

Report No.:

Test Time: 2021/11/16 15:46

## Luminaire Property

Luminaire Manufacturer:

Luminaire Category: COB RIBBONLYTE

Lamp Catalog: FCOB-24V-D480-2700-10W-8MM-IP20 RA>90

Lamp Description: 2700K

Luminous Length (mm): 500

Luminous Height (mm): 1.5

Current: 0.226 A

Power Factor: 1.000

Luminaire Description: RB90LINEA203.027

Number of Lamps: 480/M

Luminous Width (mm): 8

Voltage: 24.0 V

Power: 5.41 W

## Photometric Results

CIE Class: Direct

Measurement Flux: 355.5 lm

Downward Ratio: 97%

Horizontal Diffuse Angle(10%,50%): H159.8,H112.6

Vertical Diffuse Angle(10%,50%): V193.4,V137.9

Luminaire Efficacy Rating (LER): 66

Max. Intensity: 101.81 cd

Total Rated Lamp Lumens: 355.5 lm

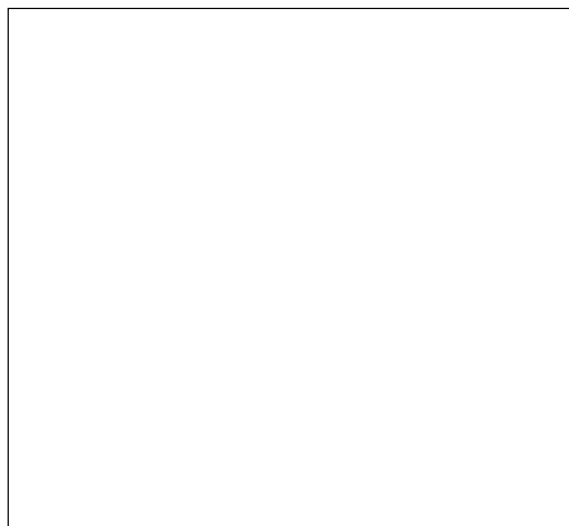
Efficiency: 100%

Upward Ratio: 3%

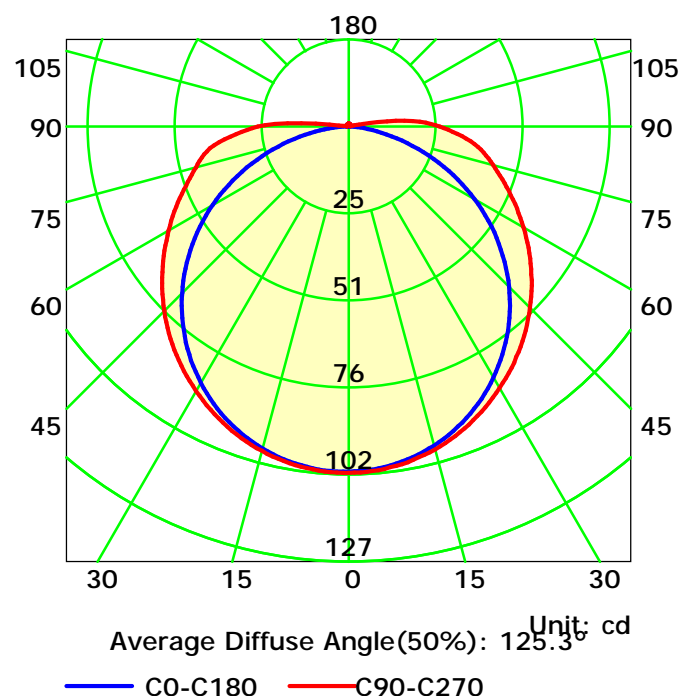
Central Intensity: 101.33 cd

Pos of Max. Intensity: H330 V1

Picture Of Luminaire



Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Kerr

Gamma Plane (°):0.0-180.0: 1.0

Test Device: GPM-1800B

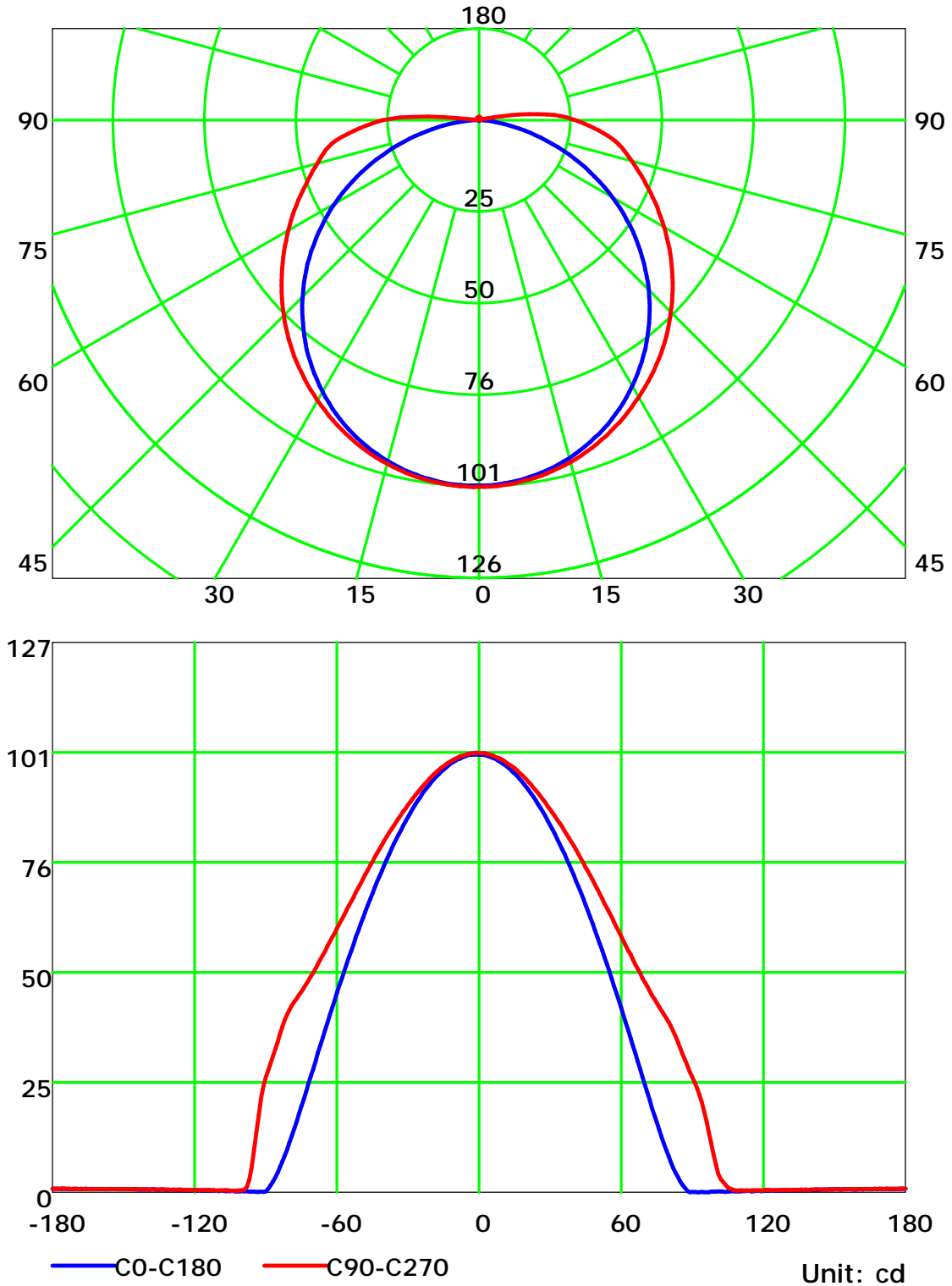
Distance: 9.028 m

Humidity: 60%

Inspector:



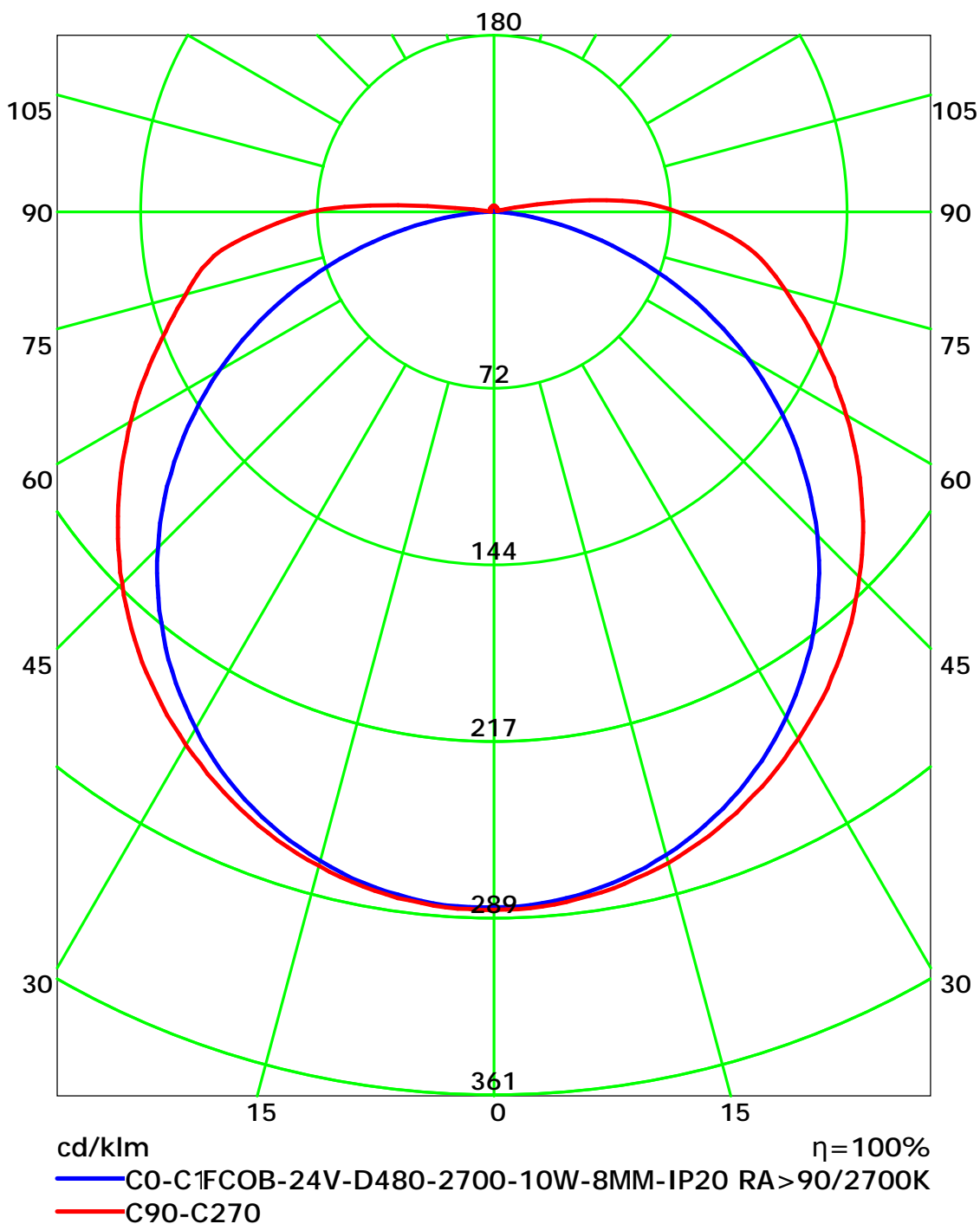
## Luminous Intensity Distribution Curve



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

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: Kerr

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

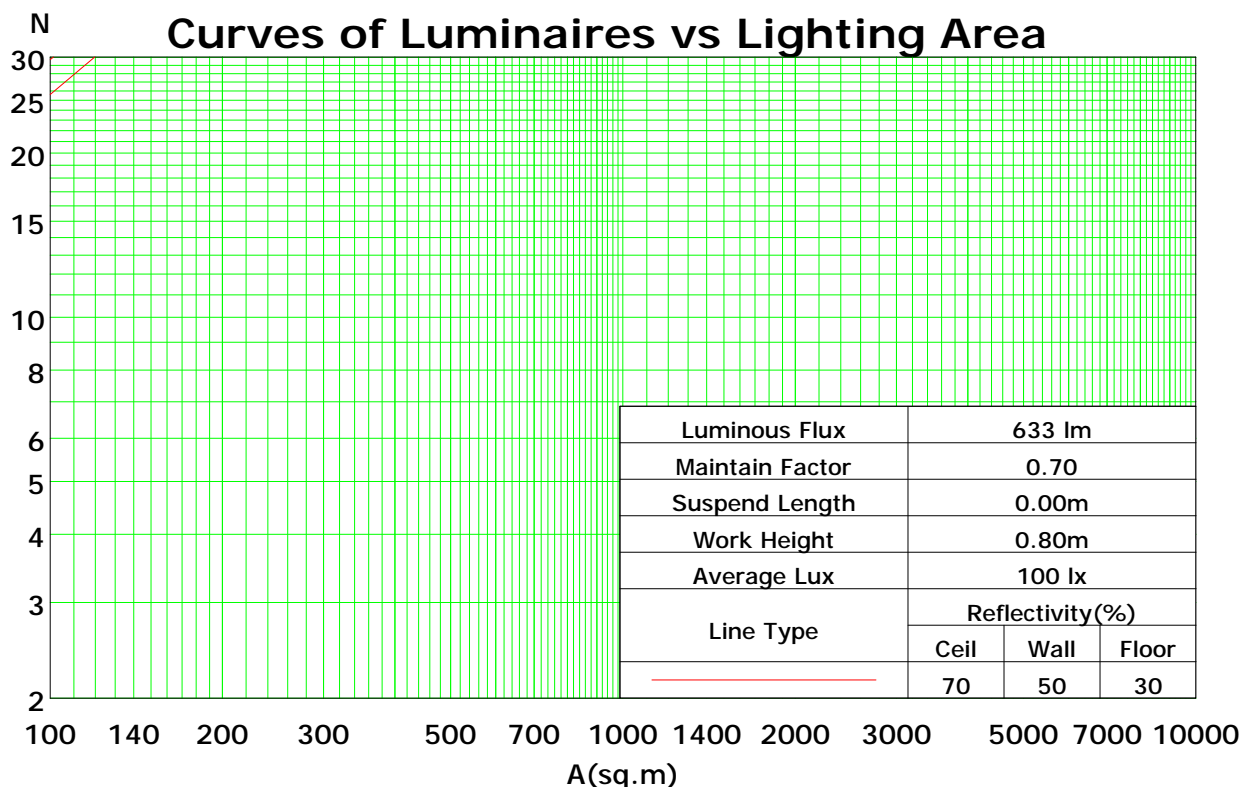
## Coefficients Of Utilization - Zonal Cavity Method

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	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99	97
1	105	100	94	90	102	97	92	88	92	88	85	88	84	81	83	81	78	76
2	95	86	78	71	92	83	76	70	79	73	68	75	70	66	72	68	64	61
3	86	74	65	58	83	73	64	57	69	62	56	66	60	55	63	58	53	51
4	79	66	56	49	76	64	55	48	61	53	47	58	52	46	56	50	45	43
5	72	58	49	42	70	57	48	41	54	46	40	52	45	40	50	44	39	37
6	66	52	43	36	64	51	42	36	49	41	35	47	40	35	45	39	34	32
7	62	47	38	32	60	46	38	31	44	37	31	43	36	31	41	35	30	28
8	57	43	34	28	55	42	34	28	41	33	28	39	32	27	38	31	27	25
9	53	39	31	25	52	39	31	25	37	30	25	36	29	24	35	29	24	22
10	50	36	28	23	49	36	28	23	35	27	22	33	27	22	32	26	22	20

Spacing Criteria (0-180): 1.26

Spacing Criteria (90-270): 1.31

Spacing Criteria (Diagonal): 1.42



C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Kerr

Gamma Plane (°):0.0-180.0: 1.0

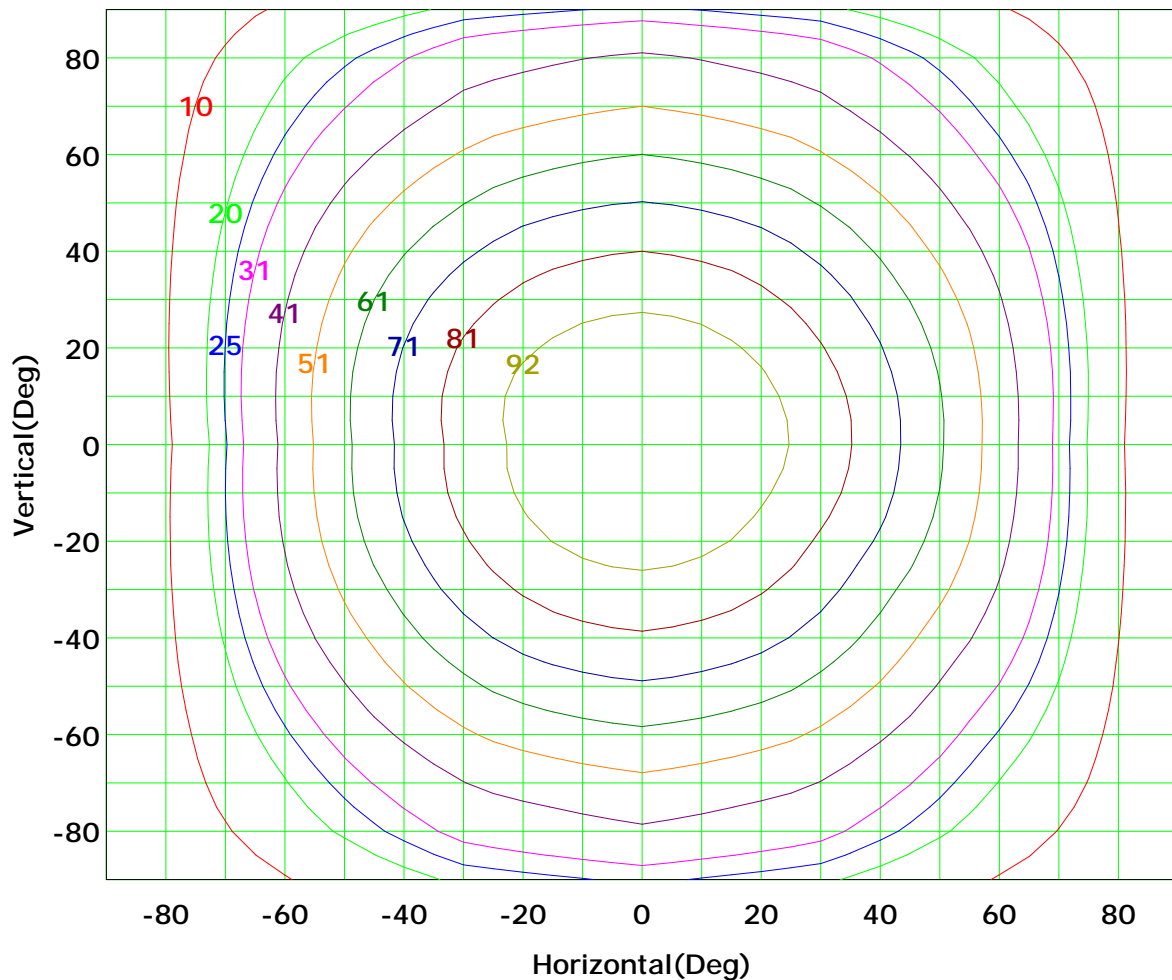
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

## Isocandela (rectangle)



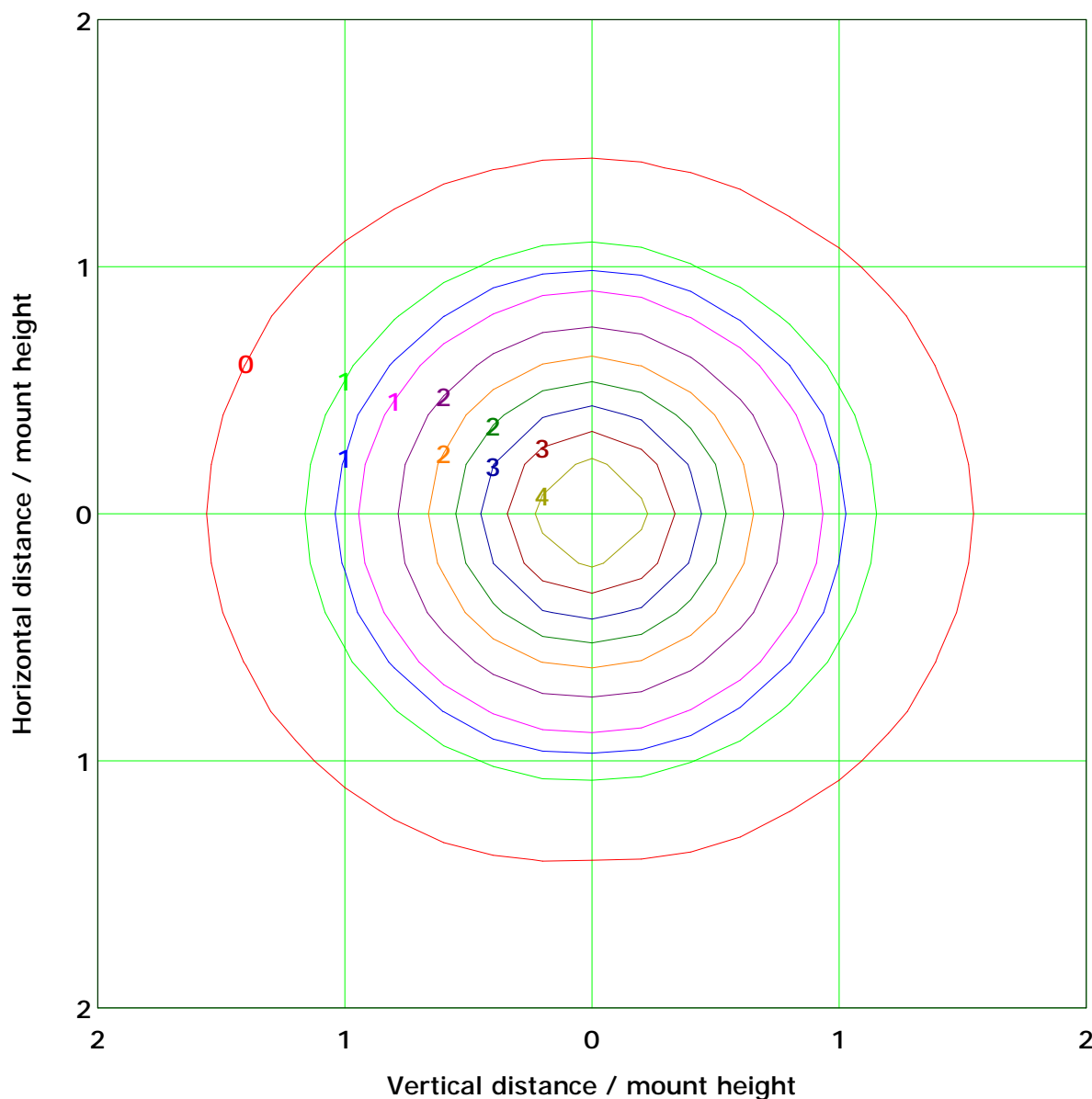
I<sub>max</sub> (100%): 102 cd

( 10%):	10 cd	( 20%):	20 cd
( 25%):	25 cd	( 30%):	31 cd
( 40%):	41 cd	( 50%):	51 cd
( 60%):	61 cd	( 70%):	71 cd
( 80%):	81 cd	( 90%):	92 cd

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

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%): 4.1 lx

( 10%): 0.4 lx	( 20%): 0.8 lx
( 25%): 1.0 lx	( 30%): 1.2 lx
( 40%): 1.6 lx	( 50%): 2.0 lx
( 60%): 2.4 lx	( 70%): 2.9 lx
( 80%): 3.3 lx	( 90%): 3.7 lx

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

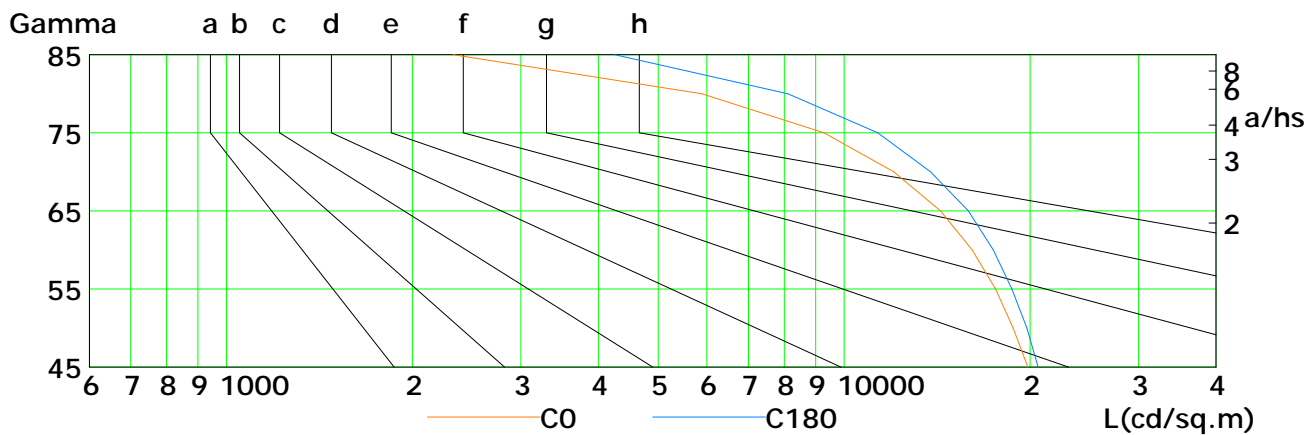
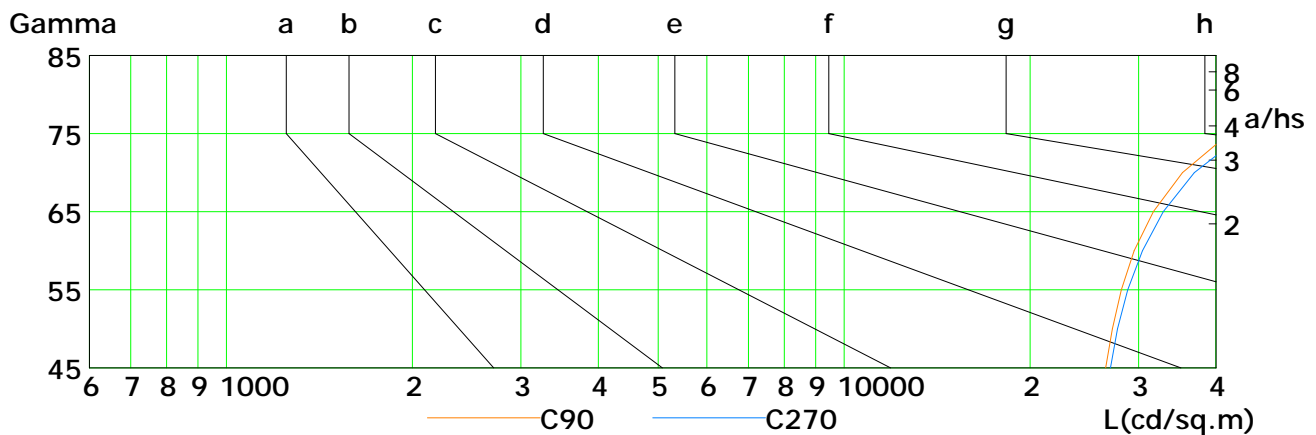
Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 9.028 m  
Humidity: 60%  
Inspector:



## 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

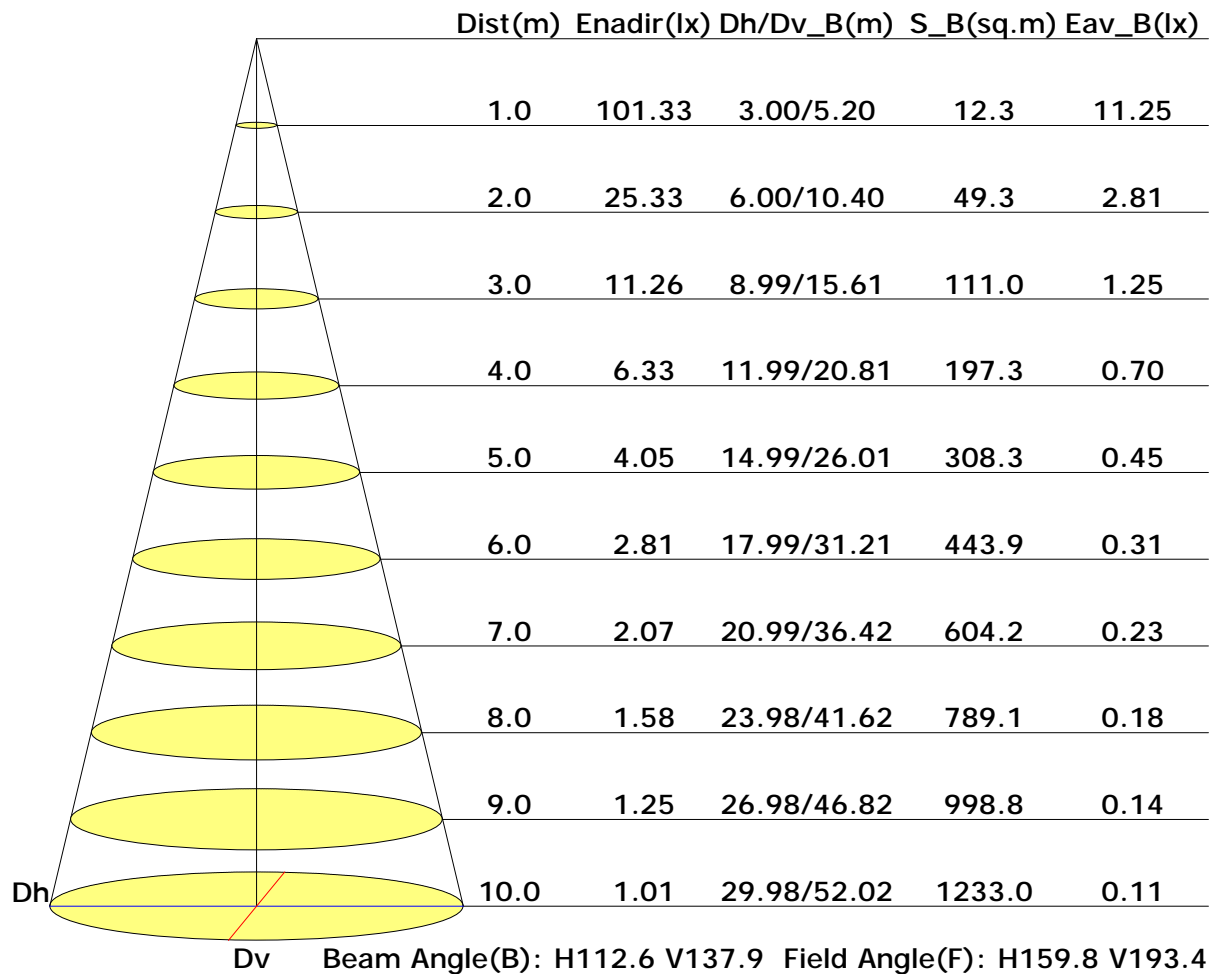


L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	19841	18788	17596	16127	14332	12041	9280	5882	2327
C90	26532	27198	28110	29482	31693	35314	41944	55874	92629
C180	20609	19764	18699	17437	15902	13802	11337	8108	4253
C270	26994	27717	28787	30402	32862	36887	44399	59838	96928

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

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

## Illuminance at a Distance

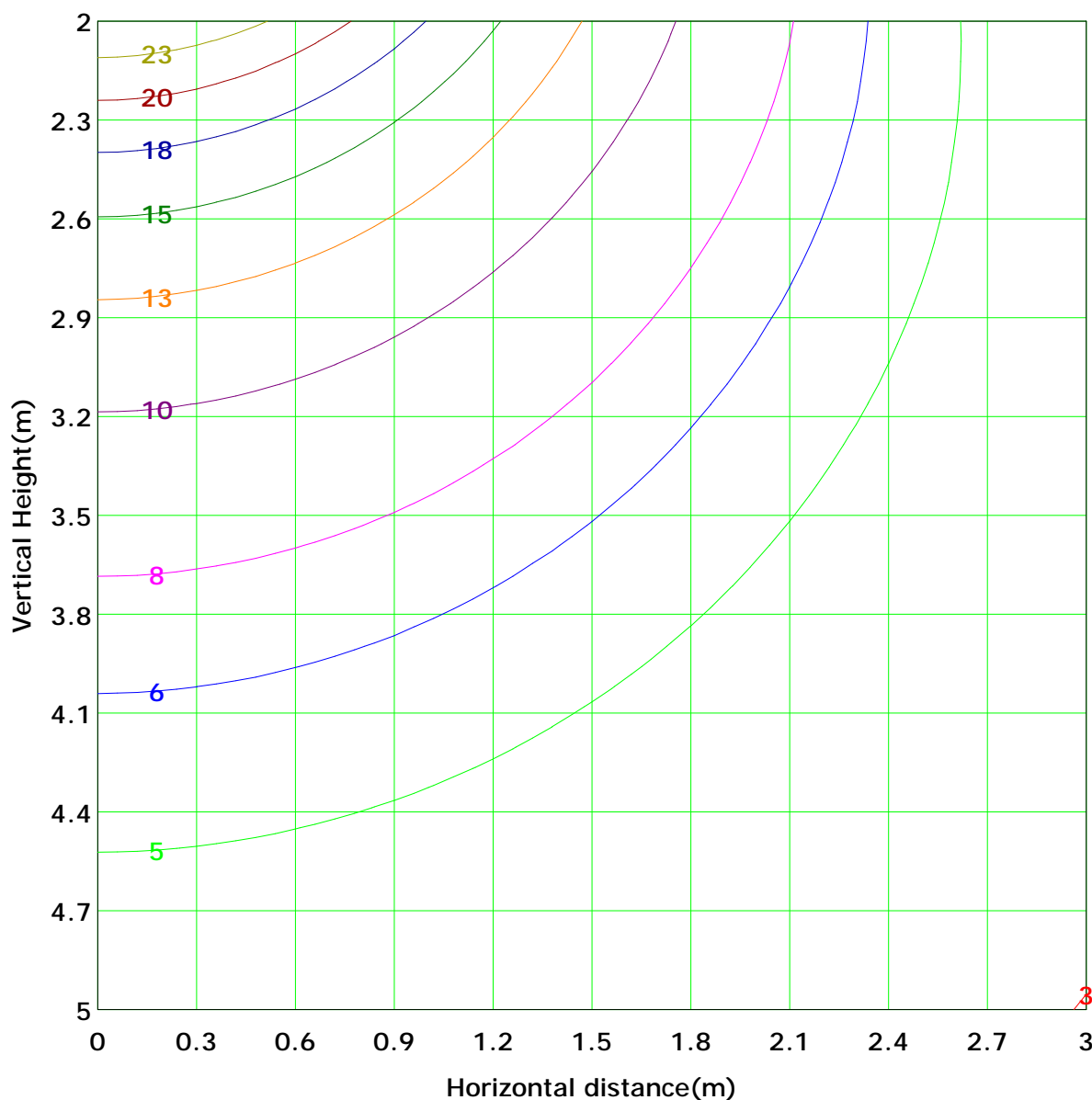


C Plane (°):0.0-360.0: 30.0  
Test Lab:  
Test Type: TYPE C  
Temperature: 25  
Operator: Kerr

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



## Vertical IsoLux Plot



Lowest(m): 2.0m	Highest(m): 5.0m	Max Lux: 25.3 lx
( 10%): 2.5 lx	( 20%): 5.1 lx	
( 25%): 6.3 lx	( 30%): 7.6 lx	
( 40%): 10.1 lx	( 50%): 12.7 lx	
( 60%): 15.2 lx	( 70%): 17.7 lx	
( 80%): 20.3 lx	( 90%): 22.8 lx	

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

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

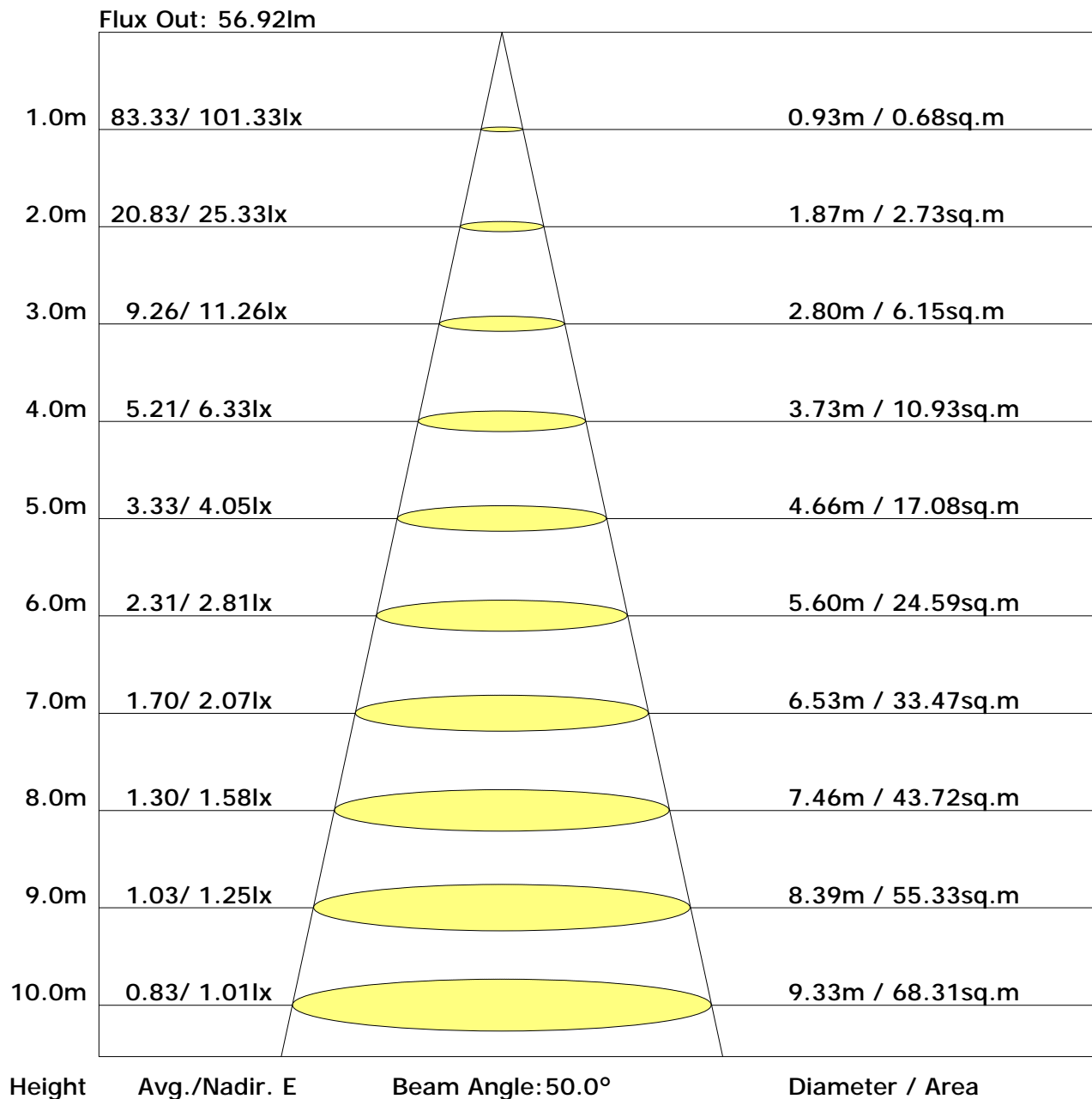
## Area Flux Table

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	0.1	0.2	0.3	0.5	0.7	0.8	0.9	1.0	1.5	2.0	2.5	2.0	1.5	1.0	0.7	0.6	0.5	0.4	0.3	0.2
		0.0	0.1	0.2	0.4	0.6	0.9	1.1	1.3	1.5	2.0	2.5	2.8	2.3	1.8	1.3	1.0	0.9	0.8	0.7	0.6	0.5
		0.0	0.1	0.3	0.5	0.8	1.1	1.4	1.6	1.9	2.4	2.9	3.1	2.6	2.1	1.6	1.3	1.1	0.9	0.7	0.6	0.5
		0.0	0.1	0.4	0.7	1.1	1.5	1.8	2.1	2.5	3.0	3.5	3.8	3.1	2.5	2.0	1.7	1.5	1.3	1.1	1.0	0.9
		0.0	0.1	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7	3.8	3.1	2.5	2.1	1.8	1.6	1.4	1.2	1.1
		0.0	0.2	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.7</									



## The Average Illuminance Effective Figure



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

Gamma Plane (°):0.0-180.0: 1.0  
Test Device: GPM-1800B  
Distance: 9.028 m  
Humidity: 60%  
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	25.7	27.3	26.1	27.7	28.1	26.3	28.0	26.7	28.4	28.8
3H	27.4	29.0	27.9	29.3	29.8	28.8	30.3	29.2	30.7	31.1
4H	28.1	29.5	28.5	29.9	30.3	30.0	31.4	30.4	31.8	32.3
6H	28.5	29.8	28.9	30.2	30.7	31.2	32.5	31.6	33.0	33.4
8H	28.6	29.9	29.0	30.3	30.8	31.8	33.1	32.2	33.5	34.0
12H	28.6	29.9	29.1	30.3	30.8	32.3	33.6	32.8	34.0	34.5
X=4H Y=2H	26.5	28.0	26.9	28.4	28.8	27.0	28.4	27.4	28.8	29.3
3H	28.5	29.8	29.0	30.2	30.7	29.7	30.9	30.1	31.4	31.8
4H	29.4	30.5	29.8	31.0	31.5	31.1	32.2	31.5	32.7	33.2
6H	30.0	31.0	30.5	31.5	32.0	32.5	33.5	33.0	34.0	34.5
8H	30.2	31.1	30.7	31.6	32.1	33.2	34.1	33.7	34.6	35.1
12H	30.3	31.2	30.8	31.7	32.2	33.8	34.7	34.4	35.2	35.8
X=8H Y=4H	30.1	31.0	30.6	31.5	32.0	31.4	32.4	31.9	32.9	33.4
6H	30.9	31.8	31.5	32.3	32.8	33.1	33.9	33.6	34.4	35.0
8H	31.3	32.0	31.8	32.6	33.1	33.9	34.7	34.5	35.2	35.8
12H	31.6	32.2	32.1	32.8	33.4	34.8	35.5	35.4	36.0	36.6
X=12H Y=4H	30.3	31.1	30.8	31.6	32.2	31.5	32.4	32.0	32.9	33.4
6H	31.3	32.0	31.8	32.5	33.1	33.2	34.0	33.8	34.5	35.0
8H	31.7	32.4	32.3	32.9	33.6	34.1	34.8	34.7	35.3	36.0

Calculate in accordance with CIE 190:2010

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

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	0.54	0.62	0.70	0.75	0.82	0.87	0.91	0.95	0.99	
	0.30		0.46	0.54	0.62	0.67	0.75	0.80	0.85	0.90	0.94	
	0.20		0.40	0.48	0.55	0.61	0.69	0.75	0.79	0.86	0.90	
0.50	0.50	0.20	0.52	0.60	0.67	0.71	0.78	0.83	0.86	0.91	0.94	
	0.30		0.45	0.53	0.60	0.65	0.72	0.77	0.81	0.87	0.90	
	0.20		0.40	0.47	0.54	0.59	0.67	0.73	0.77	0.83	0.87	
0.30	0.50	0.20	0.51	0.58	0.64	0.68	0.75	0.79	0.82	0.87	0.89	
	0.30		0.44	0.51	0.58	0.63	0.70	0.75	0.78	0.83	0.87	
	0.20		0.39	0.46	0.53	0.58	0.66	0.71	0.75	0.80	0.84	
0.00	0.00	0.00	0.37	0.43	0.50	0.55	0.62	0.66	0.70	0.75	0.78	
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 = 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	1.02	0.88	0.76	0.67	0.55	0.47	0.41	0.32	0.27	
	0.30		0.85	0.75	0.66	0.59	0.50	0.43	0.38	0.31	0.26	
	0.20		0.73	0.66	0.58	0.53	0.45	0.39	0.35	0.29	0.24	
0.50	0.50	0.20	0.98	0.84	0.72	0.64	0.52	0.47	0.39	0.31	0.26	
	0.30		0.83	0.73	0.64	0.57	0.48	0.41	0.36	0.29	0.25	
	0.20		0.72	0.64	0.57	0.52	0.44	0.38	0.34	0.28	0.24	
0.30	0.50	0.20	0.94	0.81	0.69	0.61	0.50	0.43	0.37	0.30	0.25	
	0.30		0.80	0.71	0.62	0.56	0.46	0.40	0.35	0.28	0.24	
	0.20		0.70	0.63	0.56	0.51	0.43	0.37	0.33	0.27	0.23	
0.00	0.00	0.00	0.60	0.54	0.47	0.42	0.36	0.31	0.27	0.22	0.19	
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 = 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	0.19	0.21	0.22	0.22	0.23	0.24	0.24	0.25	0.25
	0.30		0.12	0.14	0.15	0.16	0.18	0.19	0.20	0.21	0.22
	0.20		0.07	0.09	0.10	0.11	0.13	0.15	0.16	0.17	0.19
0.50	0.50	0.20	0.18	0.20	0.21	0.21	0.22	0.23	0.23	0.24	0.24
	0.30		0.12	0.13	0.15	0.16	0.17	0.18	0.19	0.20	0.21
	0.20		0.07	0.08	0.10	0.11	0.13	0.14	0.15	0.17	0.18
0.30	0.50	0.20	0.18	0.19	0.20	0.21	0.21	0.22	0.22	0.23	0.23
	0.30		0.12	0.13	0.14	0.15	0.17	0.18	0.18	0.19	0.20
	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	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Rating:5W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980											

## Zonal Lumen

Gamma [°]	I <sub>mean</sub> [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
0.0-1.0	101.6	0.1	0.1	0.03	0.03
1.0-2.0	101.6	0.3	0.4	0.08	0.11
2.0-3.0	101.6	0.5	0.9	0.14	0.25
3.0-4.0	101.5	0.7	1.6	0.19	0.44
4.0-5.0	101.3	0.9	2.4	0.25	0.68
5.0-6.0	101.2	1.1	3.5	0.30	0.98
6.0-7.0	101.0	1.3	4.7	0.35	1.33
7.0-8.0	100.7	1.4	6.2	0.41	1.74
8.0-9.0	100.5	1.6	7.8	0.46	2.20
9.0-10.0	100.2	1.8	9.6	0.51	2.71
10.0-11.0	99.9	2.0	11.6	0.56	3.27
11.0-12.0	99.5	2.2	13.8	0.61	3.88
12.0-13.0	99.1	2.4	16.1	0.66	4.54
13.0-14.0	98.7	2.5	18.7	0.71	5.25
14.0-15.0	98.2	2.7	21.4	0.76	6.01
15.0-16.0	97.8	2.9	24.2	0.81	6.82
16.0-17.0	97.3	3.0	27.3	0.85	7.67
17.0-18.0	96.7	3.2	30.5	0.90	8.57
18.0-19.0	96.2	3.3	33.8	0.94	9.51
19.0-20.0	95.6	3.5	37.3	0.98	10.50
20.0-21.0	95.0	3.6	41.0	1.03	11.52
21.0-22.0	94.3	3.8	44.7	1.07	12.59
22.0-23.0	93.6	3.9	48.7	1.11	13.69
23.0-24.0	92.9	4.1	52.7	1.14	14.84
24.0-25.0	92.2	4.2	56.9	1.18	16.01
25.0-26.0	91.4	4.3	61.2	1.21	17.23
26.0-27.0	90.6	4.4	65.7	1.25	18.48
27.0-28.0	89.8	4.5	70.2	1.28	19.76
28.0-29.0	89.0	4.7	74.9	1.31	21.07
29.0-30.0	88.1	4.8	79.6	1.34	22.40
30.0-31.0	87.2	4.9	84.5	1.37	23.77
31.0-32.0	86.3	4.9	89.4	1.39	25.16
32.0-33.0	85.4	5.0	94.5	1.41	26.57
33.0-34.0	84.4	5.1	99.6	1.44	28.01
34.0-35.0	83.4	5.2	104.7	1.46	29.47
35.0-36.0	82.4	5.2	110.0	1.48	30.95

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

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



## Zonal Lumen (Continue 1)

Gamma [°]	I <sub>mean</sub> [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
36.0-37.0	81.4	5.3	115.3	1.49	32.44
37.0-38.0	80.4	5.4	120.7	1.51	33.95
38.0-39.0	79.3	5.4	126.1	1.52	35.47
39.0-40.0	78.2	5.5	131.5	1.54	37.01
40.0-41.0	77.1	5.5	137.0	1.55	38.55
41.0-42.0	76.0	5.5	142.6	1.55	40.11
42.0-43.0	74.9	5.5	148.1	1.56	41.67
43.0-44.0	73.7	5.6	153.7	1.57	43.23
44.0-45.0	72.5	5.6	159.3	1.57	44.80
45.0-46.0	71.3	5.6	164.8	1.57	46.37
46.0-47.0	70.1	5.6	170.4	1.57	47.94
47.0-48.0	68.9	5.6	176.0	1.57	49.51
48.0-49.0	67.7	5.6	181.5	1.56	51.07
49.0-50.0	66.4	5.5	187.1	1.56	52.63
50.0-51.0	65.1	5.5	192.6	1.55	54.18
51.0-52.0	63.9	5.5	198.1	1.54	55.72
52.0-53.0	62.6	5.4	203.5	1.53	57.25
53.0-54.0	61.3	5.4	208.9	1.52	58.77
54.0-55.0	60.0	5.4	214.3	1.51	60.28
55.0-56.0	58.6	5.3	219.6	1.49	61.77
56.0-57.0	57.3	5.2	224.8	1.47	63.25
57.0-58.0	56.0	5.2	230.0	1.46	64.70
58.0-59.0	54.7	5.1	235.1	1.44	66.14
59.0-60.0	53.3	5.0	240.1	1.42	67.56
60.0-61.0	52.0	5.0	245.1	1.40	68.95
61.0-62.0	50.6	4.9	250.0	1.37	70.33
62.0-63.0	49.3	4.8	254.8	1.35	71.67
63.0-64.0	47.9	4.7	259.5	1.32	73.00
64.0-65.0	46.6	4.6	264.1	1.30	74.29
65.0-66.0	45.3	4.5	268.6	1.27	75.57
66.0-67.0	43.9	4.4	273.0	1.24	76.81
67.0-68.0	42.6	4.3	277.3	1.21	78.02
68.0-69.0	41.3	4.2	281.5	1.19	79.21
69.0-70.0	40.0	4.1	285.7	1.16	80.36
70.0-71.0	38.7	4.0	289.7	1.13	81.49
71.0-72.0	37.5	3.9	293.5	1.10	82.59

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

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

## Zonal Lumen (Continue 2)

Gamma [°]	I <sub>mean</sub> [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
72.0-73.0	36.2	3.8	297.3	1.06	83.65
73.0-74.0	35.0	3.7	301.0	1.03	84.69
74.0-75.0	33.8	3.6	304.6	1.01	85.69
75.0-76.0	32.6	3.5	308.1	0.98	86.67
76.0-77.0	31.5	3.4	311.4	0.95	87.61
77.0-78.0	30.4	3.3	314.7	0.92	88.53
78.0-79.0	29.4	3.2	317.8	0.89	89.41
79.0-80.0	28.3	3.1	320.9	0.86	90.27
80.0-81.0	27.2	2.9	323.8	0.83	91.10
81.0-82.0	26.1	2.8	326.7	0.80	91.90
82.0-83.0	25.0	2.7	329.4	0.76	92.66
83.0-84.0	23.8	2.6	332.0	0.73	93.39
84.0-85.0	22.5	2.5	334.4	0.69	94.08
85.0-86.0	21.1	2.3	336.7	0.65	94.73
86.0-87.0	19.8	2.2	338.9	0.61	95.34
87.0-88.0	18.4	2.0	340.9	0.57	95.91
88.0-89.0	17.1	1.9	342.8	0.53	96.43
89.0-90.0	15.9	1.7	344.5	0.49	96.92
90.0-91.0	14.6	1.6	346.1	0.45	97.37
91.0-92.0	13.1	1.4	347.5	0.40	97.78
92.0-93.0	11.1	1.2	348.8	0.34	98.12
93.0-94.0	8.9	1.0	349.7	0.27	98.39
94.0-95.0	6.9	0.7	350.5	0.21	98.60
95.0-96.0	5.2	0.6	351.0	0.16	98.76
96.0-97.0	3.8	0.4	351.5	0.12	98.88
97.0-98.0	2.8	0.3	351.8	0.09	98.96
98.0-99.0	2.0	0.2	352.0	0.06	99.03
99.0-100.0	1.5	0.2	352.2	0.05	99.07
100.0-101.0	1.1	0.1	352.3	0.03	99.11
101.0-102.0	0.9	0.1	352.4	0.03	99.13
102.0-103.0	0.7	0.1	352.4	0.02	99.15
103.0-104.0	0.6	0.1	352.5	0.02	99.17
104.0-105.0	0.5	0.1	352.6	0.02	99.19
105.0-106.0	0.5	0.0	352.6	0.01	99.20
106.0-107.0	0.4	0.0	352.7	0.01	99.21
107.0-108.0	0.4	0.0	352.7	0.01	99.23

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

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

## Zonal Lumen (Continue 3)

Gamma [°]	I <sub>mean</sub> [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
108.0-109.0	0.4	0.0	352.7	0.01	99.24
109.0-110.0	0.4	0.0	352.8	0.01	99.25
110.0-111.0	0.4	0.0	352.8	0.01	99.26
111.0-112.0	0.5	0.0	352.9	0.01	99.28
112.0-113.0	0.5	0.0	352.9	0.01	99.29
113.0-114.0	0.5	0.0	353.0	0.01	99.30
114.0-115.0	0.5	0.0	353.0	0.01	99.32
115.0-116.0	0.5	0.0	353.1	0.01	99.33
116.0-117.0	0.5	0.0	353.1	0.01	99.35
117.0-118.0	0.5	0.0	353.2	0.01	99.36
118.0-119.0	0.5	0.1	353.2	0.01	99.37
119.0-120.0	0.5	0.1	353.3	0.01	99.39
120.0-121.0	0.5	0.1	353.3	0.01	99.40
121.0-122.0	0.6	0.1	353.4	0.01	99.42
122.0-123.0	0.6	0.1	353.4	0.01	99.43
123.0-124.0	0.6	0.1	353.5	0.01	99.45
124.0-125.0	0.6	0.1	353.5	0.01	99.46
125.0-126.0	0.6	0.1	353.6	0.01	99.48
126.0-127.0	0.6	0.1	353.6	0.01	99.49
127.0-128.0	0.6	0.1	353.7	0.01	99.50
128.0-129.0	0.6	0.1	353.7	0.01	99.52
129.0-130.0	0.6	0.1	353.8	0.02	99.53
130.0-131.0	0.6	0.1	353.8	0.01	99.55
131.0-132.0	0.6	0.1	353.9	0.01	99.56
132.0-133.0	0.6	0.1	353.9	0.01	99.58
133.0-134.0	0.7	0.1	354.0	0.01	99.59
134.0-135.0	0.7	0.1	354.1	0.01	99.61
135.0-136.0	0.7	0.1	354.1	0.01	99.62
136.0-137.0	0.7	0.1	354.2	0.01	99.64
137.0-138.0	0.7	0.1	354.2	0.01	99.65
138.0-139.0	0.7	0.0	354.3	0.01	99.66
139.0-140.0	0.7	0.0	354.3	0.01	99.68
140.0-141.0	0.7	0.0	354.4	0.01	99.69
141.0-142.0	0.7	0.0	354.4	0.01	99.70
142.0-143.0	0.7	0.0	354.4	0.01	99.72
143.0-144.0	0.7	0.0	354.5	0.01	99.73

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

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

## Zonal Lumen (Continue 4)

Gamma [°]	I <sub>mean</sub> [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
144.0-145.0	0.7	0.0	354.5	0.01	99.74
145.0-146.0	0.7	0.0	354.6	0.01	99.76
146.0-147.0	0.7	0.0	354.6	0.01	99.77
147.0-148.0	0.7	0.0	354.7	0.01	99.78
148.0-149.0	0.8	0.0	354.7	0.01	99.79
149.0-150.0	0.8	0.0	354.8	0.01	99.81
150.0-151.0	0.8	0.0	354.8	0.01	99.82
151.0-152.0	0.8	0.0	354.8	0.01	99.83
152.0-153.0	0.8	0.0	354.9	0.01	99.84
153.0-154.0	0.8	0.0	354.9	0.01	99.85
154.0-155.0	0.8	0.0	355.0	0.01	99.86
155.0-156.0	0.8	0.0	355.0	0.01	99.87
156.0-157.0	0.8	0.0	355.0	0.01	99.88
157.0-158.0	0.8	0.0	355.1	0.01	99.89
158.0-159.0	0.8	0.0	355.1	0.01	99.90
159.0-160.0	0.8	0.0	355.1	0.01	99.91
160.0-161.0	0.8	0.0	355.2	0.01	99.92
161.0-162.0	0.8	0.0	355.2	0.01	99.93
162.0-163.0	0.8	0.0	355.2	0.01	99.93
163.0-164.0	0.8	0.0	355.2	0.01	99.94
164.0-165.0	0.8	0.0	355.3	0.01	99.95
165.0-166.0	0.8	0.0	355.3	0.01	99.95
166.0-167.0	0.9	0.0	355.3	0.01	99.96
167.0-168.0	0.9	0.0	355.3	0.01	99.97
168.0-169.0	0.9	0.0	355.3	0.01	99.97
169.0-170.0	0.9	0.0	355.4	0.00	99.98
170.0-171.0	0.9	0.0	355.4	0.00	99.98
171.0-172.0	0.9	0.0	355.4	0.00	99.98
172.0-173.0	0.9	0.0	355.4	0.00	99.99
173.0-174.0	0.9	0.0	355.4	0.00	99.99
174.0-175.0	0.9	0.0	355.4	0.00	99.99
175.0-176.0	0.9	0.0	355.4	0.00	100.00
176.0-177.0	0.9	0.0	355.4	0.00	100.00
177.0-178.0	0.9	0.0	355.4	0.00	100.00
178.0-179.0	0.9	0.0	355.4	0.00	100.00
179.0-180.0	0.9	0.0	355.4	0.00	100.00

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

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