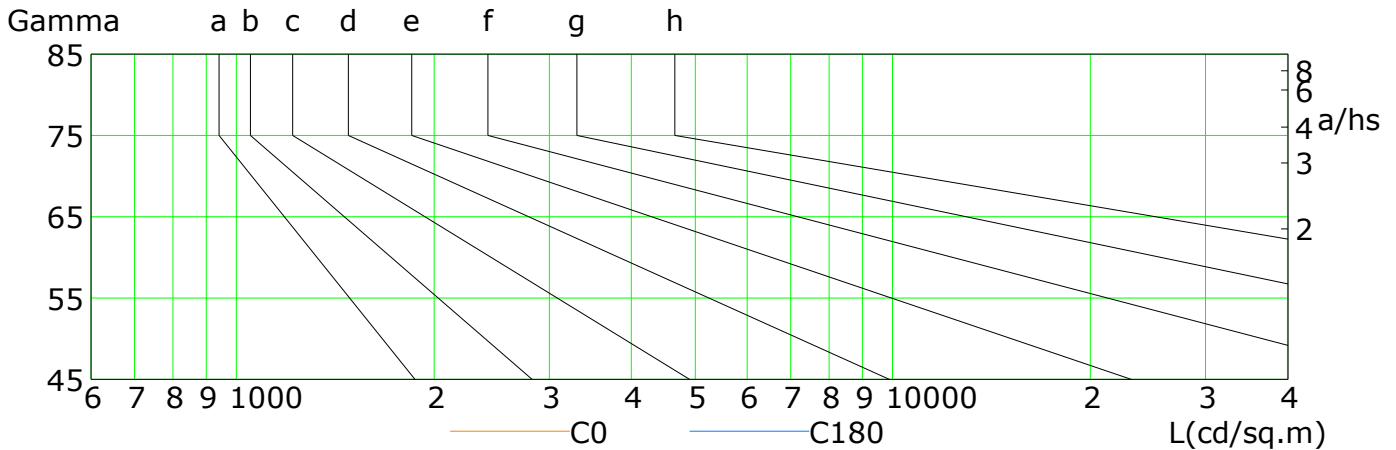
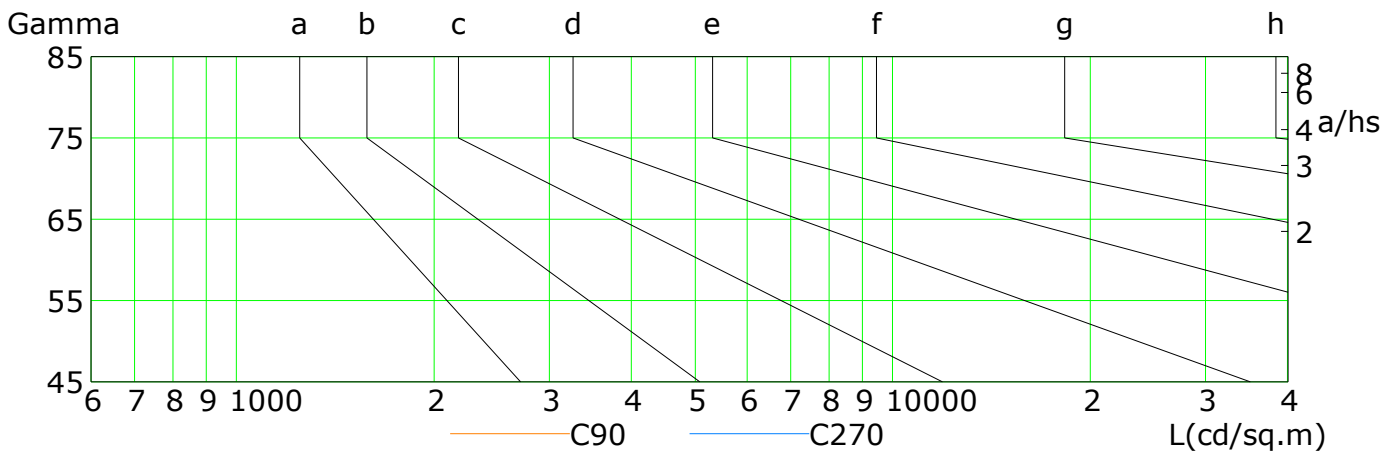
C Plane (°):0.0-360.0: 90.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

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

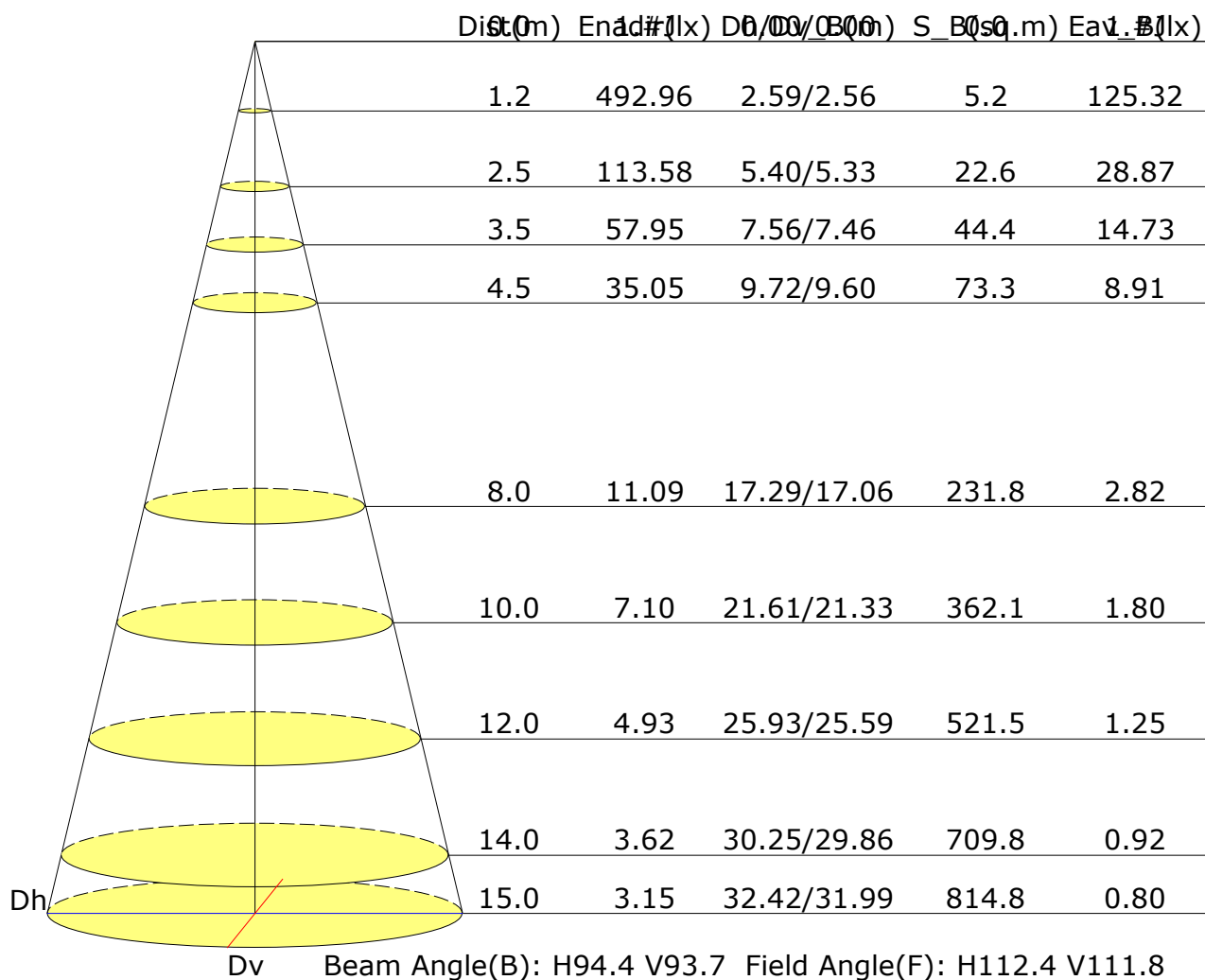


L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	401	286	98	55	44	36	28	19	8
C90	406	292	101	57	45	36	28	19	8
C180	394	264	88	55	43	36	28	19	9
C270	385	245	76	54	43	35	28	19	8

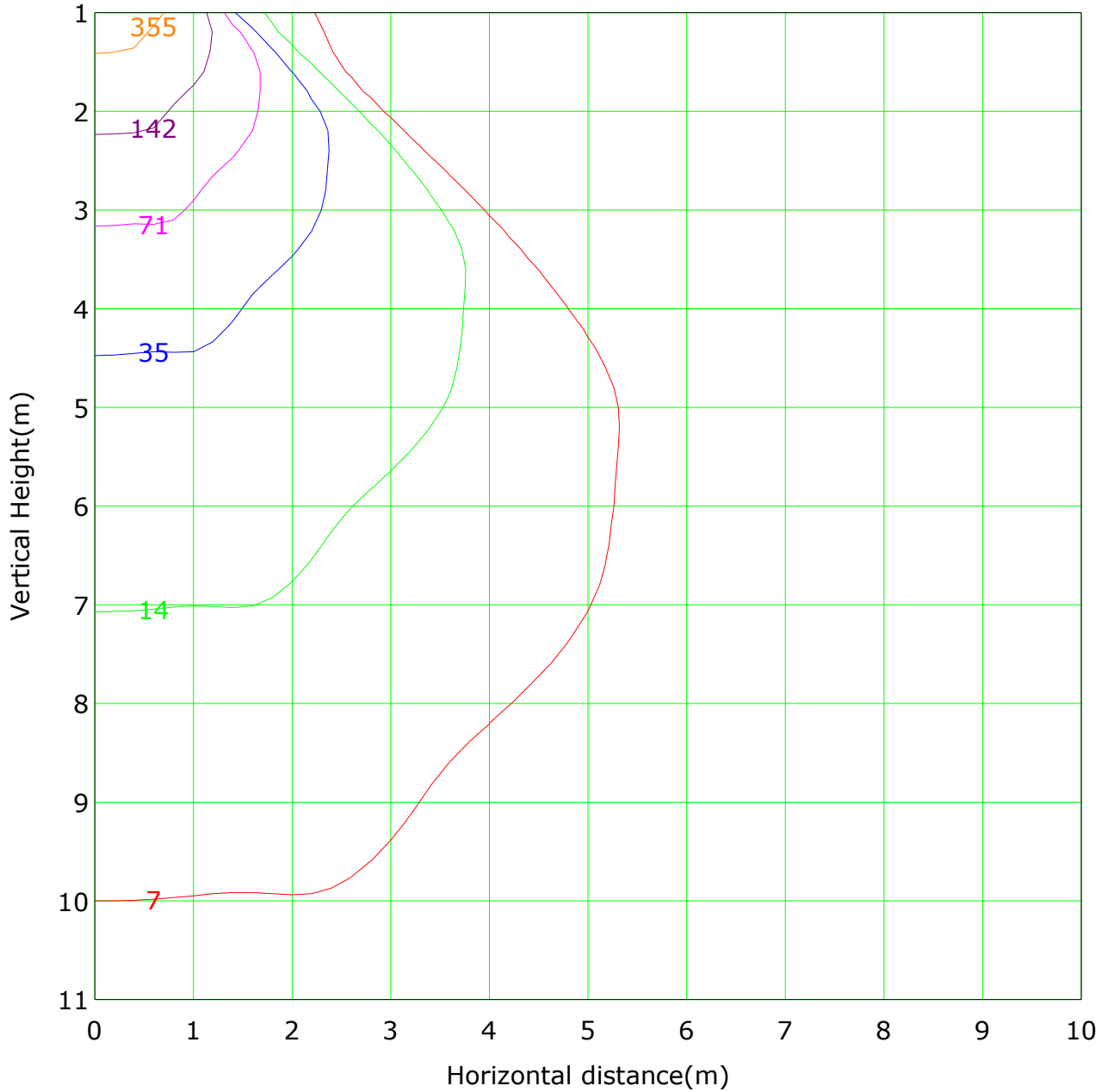
C Plane (°):0.0-360.0: 90.0
Test Lab: Inventfine instrument
Test Type: TYPE C
Temperature: 28
Operator: Jacky tang

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

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 11.0m Max Lux: 709.9 lx
— (1%): 7.1 lx — (2%): 14.2 lx
— (5%): 35.5 lx — (10%): 71.0 lx
— (20%): 142.0 lx — (50%): 354.9 lx
— (100%): 709.9 lx — (200%): 1419.7 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

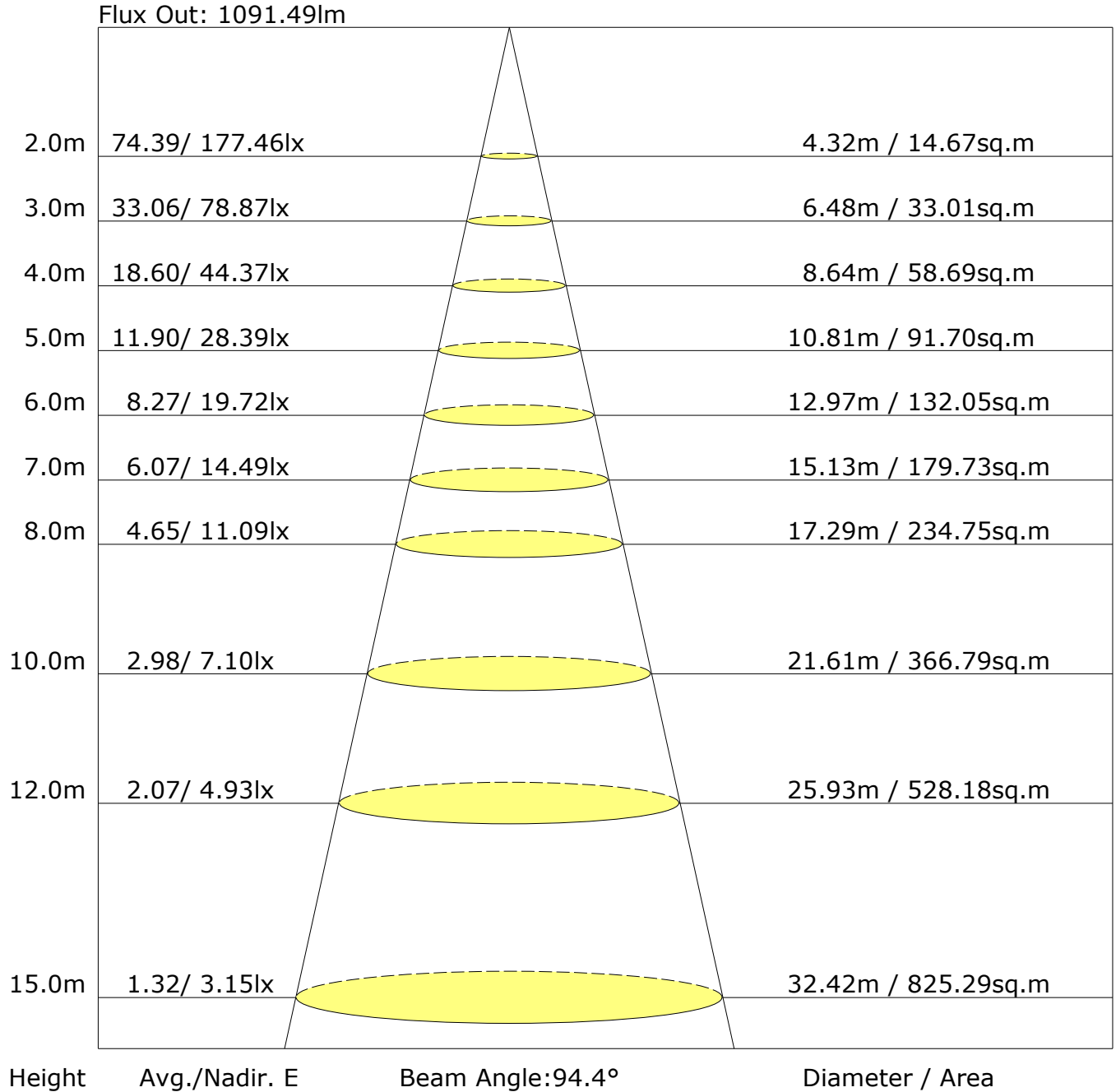
Unit: lm

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)
		0.0	0.0	0.1	0.1	0.1	0.1	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	0.4	0.0
		0.0	0.1	0.1	0.3	0.6	0.7	0.9	1.1	1.6	2.1	2.1	2.6	3.2	3.2	3.2	2.7	2.3	1.1	0.0	2.6	0.0
		0.0	0.1	0.3	0.5	0.9	1.2	1.7	2.1	2.5	3.1	3.1	3.7	4.4	4.4	4.4	3.8	3.3	2.3	6.6	6.6	0.0
		0.0	0.1	0.3	0.6	1.2	1.7	2.5	3.1	3.7	4.4	5.1	5.8	6.6	6.6	6.6	5.8	5.1	4.4	15.8	15.8	0.0
		0.0	0.2	0.4	0.7	1.2	1.7	2.5	3.1	3.7	4.4	5.1	5.8	6.6	6.6	6.6	5.8	5.1	4.4	46.7	46.7	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	92.7	92.7	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	131.2	131.2	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	2163.2	2163.2	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	180.0	180.0	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	180.6	180.6	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	164.5	164.5	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	132.7	132.7	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	94.6	94.6	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	48.7	48.7	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	7.0	7.0	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	0.0	0.0	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	2.6	2.6	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	0.4	0.4	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	1354	1354	0.0
		0.0	0.2	0.6	1.1	2.1	2.8	3.7	4.4	5.1	5.8	6.6	7.3	8.2	8.2	8.2	7.3	6.6	5.8	1248	1248	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



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 = 1.25									
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	0.70	0.79	0.85	0.89	0.95	0.98	1.01	1.04	1.06	
	0.30		0.64	0.73	0.79	0.84	0.90	0.94	0.97	1.01	1.04	
	0.20		0.59	0.69	0.75	0.80	0.86	0.91	0.94	0.98	1.01	
0.50	0.50	0.20	0.68	0.77	0.83	0.86	0.91	0.95	0.97	1.00	1.02	
	0.30		0.63	0.72	0.78	0.82	0.88	0.91	0.94	0.98	1.00	
	0.20		0.59	0.68	0.74	0.78	0.85	0.89	0.91	0.95	0.98	
0.30	0.50	0.20	0.67	0.75	0.80	0.84	0.89	0.92	0.94	0.96	0.98	
	0.30		0.62	0.71	0.76	0.80	0.85	0.89	0.91	0.94	0.96	
	0.20		0.58	0.67	0.73	0.77	0.83	0.86	0.89	0.93	0.95	
0.00	0.00	0.00	0.56	0.65	0.70	0.74	0.79	0.83	0.85	0.88	0.90	
Rating:13W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980												

Utilisation Factor Table(Wall)

Utilisation Factors UF(W)			SHR NOM = 1.25									
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	0.78	0.62	0.52	0.45	0.35	0.29	0.25	0.19	0.16	
	0.30		0.65	0.53	0.45	0.40	0.32	0.27	0.23	0.18	0.15	
	0.20		0.56	0.46	0.40	0.36	0.29	0.25	0.21	0.17	0.14	
0.50	0.50	0.20	0.74	0.59	0.49	0.42	0.33	0.31	0.23	0.18	0.14	
	0.30		0.63	0.51	0.43	0.38	0.30	0.25	0.22	0.17	0.14	
	0.20		0.55	0.45	0.39	0.34	0.28	0.23	0.20	0.16	0.13	
0.30	0.50	0.20	0.72	0.56	0.47	0.40	0.31	0.25	0.22	0.17	0.14	
	0.30		0.61	0.50	0.42	0.36	0.29	0.24	0.20	0.16	0.13	
	0.20		0.54	0.44	0.38	0.33	0.27	0.22	0.19	0.15	0.12	
0.00	0.00	0.00	0.42	0.33	0.27	0.24	0.19	0.15	0.13	0.10	0.08	
Rating:13W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980												

Utilisation Factor Table(Ceiling cavity)

Utilisation Factors UF(C)			SHR NOM = 1.25									
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	0.16	0.17	0.18	0.19	0.20	0.21	0.21	0.22	0.22	
	0.30		0.10	0.12	0.14	0.15	0.16	0.18	0.18	0.20	0.20	
	0.20		0.07	0.08	0.10	0.11	0.13	0.15	0.16	0.18	0.19	
0.50	0.50	0.20	0.15	0.16	0.17	0.18	0.19	0.20	0.20	0.21	0.21	
	0.30		0.10	0.12	0.13	0.14	0.16	0.17	0.18	0.19	0.20	
	0.20		0.07	0.08	0.10	0.11	0.13	0.15	0.16	0.17	0.18	
0.30	0.50	0.20	0.15	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.20	
	0.30		0.10	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	
	0.20		0.07	0.08	0.10	0.11	0.13	0.14	0.15	0.17	0.18	
0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Rating:13W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980												