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MingXue MX-AR111-13W-00195-HJ

LumCAT: MX-AR111-13W-00195-HJ	Luminaire: LED Spotlights
Report No:	Voltage(V): 229.900
Test No:	Current(A): 0.108
LampCAT:	Power (W): 12.800
Lamp flux(lm)	PF: 0.516
Number of Lamps: 1	Ballast type:
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 713.73
Lumens(lm)/Power(W): 55.76
Central intensity(cd): 2173.678
Maximum intensity(cd): 2189.226
Angle of maximum intensity: C=90.0 γ =0.0
Beam Angle(50%Imax): [H]Left=13.4 Right=10.5
 [V]Left=11.0 Right=12.5
Field angle(10%Imax): [H]Left=26.9 Right=24.3
 [V]Left=24.6 Right=26.1
Beam angle of C90plane: 24.06

Equipment: GMS1800B
Temperature(°C): 25.0

Date: 2016-8-3
Humidity(%): 60.0%

Operator: Jason Zhan
Distance(m): 13.00

Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2181.452	.000	.000	.000%	.000%
5.0	2002.988	50.024	50.024	7.009%	7.009%
10.0	1329.565	119.216	169.240	16.703%	23.712%
15.0	723.996	121.816	291.056	17.067%	40.779%
20.0	364.998	89.748	380.804	12.575%	53.354%
25.0	222.911	61.661	442.465	8.639%	61.993%
30.0	164.691	49.051	491.516	6.873%	68.866%
35.0	123.159	42.388	533.904	5.939%	74.805%
40.0	92.359	35.957	569.861	5.038%	79.843%
45.0	76.008	31.174	601.036	4.368%	84.210%
50.0	68.699	29.240	630.276	4.097%	88.307%
55.0	48.757	25.539	655.814	3.578%	91.885%
60.0	36.293	19.659	675.473	2.754%	94.640%
65.0	18.506	13.322	688.795	1.866%	96.506%
70.0	7.732	6.643	695.438	.931%	97.437%
75.0	4.098	3.092	698.530	.433%	97.870%
80.0	2.662	1.809	700.339	.253%	98.124%
85.0	1.648	1.171	701.510	.164%	98.288%
90.0	1.014	.729	702.239	.102%	98.390%
95.0	1.141	.590	702.829	.083%	98.472%
100.0	1.141	.620	703.449	.087%	98.559%
105.0	.972	.565	704.014	.079%	98.639%
110.0	1.014	.519	704.533	.073%	98.711%
115.0	1.183	.556	705.089	.078%	98.789%
120.0	1.183	.575	705.665	.081%	98.870%
125.0	1.437	.605	706.270	.085%	98.955%
130.0	1.521	.643	706.913	.090%	99.045%
135.0	1.817	.674	707.588	.094%	99.139%
140.0	2.113	.728	708.315	.102%	99.241%
145.0	2.746	.811	709.126	.114%	99.355%
150.0	3.591	.933	710.059	.131%	99.485%
155.0	4.267	.994	711.053	.139%	99.625%
160.0	4.648	.935	711.988	.131%	99.756%
165.0	4.732	.773	712.761	.108%	99.864%
170.0	4.521	.549	713.310	.077%	99.941%
175.0	4.394	.319	713.629	.045%	99.986%
180.0	4.141	.102	713.731	.014%	100.000%

Equipment: GMS1800B
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Operator: Jason Zhan
Distance(m): 13.00

Zonal flux distribution table

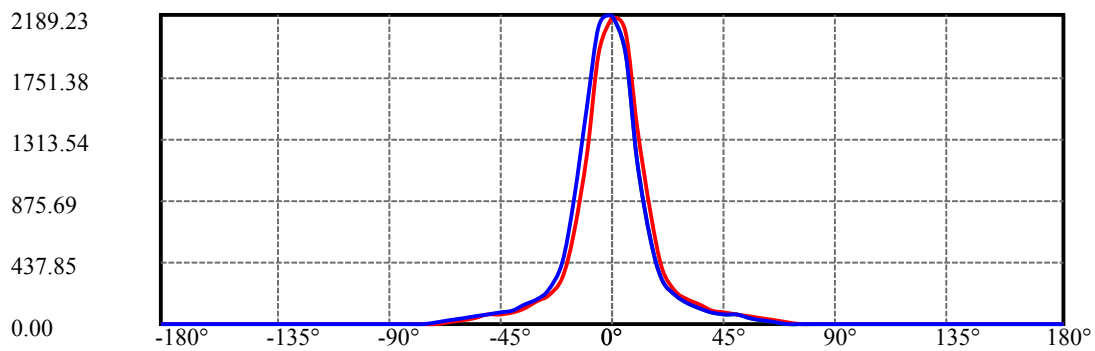
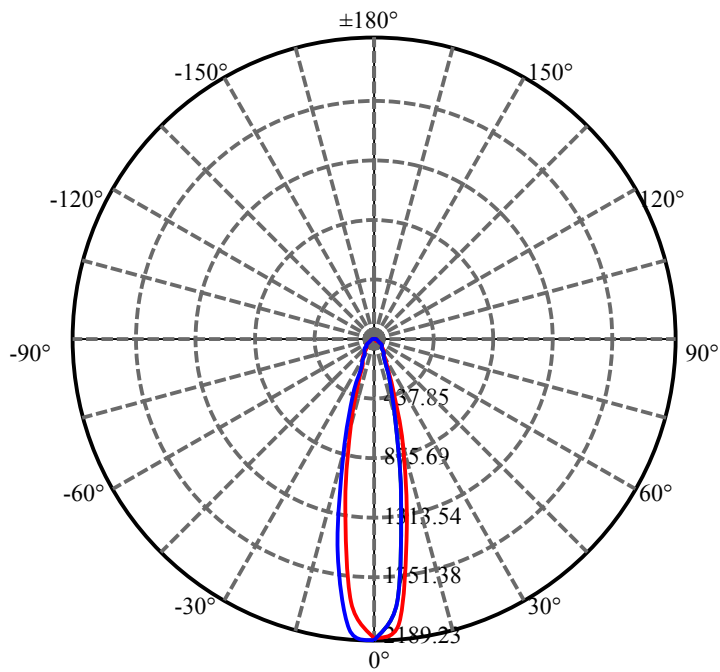
ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-30	491.52	68.87%
0-40	569.86	79.84%
0-60	675.47	94.64%
0-90	702.24	98.39%
90-120	3.43	0.48%
90-130	4.67	0.65%
90-150	7.82	1.10%
90-180	11.39	1.60%
0-180	713.73	100.00%

ZONAL LUMEN SUMMARY

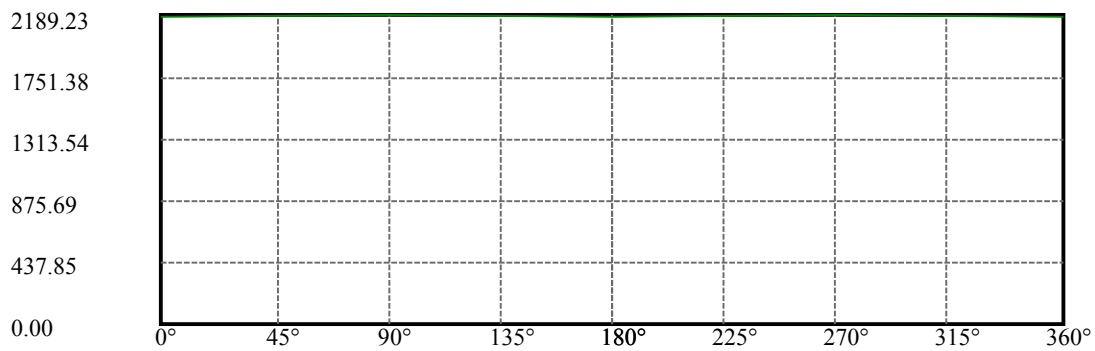
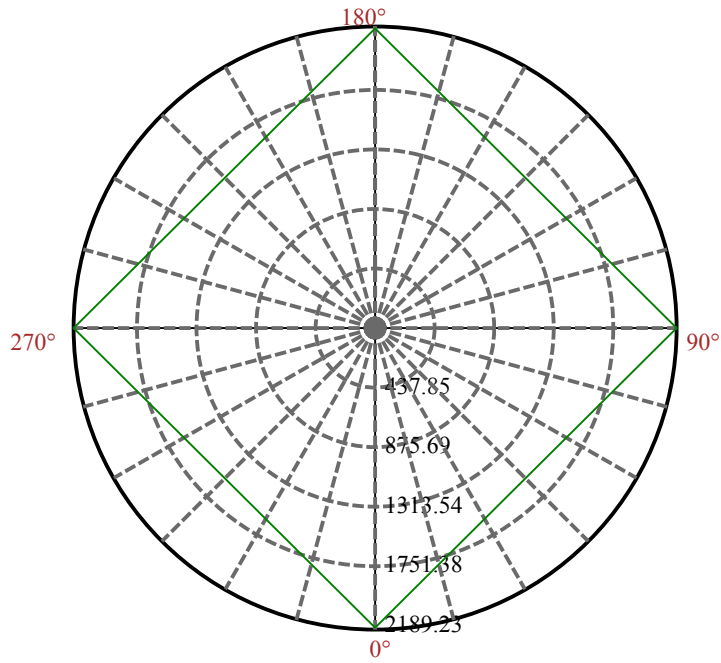
0-10	169.24
10-20	211.56
20-30	110.71
30-40	78.35
40-50	60.41
50-60	45.20
60-70	19.97
70-80	4.90
80-90	1.90
90-100	1.21
100-110	1.08
110-120	1.13
120-130	1.25
130-140	1.40
140-150	1.74
150-160	1.93
160-170	1.32
170-180	0.32

Light Distribution Curve [Unit: cd]



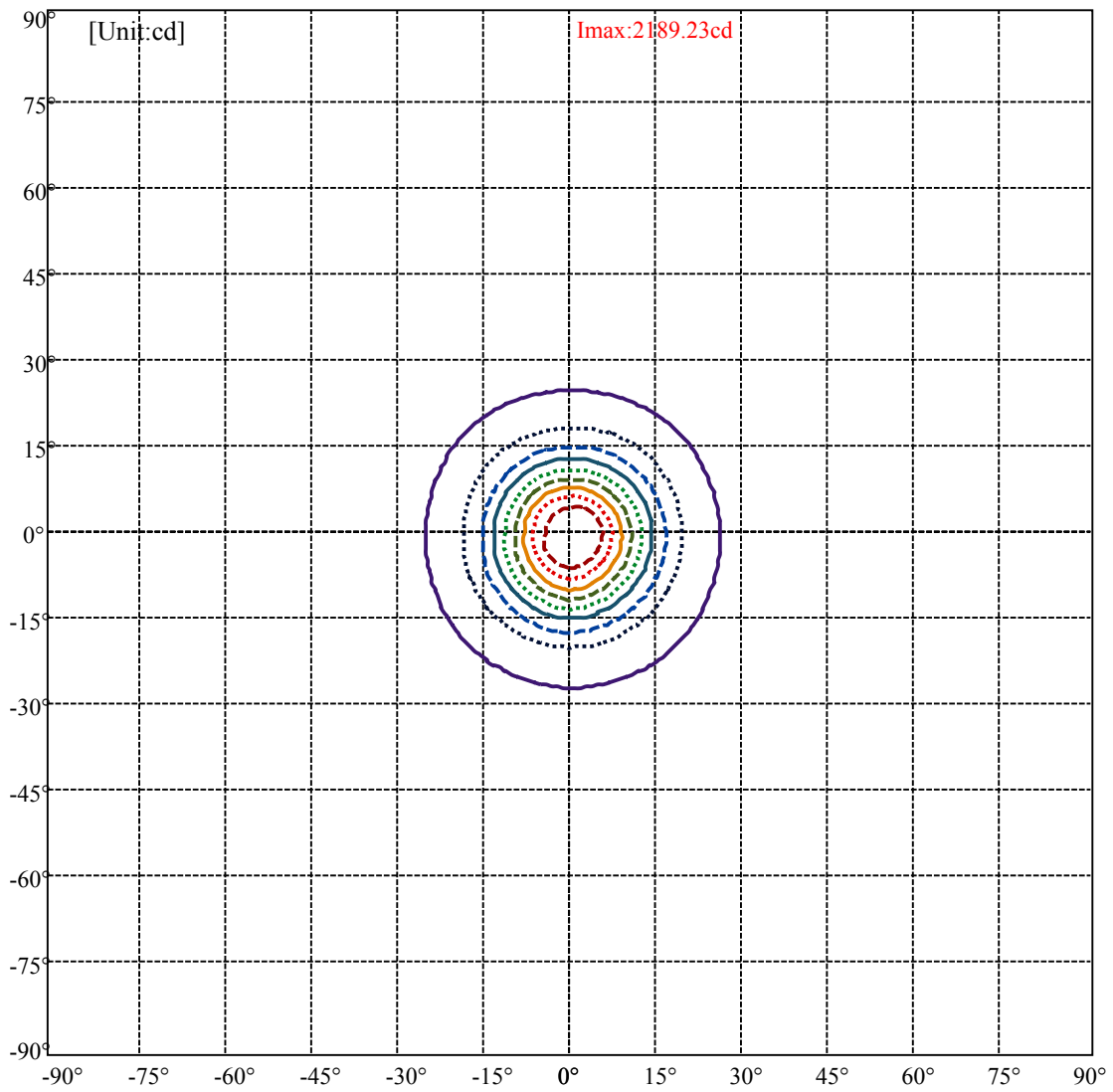
C90(Max): —
 C0/C180: —
 C90/C270: —

Light Distribution Curve [Unit: cd]



MaxG=0

ISO-Intensity(V-H)



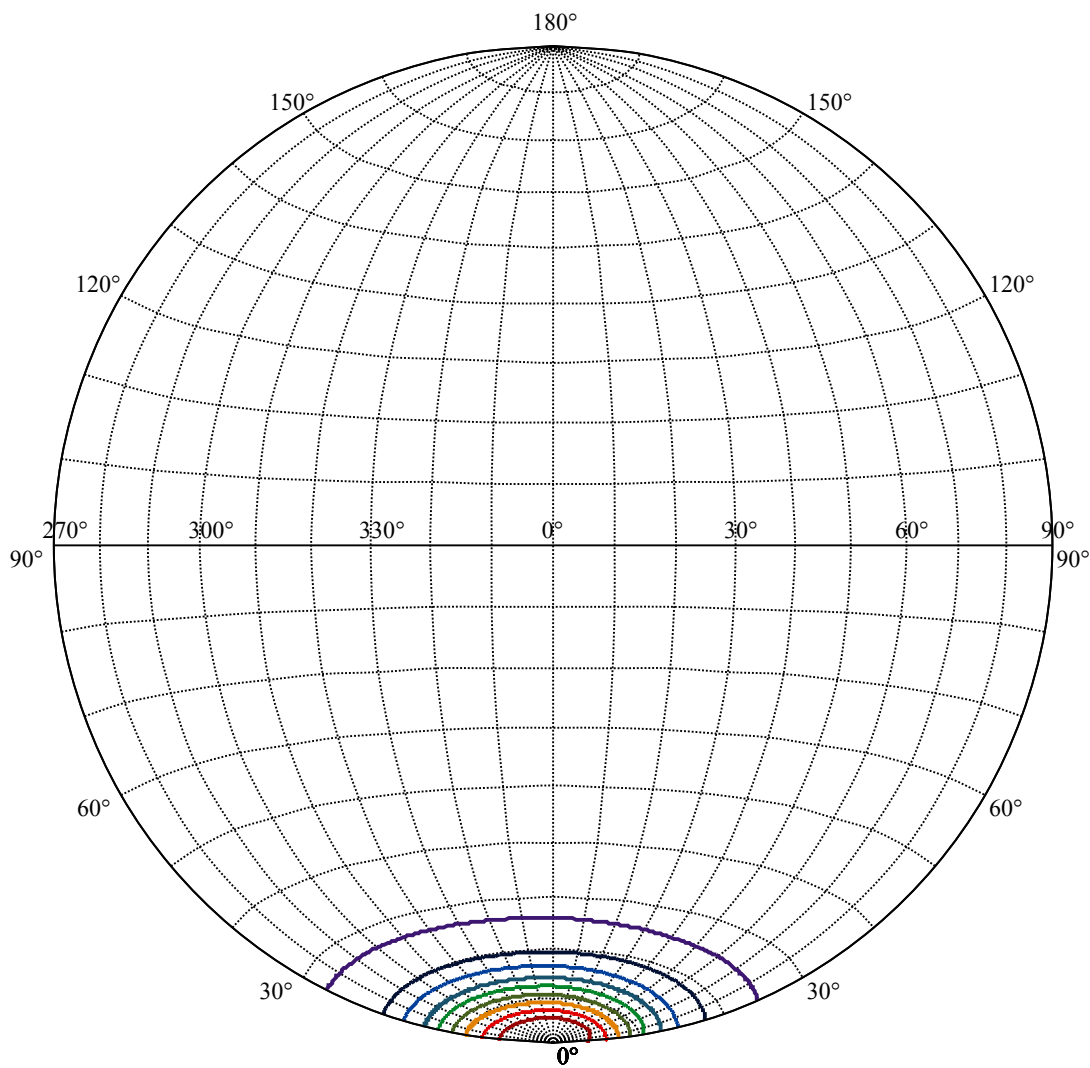
(10%Imax) 218.923	———
(20%Imax) 437.845
(30%Imax) 656.768	- - - - -
(40%Imax) 875.69	———
(50%Imax) 1094.61
(60%Imax) 1313.54	- - - - -
(70%Imax) 1532.46	———
(80%Imax) 1751.38
(90%Imax) 1970.3	- - - - -

Equipment: GMS1800B
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Date: 2016-8-3
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Operator: Jason Zhan
 Distance(m): 13.00

ISO candela diagram on circular web



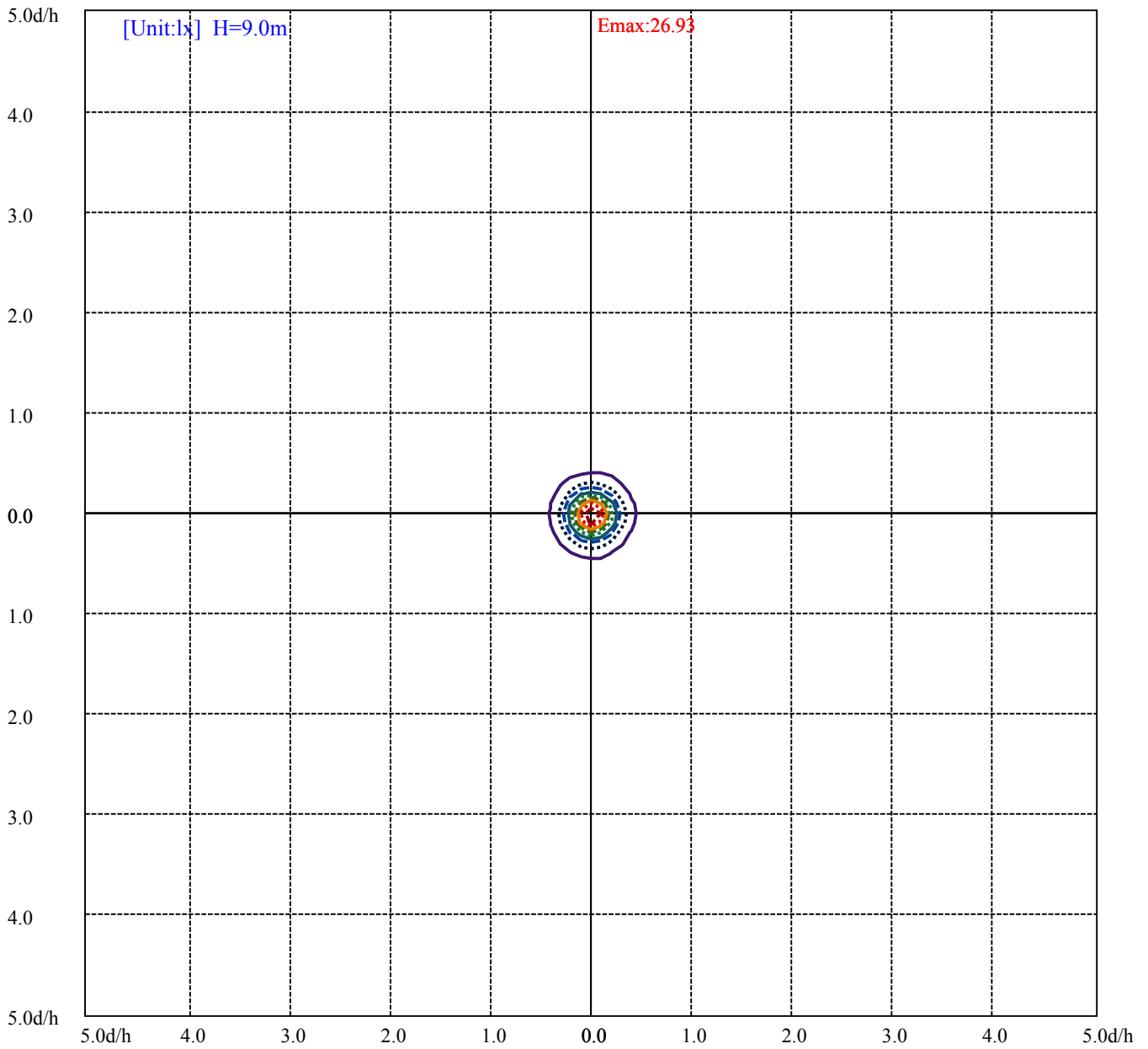
House

Road

I_{max}:2189.23cd

(10%I _{max}) 218.923	—
(20%I _{max}) 437.845	⋯
(30%I _{max}) 656.768	- - -
(40%I _{max}) 875.69	—
(50%I _{max}) 1094.61	⋯
(60%I _{max}) 1313.54	- - -
(70%I _{max}) 1532.46	—
(80%I _{max}) 1751.38	⋯
(90%I _{max}) 1970.3	- - -

ISO illuminance diagram



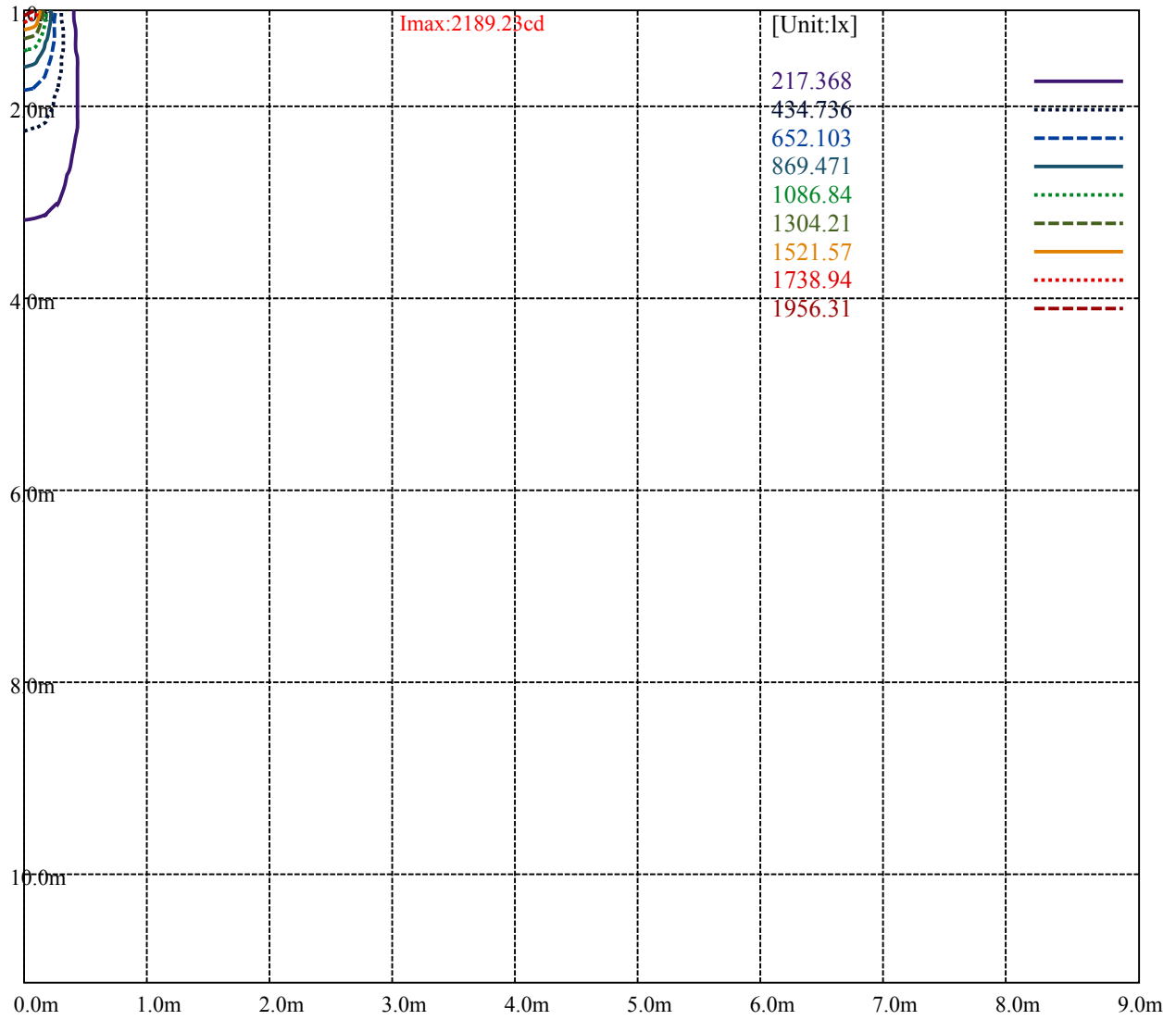
- (10%Emax) 2.693148 ————
- (20%Emax) 5.386284 ······
- (30%Emax) 8.079432 - - - - -
- (40%Emax) 10.77258 ————
- (50%Emax) 13.46568 ······
- (60%Emax) 16.15889 - - - - -
- (70%Emax) 18.85197 ————
- (80%Emax) 21.54519 ······
- (90%Emax) 24.23827 - - - - -

Equipment: GMS1800B
 Temperature(°C): 25.0

Date: 2016-8-3
 Humidity(%): 60.0%

Operator: Jason Zhan
 Distance(m): 13.00

Space ISO Lux diagram



Equipment: GMS1800B
 Temperature(°C): 25.0

Date: 2016-8-3
 Humidity(%): 60.0%

Operator: Jason Zhan
 Distance(m): 13.00

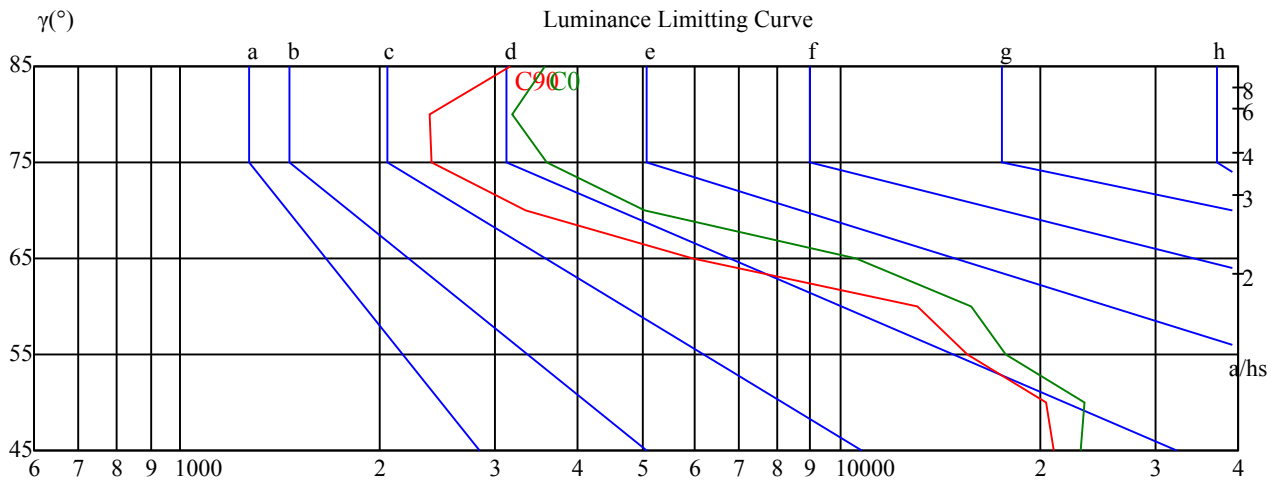
Luminance Limiting Curve(no luminous side)

Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	23022	23341	17739	15727	10528	5042	3598	3178	3562
C45	0	0	0	0	0	0	0	0	0
C90	21022	20443	15514	13037	5958	3328	2399	2383	3166

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



UGR Glare

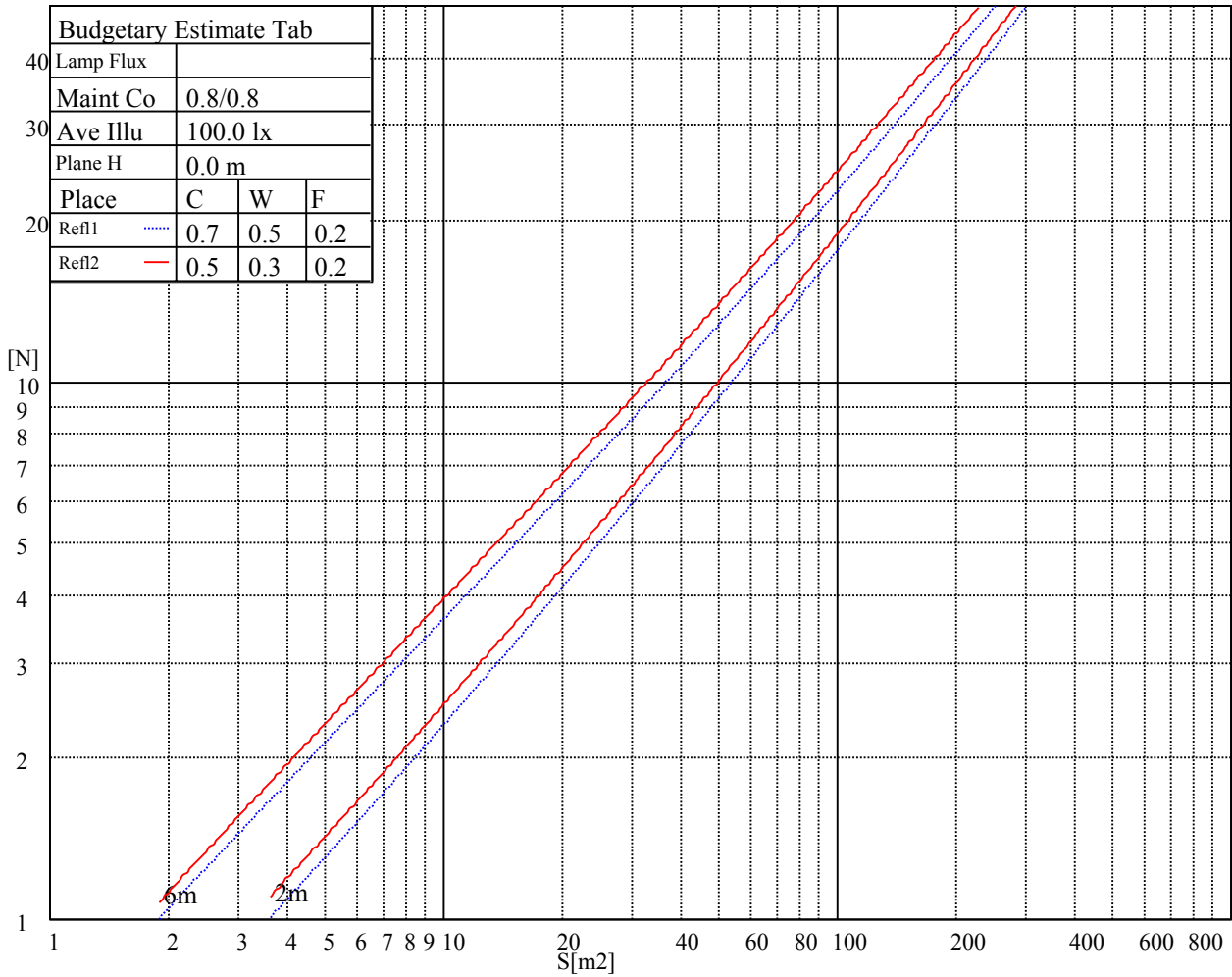
Illuminatin assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	20.9	21.7	21.2	21.9	22.2	20.2	21.1	20.5	21.3	21.5
	3H	21.1	21.9	21.5	22.2	22.4	20.3	21.0	20.6	21.3	21.6
	4H	21.0	21.6	21.4	22.0	22.3	20.1	20.8	20.5	21.1	21.5
	6H	21.1	21.7	21.4	22.0	22.4	20.2	20.8	20.6	21.2	21.5
	8H	21.1	21.7	21.5	22.1	22.4	20.2	20.8	20.6	21.2	21.5
	12H	20.9	21.4	21.4	21.8	22.2	20.0	20.5	20.5	20.9	21.3
4H	2H	20.9	21.5	21.3	21.9	22.2	20.3	21.0	20.7	21.3	21.6
	3H	21.2	21.6	21.6	22.0	22.5	20.4	20.9	20.8	21.3	21.7
	4H	21.3	21.7	21.7	22.1	22.6	20.5	20.9	20.9	21.4	21.8
	6H	21.3	21.8	21.8	22.2	22.7	20.5	21.0	21.0	21.4	21.8
	8H	21.2	21.4	21.7	21.9	22.5	20.4	20.6	20.9	21.1	21.7
	12H	21.2	21.5	21.7	22.0	22.5	20.4	20.7	20.9	21.2	21.7
8H	4H	21.1	21.4	21.6	21.8	22.4	20.3	20.6	20.8	21.1	21.6
	6H	21.2	21.5	21.7	22.0	22.5	20.4	20.7	20.9	21.2	21.7
	8H	21.3	21.5	21.8	22.0	22.6	20.5	20.7	21.0	21.2	21.8
	12H	21.3	21.6	21.8	22.1	22.6	20.5	20.8	21.0	21.3	21.8
12H	4H	21.1	21.4	21.6	21.9	22.4	20.3	20.6	20.8	21.1	21.6
	6H	21.2	21.5	21.7	22.0	22.5	20.4	20.7	20.9	21.2	21.7
	8H	21.3	21.5	21.8	22.0	22.6	20.5	20.8	21.0	21.3	21.8
Variation with the observer position at spacings:											
S = 1.0H	0.6/-0.8					0.5/-0.9					
S = 1.5H	1.0/-2.0					1.3/-2.8					
S = 2.0H	3.7/-4.6					3.8/-5.6					
Standard tables:	BK1					BK1					
Uncorrected UGR	3.3					2.5					
According 1000lm											

Equipment: GMS1800B
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Budgetary Estimate Table



Equipment: GMS1800B
 Temperature(°C): 25.0

Date: 2016-8-3
 Humidity(%): 60.0%

Operator: Jason Zhan
 Distance(m): 13.00

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	COEFFICIENTS OF UTILIZATION RHOF=20 CU															
0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	0.98
1	1.10	1.07	1.05	1.08	1.05	1.03	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.92
2	1.02	0.98	0.95	1.00	0.97	0.93	0.97	0.94	0.91	0.94	0.91	0.89	0.91	0.89	0.87	0.85
3	0.95	0.90	0.86	0.94	0.89	0.85	0.91	0.87	0.84	0.88	0.85	0.82	0.86	0.83	0.81	0.79
4	0.89	0.84	0.80	0.88	0.83	0.79	0.86	0.81	0.78	0.84	0.80	0.77	0.82	0.78	0.76	0.74
5	0.84	0.78	0.74	0.83	0.78	0.74	0.81	0.77	0.73	0.79	0.75	0.72	0.78	0.74	0.71	0.70
6	0.80	0.74	0.70	0.79	0.73	0.69	0.77	0.72	0.69	0.76	0.71	0.68	0.74	0.70	0.68	0.66
7	0.76	0.70	0.66	0.75	0.69	0.66	0.74	0.69	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.63
8	0.72	0.66	0.63	0.71	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.60
9	0.69	0.63	0.60	0.68	0.63	0.60	0.67	0.63	0.59	0.66	0.62	0.59	0.66	0.62	0.59	0.57
10	0.66	0.61	0.57	0.66	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.55
RCR	COEFFICIENTS OF UTILIZATION RHOF=20 WLC															
1	0.18	0.10	0.03	0.18	0.10	0.03	0.16	0.09	0.03	0.15	0.09	0.03	0.14	0.08	0.03	
2	0.18	0.10	0.03	0.17	0.09	0.03	0.16	0.09	0.03	0.15	0.08	0.03	0.14	0.08	0.02	
3	0.17	0.09	0.03	0.16	0.09	0.03	0.15	0.08	0.02	0.14	0.08	0.02	0.13	0.07	0.02	
4	0.16	0.08	0.02	0.15	0.08	0.02	0.14	0.08	0.02	0.13	0.07	0.02	0.13	0.07	0.02	
5	0.15	0.07	0.02	0.14	0.07	0.02	0.13	0.07	0.02	0.13	0.07	0.02	0.12	0.06	0.02	
6	0.14	0.07	0.02	0.13	0.07	0.02	0.13	0.07	0.02	0.12	0.06	0.02	0.12	0.06	0.02	
7	0.13	0.06	0.02	0.13	0.06	0.02	0.12	0.06	0.02	0.12	0.06	0.02	0.11	0.06	0.02	
8	0.12	0.06	0.02	0.12	0.06	0.02	0.12	0.06	0.02	0.11	0.06	0.02	0.11	0.05	0.02	
9	0.12	0.06	0.02	0.11	0.06	0.02	0.11	0.05	0.02	0.11	0.05	0.02	0.10	0.05	0.01	
10	0.11	0.05	0.01	0.11	0.05	0.01	0.10	0.05	0.01	0.10	0.05	0.01	0.10	0.05	0.01	
RCR	COEFFICIENTS OF UTILIZATION RHOF=20 CCLU															
0	0.20	0.20	0.20	0.17	0.17	0.17	0.12	0.12	0.12	0.07	0.07	0.07	0.02	0.02	0.02	
1	0.17	0.16	0.15	0.15	0.14	0.13	0.10	0.10	0.09	0.06	0.06	0.05	0.02	0.02	0.02	
2	0.15	0.13	0.12	0.13	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.04	0.02	0.02	0.01	
3	0.13	0.11	0.10	0.11	0.10	0.08	0.08	0.07	0.06	0.05	0.04	0.04	0.02	0.01	0.01	
4	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	
5	0.10	0.08	0.07	0.09	0.07	0.06	0.07	0.05	0.04	0.04	0.03	0.03	0.02	0.01	0.01	
6	0.09	0.07	0.06	0.08	0.06	0.05	0.06	0.05	0.04	0.04	0.03	0.02	0.02	0.01	0.01	
7	0.08	0.06	0.05	0.07	0.06	0.04	0.06	0.04	0.03	0.04	0.03	0.02	0.01	0.01	0.01	
8	0.07	0.05	0.04	0.07	0.05	0.04	0.06	0.04	0.03	0.04	0.03	0.02	0.01	0.01	0.01	
9	0.07	0.05	0.04	0.06	0.05	0.03	0.05	0.04	0.03	0.04	0.02	0.02	0.01	0.01	0.01	
10	0.06	0.05	0.03	0.06	0.04	0.03	0.05	0.03	0.02	0.03	0.02	0.01	0.01	0.01	0.01	

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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	2173.68	2072.28	1405.07	787.54	396.64	232.54	172.89	133.00	100.22
90.0	2189.23	1915.78	1150.55	601.13	310.12	203.31	152.44	113.57	84.33
180.0	2173.68	1914.26	1209.70	636.45	321.27	209.90	156.83	114.08	86.87
270.0	2189.23	2109.63	1552.94	870.86	431.96	245.90	176.61	131.99	98.02
360.0	2173.68	2072.28	1405.07	787.54	396.64	232.54	172.89	133.00	100.22
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	79.77	73.52	49.86	38.53	21.80	8.45	4.56	2.70	1.52
90.0	72.84	64.39	43.60	31.94	12.34	5.58	3.04	2.03	1.35
180.0	72.50	66.42	44.62	32.45	14.20	6.76	3.72	2.54	1.69
270.0	78.92	70.47	56.95	42.25	25.69	10.14	5.07	3.38	2.03
360.0	79.77	73.52	49.86	38.53	21.80	8.45	4.56	2.70	1.52
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1.01	1.18	1.18	0.85	1.18	1.35	1.18	1.18	1.69
90.0	1.01	1.01	1.01	1.18	1.01	1.01	1.01	1.52	1.35
180.0	1.18	1.01	1.35	1.01	0.85	1.18	1.35	1.69	1.69
270.0	0.85	1.35	1.01	0.85	1.01	1.18	1.18	1.35	1.35
360.0	1.01	1.18	1.18	0.85	1.18	1.35	1.18	1.18	1.69
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.69	1.86	2.70	3.55	4.06	4.56	4.56	4.39	4.39
90.0	2.03	2.37	2.70	3.55	4.39	4.56	4.90	4.39	4.23
180.0	1.69	2.20	2.87	3.55	4.23	4.56	4.56	4.39	4.39
270.0	1.86	2.03	2.70	3.72	4.39	4.90	4.90	4.90	4.56
360.0	1.69	1.86	2.70	3.55	4.06	4.56	4.56	4.39	4.39
C/γ(°)	180.0								
0.0	4.06								
90.0	4.23								
180.0	4.06								
270.0	4.23								
360.0	4.06								