

Report No.: 01

Test Time: 2016/11/24 10:18

Luminaire Property

Luminaire Manufacturer:

Luminaire Category: Synthesis LED Linear

Luminaire Description: Synthesis Direct LO 28CM 135 mA 2700K 15degree

Luminous Length (mm): 290

Luminous Width (mm): 50

Luminous Height (mm): 40

Voltage: 119.9 V

Current: 0.041 A

Power: 4.85 W

Power Factor: 0.984

Photometric Results

CIE Class: Direct

Measurement Flux: 632.5 lm

Downward Ratio: 100%

Horizontal Diffuse Angle(50%): H17.7

Vertical Diffuse Angle(50%): V17.4

Luminaire Efficacy Rating (LER): 130

Max. Intensity: 4315.21 cd

Total Rated Lamp Lumens: 632.5 lm

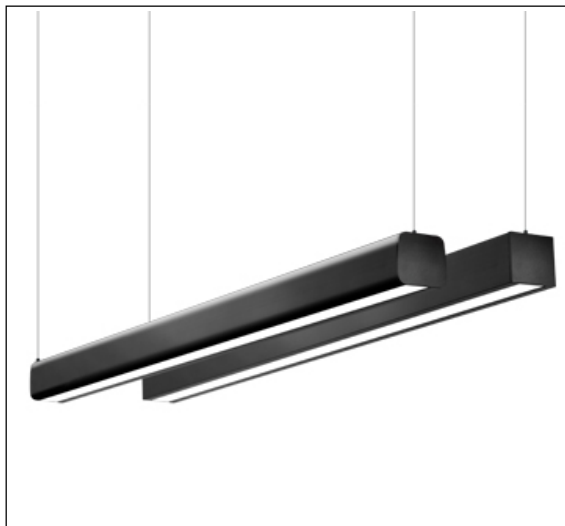
Efficiency: 100%

Upward Ratio: 0%

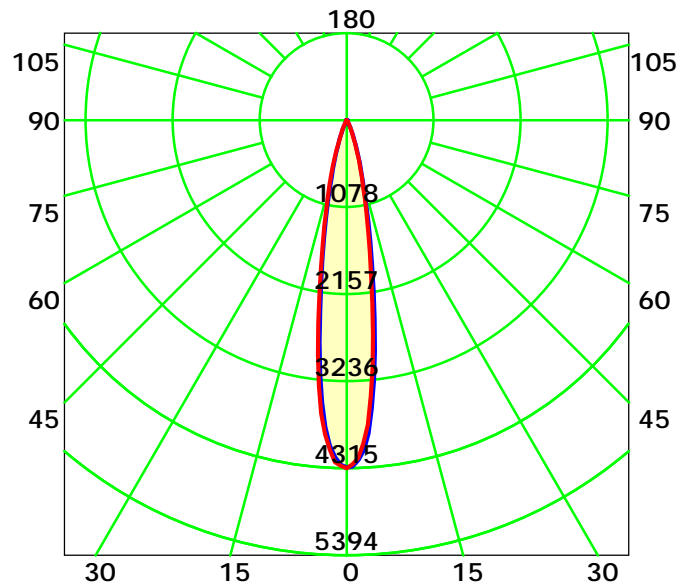
Central Intensity: 4303.27 cd

Pos of Max. Intensity: H60 V0

Picture Of Luminaire



Luminous Intensity Distribution Curve



Average Diffuse Angle(50%): 17.5°

— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 30.0

Test Lab: ACOLYTE

Test Type: TYPE C

Temperature: 25°C

Operator: Roy

Gamma Plane (°):0.0-90.0: 1.0

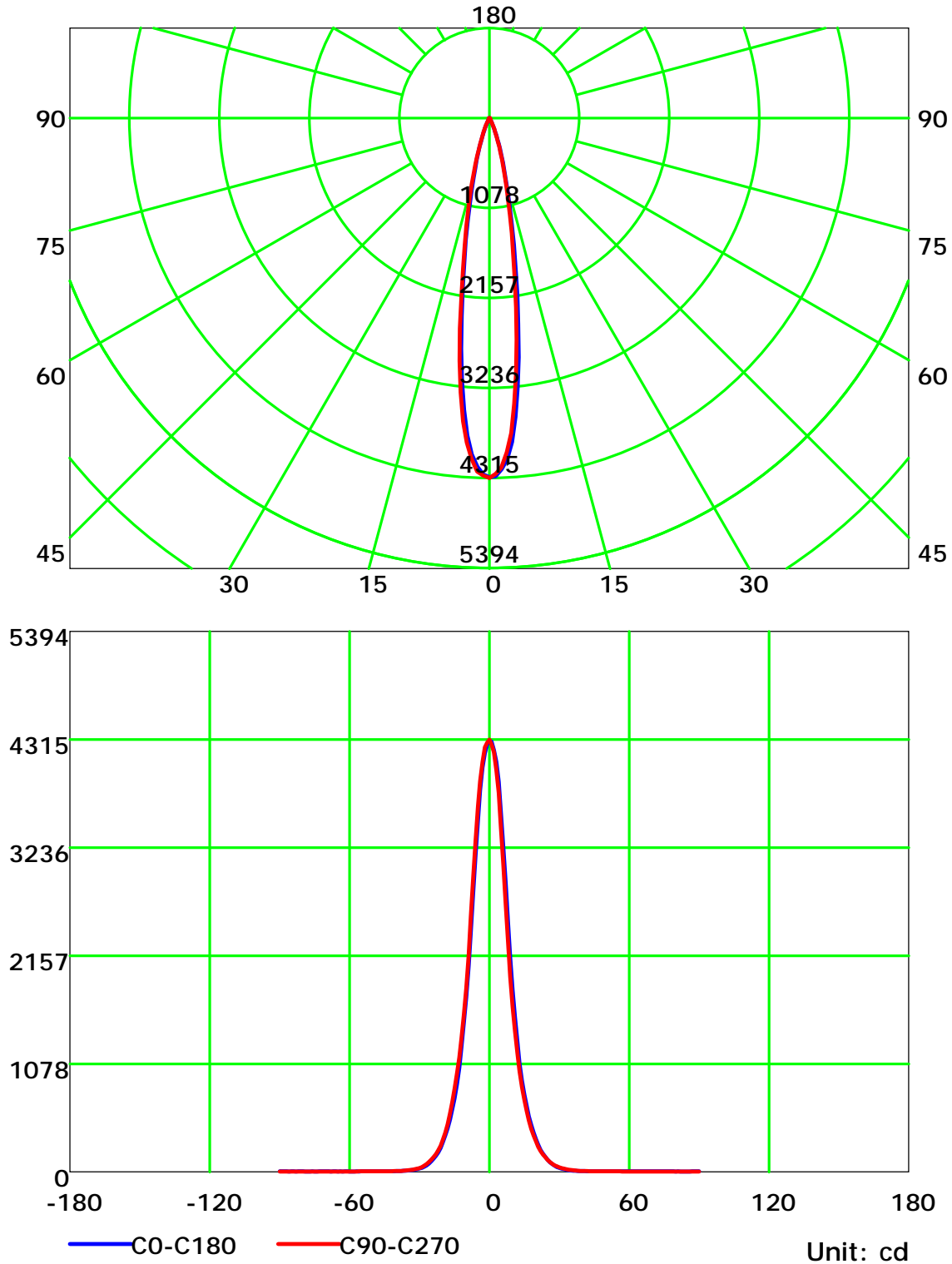
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

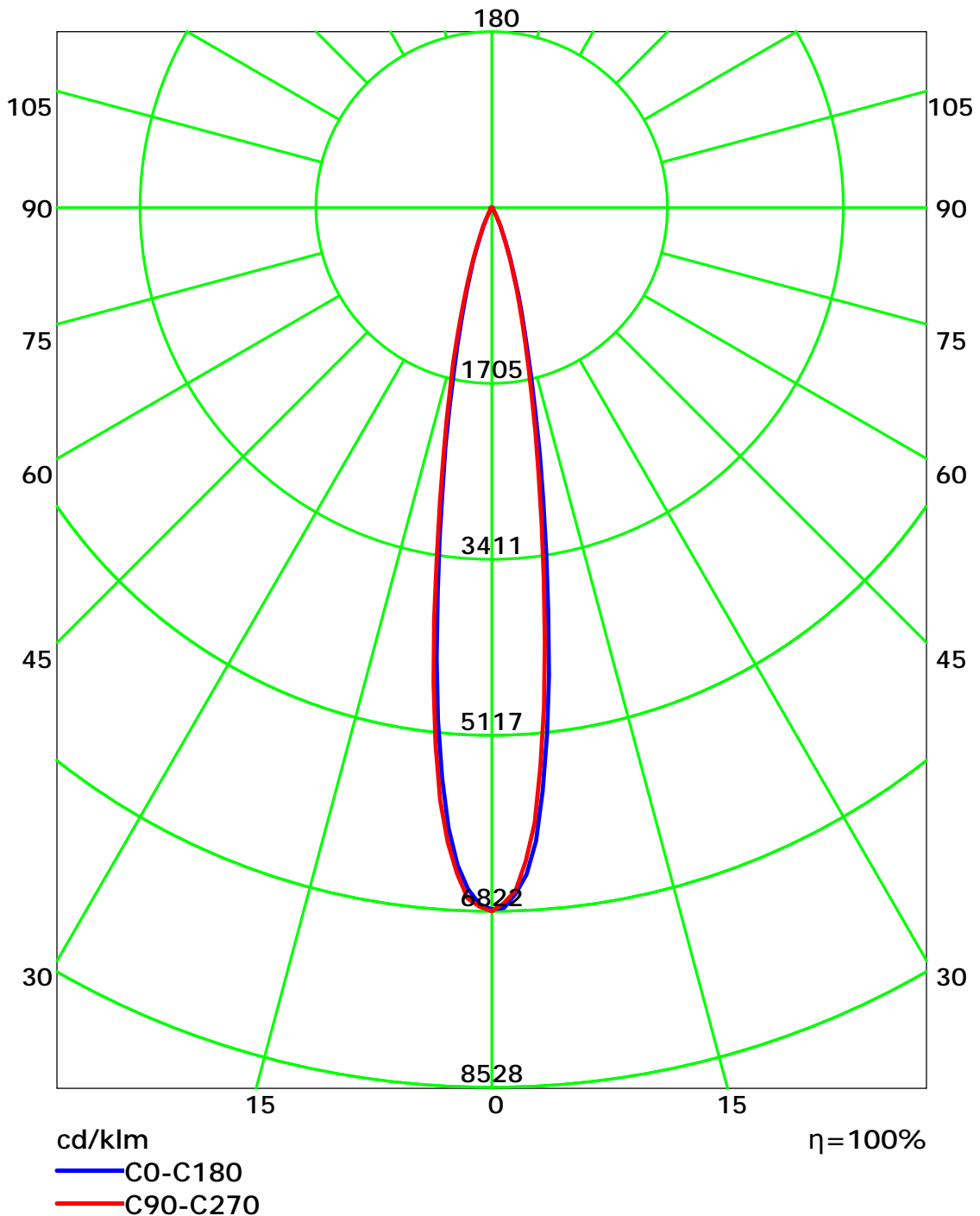
Luminous Intensity Distribution Curve



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

Gamma Plane (°):0.0-90.0:1.0
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: Roy

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

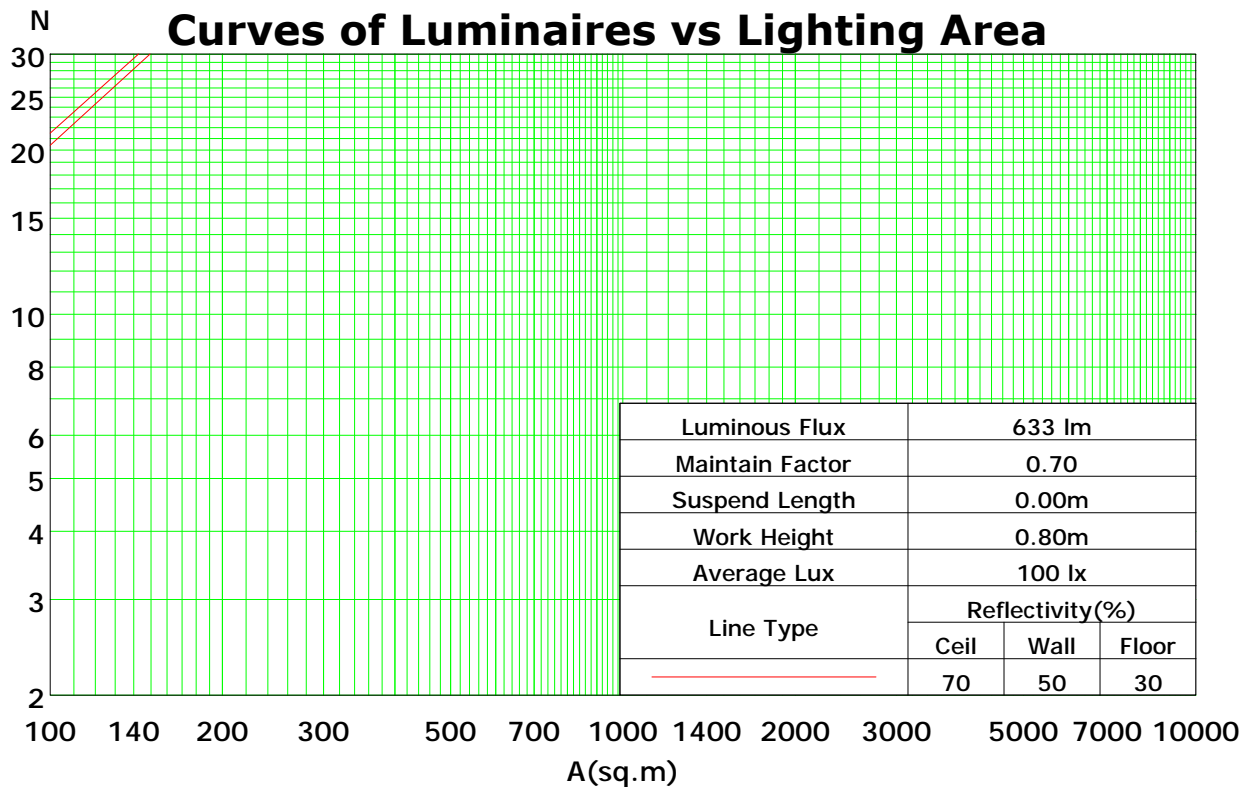
Coefficients Of Utilization - Zonal Cavity Method

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	102	102	102	100
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	103	100	108	105	102	99	101	99	97	98	97	95	96	94	93	91
3	107	102	98	95	105	100	97	94	98	95	92	95	93	91	93	91	90	88
4	103	98	93	90	102	97	93	90	95	91	89	93	90	88	91	89	87	86
5	100	94	90	87	99	93	89	86	92	88	86	90	87	85	89	86	84	83
6	98	91	87	84	96	91	87	84	89	86	83	88	85	83	87	84	82	81
7	95	89	84	81	94	88	84	81	87	83	81	86	83	80	85	82	80	79
8	93	86	82	79	92	86	82	79	85	81	79	84	81	78	83	80	78	77
9	91	84	80	77	90	84	80	77	83	79	77	82	79	77	81	79	76	75
10	89	82	78	75	88	82	78	75	81	78	75	80	77	75	80	77	75	74

Spacing Criteria (0-180): 0.30

Spacing Criteria (90-270): 0.30

Spacing Criteria (Diagonal): 0.32



C Plane (°):0.0-360.0: 30.0

Test Lab: ACOLYTE

Test Type: TYPE C

Temperature: 25°C

Operator: Roy

Gamma Plane (°):0.0-90.0: 1.0

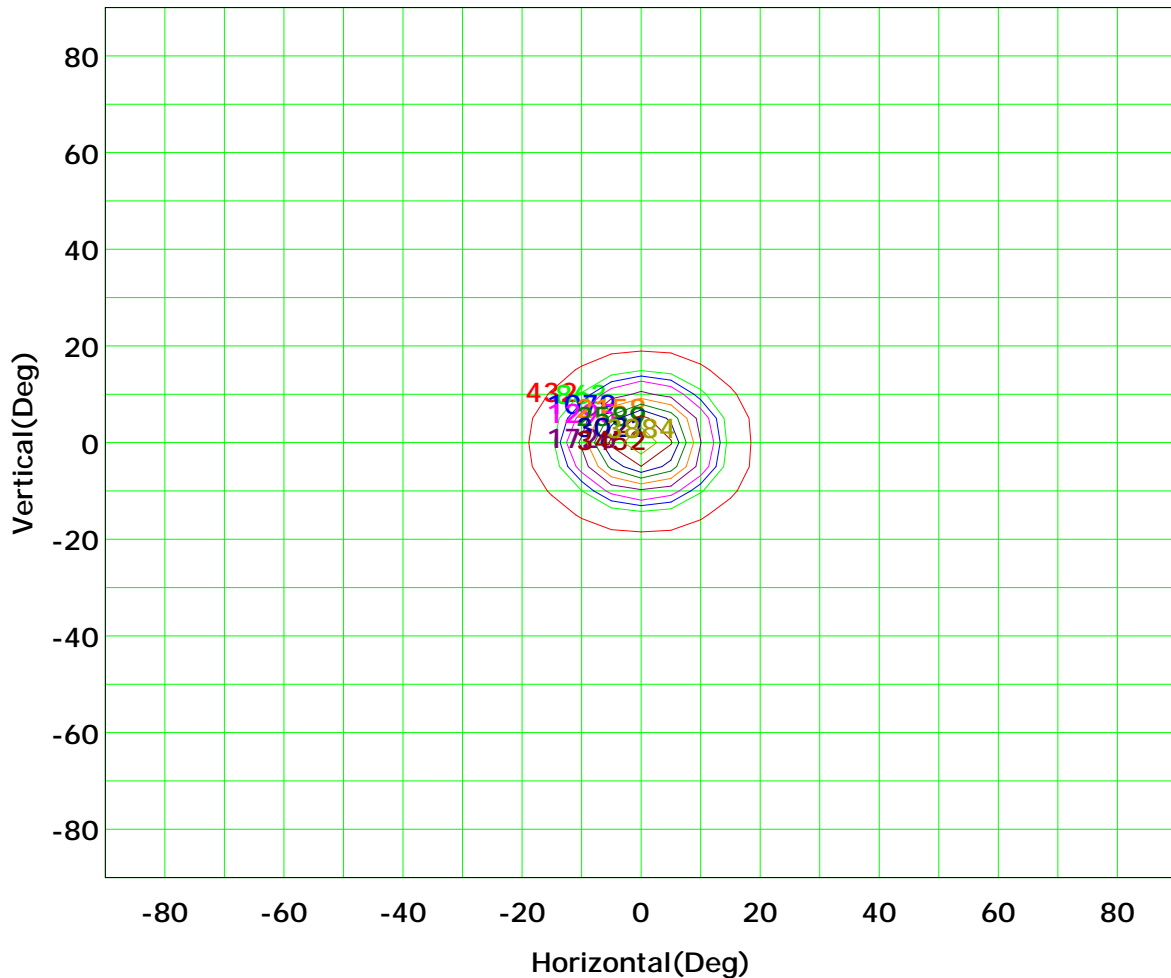
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

Isocandela (rectangle)



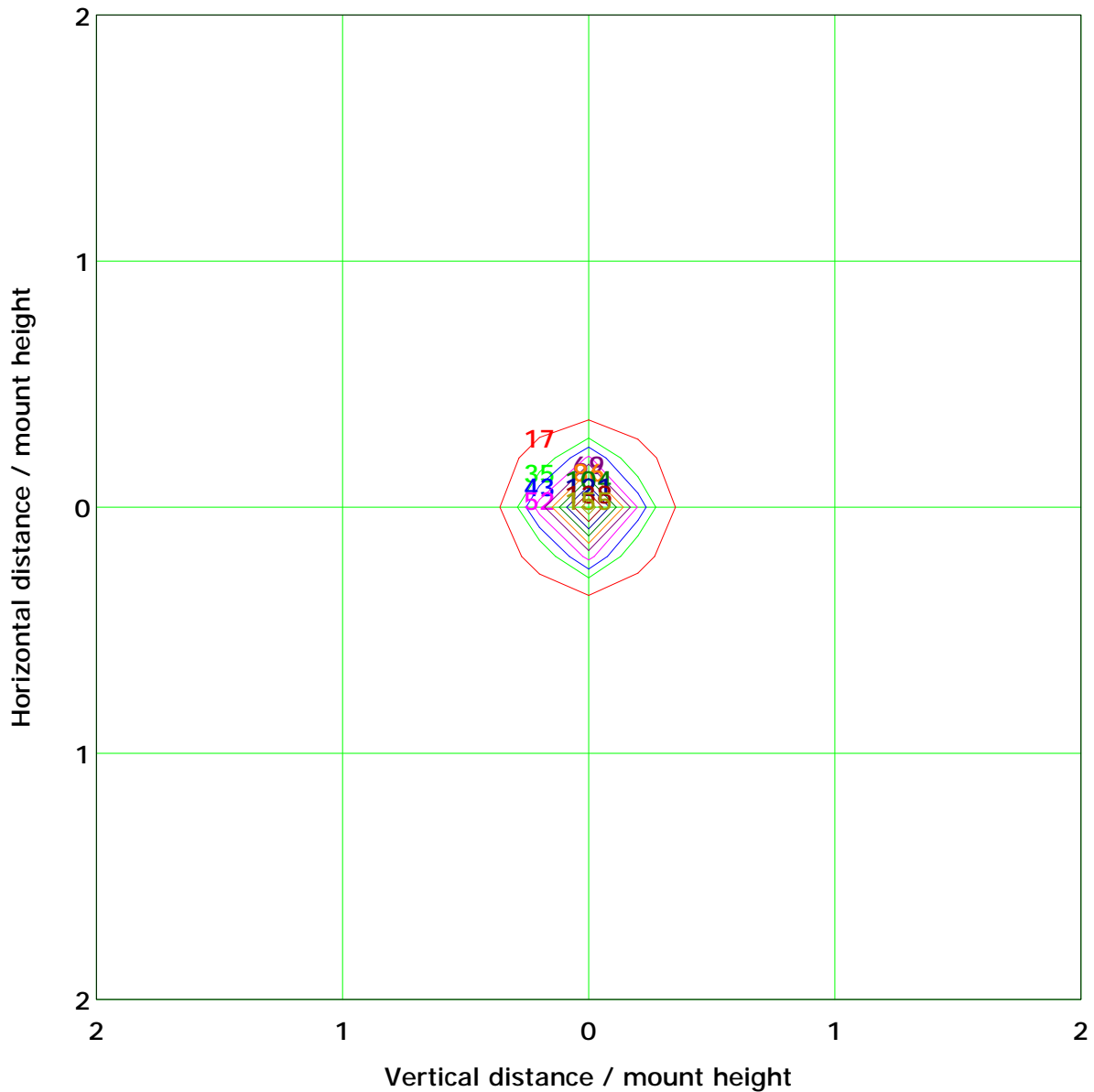
Imax (100%): 4315 cd

(10%): 432 cd	(20%): 863 cd
(25%): 1079 cd	(30%): 1295 cd
(40%): 1726 cd	(50%): 2158 cd
(60%): 2589 cd	(70%): 3021 cd
(80%): 3452 cd	(90%): 3884 cd

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

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

IsoLux Plot



Mounting Height: 5.0m Max Lux(100%): 172.6 lx	
(10%): 17.3 lx	(20%): 34.5 lx
(25%): 43.2 lx	(30%): 51.8 lx
(40%): 69.0 lx	(50%): 86.3 lx
(60%): 103.6 lx	(70%): 120.8 lx
(80%): 138.1 lx	(90%): 155.3 lx

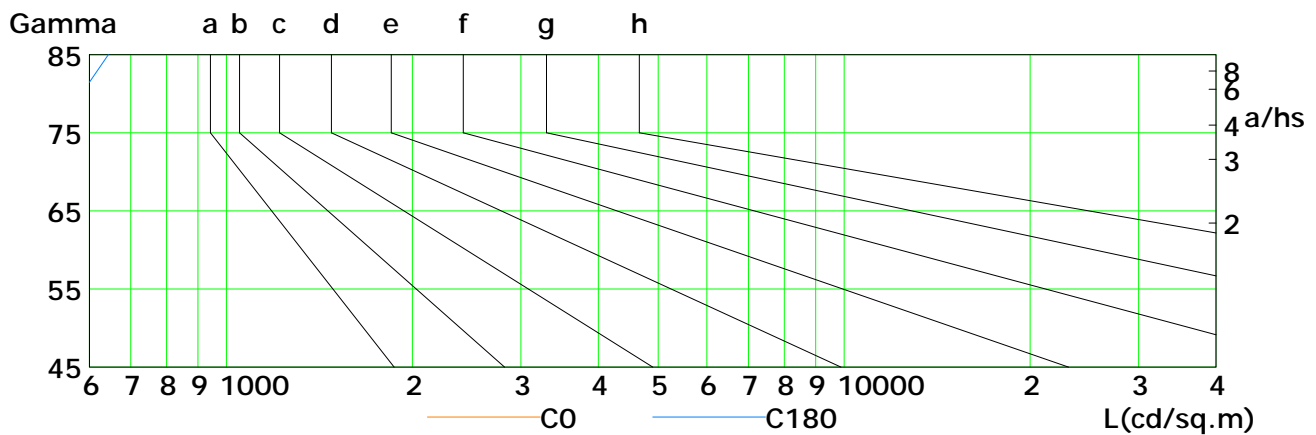
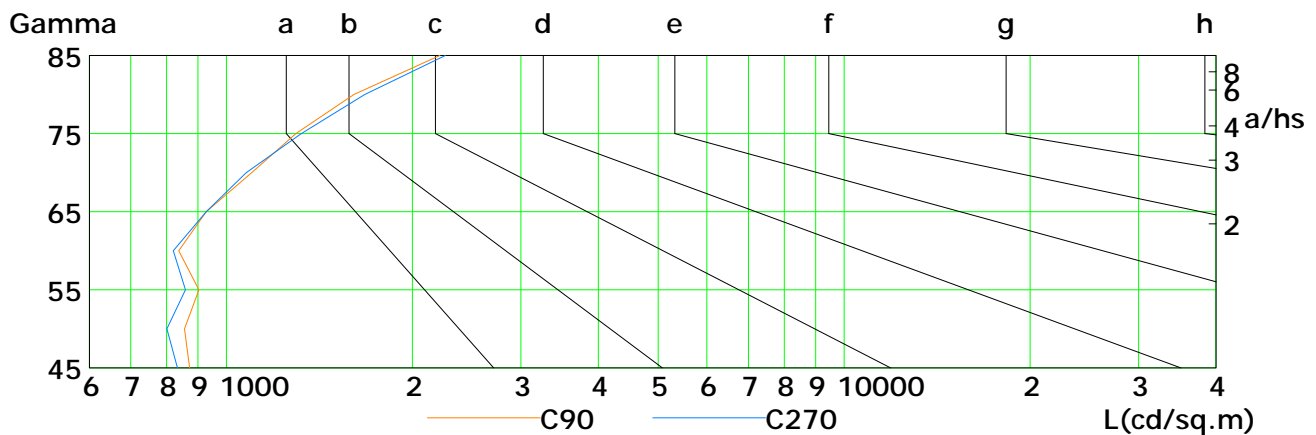
C Plane (°):0.0-360.0: 30.0
Test Lab: ACOLYTE
Test Type: TYPE C
Temperature: 25°C
Operator: Roy

Gamma Plane (°):0.0-90.0:1.0
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

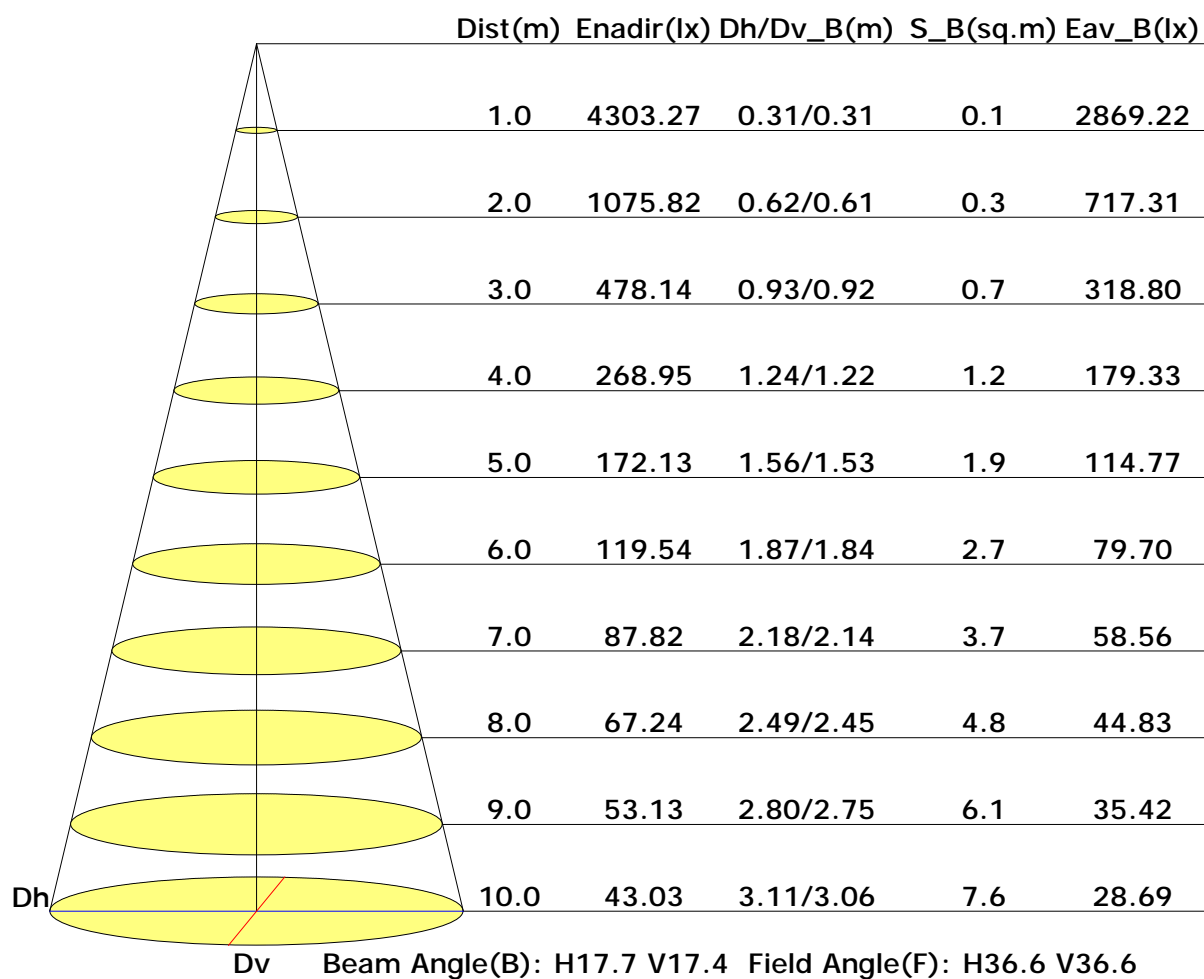


L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	535	526	464	469	496	521	542	560	587
C90	872	856	903	837	928	1100	1296	1609	2217
C180	503	494	455	460	478	511	522	582	644
C270	834	802	859	821	928	1078	1323	1676	2263

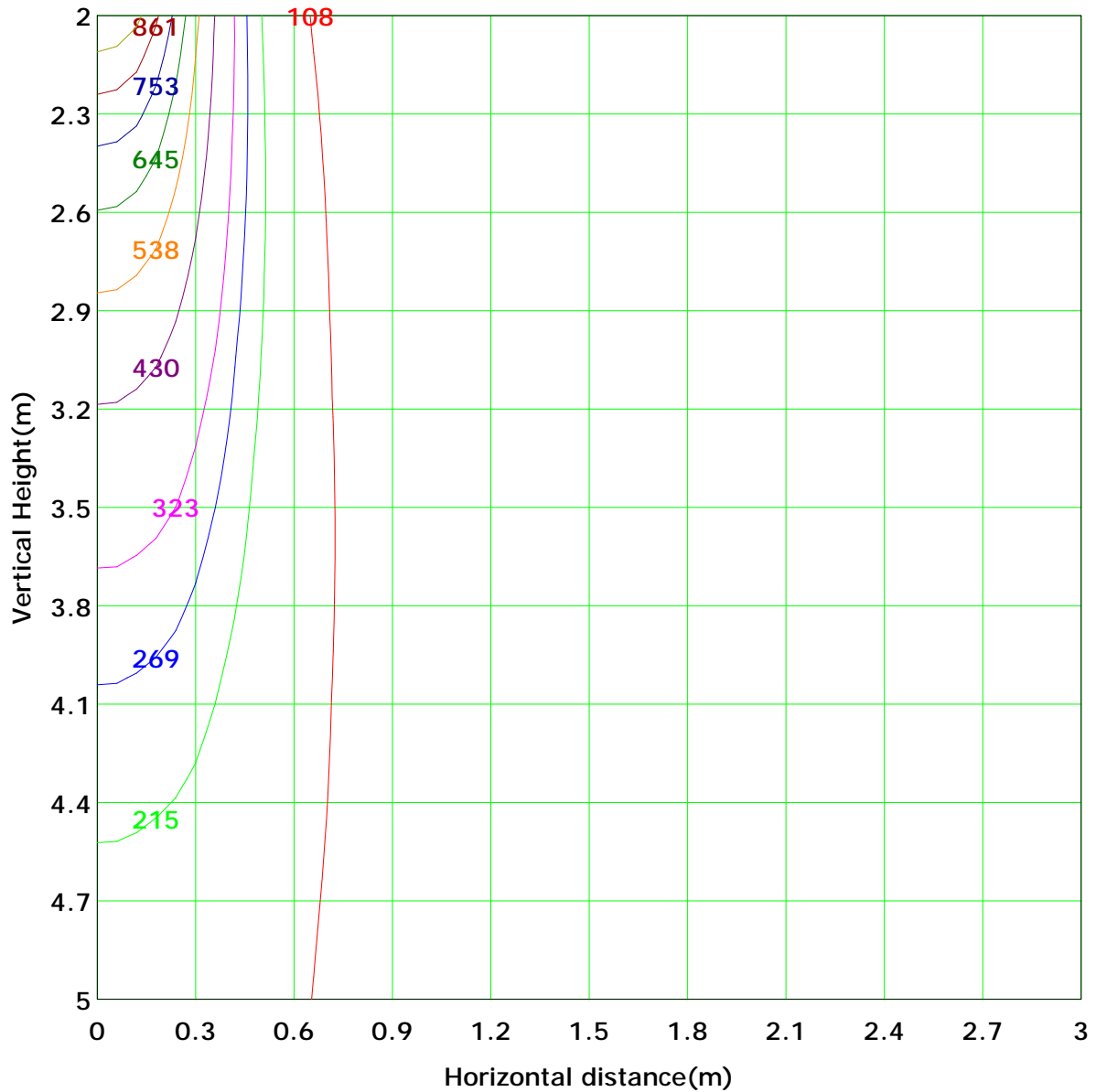
C Plane (°):0.0-360.0: 30.0
Test Lab: ACOLYTE
Test Type: TYPE C
Temperature: 25°C
Operator: Roy

Gamma Plane (°):0.0-90.0:1.0
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: 1075.8 lx

(10%): 107.6 lx	(20%): 215.2 lx
(25%): 269.0 lx	(30%): 322.7 lx
(40%): 430.3 lx	(50%): 537.9 lx
(60%): 645.5 lx	(70%): 753.1 lx
(80%): 860.7 lx	(90%): 968.2 lx

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

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:



Area Flux Table

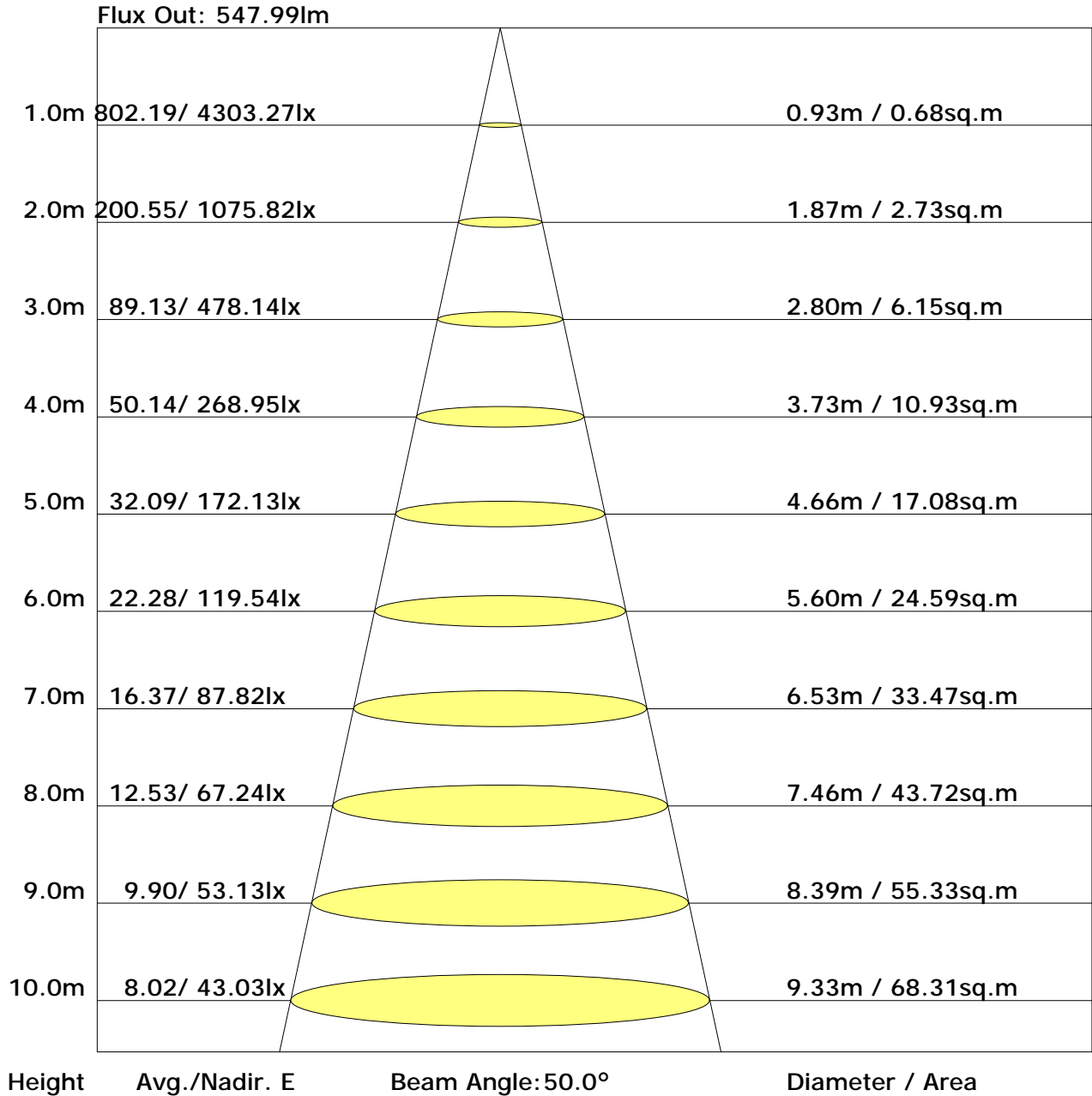
Unit: lm

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)
Horizontal plane	-90	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	0.1	0.1	0.1	0.4	0.0	0.0
	-80	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	0.1	0.1	0.1	1.1	0.0	0.0
	-70	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	0.1	0.1	0.1	1.8	0.0	0.0
	-60	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	0.1	0.1	0.1	2.5	0.0	0.0
	-50	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	0.1	0.1	0.1	3.4	0.0	0.0
	-40	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	0.1	0.1	0.1	5.4	0.0	0.0
	-30	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	0.1	0.1	0.1	17.0	0.0	0.0
	-20	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	0.1	0.1	0.1	71.1	45.1	0.0
	-10	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	0.1	0.1	0.1	216.1	198.5	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	0.1	0.1	0.1	210.8	192.9	0.0
	10	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	0.1	0.1	0.1	69.8	43.2	0.0
	20	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	0.1	0.1	0.1	17.6	0.0	0.0
	30	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	0.1	0.1	0.1	5.4	0.0	0.0
	40	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	0.1	0.1	0.1	3.4	0.0	0.0
	50	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	0.1	0.1	0.1	2.6	0.0	0.0
	60	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	0.1	0.1	0.1	1.9	0.0	0.0
	70	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	0.1	0.1	0.1	1.1	0.0	0.0
	80	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	0.1	0.1	0.1	0.4	0.0	0.0
	90	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	0.1	0.1	0.1	632	480	0.0
	Flux(T)	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	0.1	0.1	0.1	632	480	0.0
	Flux(E)	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	0.1	0.1	0.1	632	480	0.0

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

Gamma Plane (°): 0.0-90.0: 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	3.9	4.9	4.3	5.2	5.5	4.2	5.2	4.6	5.5	5.8
3H	7.3	8.2	7.7	8.5	8.9	6.1	7.0	6.5	7.3	7.7
4H	9.1	9.9	9.5	10.2	10.6	7.2	8.0	7.6	8.3	8.7
6H	10.8	11.6	11.3	12.0	12.4	8.3	9.1	8.8	9.5	9.8
8H	11.7	12.4	12.2	12.8	13.2	8.9	9.6	9.3	10.0	10.4
12H	12.6	13.3	13.1	13.7	14.1	9.5	10.1	9.9	10.5	11.0
X=4H Y=2H	4.5	5.3	4.9	5.6	6.0	4.7	5.5	5.1	5.9	6.3
3H	8.0	8.7	8.4	9.1	9.5	7.0	7.7	7.4	8.1	8.5
4H	9.9	10.5	10.3	10.9	11.4	8.3	8.9	8.7	9.3	9.7
6H	11.9	12.4	12.3	12.8	13.3	9.6	10.1	10.1	10.6	11.1
8H	12.8	13.3	13.3	13.8	14.2	10.3	10.8	10.8	11.2	11.7
12H	13.8	14.3	14.3	14.7	15.2	11.0	11.4	11.5	11.9	12.4
X=8H Y=4H	10.2	10.7	10.7	11.2	11.6	8.9	9.4	9.4	9.8	10.3
6H	12.4	12.7	12.9	13.2	13.7	10.5	10.9	11.0	11.4	11.9
8H	13.5	13.8	14.0	14.3	14.8	11.3	11.7	11.9	12.2	12.7
12H	14.7	15.0	15.2	15.5	16.1	12.2	12.5	12.7	13.0	13.6
X=12H Y=4H	10.3	10.7	10.8	11.2	11.7	9.1	9.5	9.6	10.0	10.5
6H	12.5	12.8	13.0	13.3	13.8	10.8	11.1	11.3	11.6	12.1
8H	13.7	14.0	14.2	14.5	15.0	11.7	12.0	12.2	12.5	13.1

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: Roy

Gamma Plane (°):0.0-90.0:1.0
 Test Device: GPM-1800B
 Distance: 9.028 m
 Humidity: 60%
 Inspector:

Utilisation Factor Table(Floor cavity)

Utilisation Factors UF(F)			SHR NOM = 0.50								
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	0.99	1.04	1.07	1.09	1.12	1.14	1.16	1.18	1.19
	0.30		0.96	1.00	1.03	1.05	1.09	1.11	1.13	1.15	1.17
	0.20		0.93	0.97	1.00	1.03	1.06	1.09	1.11	1.13	1.15
0.50	0.50	0.20	0.98	1.02	1.05	1.06	1.09	1.11	1.12	1.14	1.15
	0.30		0.95	0.99	1.01	1.04	1.06	1.08	1.10	1.12	1.13
	0.20		0.92	0.96	0.99	1.01	1.04	1.06	1.08	1.10	1.12
0.30	0.50	0.20	0.97	1.00	1.03	1.04	1.06	1.08	1.09	1.10	1.11
	0.30		0.94	0.98	1.00	1.02	1.04	1.06	1.07	1.08	1.10
	0.20		0.92	0.95	0.98	1.00	1.02	1.04	1.06	1.07	1.08
0.00	0.00	0.00	0.90	0.94	0.96	0.97	0.99	1.00	1.01	1.03	1.03
Rating:5W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980											

Utilisation Factor Table(Wall)

Utilisation Factors UF(W)			SHR NOM = 0.50								
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	0.49	0.41	0.35	0.31	0.25	0.21	0.18	0.14	0.12
	0.30		0.41	0.35	0.31	0.27	0.23	0.19	0.17	0.14	0.11
	0.20		0.35	0.30	0.27	0.24	0.21	0.18	0.16	0.13	0.11
0.50	0.50	0.20	0.46	0.38	0.33	0.29	0.23	0.24	0.17	0.13	0.11
	0.30		0.39	0.33	0.29	0.26	0.21	0.18	0.16	0.12	0.10
	0.20		0.34	0.29	0.26	0.23	0.19	0.17	0.15	0.12	0.10
0.30	0.50	0.20	0.44	0.36	0.30	0.26	0.21	0.18	0.15	0.12	0.10
	0.30		0.38	0.31	0.27	0.24	0.19	0.17	0.14	0.11	0.09
	0.20		0.33	0.28	0.25	0.22	0.18	0.15	0.13	0.11	0.09
0.00	0.00	0.00	0.17	0.14	0.12	0.11	0.09	0.07	0.06	0.05	0.04
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 = 0.50								
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	0.13	0.15	0.16	0.17	0.19	0.20	0.21	0.22	0.22
	0.30		0.09	0.11	0.13	0.14	0.16	0.18	0.19	0.20	0.21
	0.20		0.07	0.09	0.11	0.12	0.14	0.16	0.17	0.18	0.19
0.50	0.50	0.20	0.12	0.14	0.15	0.17	0.18	0.19	0.20	0.21	0.21
	0.30		0.09	0.11	0.13	0.14	0.16	0.17	0.18	0.19	0.20
	0.20		0.07	0.09	0.11	0.12	0.14	0.15	0.16	0.18	0.19
0.30	0.50	0.20	0.12	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.20
	0.30		0.09	0.11	0.12	0.14	0.15	0.17	0.17	0.19	0.19
	0.20		0.07	0.09	0.10	0.12	0.14	0.15	0.16	0.17	0.18
0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rating:5W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980											