浙大三色

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OML

Client:
LumCAT: 2216-294P-24V-2700K
Luminaire:

Report No:	Voltage(V): 24.0000
Test No: OML-LA-19082202	Current(A): 0.6210
LampCAT: LED	Power (W): 14.9100
Lamp flux(lm): -1.0	PF: 1.0000
Number of Lamps: 1	Ballast type:
Length(mm): 1000	Width(mm): 30
Phm Type: C	Height(mm): 30

Photometric Results

Lumens(lm): 1442.80, Efficiency(%): 0.00% , Luminous Efficacy(lm/W): 96.77
Central intensity(cd): 489.958, Maximum intensity(cd): 491.556
Angle of maximum intensity: C=15.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=115.0
[C90/270]Total=117.7
Field angle(10%Imax): [C0/180]Total=162.1
[C90/270]Total=162.8
Maximum s/h(1/2): C0_180=1.29 C90_270=1.31
Maximum s/h(1/4): C0_180=1.40 C90_270=1.43
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 0.00%
Up flux rate of LUM(%): 0.14%
Down flux rate of LUM(%): 99.86%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 77.907%

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Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	484.402	0.000	0	0.00%	0.00%
5.0	482.585	11.560	11.56	0.00%	0.80%
10.0	477.001	34.327	45.887	0.00%	3.18%
15.0	467.954	56.054	101.942	0.00%	7.07%
20.0	454.979	76.063	178.004	0.00%	12.34%
25.0	438.293	93.688	271.692	0.00%	18.83%
30.0	418.116	108.379	380.071	0.00%	26.34%
35.0	394.324	119.637	499.708	0.00%	34.63%
40.0	367.383	127.085	626.793	0.00%	43.44%
45.0	336.817	130.388	757.182	0.00%	52.48%
50.0	302.989	129.282	886.464	0.00%	61.44%
55.0	266.041	123.726	1010.19	0.00%	70.02%
60.0	226.495	113.848	1124.038	0.00%	77.91%
65.0	184.429	99.896	1223.935	0.00%	84.83%
70.0	140.574	82.293	1306.227	0.00%	90.53%
75.0	97.385	62.198	1368.426	0.00%	94.85%
80.0	57.192	41.360	1409.786	0.00%	97.71%
85.0	25.228	22.396	1432.182	0.00%	99.26%
90.0	6.050	8.564	1440.746	0.00%	99.86%
95.0	0.628	1.829	1442.575	0.00%	99.98%
100.0	0.000	0.171	1442.745	0.00%	100.00%
105.0	0.000	0.000	1442.745	0.00%	100.00%
110.0	0.000	0.000	1442.745	0.00%	100.00%
115.0	0.000	0.000	1442.745	0.00%	100.00%
120.0	0.000	0.000	1442.745	0.00%	100.00%
125.0	0.000	0.000	1442.745	0.00%	100.00%
130.0	0.000	0.000	1442.745	0.00%	100.00%
135.0	0.010	0.002	1442.747	0.00%	100.00%
140.0	0.000	0.002	1442.749	0.00%	100.00%
145.0	0.000	0.000	1442.749	0.00%	100.00%
150.0	0.038	0.006	1442.755	0.00%	100.00%
155.0	0.076	0.014	1442.769	0.00%	100.00%
160.0	0.048	0.013	1442.782	0.00%	100.00%
165.0	0.038	0.007	1442.789	0.00%	100.00%
170.0	0.067	0.006	1442.795	0.00%	100.00%
175.0	0.048	0.004	1442.799	0.00%	100.00%
180.0	0.133	0.002	1442.802	0.00%	100.00%

Zonal flux distribution table

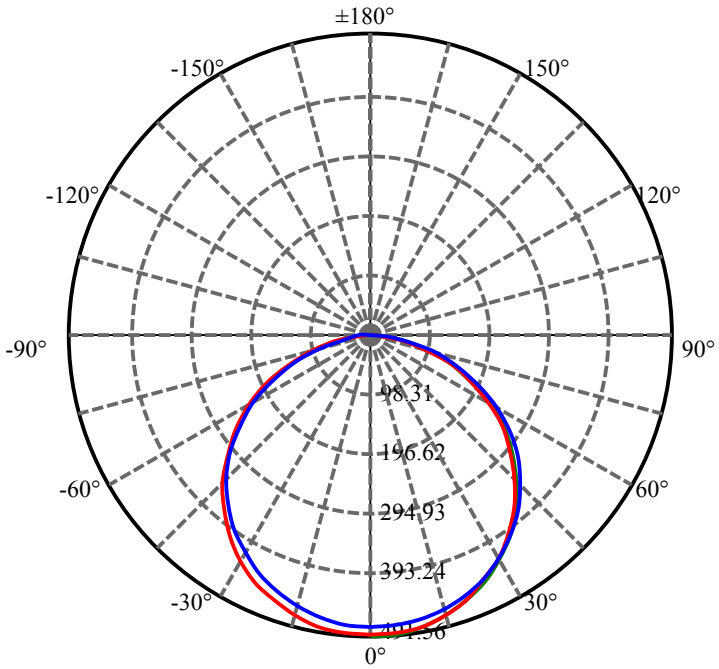
ZONAL LUMEN SUMMARY

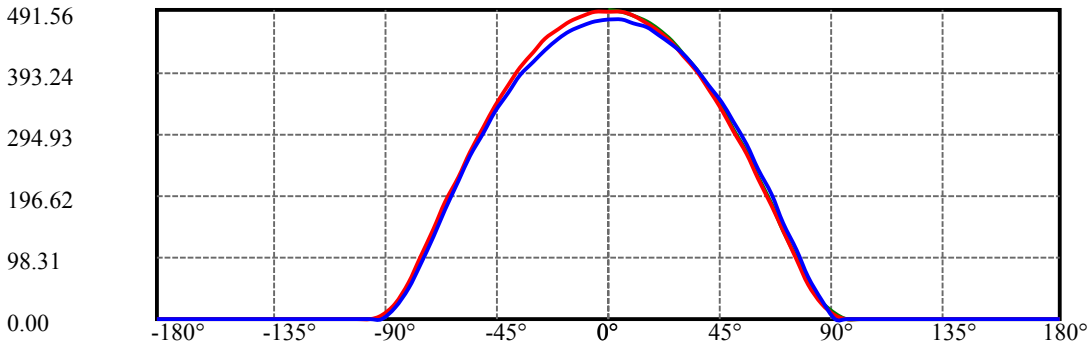
Zone	Lumens	%Lamp	%Fixt
0-30	380.07	N.A.	26.34%
0-40	626.79	N.A.	43.44%
0-60	1124.04	N.A.	77.91%
0-90	1440.75	N.A.	99.86%
0-120	1442.75	N.A.	100.00%
0-180	1442.80	N.A.	100.00%
60-90	430.56	N.A.	29.84%
90-120	10.56	N.A.	0.73%
90-130	10.56	N.A.	0.73%
90-150	10.57	N.A.	0.73%
90-180	10.62	N.A.	0.74%
0-61.51	1154.24	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	45.89
10-20	132.12
20-30	202.07
30-40	246.72
40-50	259.67
50-60	237.57
60-70	182.19
70-80	103.56
80-90	30.96
90-100	2.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.01
150-160	0.03
160-170	0.01
170-180	0.00

Light Distribution Curve [Unit:cd]





C15(Max):

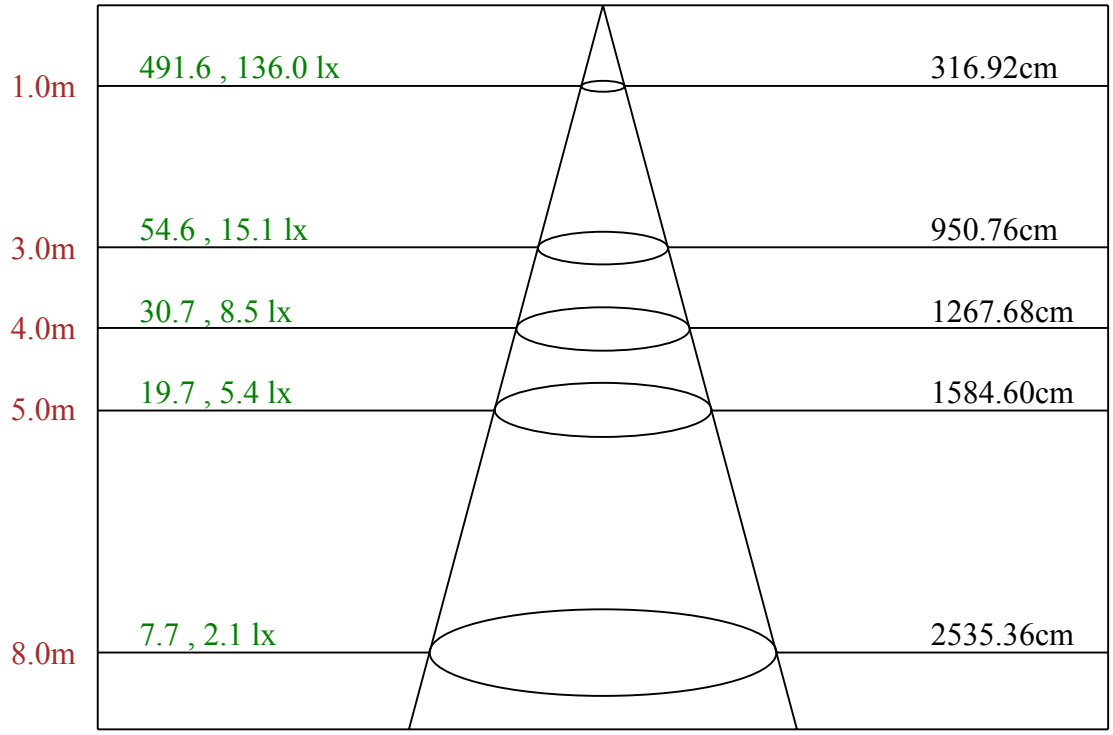
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:81.2 Right:80.9
:C90/270Left:80.1 Right:82.7

Beam Angle(50%Imax):C0/180Left:57.7 Right:57.3
:C90/270Left:57.6 Right:60.1

Lux distance Curve



Max , Ave

Beam angle of C15 plane 115.49

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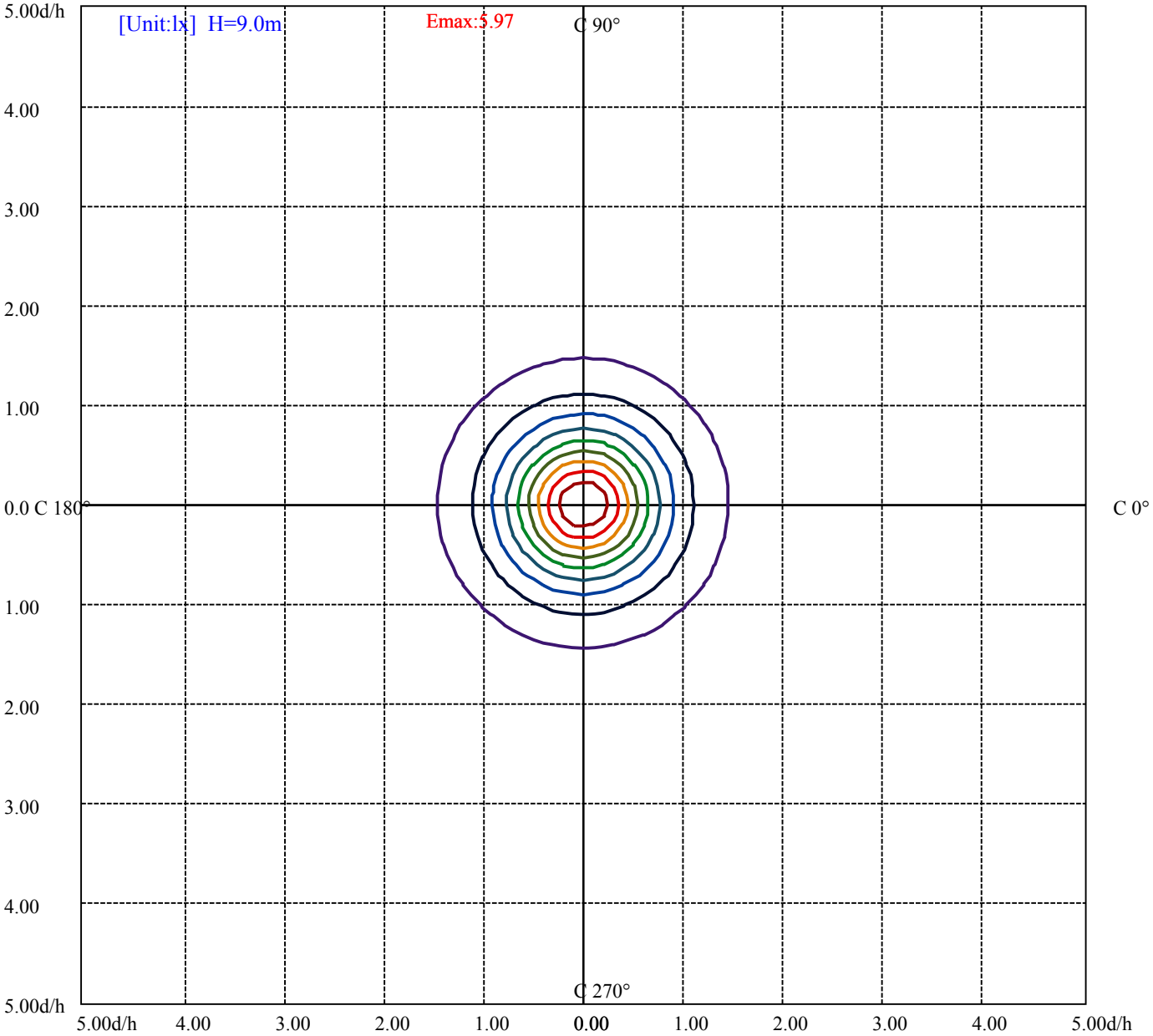
ISO illuminance diagram

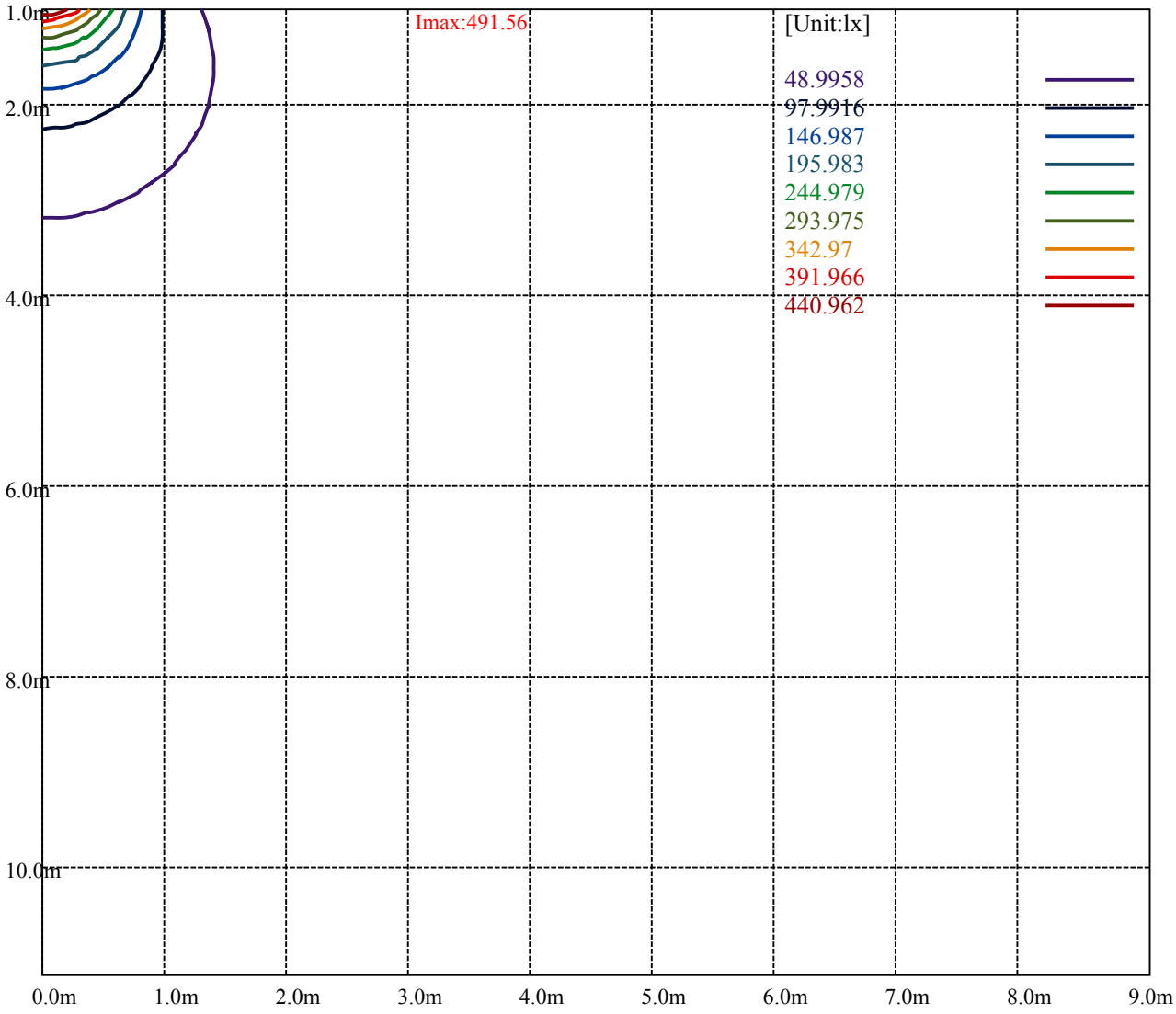


Equipment: GMS-3000H
Temperature(°C): 25.0

Date: 2019/8/22
Humidity(%): 55.0%

Operator: 002
Distance(m): 15.11

Space ISO Lux diagram



Equipment: GMS-3000H
Temperature(°C): 25.0

Date: 2019/8/22
Humidity(%): 55.0%

Operator: 002
Distance(m): 15.11

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Luminance Limitting Curve(no luminous side)

Luminance Table

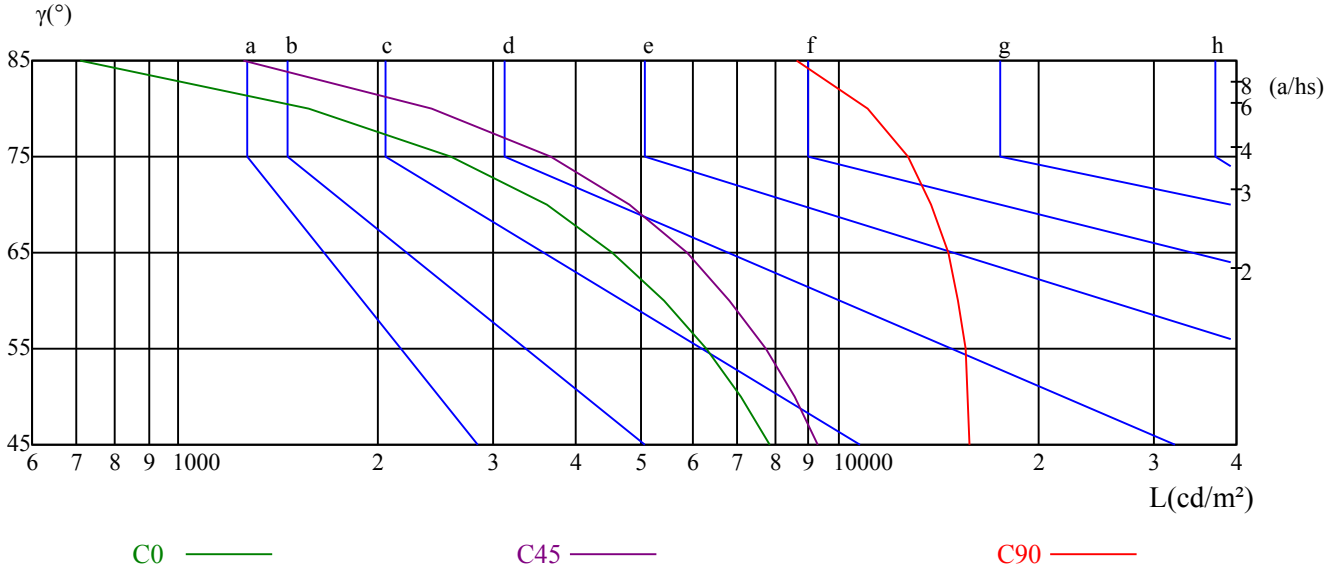
γ	45	50	55	60	65	70	75	80	85
C0	7841	7093	6295	5449	4547	3622	2591	1570	710
C45	9304	8557	7726	6825	5883	4805	3654	2417	1255
C90	15789	15672	15548	15163	14618	13753	12719	11086	8648

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
14496	14685	14568	12453	12585	12651	9038	9125	9933

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limitting Curve

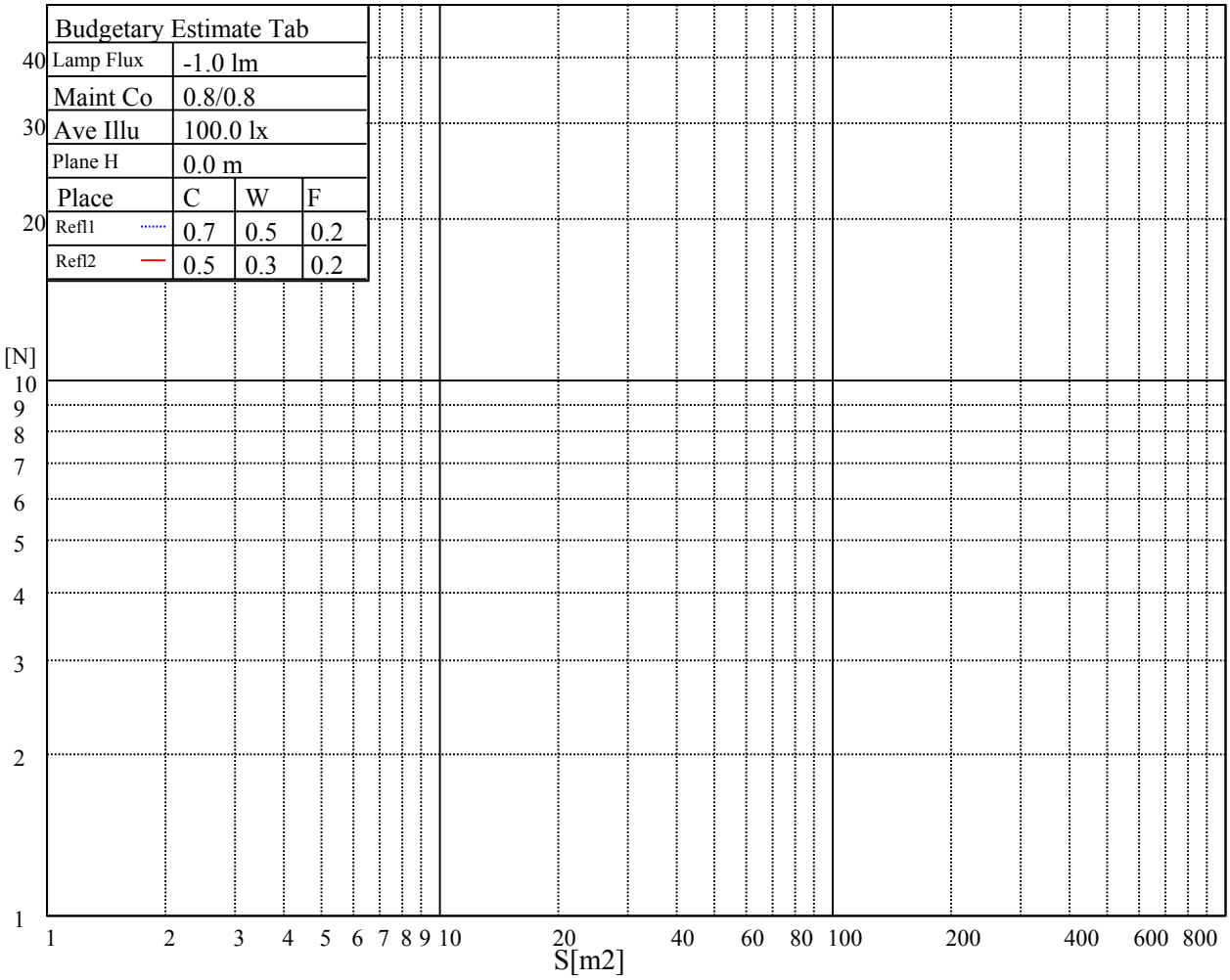


Equipment: GMS-3000H
Temperature(°C): 25.0
Date: 2019/8/22
Humidity(%): 55.0%
Operator: 002
Distance(m): 15.11

Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	19.04	20.70	19.40	21.01	21.33	19.99	21.64	20.35	21.96	22.28
	3H	20.38	21.89	20.77	22.23	22.57	21.77	23.27	22.15	23.62	23.96
	4H	20.79	22.21	21.19	22.56	22.92	22.45	23.86	22.84	24.21	24.58
	6H	21.04	22.35	21.44	22.72	23.12	22.98	24.29	23.38	24.66	25.05
	8H	21.06	22.33	21.47	22.71	23.11	23.13	24.40	23.54	24.78	25.18
	12H	21.05	22.27	21.46	22.66	23.07	23.23	24.45	23.64	24.84	25.25
4H	2H	19.81	21.23	20.21	21.58	21.95	20.56	21.98	20.96	22.33	22.69
	3H	21.28	22.49	21.69	22.87	23.28	22.47	23.67	22.88	24.06	24.47
	4H	21.83	22.90	22.26	23.32	23.76	23.29	24.36	23.72	24.78	25.22
	6H	22.11	23.07	22.57	23.51	23.95	23.88	24.84	24.34	25.28	25.72
	8H	22.18	23.08	22.65	23.52	23.98	24.11	25.00	24.58	25.45	25.91
	12H	22.21	23.05	22.69	23.49	23.99	24.27	25.10	24.74	25.54	26.04
8H	4H	22.11	23.00	22.58	23.45	23.91	23.43	24.33	23.90	24.78	25.24
	6H	22.47	23.22	22.96	23.69	24.19	24.10	24.86	24.59	25.32	25.82
	8H	22.63	23.29	23.14	23.80	24.29	24.44	25.10	24.95	25.60	26.09
	12H	22.69	23.25	23.21	23.76	24.27	24.65	25.21	25.17	25.72	26.22
12H	4H	22.14	22.97	22.61	23.41	23.91	23.43	24.27	23.91	24.71	25.21
	6H	22.57	23.23	23.08	23.74	24.23	24.16	24.82	24.67	25.33	25.82
	8H	22.71	23.27	23.23	23.78	24.29	24.47	25.03	24.99	25.54	26.05
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.7					0.4/-0.4				
S = 1.5H		0.7/-0.6					0.6/-0.8				
S = 2.0H		0.9/-0.6					1.1/-1.1				
Standard tables:		BK3					BK3				
Uncorrected UGR		5.7					4.3				

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25

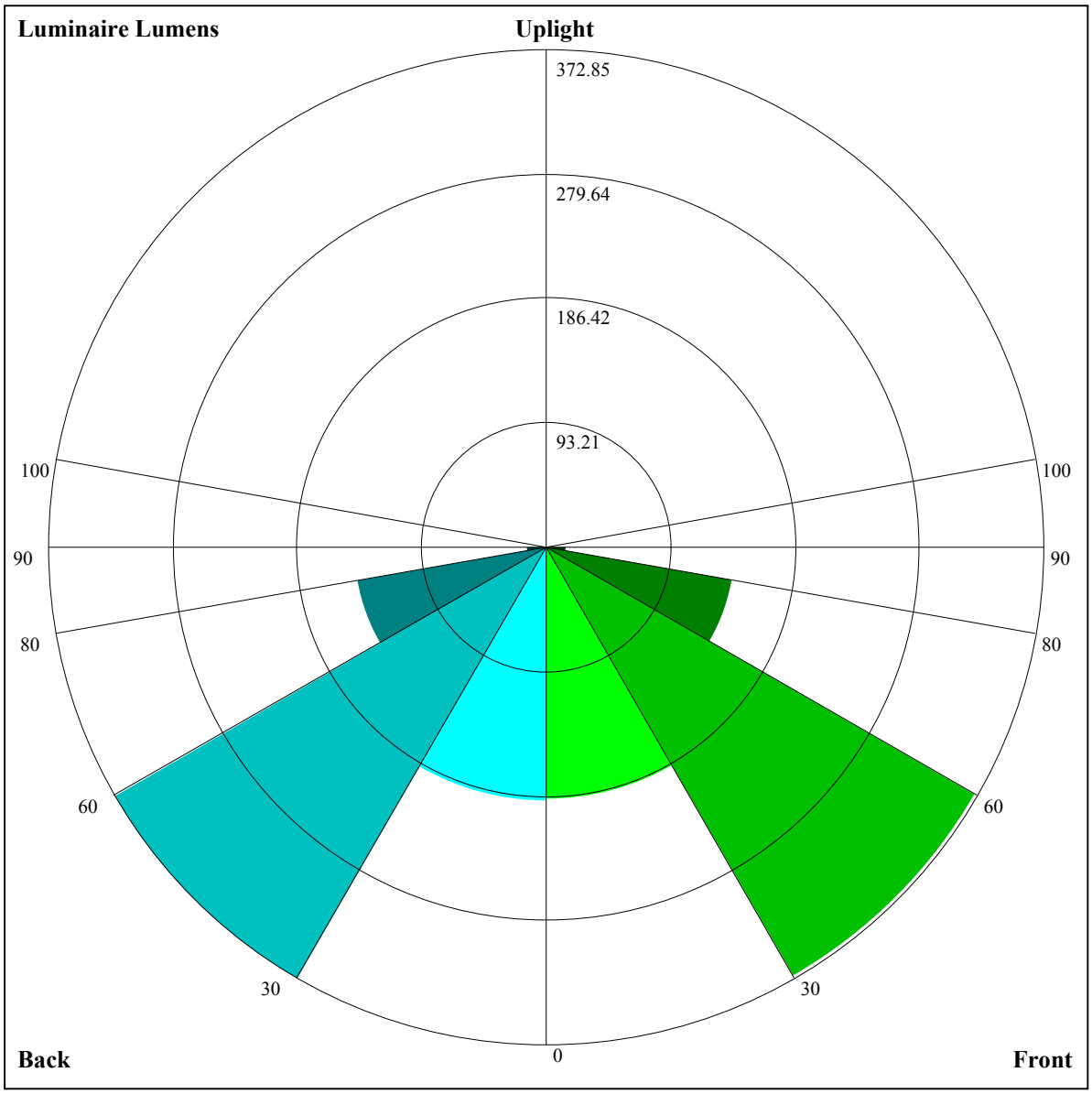
Budgetary Estimate Table



Utilization factor table for indoor luminaire

RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

LCS Graph



Luminaire Lumens:

FL=189.46,FM=370.69,FH=141.81,FVH=15.15

BL=189.94,BM=372.85,BH=143.86,BVH=15.63

UL=2,UH=0.06

BUG Rating:B1-U1-G1

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	489.96	487.90	481.97	471.69	458.22	440.41	419.41	393.84	365.07
15.0	491.56	489.04	482.88	474.20	460.51	442.93	421.69	398.18	369.41
30.0	485.39	483.34	479.23	470.55	457.54	442.47	421.92	397.95	370.09
45.0	483.34	481.74	476.94	468.27	456.17	439.96	420.55	396.58	371.46
60.0	486.30	485.16	480.37	471.01	458.45	442.47	423.52	400.00	374.20
75.0	484.48	483.34	478.54	470.78	458.22	442.93	424.20	402.06	375.12
90.0	476.94	476.03	471.69	463.70	452.29	437.22	419.87	398.18	373.29
105.0	479.91	479.46	474.89	467.13	454.80	438.82	418.95	397.03	371.69
120.0	480.83	479.23	475.12	466.67	454.34	439.04	419.41	396.12	371.92
135.0	481.05	480.60	475.12	466.90	455.71	439.73	420.32	397.49	370.55
150.0	483.57	482.65	478.31	470.09	457.31	441.56	422.61	399.09	373.29
165.0	489.50	487.67	482.42	474.66	463.02	445.89	425.35	399.77	372.61
180.0	489.96	488.59	483.11	473.98	461.19	444.52	424.66	399.77	371.46
195.0	491.56	489.27	483.34	473.52	459.82	441.56	420.09	395.66	367.81
210.0	485.39	483.11	477.63	468.04	454.57	436.99	417.13	393.38	365.76
225.0	483.34	481.05	474.20	465.30	452.51	434.71	414.39	390.41	363.47
240.0	486.30	483.57	477.40	468.04	454.11	437.67	416.44	391.33	362.56
255.0	484.48	482.20	475.57	466.21	452.74	434.93	414.16	389.73	362.56
270.0	476.94	474.20	468.04	458.22	444.52	428.54	408.68	386.30	359.59
285.0	479.91	477.63	471.01	460.96	447.49	430.14	408.68	384.93	357.08
300.0	480.83	477.86	470.78	461.42	447.49	430.60	409.14	385.16	357.77
315.0	481.05	478.09	471.24	461.65	449.09	431.97	412.33	387.90	360.73
330.0	483.57	482.42	476.94	466.90	454.11	436.08	415.07	391.33	365.07
345.0	489.50	487.90	481.28	471.01	455.25	437.90	416.21	391.56	364.61
360.0	489.96	487.90	481.97	471.69	458.22	440.41	419.41	393.84	365.07

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	332.65	299.77	263.02	223.29	181.28	139.27	95.21	54.57	23.06
15.0	338.13	303.20	266.21	227.40	184.70	141.10	97.26	56.85	26.03
30.0	338.82	306.17	269.64	229.68	186.99	143.61	101.37	60.73	27.85
45.0	341.10	308.22	271.23	231.51	191.10	147.95	105.48	64.61	30.59
60.0	344.52	310.73	272.83	235.16	193.38	149.32	105.94	65.07	31.96
75.0	345.66	312.79	276.03	236.99	194.98	151.37	106.85	65.75	31.28
90.0	344.98	313.02	279.00	239.27	197.26	152.74	109.82	67.58	30.37
105.0	341.78	308.91	274.43	235.62	193.84	151.14	107.76	67.12	30.82
120.0	342.24	309.36	273.06	233.79	194.29	150.91	107.31	65.98	32.19
135.0	340.41	309.36	273.29	234.70	193.38	149.77	107.54	65.98	30.82
150.0	343.61	310.28	273.52	232.88	192.47	148.86	104.34	62.79	30.14
165.0	342.70	306.85	271.23	231.51	189.50	145.43	103.20	61.64	28.08
180.0	339.96	304.34	266.67	226.94	186.30	142.24	98.17	56.62	24.20
195.0	336.08	303.88	266.67	226.03	183.11	138.81	94.52	55.94	24.20
210.0	333.79	299.32	261.65	223.52	180.82	136.53	92.92	53.43	22.83
225.0	331.97	296.35	259.13	219.64	176.71	133.11	91.10	52.06	22.37
240.0	331.05	296.35	257.99	219.18	176.03	131.96	88.81	49.77	21.23
255.0	332.88	298.63	259.36	216.90	173.97	129.68	88.36	49.32	18.49
270.0	330.82	297.26	260.28	218.95	175.12	130.37	85.62	48.17	17.35
285.0	325.57	290.87	255.48	215.53	173.29	129.68	86.53	47.49	18.95
300.0	328.08	293.61	256.17	215.98	173.52	129.45	88.36	49.32	19.63
315.0	329.68	294.75	257.76	219.64	177.63	132.88	88.81	49.32	20.09
330.0	333.79	299.55	260.28	220.55	177.17	132.19	90.64	51.14	21.00
345.0	333.34	298.18	260.05	221.23	179.45	135.39	91.32	51.37	21.92
360.0	332.65	299.77	263.02	223.29	181.28	139.27	95.21	54.57	23.06

Intensity data(cd)

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	5.94	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	7.76	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	9.13	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	10.05	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	6.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	8.45	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	8.68	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0	8.22	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0	6.85	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	5.48	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195.0	6.16	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.0	6.62	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.0	6.16	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00
240.0	5.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
255.0	2.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
285.0	2.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.0	5.02	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	6.16	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330.0	6.16	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345.0	5.94	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	5.94	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
165.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.23	0.00
195.0	0.23	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00
210.0	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
240.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
255.0	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.23	0.23
270.0	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.23
285.0	0.00	0.00	0.00	0.23	0.23	0.23	0.00	0.00	0.00
300.0	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.23	0.00
330.0	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23	0.00
345.0	0.00	0.00	0.00	0.00	0.23	0.23	0.23	0.00	0.00
360.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Intensity data(cd)

C/γ(°)	180.0
0.0	0.00
15.0	0.23
30.0	0.23
45.0	0.00
60.0	0.00
75.0	0.46
90.0	0.00
105.0	0.00
120.0	0.00
135.0	0.46
150.0	0.00
165.0	0.23
180.0	0.00
195.0	0.23
210.0	0.23
225.0	0.00
240.0	0.00
255.0	0.46
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.46
330.0	0.00
345.0	0.23
360.0	0.00