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SHENZHEN YOUWIN OPTRONICS CO., LTD

LumCAT: YWHBFM-120H-AL120
Luminaire: LED High Bay Light

Report No:	Voltage(V): 230.000
Test No:	Current(A): 0.544
LampCAT: LED	Power (W): 122.100
Lamp flux(lm)	PF: 0.976
Number of Lamps: 1	Ballast type: -
Length(mm): 510	Width(mm): 510
Phm Type: C	Height(mm): 400

Photometric Results

Lumens(lm): 13387.60
Lumens(lm)/Power(W): 109.64
Central intensity(cd): 6662.400
Maximum intensity(cd): 6662.400
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Left=49.8 Right=46.1
[C90/270]Left=44.6 Right=51.2
Field angle(10%Imax): [C0/180]Left=64.4 Right=62.7
[C90/270]Left=59.0 Right=67.8
Beam angle of C0plane: 96.07
Maximum s/h: C0_180=1.14 C90_270=1.16
Up flux rate of LUM(%): 0.79%
Down flux rate of LUM(%): 99.21%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.086%

Equipment: GMS-1800B	Date: 2015-4-29	Operator: Marine
Temperature(°C): 25.0	Humidity(%): 50.0%	Distance(m): 11.48

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6651.747	.000	.000	.000%	.000%
5.0	6574.649	158.118	158.118	1.181%	1.181%
10.0	6359.283	462.687	620.805	3.456%	4.637%
15.0	6043.205	735.707	1356.512	5.495%	10.133%
20.0	5659.805	964.492	2321.004	7.204%	17.337%
25.0	5261.467	1145.440	3466.444	8.556%	25.893%
30.0	4855.224	1280.276	4746.720	9.563%	35.456%
35.0	4442.171	1369.106	6115.827	10.227%	45.683%
40.0	4023.516	1412.436	7528.263	10.550%	56.233%
45.0	3577.186	1407.332	8935.595	10.512%	66.745%
50.0	3146.891	1358.698	10294.290	10.149%	76.894%
55.0	2733.552	1278.604	11572.900	9.551%	86.445%
60.0	1692.276	1023.018	12595.920	7.642%	94.086%
65.0	506.207	534.455	13130.370	3.992%	98.079%
70.0	19.769	133.180	13263.550	.995%	99.073%
75.0	12.531	8.443	13271.990	.063%	99.136%
80.0	7.270	5.298	13277.290	.040%	99.176%
85.0	3.273	2.865	13280.160	.021%	99.197%
90.0	1.867	1.407	13281.560	.011%	99.208%
95.0	2.833	1.287	13282.850	.010%	99.218%
100.0	4.865	2.092	13284.940	.016%	99.233%
105.0	7.457	3.297	13288.240	.025%	99.258%
110.0	10.280	4.636	13292.880	.035%	99.292%
115.0	13.069	5.912	13298.790	.044%	99.337%
120.0	15.859	7.032	13305.820	.053%	99.389%
125.0	18.692	7.986	13313.810	.060%	99.449%
130.0	21.614	8.764	13322.570	.065%	99.514%
135.0	24.392	9.296	13331.870	.069%	99.584%
140.0	26.622	9.446	13341.310	.071%	99.654%
145.0	28.555	9.206	13350.520	.069%	99.723%
150.0	30.389	8.680	13359.200	.065%	99.788%
155.0	32.058	7.903	13367.100	.059%	99.847%
160.0	33.683	6.895	13373.990	.052%	99.898%
165.0	35.375	5.691	13379.690	.043%	99.941%
170.0	37.033	4.295	13383.980	.032%	99.973%
175.0	38.307	2.695	13386.680	.020%	99.993%
180.0	38.944	.924	13387.600	.007%	100.000%

Zonal flux distribution table

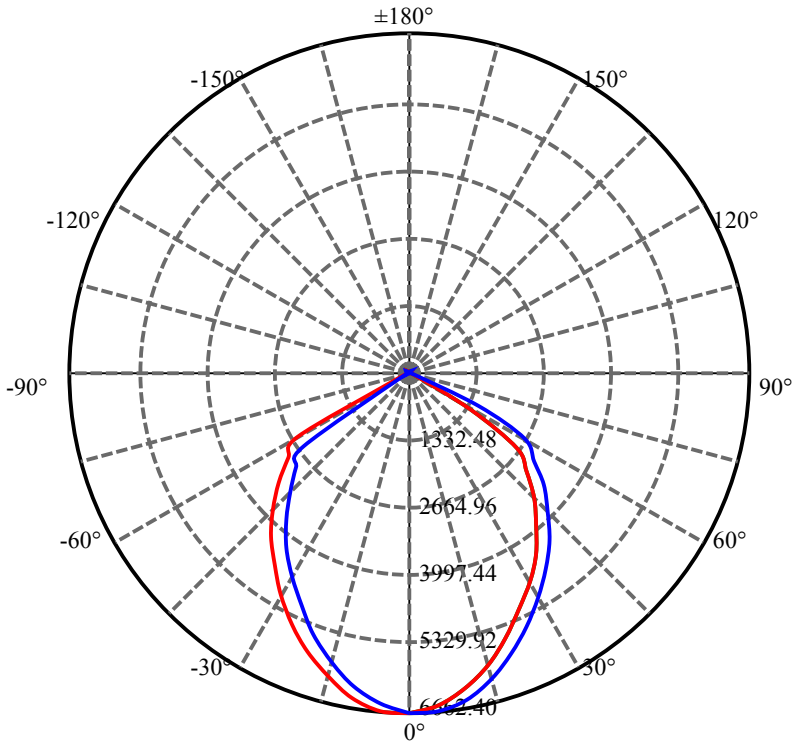
ZONAL LUMEN SUMMARY

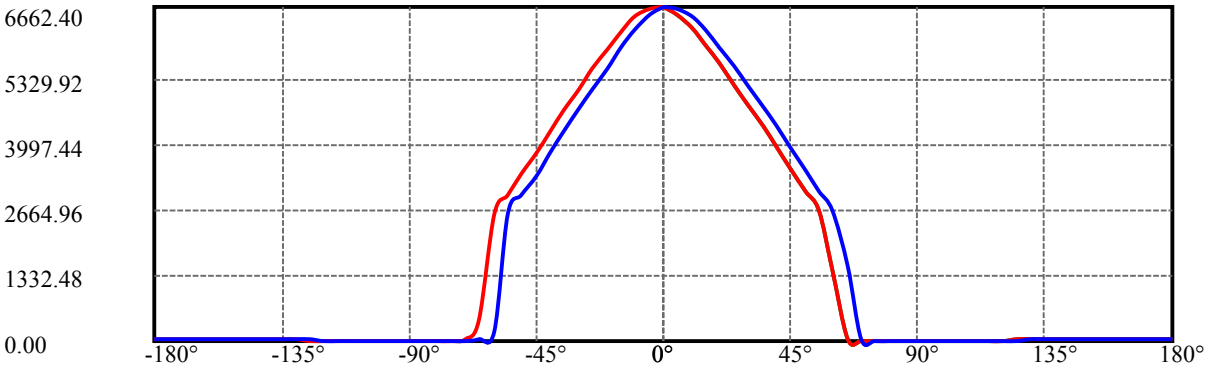
Zone	Lumens	%Fixt
0-30	4746.72	35.46%
0-40	7528.26	56.23%
0-60	12595.92	94.09%
0-90	13281.56	99.21%
0-120	13305.82	99.39%
0-180	13387.60	100.00%
60-90	1708.67	12.76%
90-120	25.66	0.19%
90-130	42.41	0.32%
90-150	79.04	0.59%
90-180	106.52	0.80%
0-51.63	10710.08	80.00%

ZONAL LUMEN SUMMARY

0-10	620.81
10-20	1700.20
20-30	2425.72
30-40	2781.54
40-50	2766.03
50-60	2301.62
60-70	667.64
70-80	13.74
80-90	4.27
90-100	3.38
100-110	7.93
110-120	12.94
120-130	16.75
130-140	18.74
140-150	17.89
150-160	14.80
160-170	9.99
170-180	2.70

Light Distribution Curve [Unit:cd]





C0(Max):

C0/C180:

C90/C270:

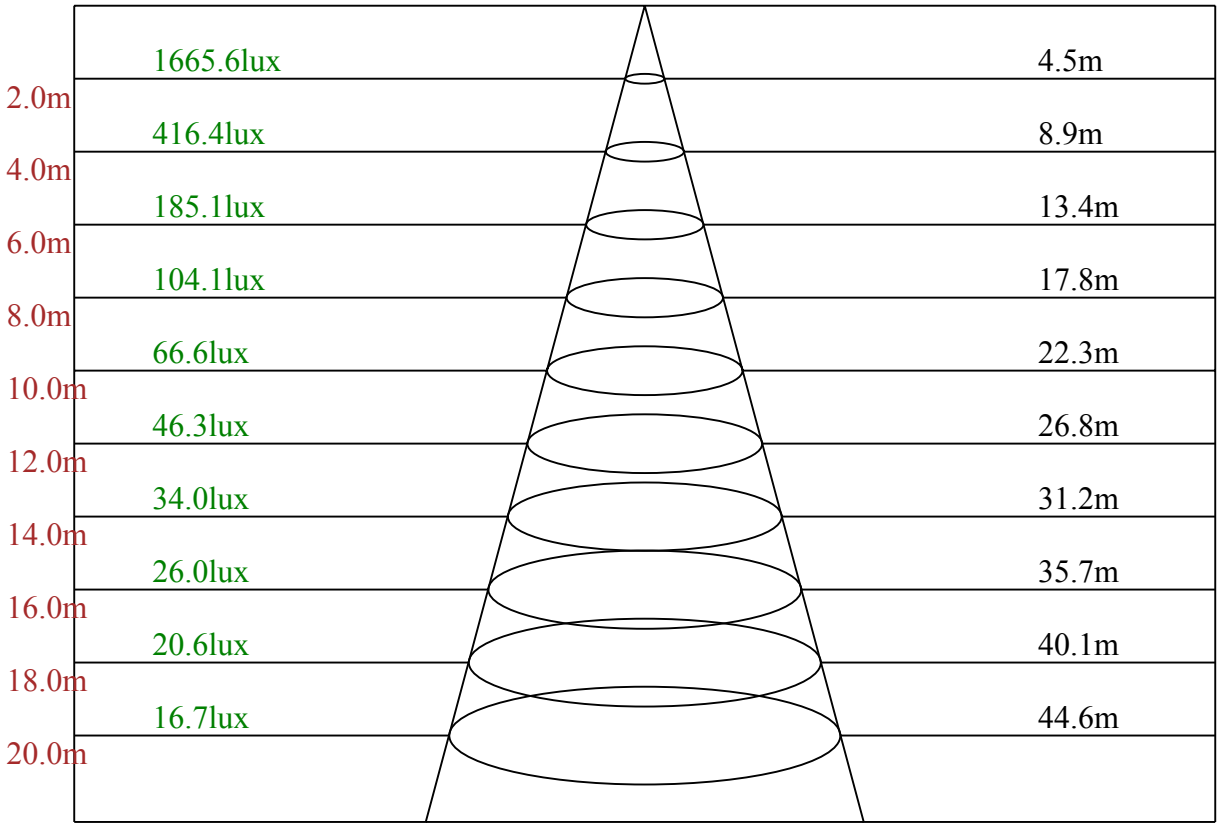
Field angle(10%Imax):C0/180Left:64.4 Right:62.7

:C90/270Left:59.0 Right:67.8

Beam Angle(50%Imax):C0/180Left:49.8 Right:46.1

:C90/270Left:44.6 Right:51.2

Lux distance Curve



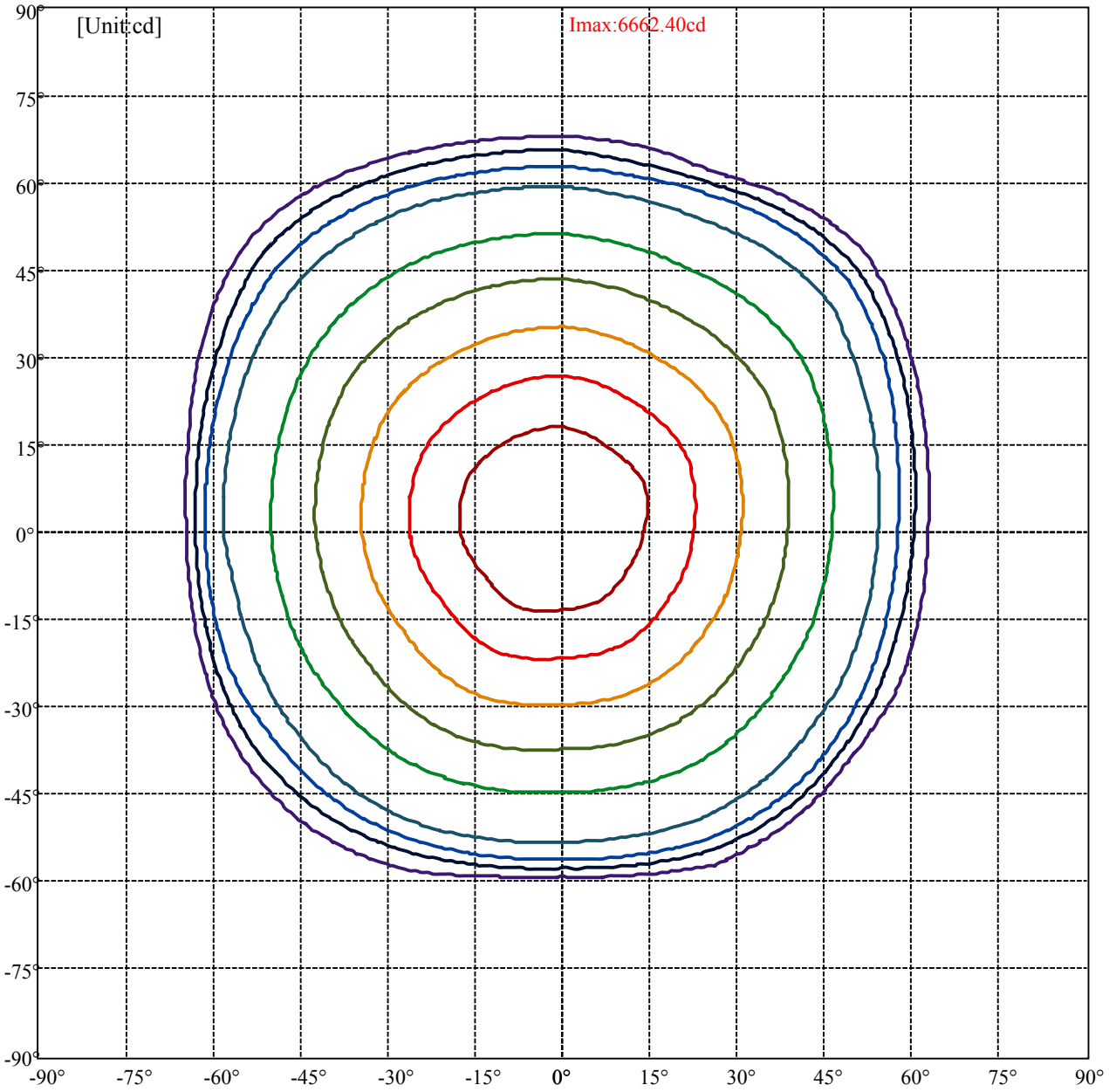
Beam angle of C0plane96.07

Equipment: GMS-1800B
Temperature(°C): 25.0

Date: 2015-4-29
Humidity(%): 50.0%

Operator: Marine
Distance(m): 11.48

ISO-Intensity(V-H)



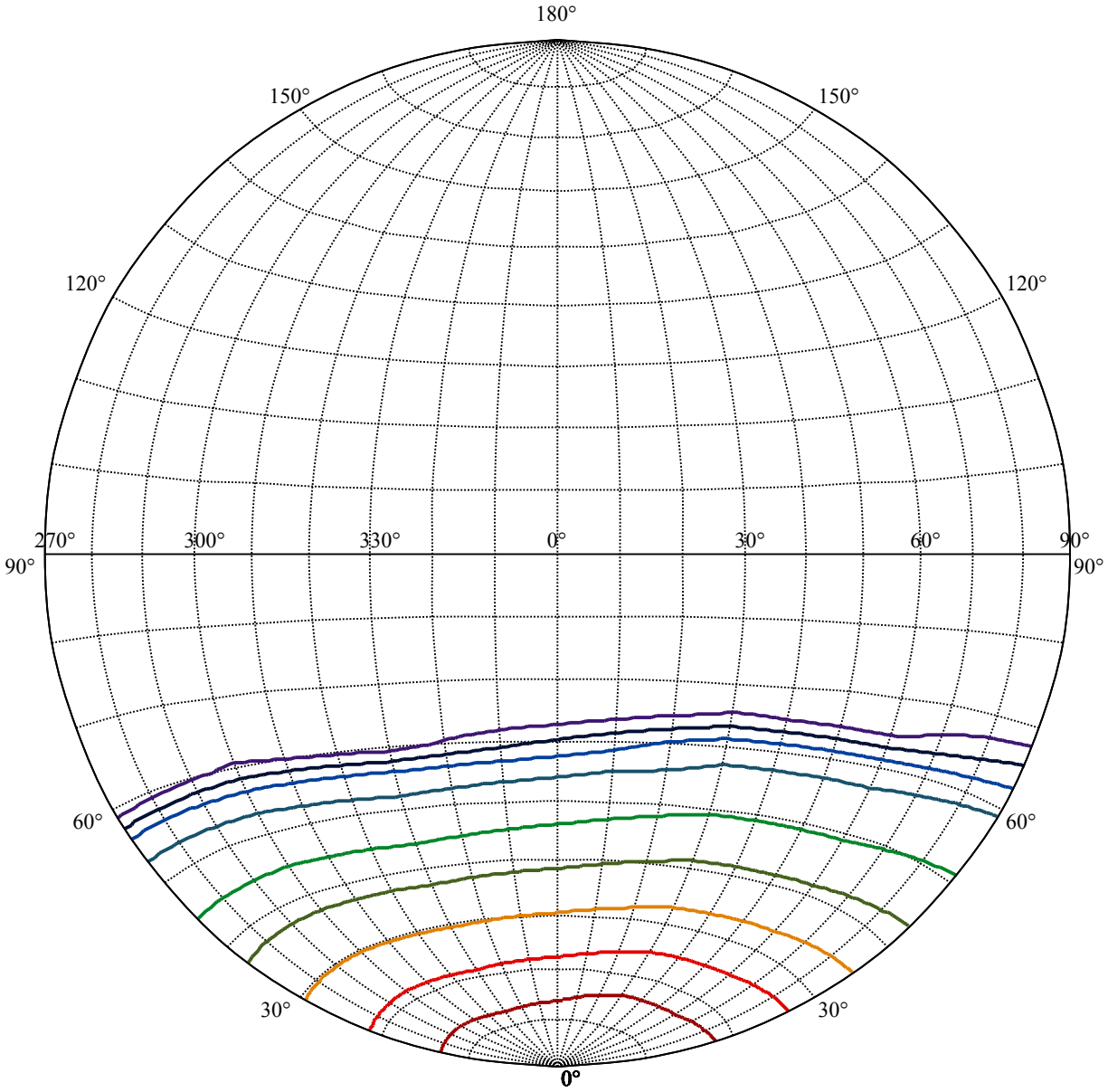
(10%Imax) 665.739
(20%Imax) 1331.48
(30%Imax) 1997.22
(40%Imax) 2662.96
(50%Imax) 3328.7
(60%Imax) 3994.44
(70%Imax) 4660.17
(80%Imax) 5325.91
(90%Imax) 5991.65

Equipment: GMS-1800B
Temperature(°C): 25.0

Date: 2015-4-29
Humidity(%): 50.0%

Operator: Marine
Distance(m): 11.48

ISO candela diagram on circular web



[Unit:cd]

Imax:6662.40

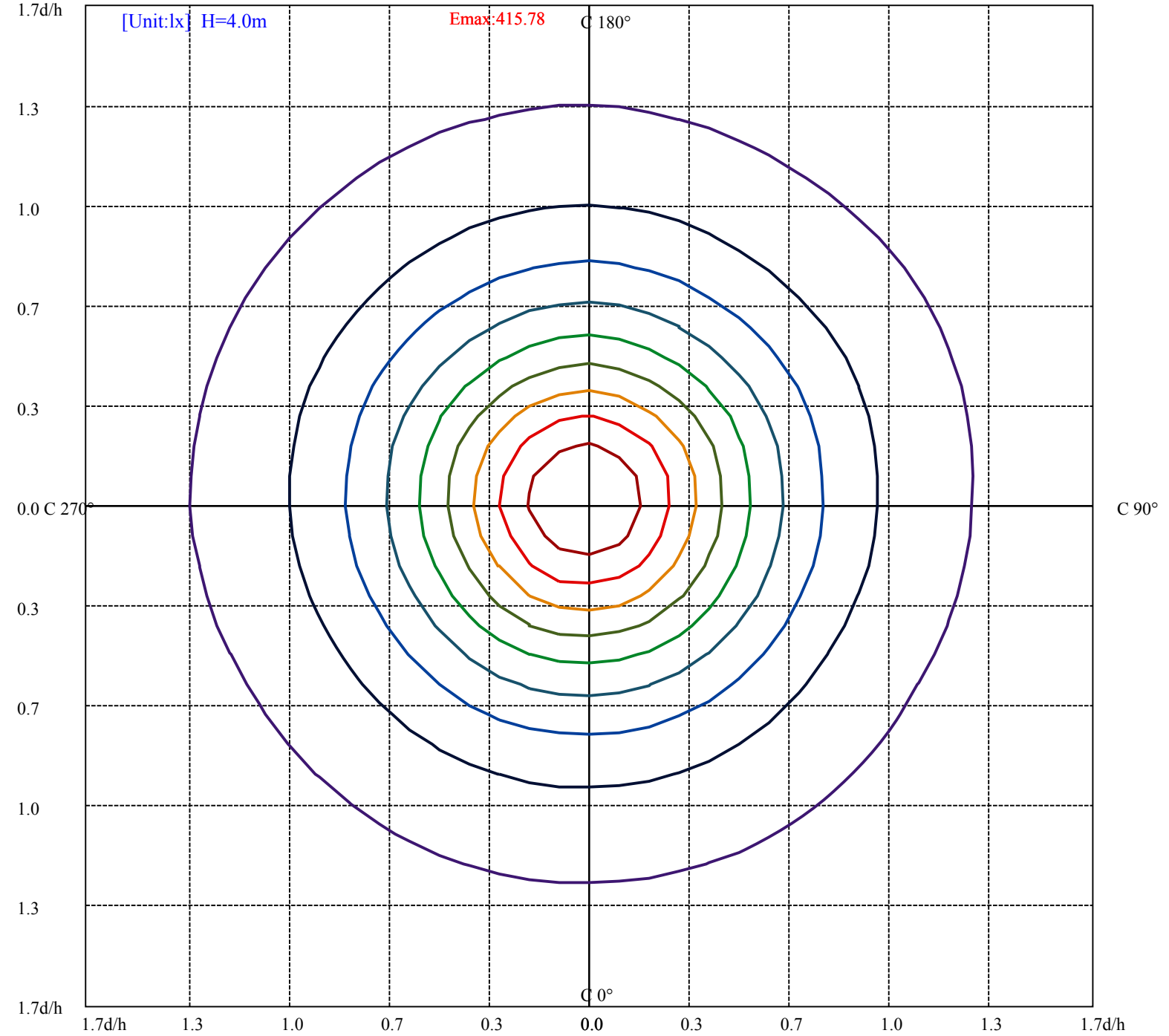
(10%Imax) 666.24
(20%Imax) 1332.48
(30%Imax) 1998.72
(40%Imax) 2664.96
(50%Imax) 3331.2
(60%Imax) 3997.44
(70%Imax) 4663.68
(80%Imax) 5329.92
(90%Imax) 5996.16

Equipment: GMS-1800B
Temperature(°C): 25.0

Date: 2015-4-29
Humidity(%): 50.0%

Operator: Marine
Distance(m): 11.48

ISO illuminance diagram

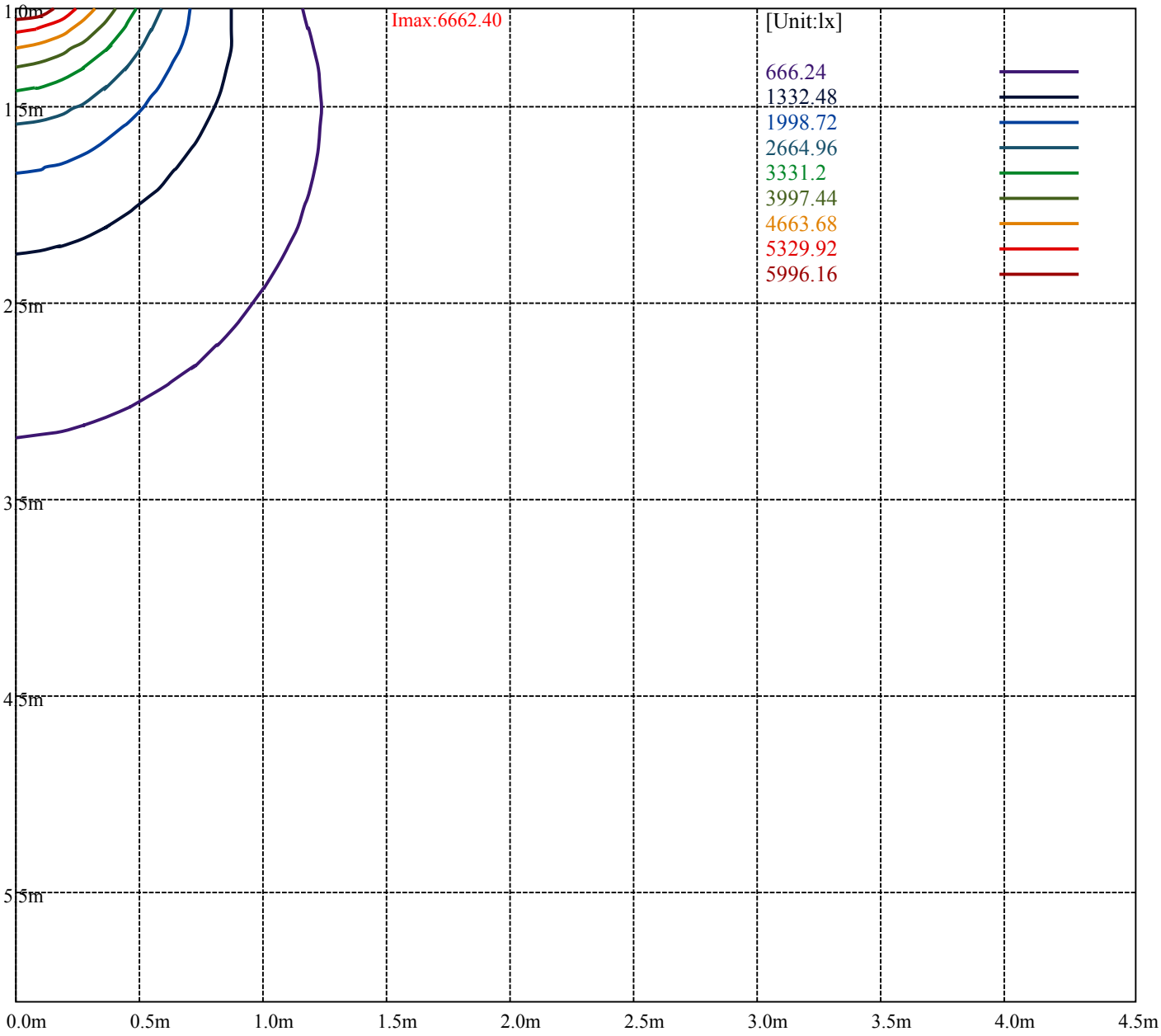


Equipment: GMS-1800B
Temperature(°C): 25.0

Date: 2015-4-29
Humidity(%): 50.0%

Operator: Marine
Distance(m): 11.48

Space ISO Lux diagram



Equipment: GMS-1800B
Temperature(°C): 25.0

Date: 2015-4-29
Humidity(%): 50.0%

Operator: Marine
Distance(m): 11.48

Luminance Limitting Curve(no luminous side)

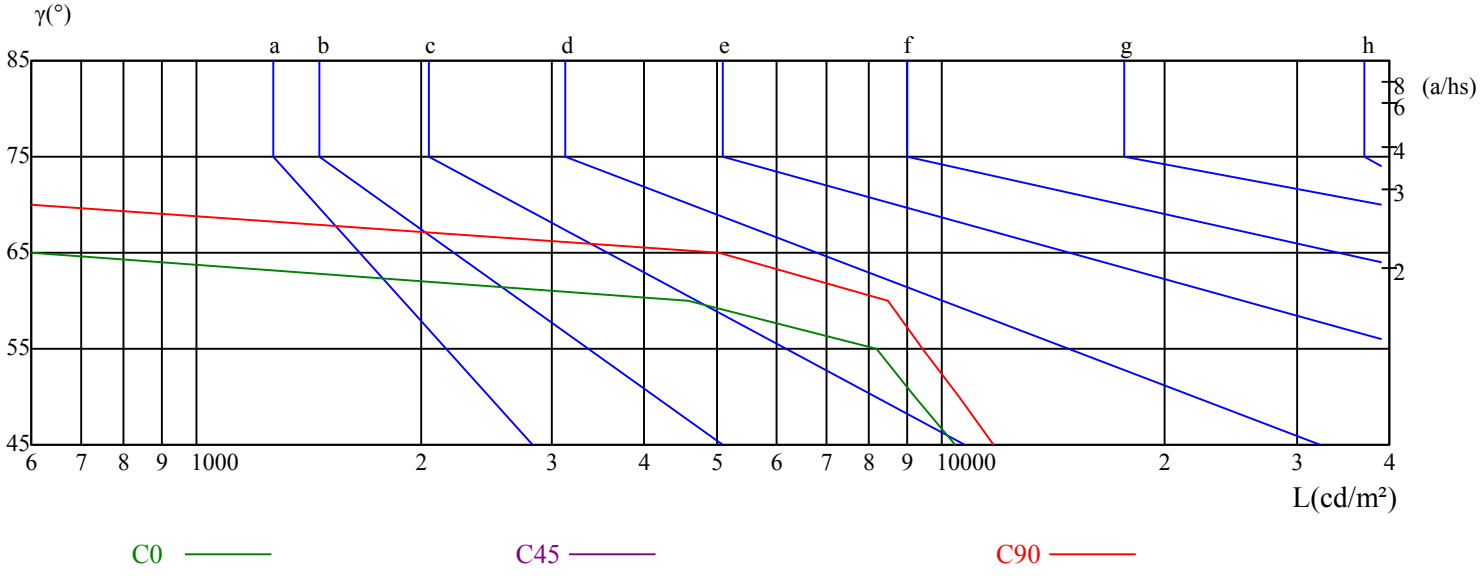
Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	10463	9222	8185	4573	87	59	39	22	8
C45	0	0	0	0	0	0	0	0	0
C90	11744	10582	9468	8462	5035	98	66	46	27

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



UGR Glare

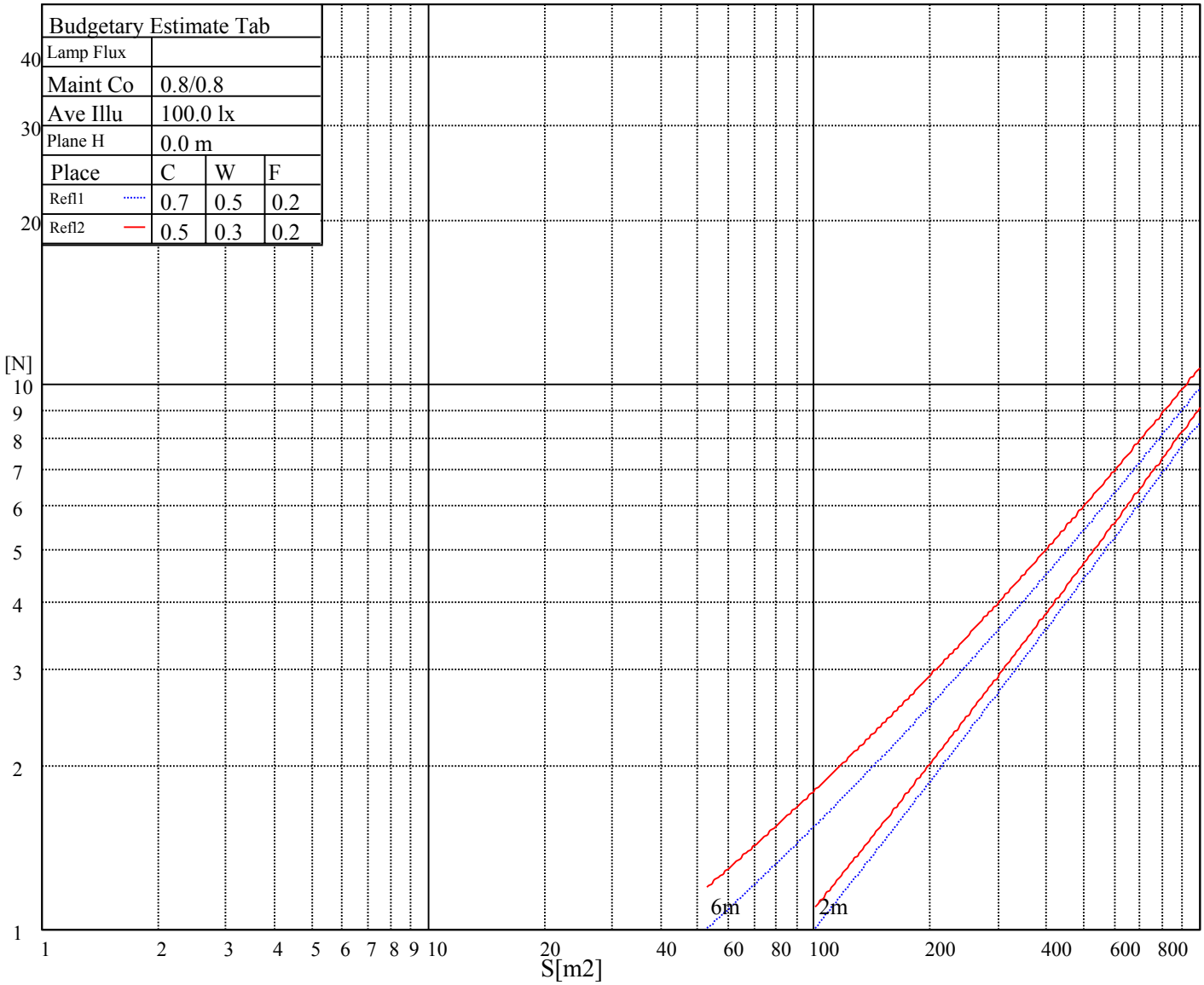
Illuminatin assessment acconding UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	10.0	11.2	10.3	11.4	11.6	10.8	12.0	11.1	12.2	12.5
	3H	9.8	10.8	10.1	11.1	11.4	10.9	11.9	11.2	12.2	12.5
	4H	9.6	10.5	10.0	10.8	11.1	10.7	11.6	11.1	11.9	12.2
	6H	9.6	10.5	10.0	10.8	11.1	10.7	11.6	11.1	11.9	12.2
	8H	9.6	10.5	10.0	10.8	11.1	10.7	11.6	11.1	11.9	12.2
	12H	9.4	10.1	9.9	10.5	10.9	10.5	11.1	10.9	11.5	12.0
4H	2H	10.1	11.0	10.5	11.3	11.6	10.8	11.7	11.2	12.0	12.3
	3H	9.9	10.6	10.4	11.0	11.4	10.9	11.5	11.3	11.9	12.3
	4H	9.9	10.6	10.4	11.0	11.4	10.9	11.5	11.3	11.9	12.3
	6H	9.9	10.6	10.4	11.0	11.4	10.9	11.5	11.3	11.9	12.3
	8H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
	12H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
8H	4H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
	6H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
	8H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
	12H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
12H	4H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
	6H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
	8H	9.8	10.1	10.3	10.6	11.1	10.7	11.1	11.2	11.5	12.1
Variation with the observer position at spacings:											
S = 1.0H		0.6/-0.7					0.6/-0.3				
S = 1.5H		1.9/-5.3					1.1/-2.5				
S = 2.0H		3.8/-21.5					3.2/-12.2				
Standard tables:		BK0					BK1				
Uncorrected UGR		-8.3					-6.9				
According 1000lm											

Equipment: GMS-1800B
Temperature(°C): 25.0

Date: 2015-4-29
Humidity(%): 50.0%

Operator: Marine
Distance(m): 11.48

Budgetary Estimate Table



Equipment: GMS-1800B	Date: 2015-4-29	Operator: Marine
Temperature(°C): 25.0	Humidity(%): 50.0%	Distance(m): 11.48

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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	0.99
1	1.08	1.04	1.01	1.05	1.02	1.00	1.01	0.99	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.88
2	0.96	0.91	0.86	0.94	0.89	0.85	0.91	0.87	0.83	0.88	0.84	0.81	0.85	0.82	0.79	0.77
3	0.86	0.79	0.74	0.85	0.78	0.73	0.82	0.76	0.72	0.79	0.74	0.71	0.76	0.73	0.69	0.67
4	0.77	0.70	0.64	0.76	0.69	0.64	0.74	0.68	0.63	0.71	0.66	0.62	0.69	0.65	0.61	0.59
5	0.70	0.62	0.56	0.69	0.61	0.56	0.67	0.60	0.55	0.65	0.59	0.55	0.63	0.58	0.54	0.52
6	0.63	0.55	0.50	0.62	0.55	0.49	0.61	0.54	0.49	0.59	0.53	0.48	0.57	0.52	0.48	0.46
7	0.58	0.50	0.44	0.57	0.49	0.44	0.55	0.49	0.44	0.54	0.48	0.43	0.53	0.47	0.43	0.41
8	0.53	0.45	0.40	0.52	0.45	0.40	0.51	0.44	0.39	0.50	0.44	0.39	0.48	0.43	0.39	0.37
9	0.49	0.41	0.36	0.48	0.41	0.36	0.47	0.40	0.36	0.46	0.40	0.35	0.45	0.39	0.35	0.34
10	0.45	0.38	0.33	0.45	0.37	0.33	0.44	0.37	0.33	0.43	0.37	0.32	0.42	0.36	0.32	0.31
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 WLC															
1	0.24	0.13	0.04	0.23	0.13	0.04	0.22	0.12	0.04	0.20	0.12	0.04	0.19	0.11	0.04	
2	0.23	0.13	0.04	0.23	0.13	0.04	0.22	0.12	0.04	0.21	0.12	0.04	0.20	0.11	0.03	
3	0.22	0.12	0.04	0.22	0.12	0.04	0.21	0.11	0.03	0.20	0.11	0.03	0.19	0.11	0.03	
4	0.21	0.11	0.03	0.21	0.11	0.03	0.20	0.11	0.03	0.19	0.10	0.03	0.18	0.10	0.03	
5	0.20	0.10	0.03	0.20	0.10	0.03	0.19	0.10	0.03	0.18	0.10	0.03	0.18	0.09	0.03	
6	0.19	0.10	0.03	0.19	0.09	0.03	0.18	0.09	0.03	0.17	0.09	0.03	0.17	0.09	0.03	
7	0.18	0.09	0.03	0.18	0.09	0.03	0.17	0.09	0.02	0.16	0.08	0.02	0.16	0.08	0.02	
8	0.17	0.08	0.02	0.17	0.08	0.02	0.16	0.08	0.02	0.16	0.08	0.02	0.15	0.08	0.02	
9	0.16	0.08	0.02	0.16	0.08	0.02	0.15	0.08	0.02	0.15	0.07	0.02	0.14	0.07	0.02	
10	0.15	0.07	0.02	0.15	0.07	0.02	0.15	0.07	0.02	0.14	0.07	0.02	0.14	0.07	0.02	
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 CCLU															
0	0.20	0.20	0.20	0.17	0.17	0.17	0.11	0.11	0.11	0.07	0.07	0.07	0.02	0.02	0.02	
1	0.16	0.15	0.14	0.14	0.13	0.12	0.10	0.09	0.09	0.06	0.05	0.05	0.02	0.02	0.02	
2	0.13	0.12	0.10	0.12	0.10	0.09	0.09	0.08	0.07	0.06	0.05	0.04	0.02	0.02	0.01	
3	0.11	0.09	0.08	0.10	0.08	0.07	0.08	0.06	0.05	0.05	0.04	0.03	0.02	0.01	0.01	
4	0.09	0.07	0.06	0.09	0.07	0.05	0.07	0.05	0.04	0.05	0.04	0.02	0.02	0.01	0.01	
5	0.08	0.06	0.05	0.08	0.06	0.04	0.07	0.05	0.03	0.05	0.03	0.02	0.02	0.01	0.01	
6	0.07	0.05	0.04	0.07	0.05	0.04	0.06	0.04	0.03	0.04	0.03	0.02	0.02	0.01	0.01	
7	0.06	0.04	0.03	0.06	0.04	0.03	0.06	0.04	0.02	0.04	0.03	0.01	0.02	0.01	0.01	
8	0.06	0.04	0.03	0.06	0.04	0.03	0.06	0.03	0.02	0.04	0.02	0.01	0.02	0.01	0.00	
9	0.05	0.04	0.02	0.06	0.04	0.02	0.05	0.03	0.02	0.04	0.02	0.01	0.02	0.01	0.00	
10	0.05	0.03	0.02	0.05	0.03	0.02	0.05	0.03	0.02	0.04	0.02	0.01	0.01	0.01	0.00	

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	6662.40	6520.07	6255.17	5915.15	5534.27	5107.27	4710.58	4299.40	3868.44
30.0	6653.17	6597.82	6393.55	6091.75	5710.87	5315.50	4908.27	4504.99	4108.30
60.0	6651.86	6600.46	6405.41	6093.07	5726.69	5344.50	4954.40	4548.48	4142.57
90.0	6645.27	6638.68	6488.44	6213.00	5849.25	5464.43	5078.28	4673.68	4275.68
120.0	6650.54	6649.22	6492.39	6215.63	5851.89	5460.47	5057.19	4671.05	4286.22
150.0	6647.90	6659.76	6522.70	6253.85	5888.79	5506.60	5120.45	4721.13	4328.39
180.0	6661.08	6642.63	6477.89	6176.09	5805.76	5423.57	5008.43	4606.47	4188.69
210.0	6653.17	6564.88	6319.75	6000.81	5601.49	5203.48	4797.57	4373.20	3940.93
240.0	6651.86	6553.01	6311.84	5985.00	5589.63	5187.67	4759.35	4333.66	3881.62
270.0	6645.27	6492.39	6216.95	5867.70	5449.93	5032.15	4617.01	4182.10	3748.51
300.0	6650.54	6496.34	6228.81	5875.61	5471.02	5061.15	4635.46	4203.19	3778.83
330.0	6647.90	6480.53	6198.50	5830.80	5438.07	5030.83	4615.70	4188.69	3734.02
360.0	6662.40	6520.07	6255.17	5915.15	5534.27	5107.27	4710.58	4299.40	3868.44

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3433.54	2982.81	2588.76	1402.65	25.70	16.47	10.28	5.40	1.85
30.0	3683.94	3259.57	2849.70	2442.47	748.96	22.01	14.76	8.96	4.09
60.0	3694.48	3230.58	2822.03	2418.62	530.85	23.46	15.81	9.62	4.74
90.0	3853.95	3422.99	2994.67	2595.35	1484.36	27.41	17.40	11.33	6.06
120.0	3872.40	3442.76	3003.90	2620.52	1413.19	27.02	16.74	10.81	5.67
150.0	3890.85	3411.13	2970.95	2565.04	1355.20	26.09	16.21	10.41	5.40
180.0	3763.01	3317.56	2907.69	2514.96	404.20	21.48	14.23	8.43	3.95
210.0	3492.84	3068.48	2619.47	1440.86	25.70	15.95	10.41	5.54	1.98
240.0	3399.27	2981.49	2599.30	942.70	23.59	15.42	9.62	5.14	1.71
270.0	3283.29	2897.15	2511.13	183.72	20.56	13.71	8.17	3.82	1.19
300.0	3310.97	2912.96	2508.37	772.69	20.82	13.97	8.17	3.95	1.32
330.0	3247.71	2835.21	2426.66	407.76	21.35	14.23	8.57	3.82	1.32
360.0	3433.54	2982.81	2588.76	1402.65	25.70	16.47	10.28	5.40	1.85

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1.58	3.16	5.67	8.57	11.99	14.76	17.66	20.69	23.85
30.0	1.71	2.64	4.35	6.72	9.23	12.12	14.76	17.79	20.69
60.0	1.85	2.24	4.09	6.19	8.83	11.73	14.50	17.40	20.43
90.0	2.50	1.85	3.43	5.54	7.91	10.81	13.44	16.34	19.50
120.0	2.24	1.85	3.56	5.67	8.04	10.94	13.44	16.34	19.24
150.0	2.11	1.98	3.43	5.40	7.91	10.81	13.31	16.21	19.11
180.0	1.58	2.37	4.22	6.46	8.83	11.73	14.23	17.00	20.30
210.0	1.45	3.03	5.27	7.91	11.33	13.84	16.74	19.50	22.27
240.0	1.45	3.16	5.27	8.30	11.47	13.97	17.13	19.77	22.40
270.0	1.98	3.95	6.33	9.62	12.52	15.29	18.19	20.95	23.72
300.0	1.98	3.95	6.46	9.49	12.65	15.42	18.45	21.09	23.59
330.0	1.98	3.82	6.33	9.62	12.65	15.42	18.45	21.22	24.25
360.0	1.58	3.16	5.67	8.57	11.99	14.76	17.66	20.69	23.85

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	26.62	28.73	30.71	32.55	34.27	35.72	36.90	38.09	38.75
30.0	23.85	26.23	28.20	29.65	31.37	32.82	34.53	36.37	37.96
60.0	23.20	25.57	27.41	29.39	30.97	32.68	34.53	36.51	38.22
90.0	22.40	24.78	27.02	28.73	30.44	32.03	34.00	36.11	37.96
120.0	22.14	24.64	26.49	28.33	30.05	31.63	33.61	35.98	37.82
150.0	22.27	24.91	26.89	28.73	30.31	31.89	33.74	35.85	37.43
180.0	23.46	25.96	27.94	29.78	31.23	32.95	34.66	36.37	37.69
210.0	25.04	26.89	28.99	30.97	32.68	34.53	36.11	37.43	38.48
240.0	24.91	26.75	28.73	30.58	32.29	34.13	35.98	37.56	38.75
270.0	25.83	28.07	29.78	31.63	33.47	35.32	36.77	38.09	38.88
300.0	26.23	28.20	30.05	32.03	33.61	35.19	36.77	37.96	38.88
330.0	26.75	28.73	30.44	32.29	34.00	35.32	36.90	38.09	38.88
360.0	26.62	28.73	30.71	32.55	34.27	35.72	36.90	38.09	38.75

Intensity data(cd)

C/γ(°)	180.0
0.0	38.88
30.0	38.88
60.0	39.01
90.0	39.01
120.0	39.01
150.0	38.88
180.0	38.88
210.0	38.88
240.0	39.01
270.0	39.01
300.0	39.01
330.0	38.88
360.0	38.88