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Complete Integrated LED Lighting Solutions

Report No.:

Test Time: 2018/10/12 14:28

## Luminaire Property

Luminaire Manufacturer:

Luminaire Category: RIBBONLYTE

Luminous Length (mm): 500

Luminous Height (mm): 1

Current: 0.206 A

Power Factor: 1.000

Luminaire Description: RBS220243.0A

Luminous Width (mm): 8

Voltage: 24.0 V

Power: 4.95 W

## Photometric Results

CIE Class: Direct

Measurement Flux: 142 lm

Downward Ratio: 99%

Horizontal Diffuse Angle(50%): H125.2

Vertical Diffuse Angle(50%): V120.6

Luminaire Efficacy Rating (LER): 29

Max. Intensity: 44.28 cd

Total Rated Lamp Lumens: 142.0 lm

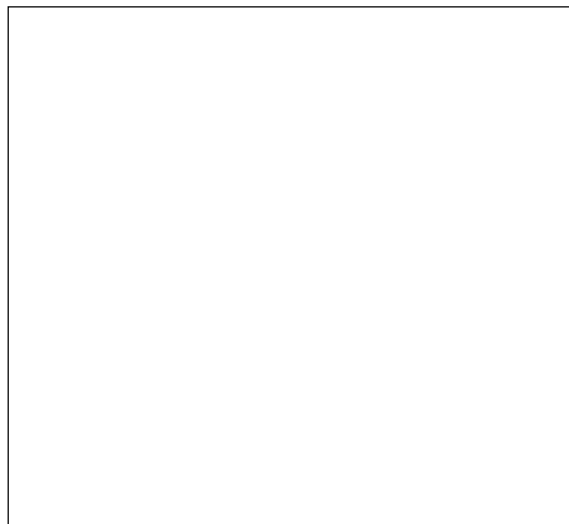
Efficiency: 100%

Upward Ratio: 1%

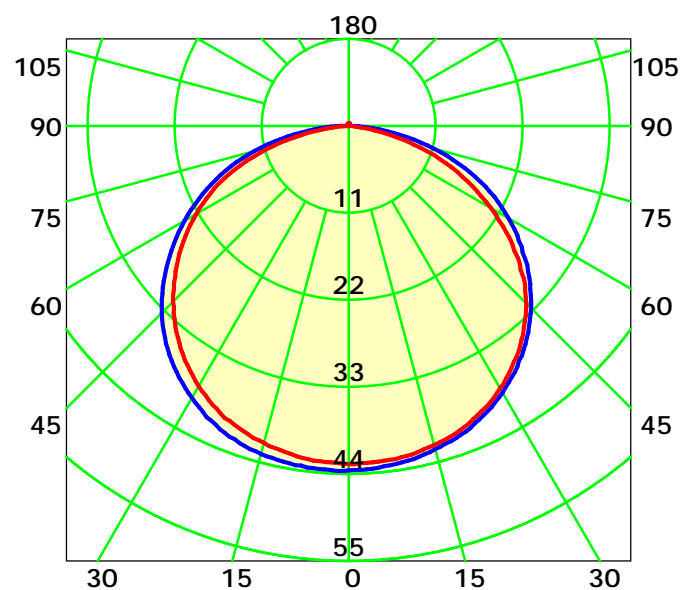
Central Intensity: 44.16 cd

Pos of Max. Intensity: H180 V2

Picture Of Luminaire



Luminous Intensity Distribution Curve



Average Diffuse Angle(50%): 122.9° Unit: cd

— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0: 1.0

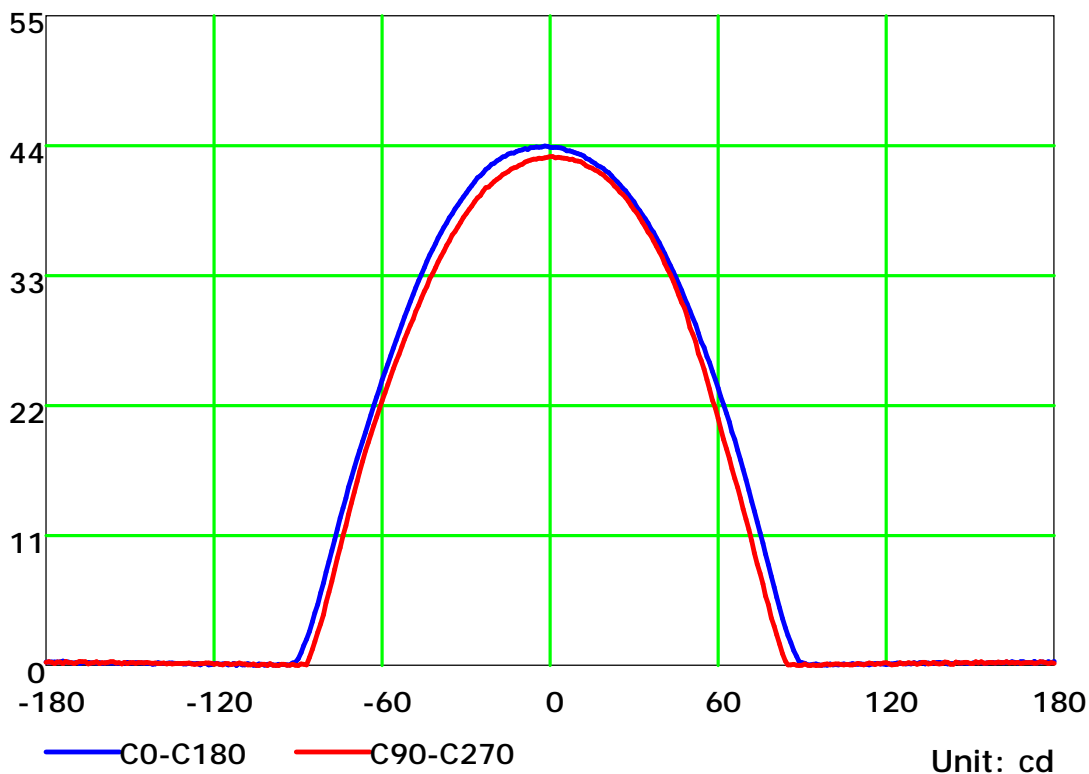
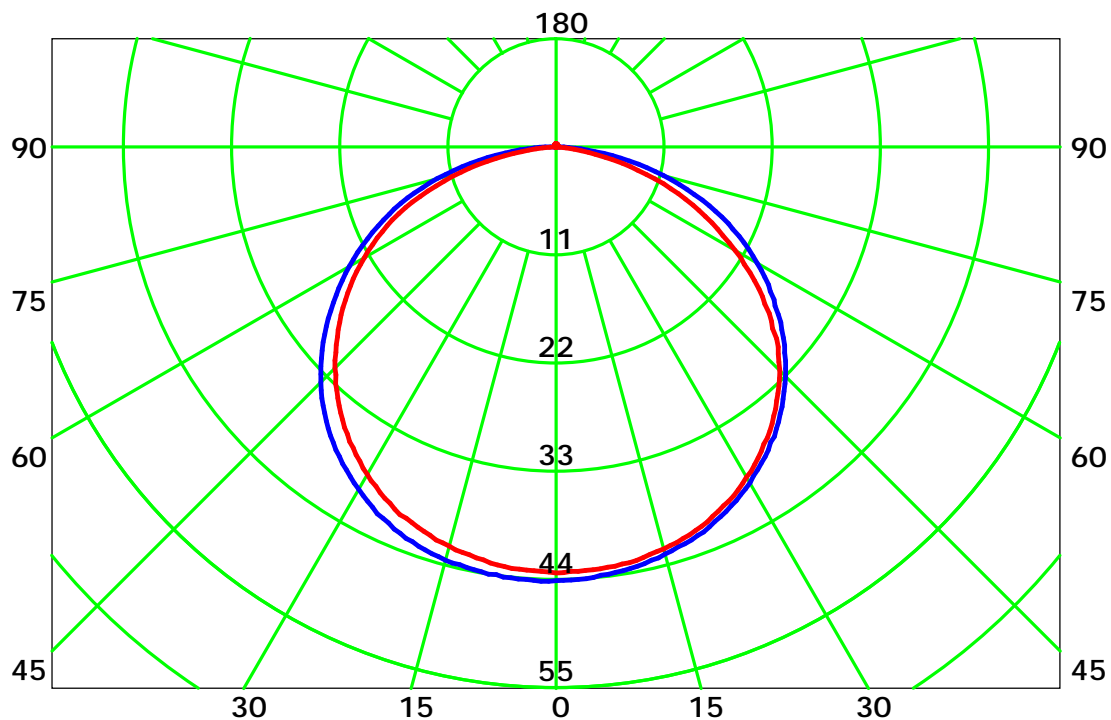
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

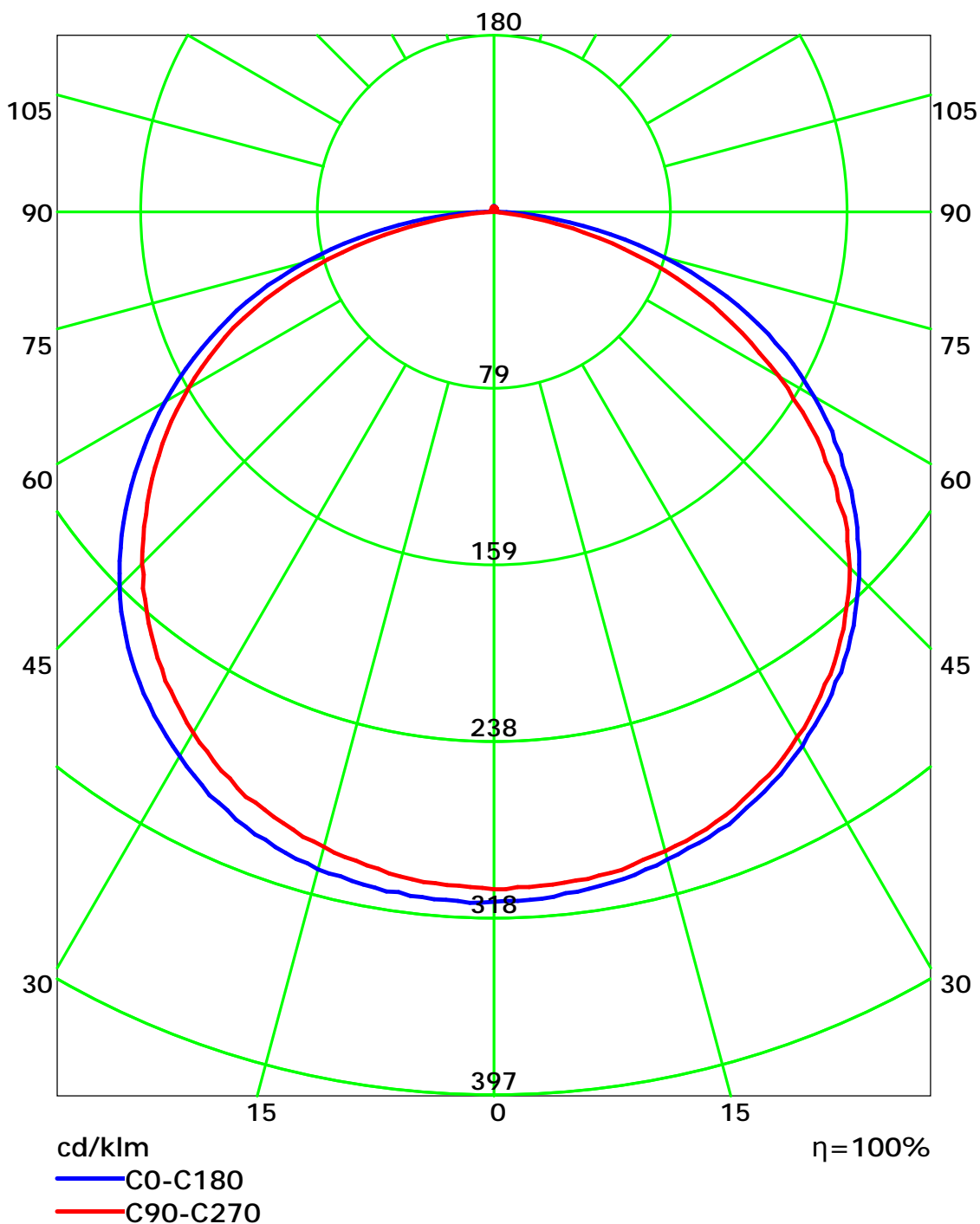
## Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 30.0  
Test Lab:  
Test Type: TYPE C  
Temperature: 25  
Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 9.028 m  
Humidity: 60%  
Inspector:

## Luminous Intensity Distribution Curve(cd/klm)



C Plane (°):0.0-360.0: 30.0  
 Test Lab:  
 Test Type: TYPE C  
 Temperature: 25  
 Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0  
 Test Device: GPM-1800B  
 Distance: 9.028 m  
 Humidity: 60%  
 Inspector:



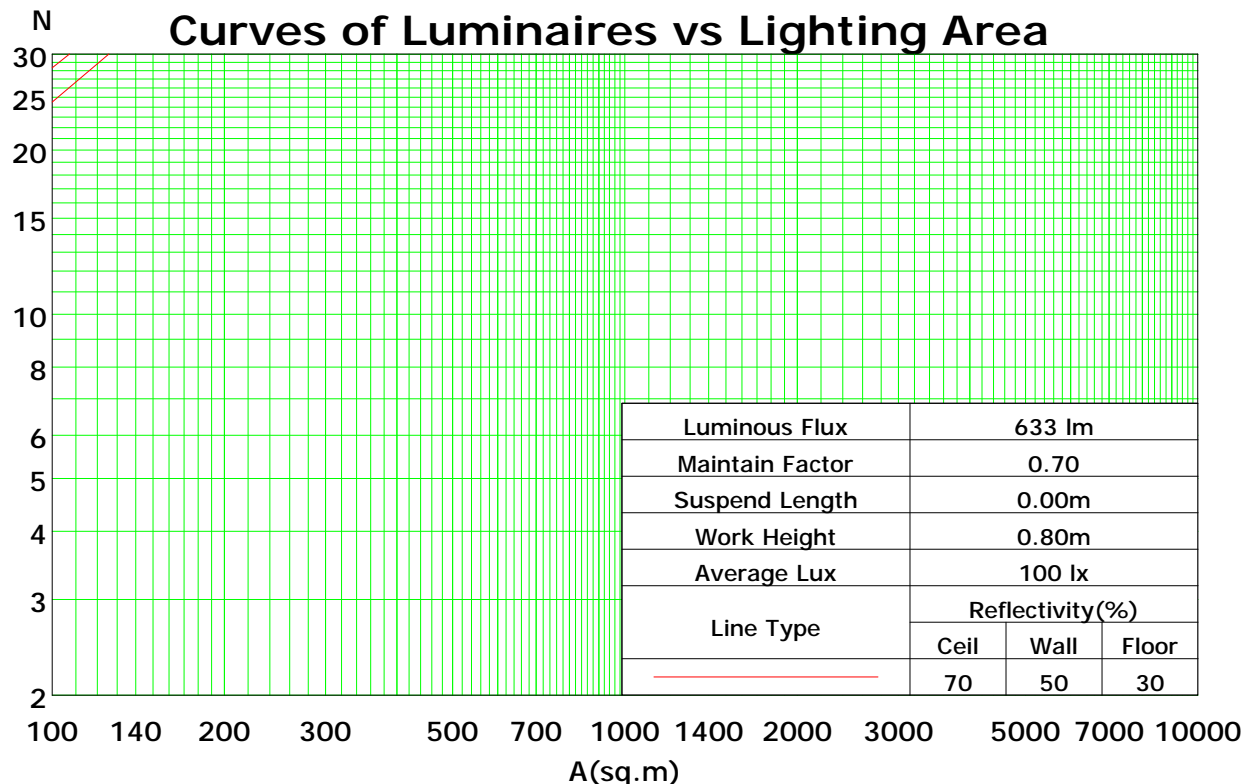
## Coefficients Of Utilization - Zonal Cavity Method

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	108	103	98	94	105	101	96	93	96	93	90	92	89	87	88	86	84	82
2	98	89	82	76	95	87	81	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	67	62	58	56
4	81	69	59	52	79	67	59	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	55	49	43	53	48	43	41
6	68	55	45	39	66	54	45	39	52	44	38	50	43	38	48	42	37	35
7	63	49	40	34	62	49	40	34	47	39	34	45	38	33	44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30	42	35	30	40	34	29	27
9	55	41	33	27	53	41	33	27	39	32	27	38	31	27	37	31	26	25
10	51	38	30	24	50	37	30	24	36	29	24	35	29	24	34	28	24	22

Spacing Criteria (0-180): 1.34

Spacing Criteria (90-270): 1.32

Spacing Criteria (Diagonal): 1.45



C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0: 1.0

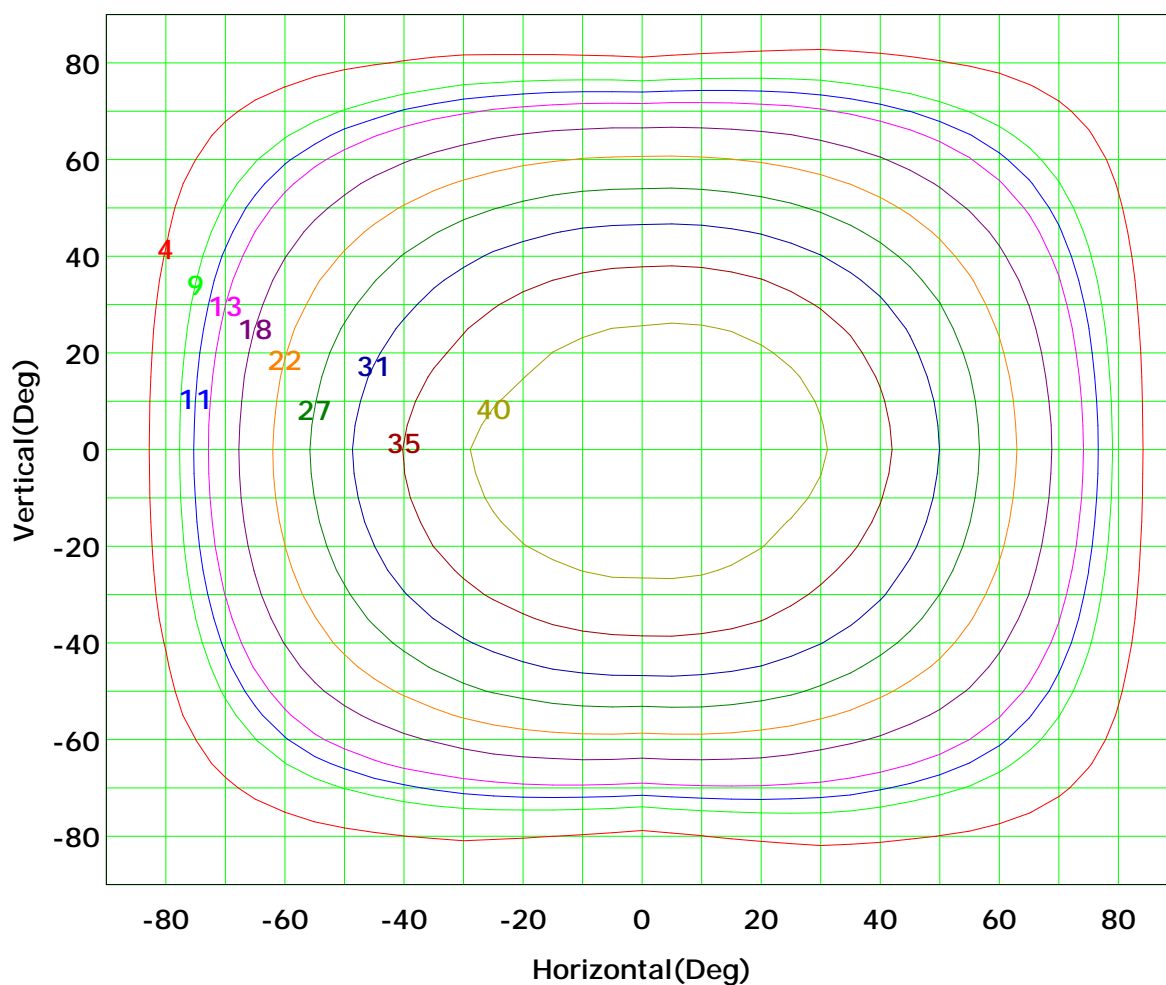
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

## Isocandela (rectangle)



I<sub>max</sub> (100%): 44 cd

( 10%):	4 cd	( 20%):	9 cd
( 25%):	11 cd	( 30%):	13 cd
( 40%):	18 cd	( 50%):	22 cd
( 60%):	27 cd	( 70%):	31 cd
( 80%):	35 cd	( 90%):	40 cd

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-1800B

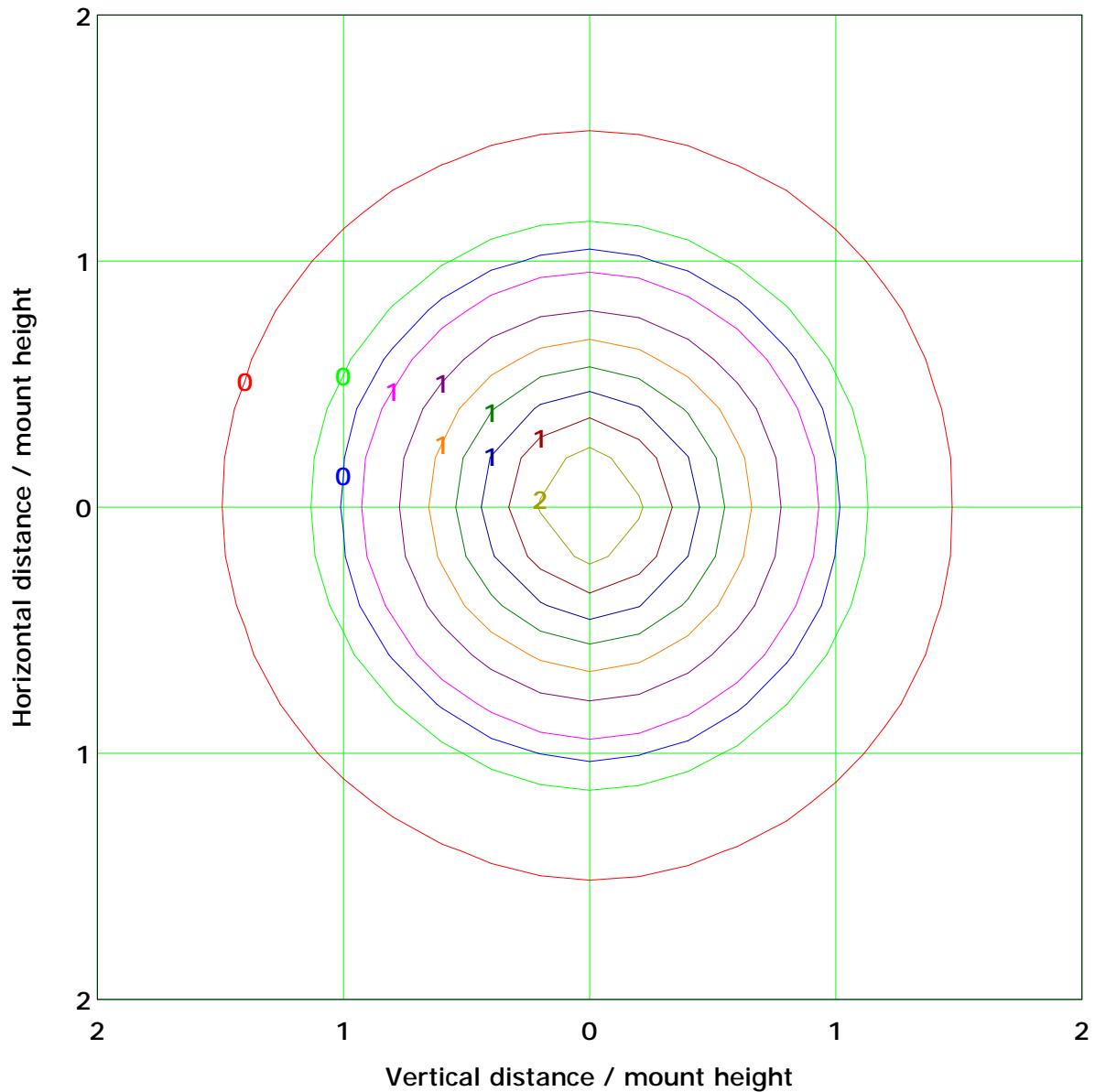
Distance: 9.028 m

Humidity: 60%

Inspector:



## IsoLux Plot



Mounting Height: 5.0m Max Lux(100%): 1.8 lx

( 10%): 0.2 lx	( 20%): 0.4 lx
( 25%): 0.4 lx	( 30%): 0.5 lx
( 40%): 0.7 lx	( 50%): 0.9 lx
( 60%): 1.1 lx	( 70%): 1.2 lx
( 80%): 1.4 lx	( 90%): 1.6 lx

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

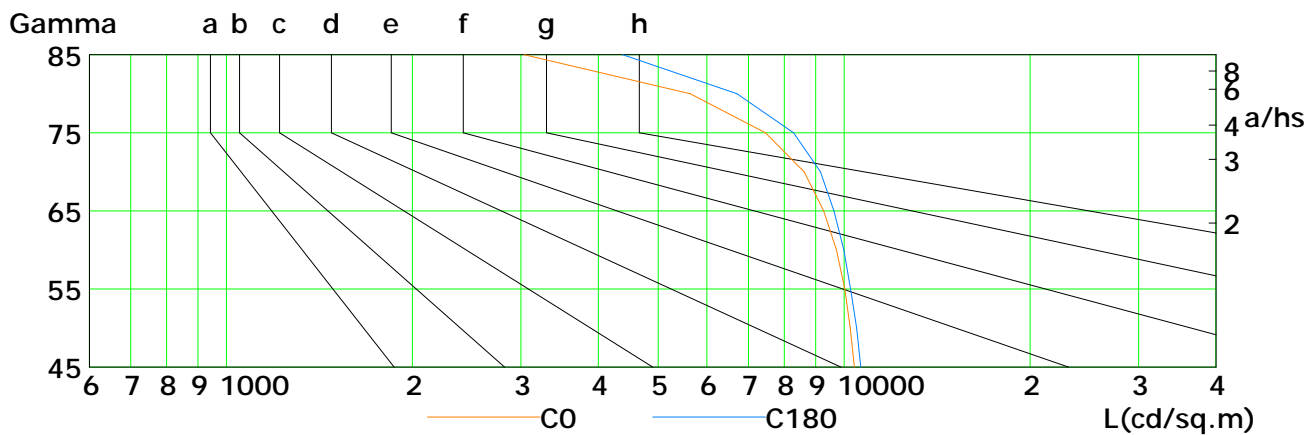
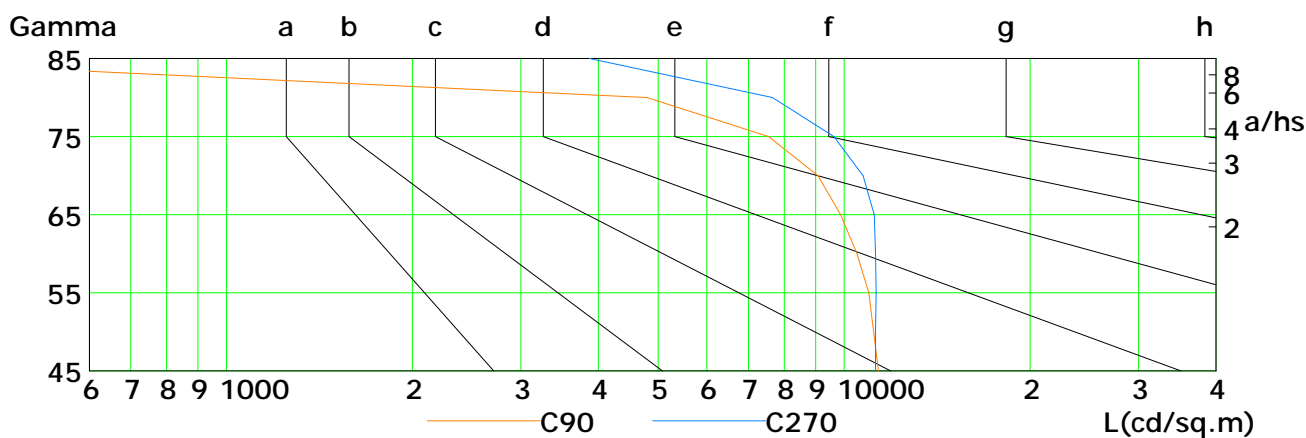
Inspector:



## 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	10393	10230	10030	9725	9274	8624	7456	5636	3035
C90	11369	11163	10974	10489	9878	9072	7546	4797	224
C180	10651	10483	10248	9996	9629	9162	8286	6706	4382
C270	11245	11244	11270	11246	11197	10737	9636	7659	3870

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-1800B

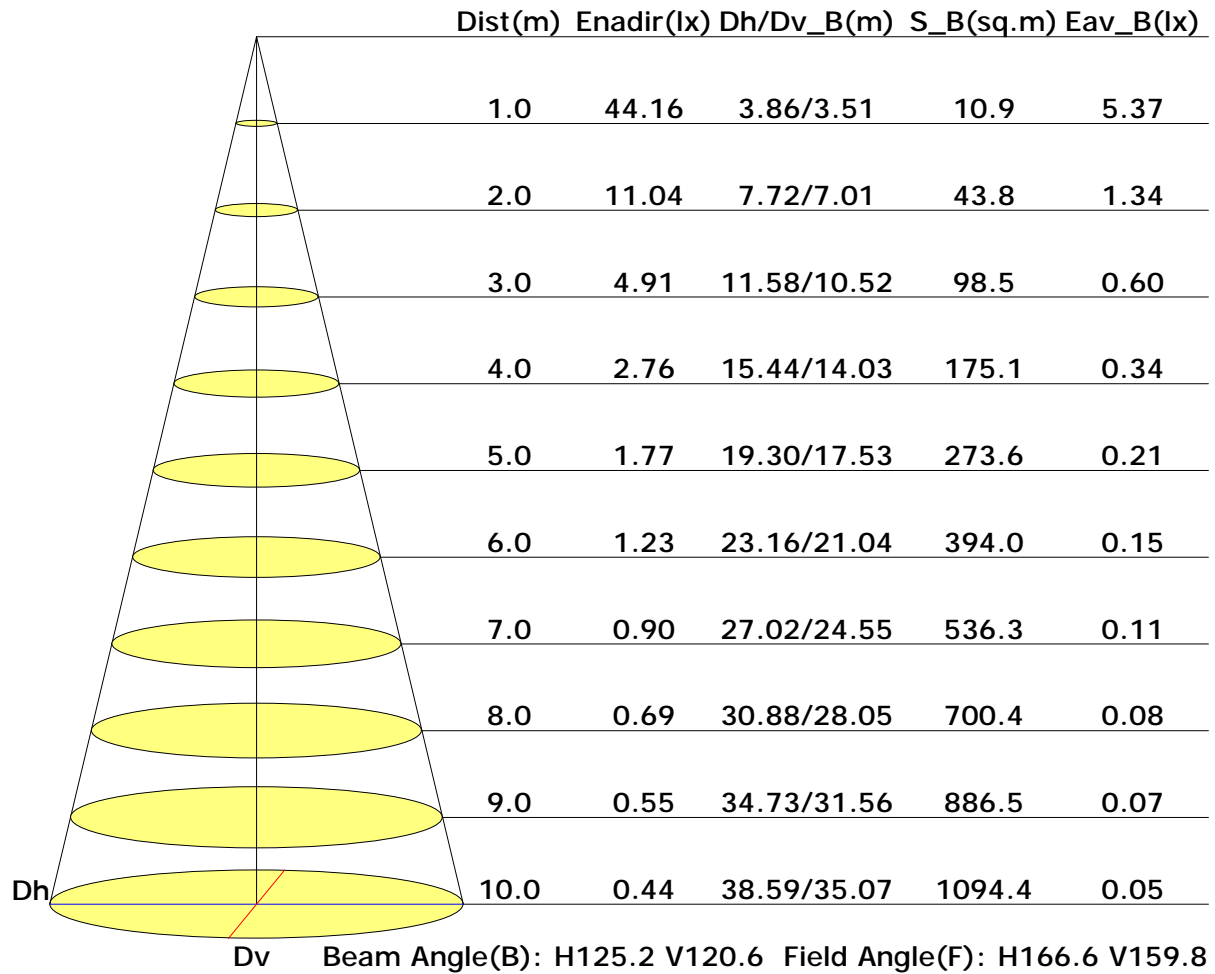
Distance: 9.028 m

Humidity: 60%

Inspector:

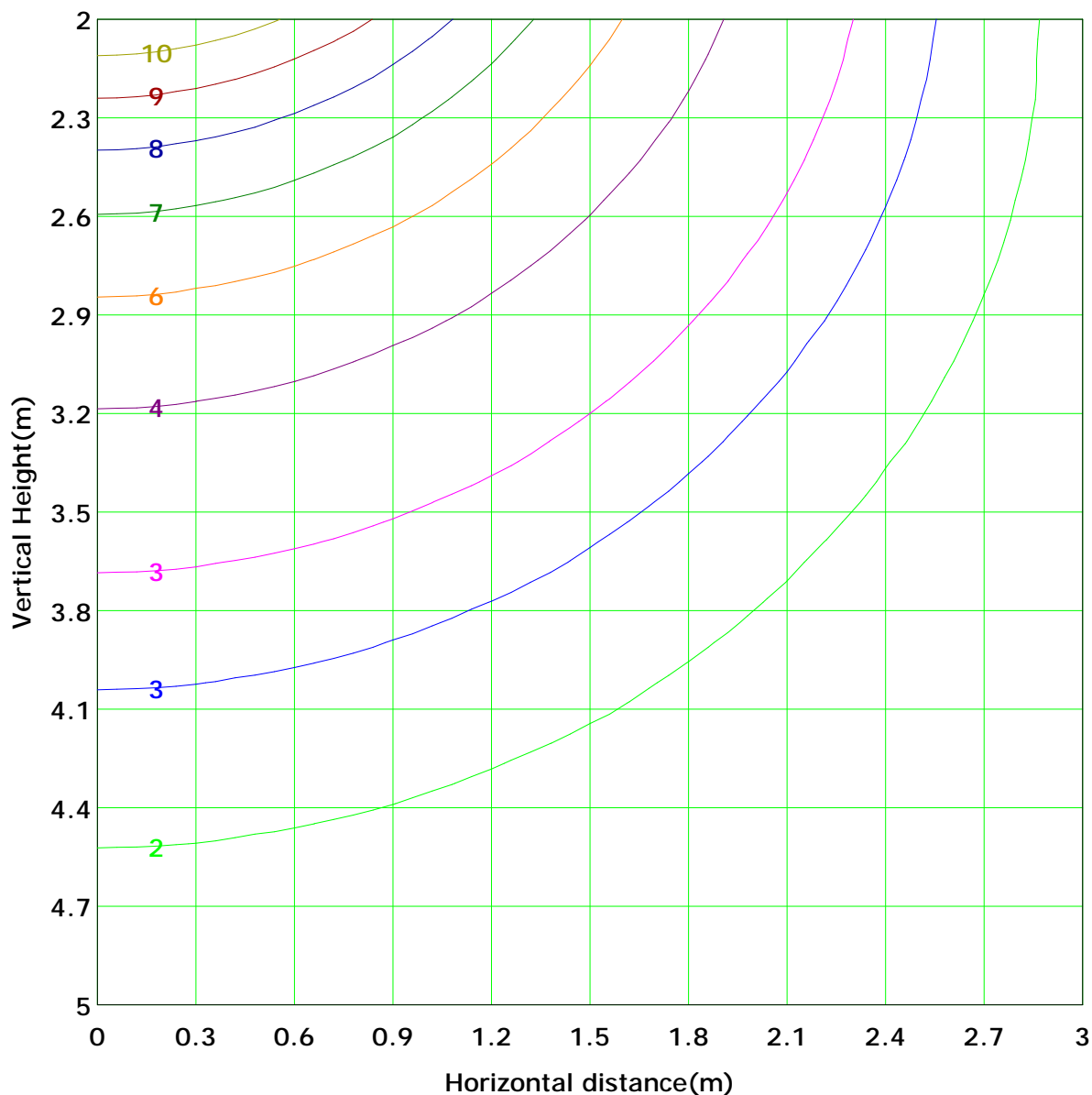


## Illuminance at a Distance





## Vertical IsoLux Plot



Lowest(m): 2.0m	Highest(m): 5.0m	Max Lux: 11.0 lx
( 10%): 1.1 lx	( 20%): 2.2 lx	
( 25%): 2.8 lx	( 30%): 3.3 lx	
( 40%): 4.4 lx	( 50%): 5.5 lx	
( 60%): 6.6 lx	( 70%): 7.7 lx	
( 80%): 8.8 lx	( 90%): 9.9 lx	

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:



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## 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(E)	Flux(T)	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
		0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-90	-80	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-80	-70	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-70	-60	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-60	-50	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-50	-40	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-40	-30	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-30	-20	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-20	-10	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
-10	0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
0	10	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
10	20	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
20	30	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
30	40	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
40	50	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
50	60	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
60	70	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
70	80	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
80	90	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8
90	Flux(T)	0.2	1.1	3.0	5.5	8.2	10.9	13.0	14.5	15.1	15.0	14.3	12.7	10.5	7.9	5.2	2.8	1.0	0.1	141
Flux(E)	0.1	1.0	2.9	5.4	8.1	10.8	12.9	14.4	15.0	14.9	14.2	12.6	10.4	7.8	5.1	2.7	0.9	0.0	0.0	139

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:



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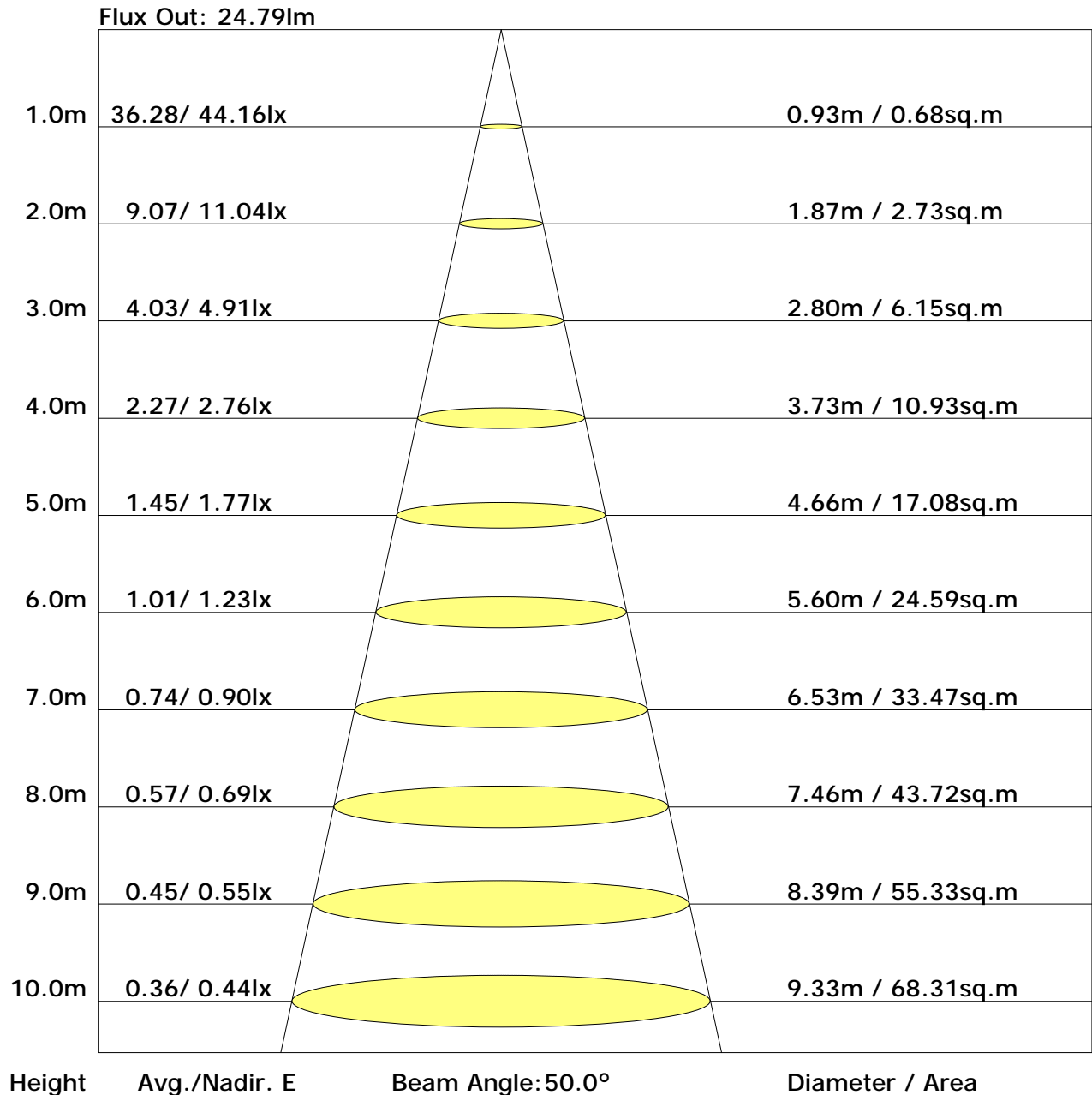
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## The Average Illuminance Effective Figure



C Plane (°):0.0-360.0: 30.0  
Test Lab:  
Test Type: TYPE C  
Temperature: 25  
Operator: Aaron

Gamma Plane (°):0.0-180.0: 1.0  
Test Device: GPM-1800B  
Distance: 9.028 m  
Humidity: 60%  
Inspector:



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## 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	27.4	29.1	27.8	29.4	29.7	26.7	28.4	27.1	28.7	29.0
3H	29.5	31.0	29.9	31.3	31.7	28.3	29.8	28.7	30.1	30.5
4H	30.3	31.7	30.7	32.1	32.5	28.8	30.2	29.2	30.6	31.0
6H	30.8	32.2	31.3	32.5	32.9	29.0	30.3	29.4	30.7	31.1
8H	31.0	32.3	31.4	32.7	33.1	29.0	30.3	29.4	30.7	31.1
12H	31.1	32.3	31.5	32.7	33.1	29.0	30.2	29.4	30.6	31.0
X=4H Y=2H	28.0	29.4	28.4	29.8	30.2	27.5	28.9	27.9	29.3	29.6
3H	30.3	31.5	30.7	31.9	32.3	29.3	30.5	29.7	30.9	31.3
4H	31.2	32.3	31.6	32.7	33.2	29.9	31.0	30.3	31.4	31.9
6H	31.9	32.8	32.3	33.3	33.8	30.2	31.2	30.7	31.7	32.1
8H	32.1	33.0	32.6	33.4	33.9	30.3	31.2	30.8	31.6	32.1
12H	32.2	33.0	32.7	33.5	34.0	30.3	31.1	30.8	31.6	32.1
X=8H Y=4H	31.5	32.3	31.9	32.8	33.3	30.3	31.2	30.8	31.7	32.2
6H	32.2	33.0	32.7	33.5	34.0	30.8	31.6	31.3	32.1	32.5
8H	32.5	33.2	33.0	33.7	34.2	30.9	31.6	31.4	32.1	32.6
12H	32.7	33.3	33.2	33.8	34.4	30.9	31.5	31.4	32.0	32.6
X=12H Y=4H	31.5	32.3	32.0	32.8	33.3	30.4	31.2	30.9	31.7	32.2
6H	32.3	33.0	32.8	33.4	34.0	30.9	31.6	31.4	32.1	32.6
8H	32.6	33.2	33.1	33.7	34.2	31.1	31.6	31.6	32.1	32.7

Calculate in accordance with CIE 190:2010

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Aaron

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

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	0.57	0.66	0.74	0.79	0.86	0.91	0.95	1.00	1.03
	0.30		0.50	0.58	0.66	0.72	0.80	0.86	0.90	0.95	0.99
	0.20		0.44	0.52	0.60	0.66	0.75	0.81	0.85	0.92	0.96
0.50	0.50	0.20	0.56	0.64	0.71	0.76	0.83	0.88	0.91	0.95	0.98
	0.30		0.49	0.57	0.64	0.70	0.78	0.83	0.87	0.92	0.95
	0.20		0.44	0.51	0.59	0.65	0.73	0.79	0.83	0.89	0.93
0.30	0.50	0.20	0.54	0.62	0.69	0.73	0.80	0.84	0.88	0.92	0.94
	0.30		0.48	0.56	0.63	0.68	0.75	0.80	0.84	0.89	0.92
	0.20		0.43	0.51	0.58	0.64	0.72	0.77	0.81	0.86	0.90
0.00	0.00	0.00	0.41	0.48	0.56	0.61	0.68	0.73	0.77	0.82	0.85
<p>Rating:5W Photometrically tested without ceiling board.</p> <p>Multiply UF values by service correction factors</p> <p>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	0.98	0.84	0.71	0.62	0.50	0.41	0.35	0.28	0.22	
	0.30		0.82	0.72	0.62	0.55	0.45	0.38	0.33	0.26	0.21	
	0.20		0.70	0.63	0.55	0.49	0.41	0.35	0.31	0.24	0.20	
0.50	0.50	0.20	0.95	0.81	0.68	0.59	0.47	0.43	0.34	0.26	0.21	
	0.30		0.80	0.70	0.60	0.53	0.43	0.37	0.32	0.25	0.20	
	0.20		0.70	0.62	0.54	0.48	0.40	0.34	0.30	0.24	0.20	
0.30	0.50	0.20	0.92	0.77	0.65	0.57	0.45	0.38	0.32	0.25	0.20	
	0.30		0.79	0.68	0.59	0.52	0.42	0.35	0.30	0.24	0.20	
	0.20		0.69	0.61	0.53	0.47	0.39	0.33	0.29	0.23	0.19	
0.00	0.00	0.00	0.58	0.51	0.44	0.39	0.31	0.26	0.23	0.18	0.15	
<p>Rating:5W Photometrically tested without ceiling board.</p> <p>Multiply UF values by service correction factors</p> <p>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	0.17	0.18	0.19	0.20	0.21	0.21	0.22	0.22	0.23
	0.30		0.10	0.12	0.13	0.14	0.16	0.17	0.18	0.19	0.20
	0.20		0.05	0.07	0.08	0.10	0.12	0.13	0.14	0.16	0.17
0.50	0.50	0.20	0.16	0.18	0.19	0.19	0.20	0.20	0.21	0.21	0.22
	0.30		0.10	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19
	0.20		0.05	0.07	0.08	0.10	0.11	0.13	0.14	0.16	0.17
0.30	0.50	0.20	0.16	0.17	0.18	0.18	0.19	0.20	0.20	0.20	0.21
	0.30		0.10	0.11	0.12	0.13	0.15	0.16	0.17	0.18	0.18
	0.20		0.05	0.07	0.08	0.09	0.11	0.13	0.14	0.15	0.16
0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
<p>Rating:5W Photometrically tested without ceiling board.</p> <p>Multiply UF values by service correction factors</p> <p>Calculate in accordance with CIBSE Technical Memorandum NO.5 1980</p>											