

Report No.: 01

Test Time: 2016/10/17 14:14

## Luminaire Property

Luminaire Manufacturer:

Luminaire Category: Synthesis LED Linear

Luminaire Description: Synthesis Indirect LO 28CM 135 mA 3500K 92x33degree

Luminous Length (mm): 304

Luminous Width (mm): 50

Luminous Height (mm): 2

Voltage: 219.8 V

Current: 0.024 A

Power: 4.53 W

Power Factor: 0.844

## Photometric Results

CIE Class: Direct

Measurement Flux: 464.9 lm

Downward Ratio: 99%

Horizontal Diffuse Angle(50%): H36.3

Vertical Diffuse Angle(50%): V92

Luminaire Efficacy Rating (LER): 103

Max. Intensity: 476.46 cd

Total Rated Lamp Lumens: 464.9 lm

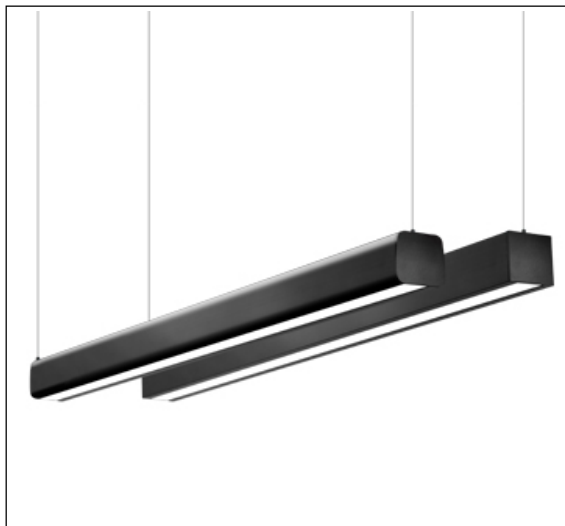
Efficiency: 100%

Upward Ratio: 1%

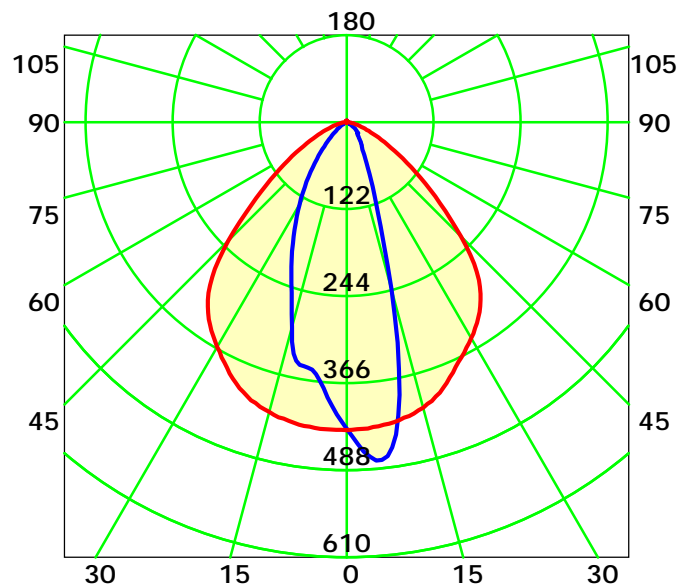
Central Intensity: 430.08 cd

Pos of Max. Intensity: H330 V6

Picture Of Luminaire



Luminous Intensity Distribution Curve



Average Diffuse Angle(50%): 64.2° Unit: cd

— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 30.0

Test Lab: ACOLYTE

Test Type: TYPE C

Temperature: 25°C

Operator: leo

Gamma Plane (°):0.0-180.0: 1.0

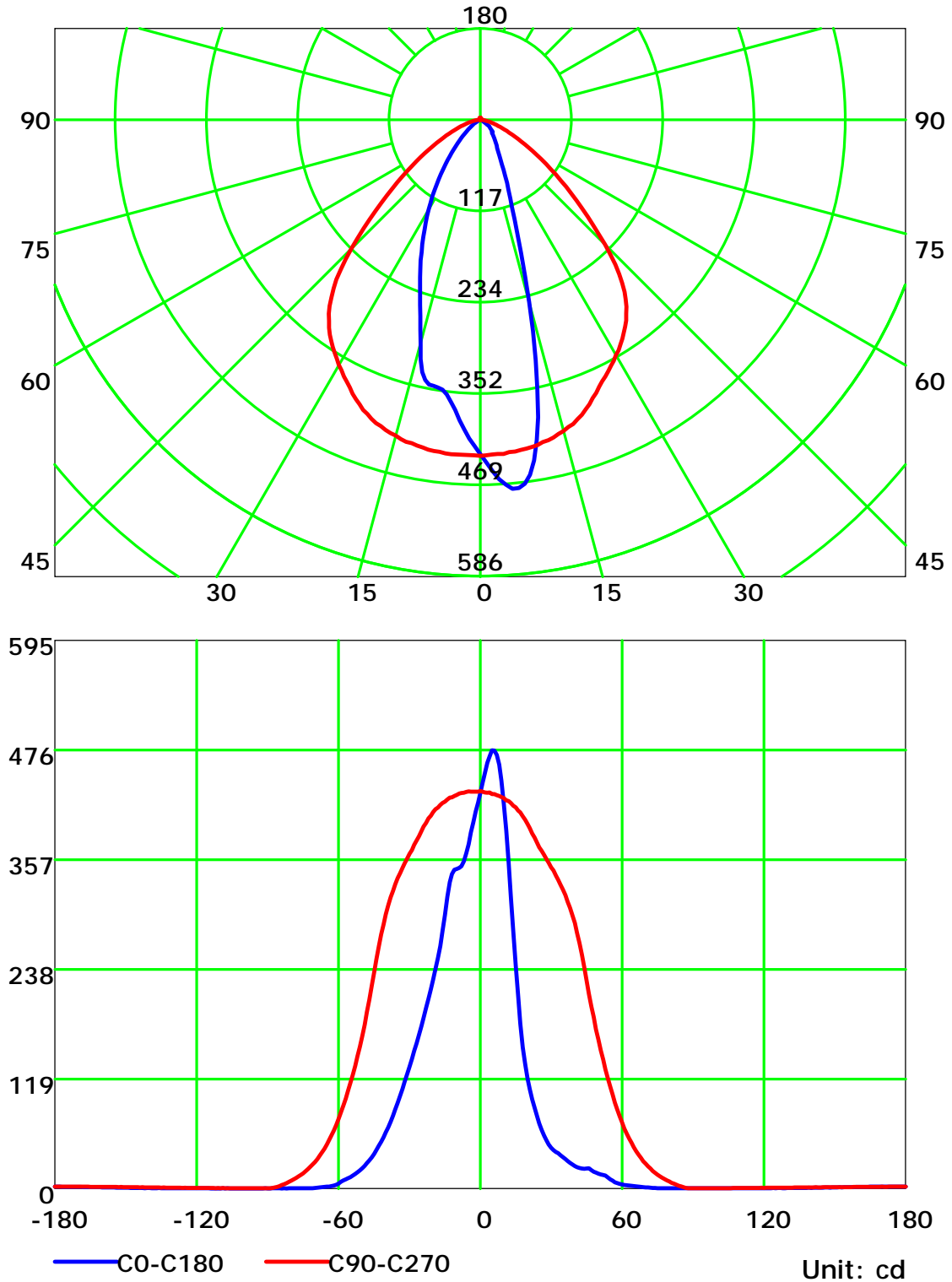
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

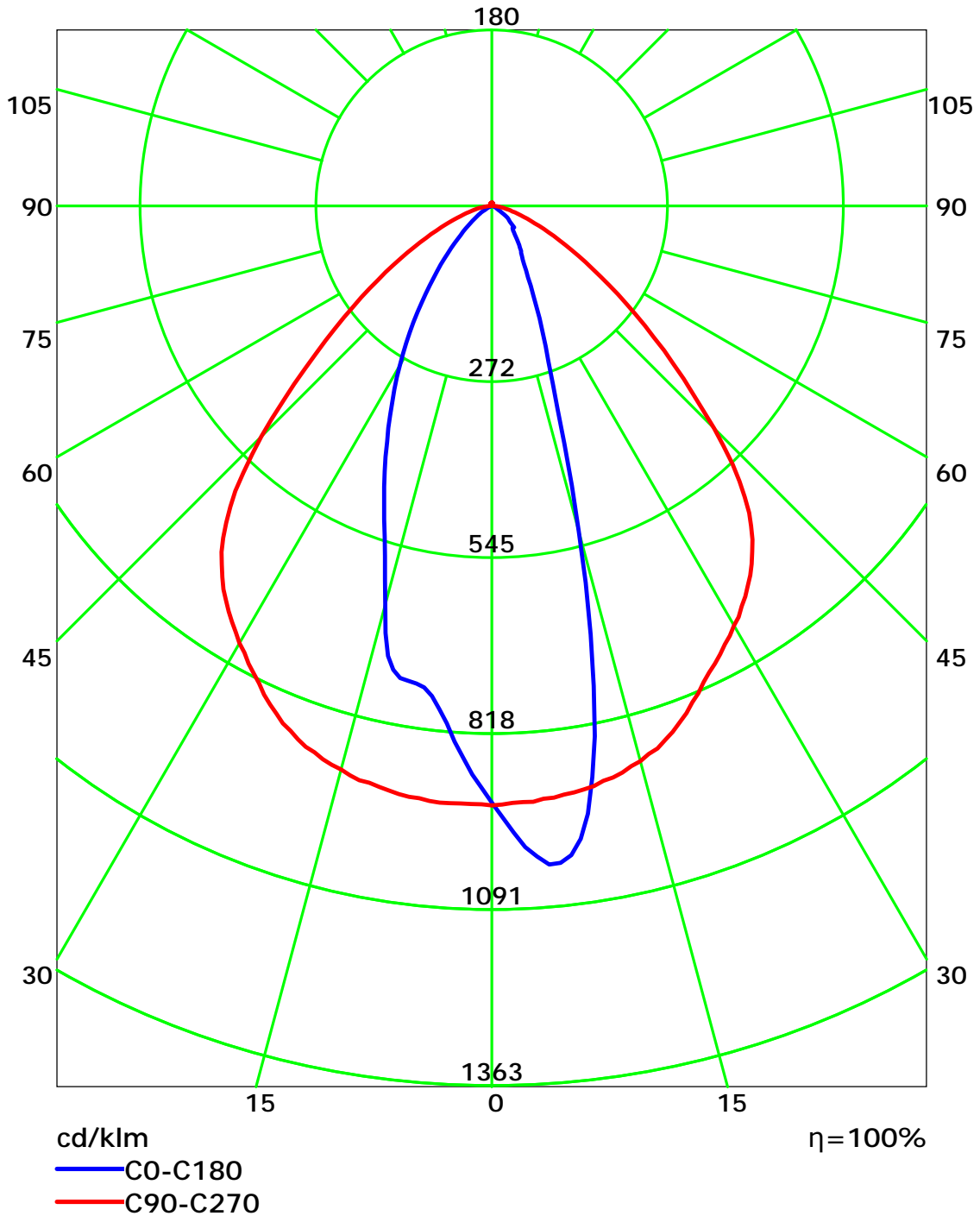
## Luminous Intensity Distribution Curve



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

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: ACOLYTE  
Test Type: TYPE C  
Temperature: 25°C  
Operator: leo

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

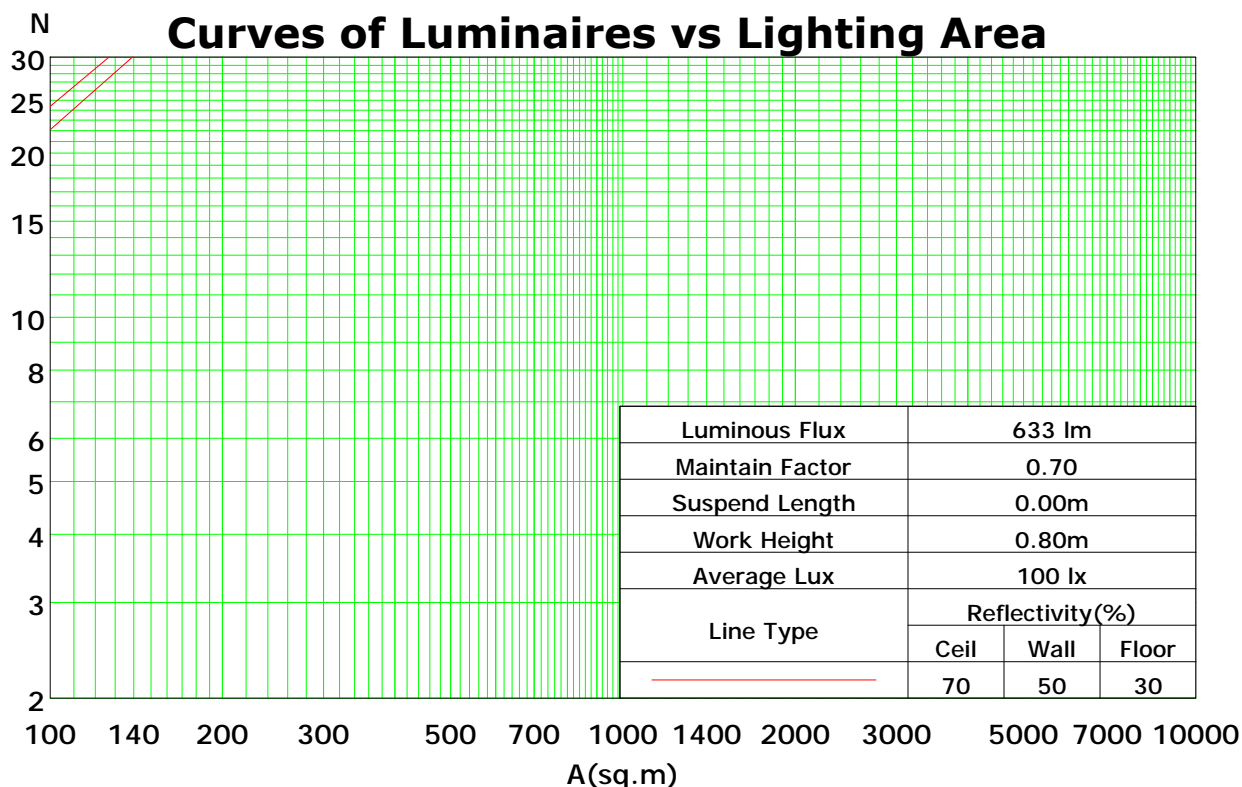
## Coefficients Of Utilization - Zonal Cavity Method

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	110	110	110	105	105	105	101	101	101	99
1	112	108	105	103	109	106	103	101	102	99	97	98	96	94	94	92	91	89
2	105	99	94	89	102	97	92	88	93	89	86	90	87	84	87	84	82	80
3	98	90	84	79	95	88	83	78	85	81	77	83	79	75	80	77	74	72
4	92	82	76	71	89	81	75	70	79	73	69	76	72	68	74	70	67	65
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	59
6	81	70	63	58	79	69	62	58	67	62	57	66	61	57	64	60	56	54
7	76	65	58	53	74	64	58	53	63	57	52	61	56	52	60	55	52	50
8	72	61	54	49	70	60	53	49	59	53	48	57	52	48	56	51	48	46
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43
10	64	53	47	42	63	53	46	42	52	46	42	51	46	42	50	45	42	40

Spacing Criteria (0-180): 0.58

Spacing Criteria (90-270): 1.23

Spacing Criteria (Diagonal): 0.77



C Plane (°):0.0-360.0: 30.0

Test Lab: ACOLYTE

Test Type: TYPE C

Temperature: 25°C

Operator: leo

Gamma Plane (°):0.0-180.0:1.0

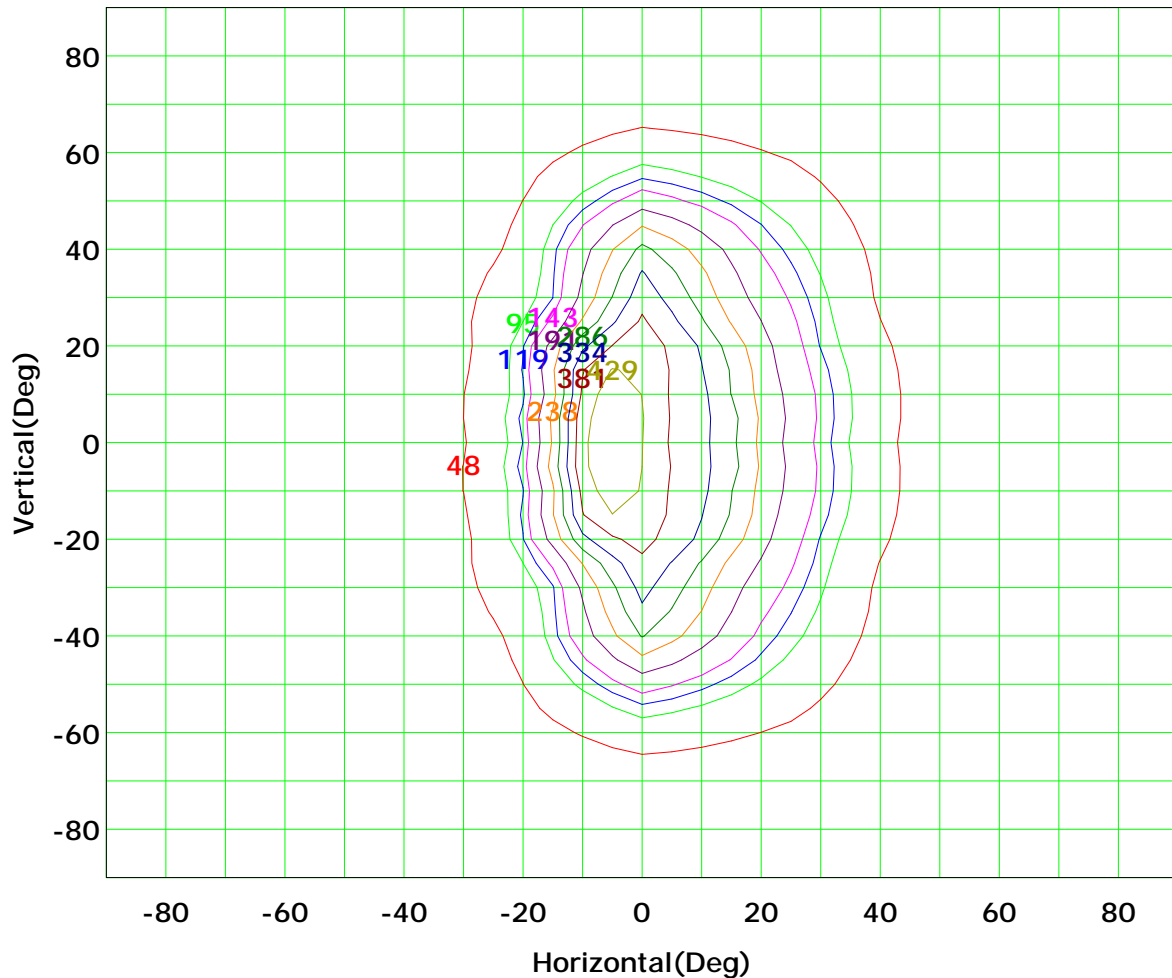
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

## Isocandela (rectangle)



I<sub>max</sub> (100%): 476 cd

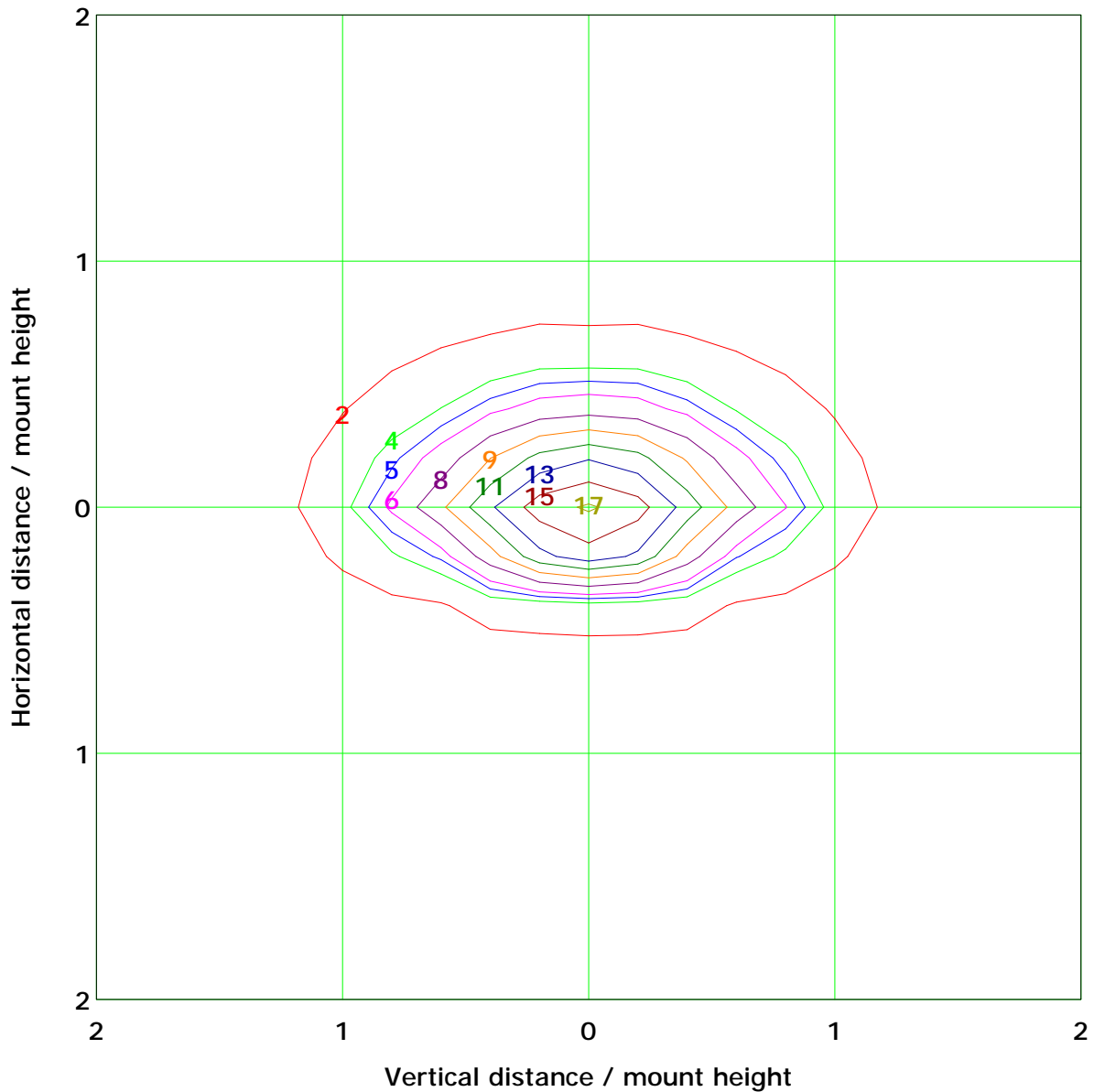
( 10%): 48 cd	( 20%): 95 cd
( 25%): 119 cd	( 30%): 143 cd
( 40%): 191 cd	( 50%): 238 cd
( 60%): 286 cd	( 70%): 334 cd
( 80%): 381 cd	( 90%): 429 cd

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

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%): 18.8 lx
( 10%):	1.9 lx	( 20%): 3.8 lx
( 25%):	4.7 lx	( 30%): 5.7 lx
( 40%):	7.5 lx	( 50%): 9.4 lx
( 60%):	11.3 lx	( 70%): 13.2 lx
( 80%):	15.1 lx	( 90%): 17.0 lx

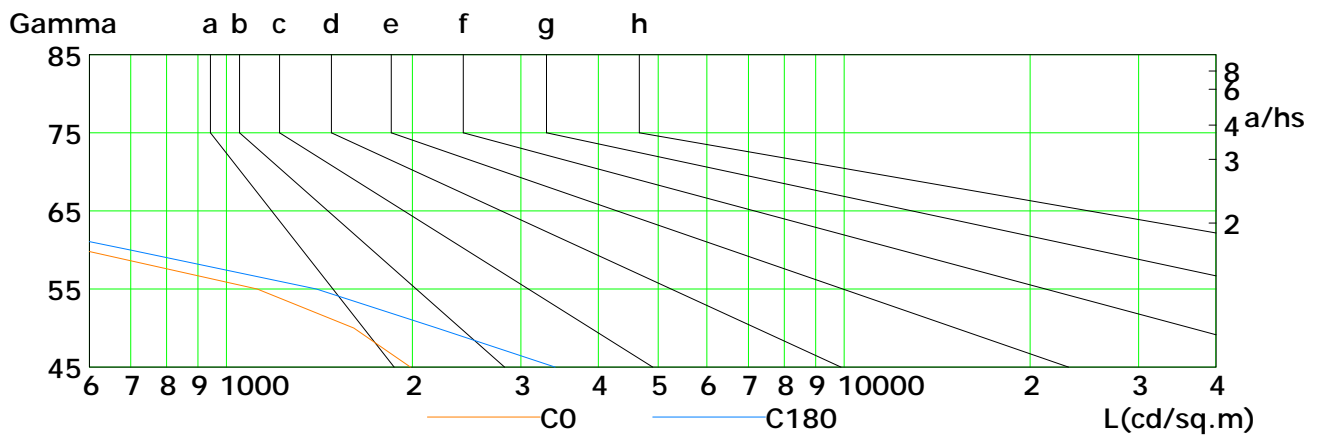
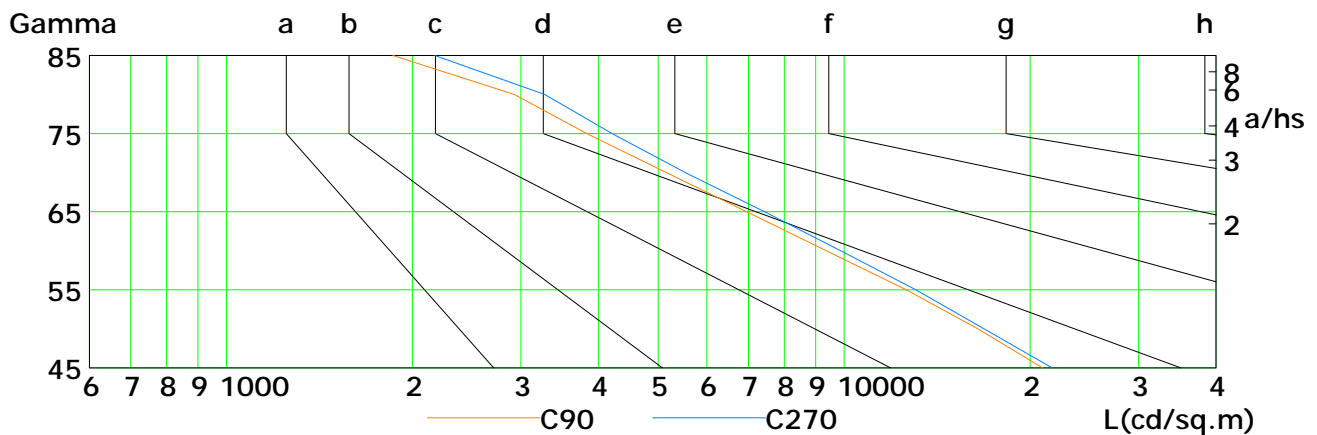
C Plane (°):0.0-360.0: 30.0  
Test Lab: ACOLYTE  
Test Type: TYPE C  
Temperature: 25°C  
Operator: leo

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	1987	1609	1122	587	447	286	155	244	326
C90	20970	16477	12617	9363	6954	5160	3833	2929	1860
C180	3408	2192	1399	699	346	187	159	204	316
C270	21730	16861	13070	9872	7430	5534	4213	3280	2176

C Plane (°):0.0-360.0: 30.0

Test Lab: ACOLYTE

Test Type: TYPE C

Temperature: 25°C

Operator: leo

Gamma Plane (°):0.0-180.0:1.0

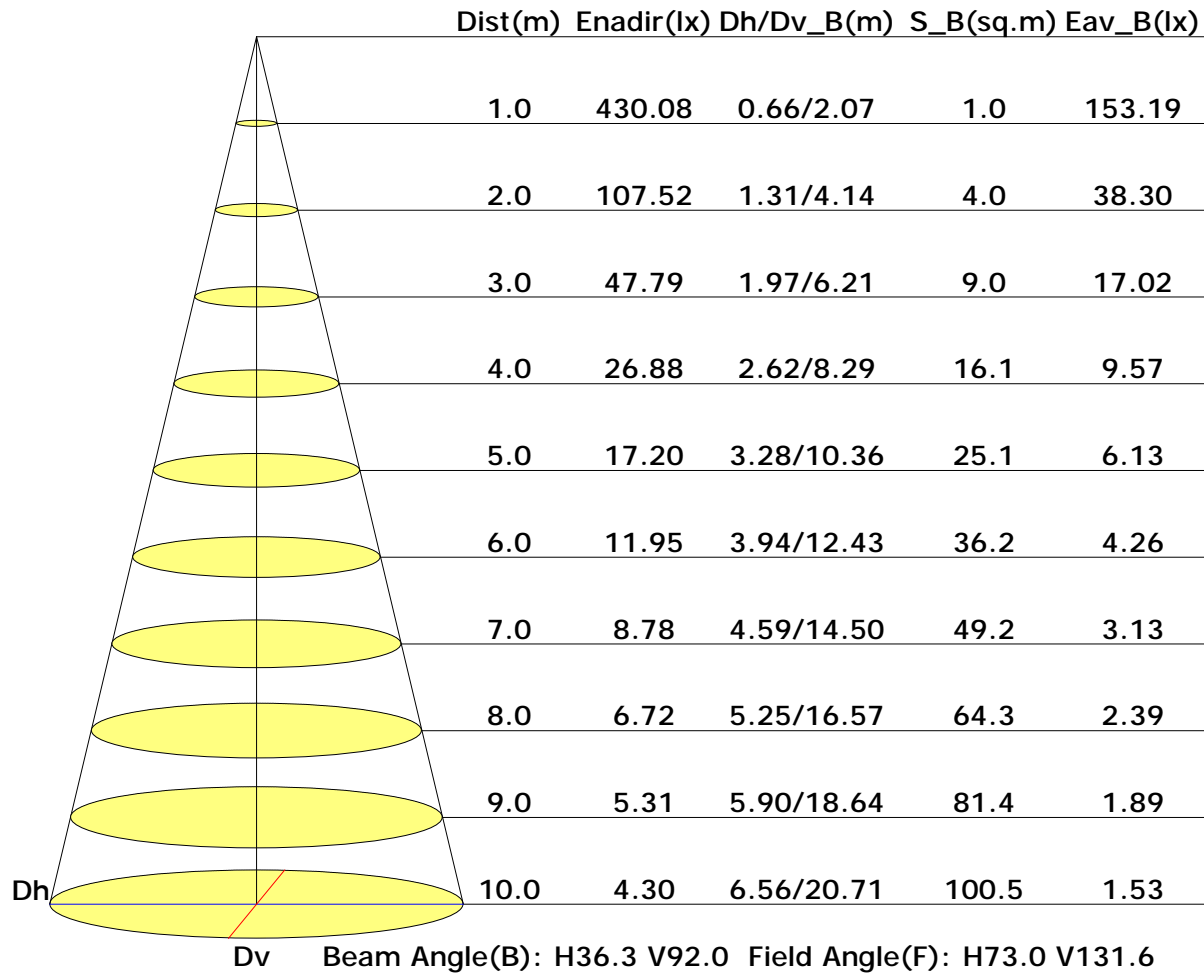
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

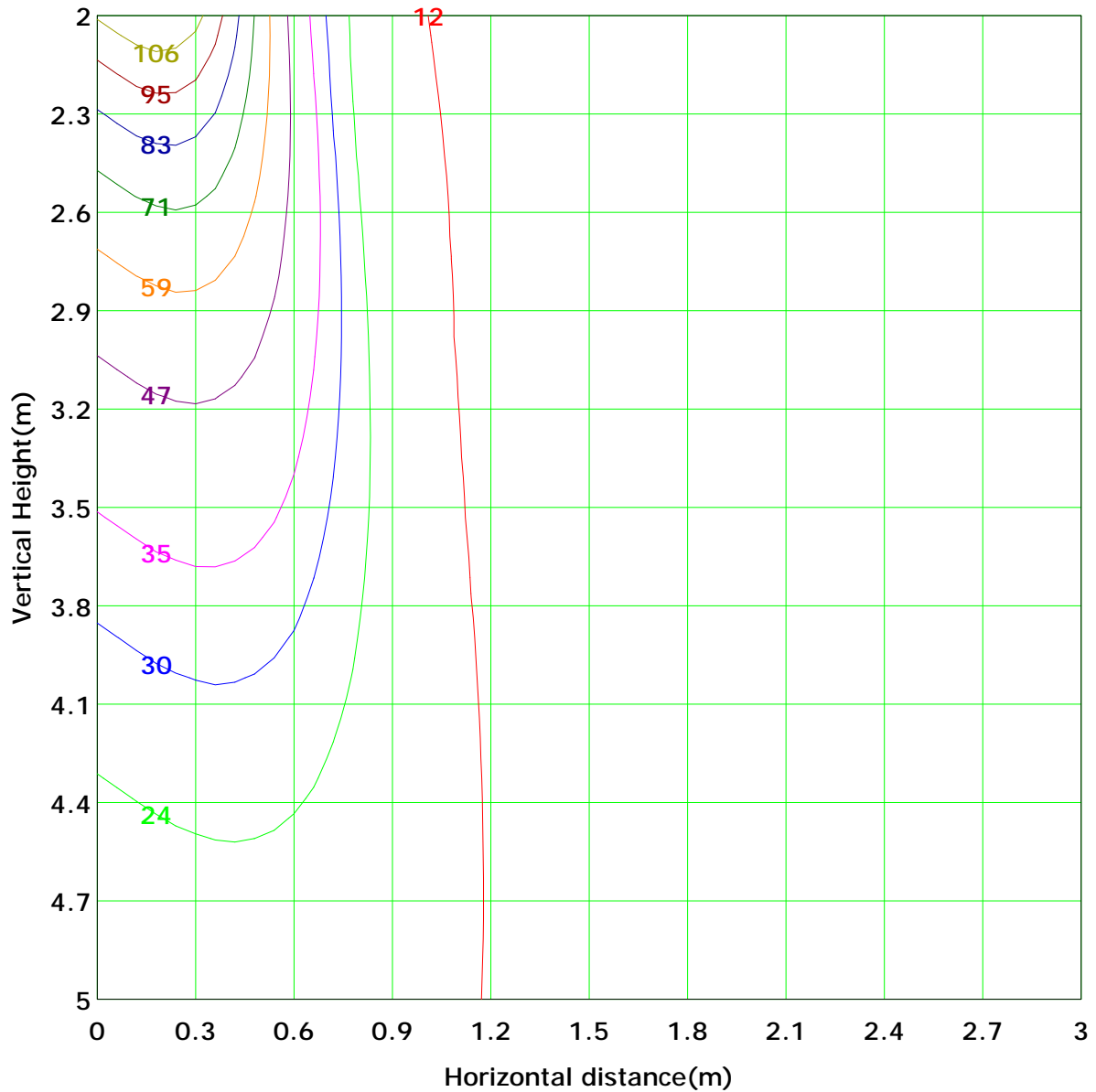
Inspector:

## Illuminance at a Distance





## Vertical IsoLux Plot



Lowest(m): 2.0m	Highest(m): 5.0m	Max Lux: 118.1 lx
( 10%): 11.8 lx	( 20%): 23.6 lx	
( 25%): 29.5 lx	( 30%): 35.4 lx	
( 40%): 47.3 lx	( 50%): 59.1 lx	
( 60%): 70.9 lx	( 70%): 82.7 lx	
( 80%): 94.5 lx	( 90%): 106.3 lx	

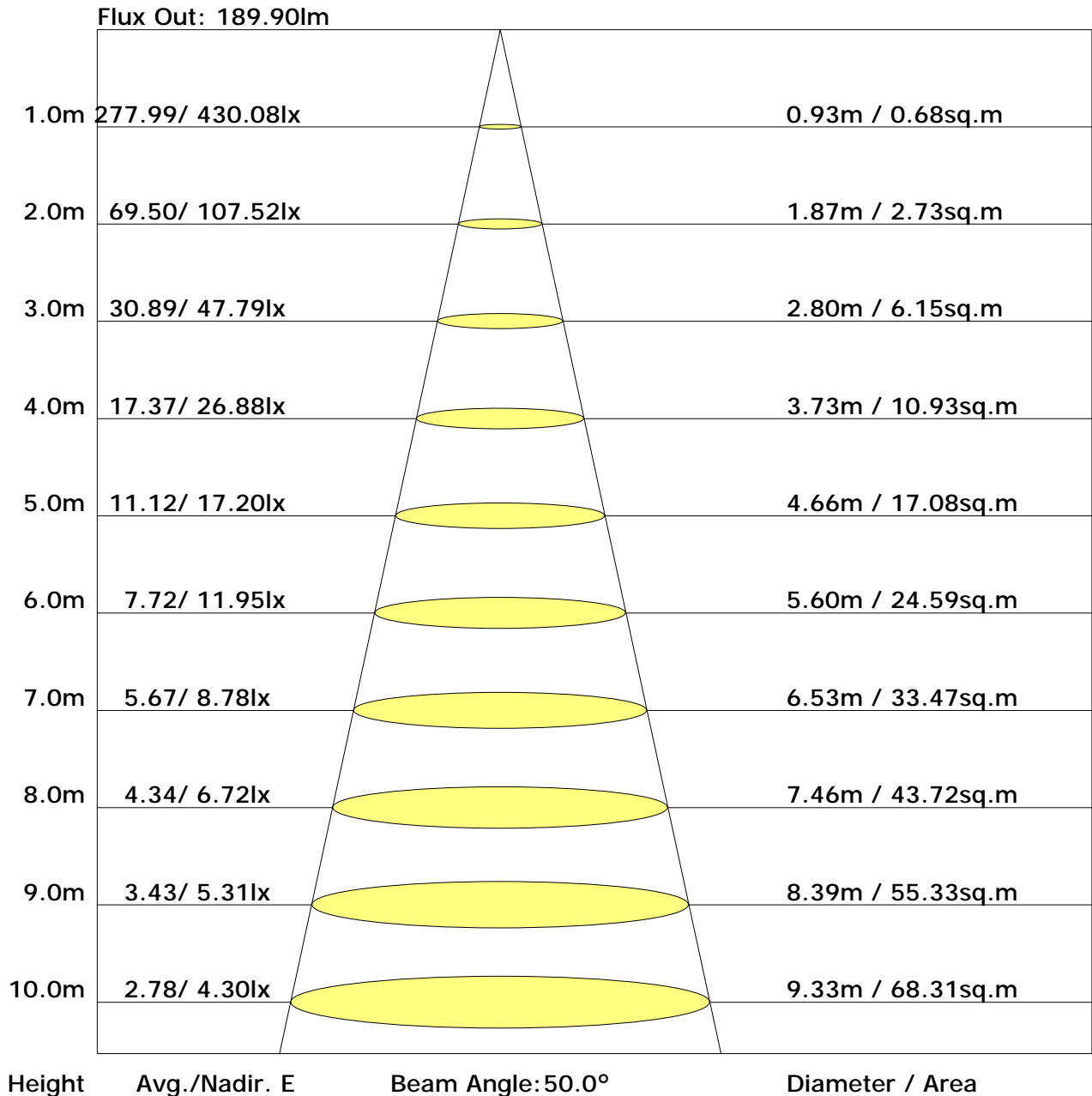
C Plane (°):0.0-360.0: 30.0  
Test Lab: ACOLYTE  
Test Type: TYPE C  
Temperature: 25°C  
Operator: leo

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

## Unit: 1m

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 9.028 m  
Humidity: 60%  
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	8.4	9.6	8.8	10.0	10.3	21.2	22.5	21.6	22.8	23.2
3H	8.6	9.7	9.0	10.1	10.5	22.1	23.2	22.5	23.6	24.0
4H	8.6	9.7	9.1	10.0	10.5	22.3	23.4	22.8	23.7	24.2
6H	8.6	9.6	9.1	10.0	10.4	22.4	23.4	22.9	23.8	24.2
8H	8.6	9.5	9.1	10.0	10.4	22.4	23.3	22.9	23.7	24.2
12H	8.7	9.5	9.1	10.0	10.4	22.4	23.3	22.9	23.7	24.1
X=4H Y=2H	9.6	10.7	10.1	11.0	11.5	21.1	22.1	21.5	22.5	22.9
3H	9.9	10.7	10.3	11.2	11.6	22.1	22.9	22.5	23.4	23.8
4H	9.9	10.6	10.3	11.1	11.6	22.3	23.1	22.8	23.5	24.0
6H	9.9	10.5	10.4	11.0	11.5	22.5	23.1	23.0	23.6	24.1
8H	9.9	10.5	10.4	11.0	11.5	22.5	23.1	23.0	23.6	24.1
12H	10.0	10.5	10.5	11.0	11.5	22.5	23.0	23.0	23.5	24.0
X=8H Y=4H	10.5	11.1	11.0	11.6	12.1	22.2	22.8	22.7	23.3	23.8
6H	10.5	11.0	11.1	11.5	12.1	22.3	22.8	22.9	23.3	23.9
8H	10.6	11.0	11.1	11.5	12.1	22.3	22.8	22.9	23.3	23.9
12H	10.7	11.1	11.2	11.6	12.2	22.4	22.7	22.9	23.3	23.9
X=12H Y=4H	10.6	11.1	11.1	11.6	12.1	22.2	22.7	22.7	23.2	23.7
6H	10.6	11.0	11.2	11.5	12.1	22.3	22.7	22.8	23.2	23.8
8H	10.7	11.0	11.2	11.6	12.2	22.3	22.7	22.8	23.2	23.8

Calculate in accordance with CIE 190:2010

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

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 = 0.75								
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	0.71	0.80	0.86	0.90	0.96	1.00	1.02	1.06	1.08
	0.30		0.65	0.74	0.80	0.85	0.91	0.96	0.99	1.03	1.05
	0.20		0.60	0.69	0.76	0.81	0.88	0.92	0.95	1.00	1.03
0.50	0.50	0.20	0.69	0.78	0.83	0.87	0.93	0.96	0.98	1.01	1.03
	0.30		0.64	0.73	0.79	0.83	0.89	0.93	0.95	0.99	1.01
	0.20		0.60	0.69	0.75	0.79	0.86	0.90	0.93	0.97	0.99
0.30	0.50	0.20	0.68	0.76	0.81	0.85	0.90	0.93	0.95	0.98	0.99
	0.30		0.63	0.71	0.77	0.81	0.87	0.90	0.93	0.96	0.98
	0.20		0.59	0.68	0.74	0.78	0.84	0.88	0.90	0.94	0.96
0.00	0.00	0.00	0.57	0.66	0.71	0.75	0.80	0.84	0.86	0.89	0.91
Rating:5W 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 = 0.75								
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	0.63	0.53	0.45	0.36	0.29	0.25	0.19	0.15
	0.30		0.65	0.54	0.46	0.40	0.32	0.27	0.23	0.18	0.15
	0.20		0.56	0.47	0.41	0.36	0.29	0.25	0.21	0.17	0.14
0.50	0.50	0.20	0.75	0.60	0.50	0.43	0.34	0.31	0.23	0.18	0.14
	0.30		0.63	0.52	0.44	0.38	0.31	0.25	0.22	0.17	0.14
	0.20		0.55	0.46	0.40	0.35	0.28	0.24	0.20	0.16	0.13
0.30	0.50	0.20	0.72	0.57	0.48	0.41	0.31	0.26	0.22	0.16	0.13
	0.30		0.61	0.50	0.43	0.37	0.29	0.24	0.20	0.16	0.13
	0.20		0.54	0.45	0.39	0.34	0.27	0.23	0.19	0.15	0.12
0.00	0.00	0.00	0.42	0.34	0.28	0.24	0.19	0.15	0.13	0.10	0.08
Rating:5W 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 = 0.75								
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	0.23
	0.30		0.11	0.12	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
0.50	0.50	0.20	0.15	0.17	0.18	0.18	0.19	0.20	0.21	0.21	0.22
	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	0.18	0.19	0.19	0.20	0.20	0.21
	0.30		0.10	0.12	0.13	0.14	0.16	0.17	0.18	0.19	0.19
	0.20		0.07	0.08	0.10	0.11	0.13	0.14	0.16	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
<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>											