NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.cn
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380 JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

Client:
LumCAT: 3-2033-M
Luminaire: 92.70.131.00
Report No: nata-0100
Test No:
LampCAT: CREE CMT1922
Lamp flux(lm): 2545.4
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 35.0000
Current(A): 0.6000
Power (W): 21.0000
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 2400.32, Efficiency(%): 94.30% , Luminous Efficacy(lm/W): 114.30
Central intensity(cd): 19075.670, Maximum intensity(cd): 19075.670
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=14.8
[C90/270]Total=14.8
Field angle(10%Imax): [C0/180]Total=29.8
[C90/270]Total=29.8
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.25 C90_270=0.25
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 95.00%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.021%

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2018/5/21
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	19075.666	18.255	18.255	.717%	.761%
2.0	18175.494	139.114	157.369	5.465%	6.556%
4.0	15631.888	239.145	396.513	9.395%	16.519%
6.0	12100.709	277.403	673.916	10.898%	28.076%
8.0	8562.303	261.343	935.259	10.267%	38.964%
10.0	5222.857	198.904	1134.163	7.814%	47.250%
12.0	3169.941	144.542	1278.706	5.679%	53.272%
14.0	2199.503	116.698	1395.404	4.585%	58.134%
16.0	1576.471	95.299	1490.703	3.744%	62.104%
18.0	1280.956	86.812	1577.516	3.411%	65.721%
20.0	1103.846	82.799	1660.315	3.253%	69.171%
22.0	1004.655	82.539	1742.853	3.243%	72.609%
24.0	934.520	83.362	1826.215	3.275%	76.082%
26.0	887.089	85.285	1911.501	3.351%	79.635%
28.0	851.612	87.683	1999.184	3.445%	83.288%
30.0	821.042	90.033	2089.217	3.537%	87.039%
32.0	762.166	88.578	2177.794	3.480%	90.729%
34.0	620.465	76.093	2253.887	2.989%	93.899%
36.0	421.753	54.368	2308.255	2.136%	96.164%
38.0	224.713	30.341	2338.596	1.192%	97.428%
40.0	76.639	10.804	2349.4	.424%	97.879%
42.0	22.518	3.305	2352.705	.130%	98.016%
44.0	15.402	2.346	2355.051	.092%	98.114%
46.0	12.436	1.962	2357.013	.077%	98.196%
48.0	11.713	1.909	2358.922	.075%	98.275%
50.0	11.259	1.892	2360.814	.074%	98.354%
52.0	10.942	1.891	2362.705	.074%	98.433%
54.0	10.667	1.893	2364.598	.074%	98.512%
56.0	10.468	1.903	2366.501	.075%	98.591%
58.0	10.309	1.917	2368.418	.075%	98.671%
60.0	10.185	1.935	2370.353	.076%	98.751%
62.0	10.103	1.956	2372.309	.077%	98.833%
64.0	10.020	1.975	2374.284	.078%	98.915%
66.0	9.965	1.997	2376.281	.078%	98.998%
68.0	9.917	2.017	2378.297	.079%	99.082%
70.0	9.876	2.035	2380.333	.080%	99.167%
72.0	9.848	2.054	2382.387	.081%	99.253%
74.0	9.828	2.072	2384.459	.081%	99.339%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.800	2.085	2386.544	.082%	99.426%
78.0	9.779	2.098	2388.642	.082%	99.513%
80.0	9.766	2.109	2390.751	.083%	99.601%
82.0	9.752	2.118	2392.869	.083%	99.690%
84.0	9.745	2.125	2394.994	.084%	99.778%
86.0	9.745	2.132	2397.126	.084%	99.867%
88.0	9.717	2.130	2399.256	.084%	99.956%
90.0	9.717	1.066	2400.322	.042%	100.000%

Zonal flux distribution table

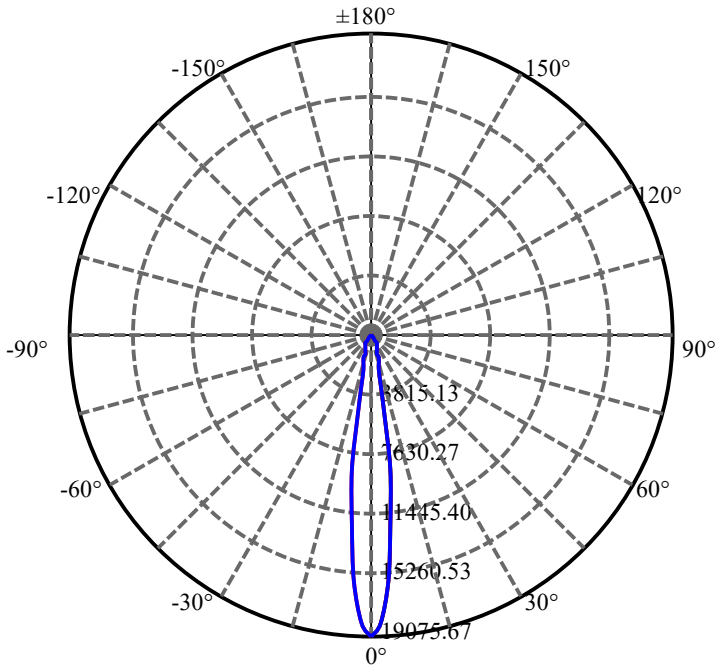
ZONAL LUMEN SUMMARY

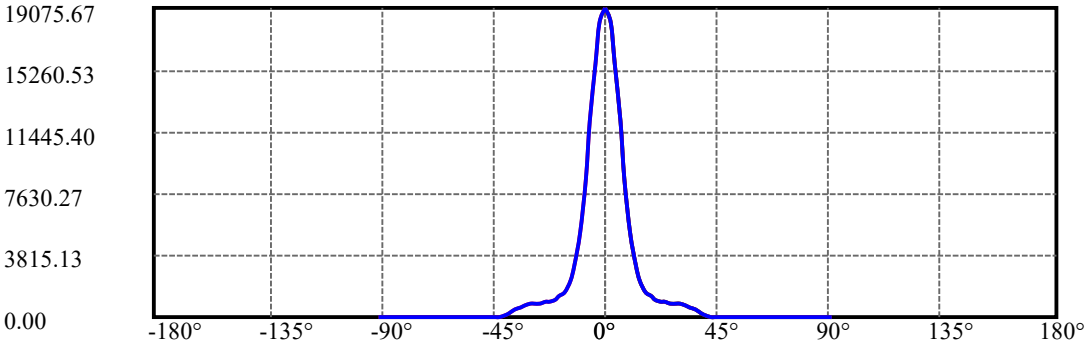
Zone	Lumens	%Lamp	%Fixt
0-30	2089.22	82.08%	87.04%
0-40	2349.40	92.30%	97.88%
0-60	2370.35	93.12%	98.75%
0-90	2399.26	94.26%	99.96%
0-120	2399.26	94.26%	99.96%
0-180	2400.32	94.30%	100.00%
60-90	30.84	1.21%	1.28%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.20	1920.26	75.44%	80.00%

ZONAL LUMEN SUMMARY

0-10	1134.16
10-20	526.15
20-30	428.90
30-40	260.18
40-50	11.41
50-60	9.54
60-70	9.98
70-80	10.42
80-90	8.51
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

Light Distribution Curve [Unit:cd]





C0(Max):

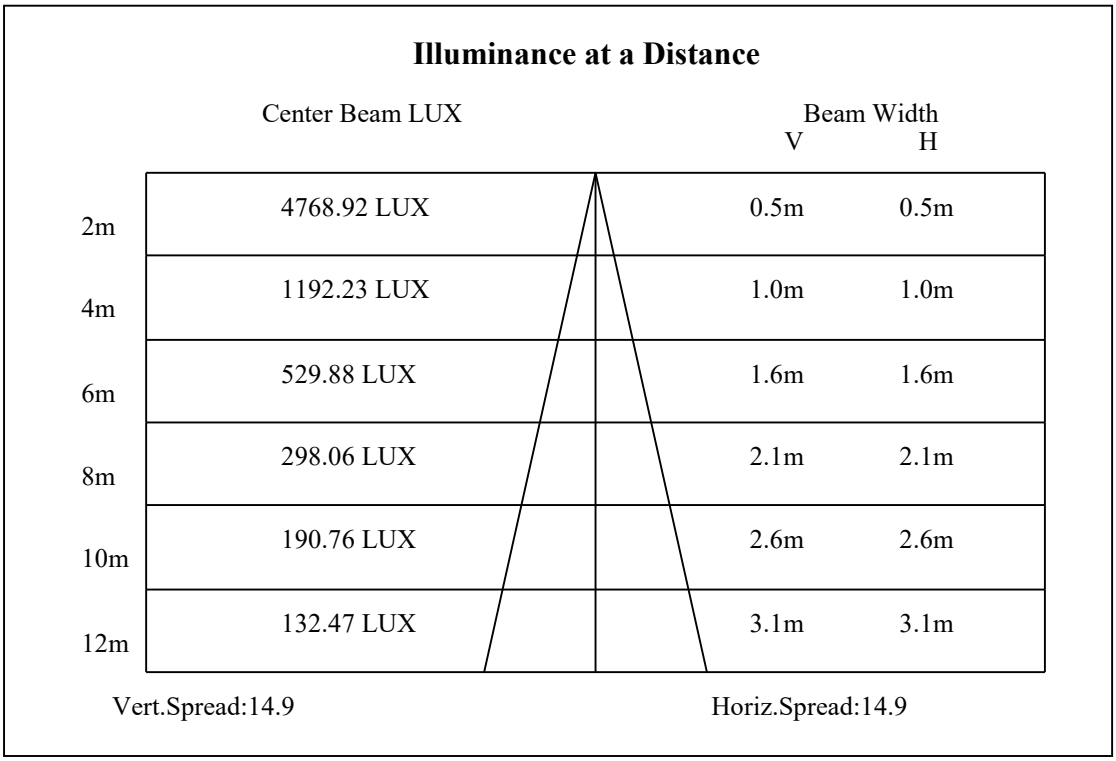
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:14.9 Right:14.9
:C90/270Left:14.9 Right:14.9

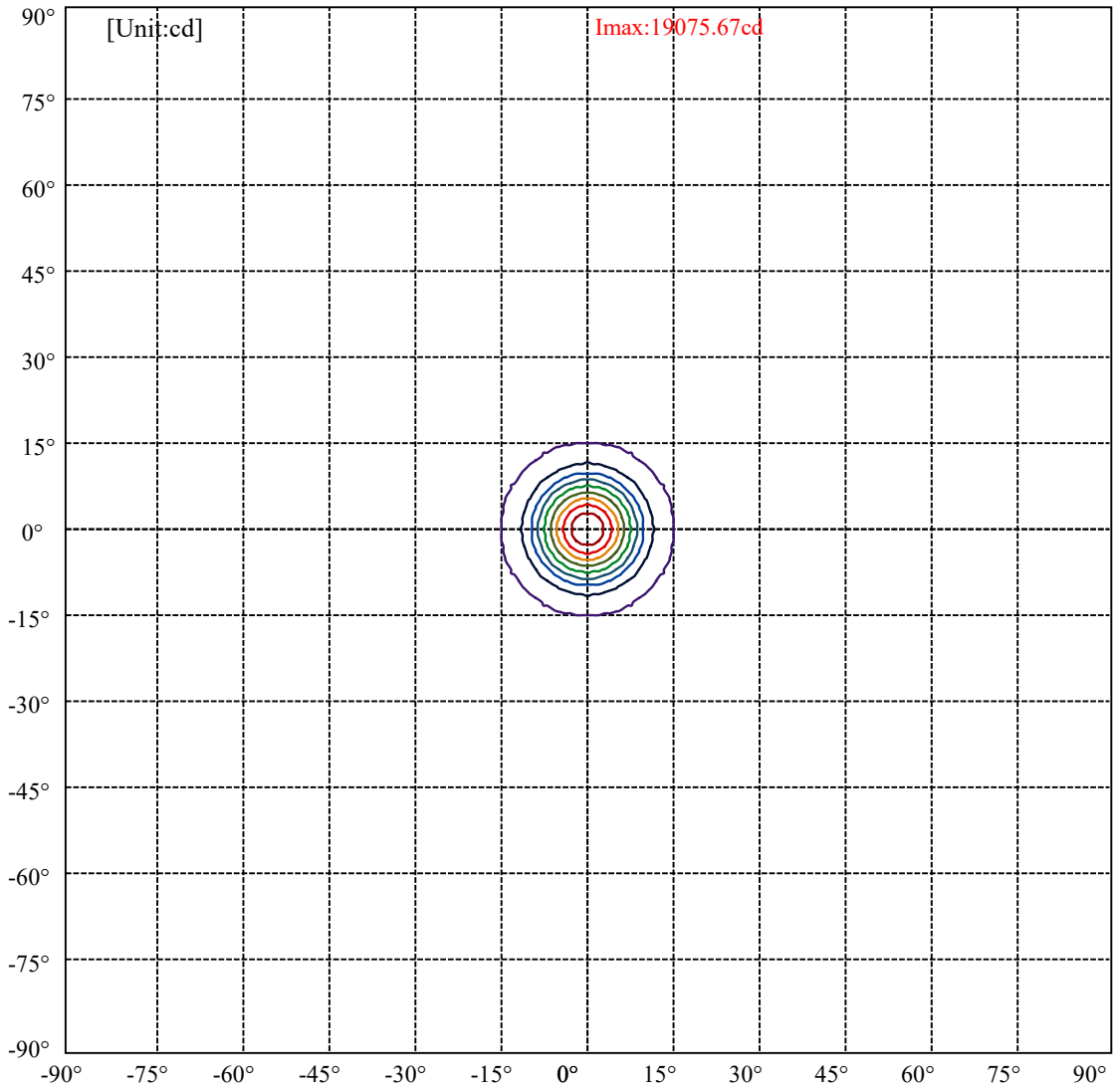
Beam Angle(50%Imax):C0/180Left:7.4 Right:7.4
:C90/270Left:7.4 Right:7.4

Lux distance Curve



Equipment: GMS1980 Date: 2018/5/21 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)



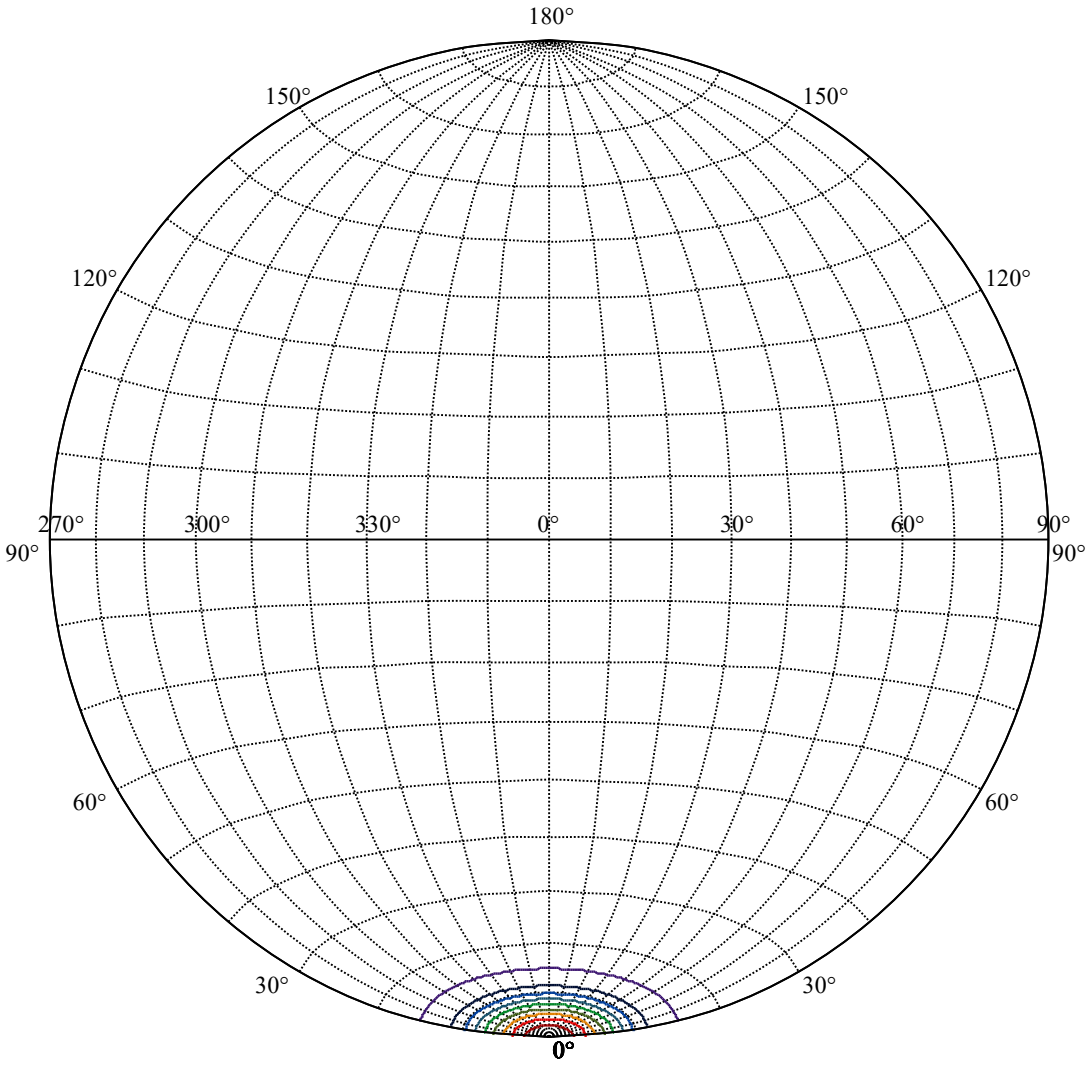
(10%Imax) 1907.57
(20%Imax) 3815.13
(30%Imax) 5722.7
(40%Imax) 7630.27
(50%Imax) 9537.83
(60%Imax) 11445.4
(70%Imax) 13353
(80%Imax) 15260.5
(90%Imax) 17168.1

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/5/21
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



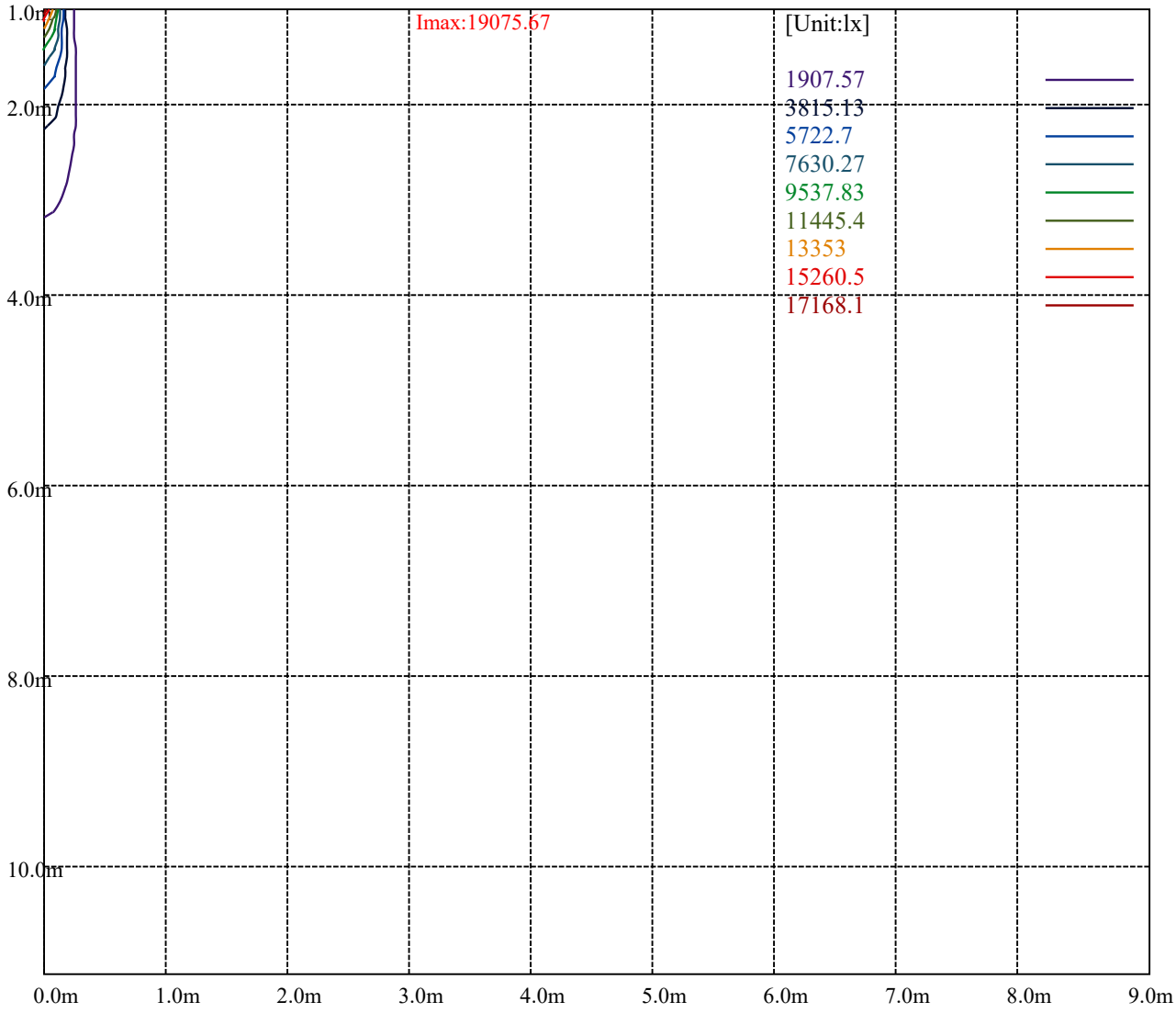
House [Unit:cd] Road

Imax:19075.67

(10%Imax) 1907.57
(20%Imax) 3815.13
(30%Imax) 5722.7
(40%Imax) 7630.27
(50%Imax) 9537.83
(60%Imax) 11445.4
(70%Imax) 13353
(80%Imax) 15260.5
(90%Imax) 17168.1

Equipment: GMS1980 Date: 2018/5/21 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/5/21
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

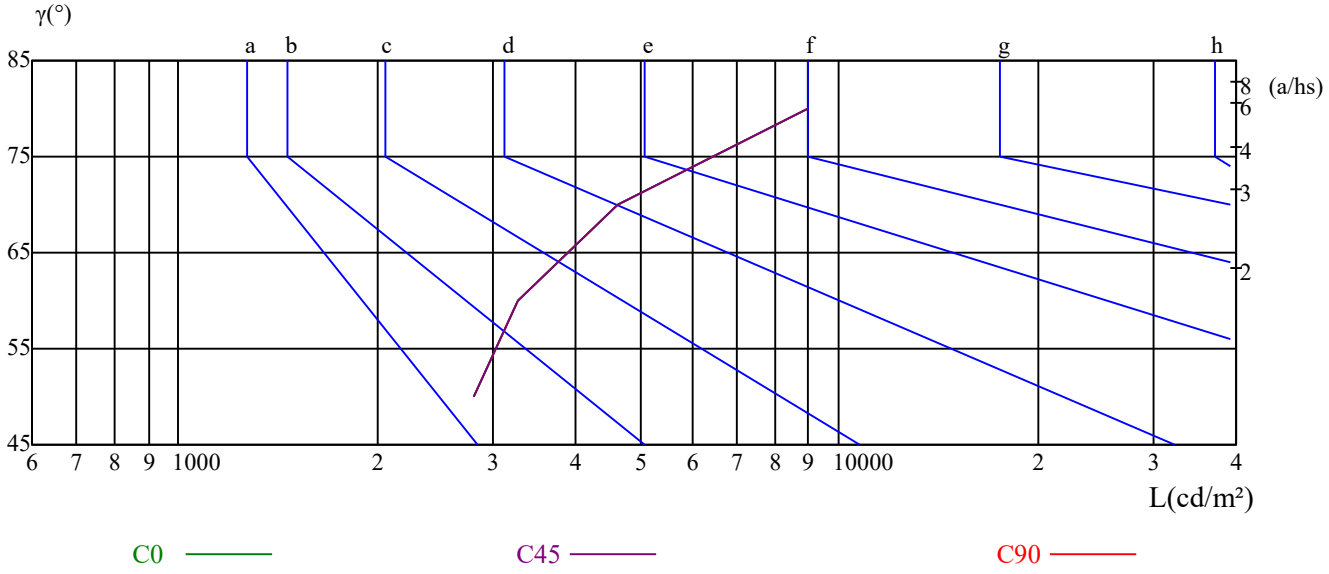
γ	45	50	55	60	65	70	75	80	85
C0	0	2807	0	3264	0	4627	0	9011	0
C45	0	2807	0	3264	0	4627	0	9011	0
C90	0	2807	0	3264	0	4627	0	9011	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3935	3935	3935	6229	6229	6229	18207	18207	18207

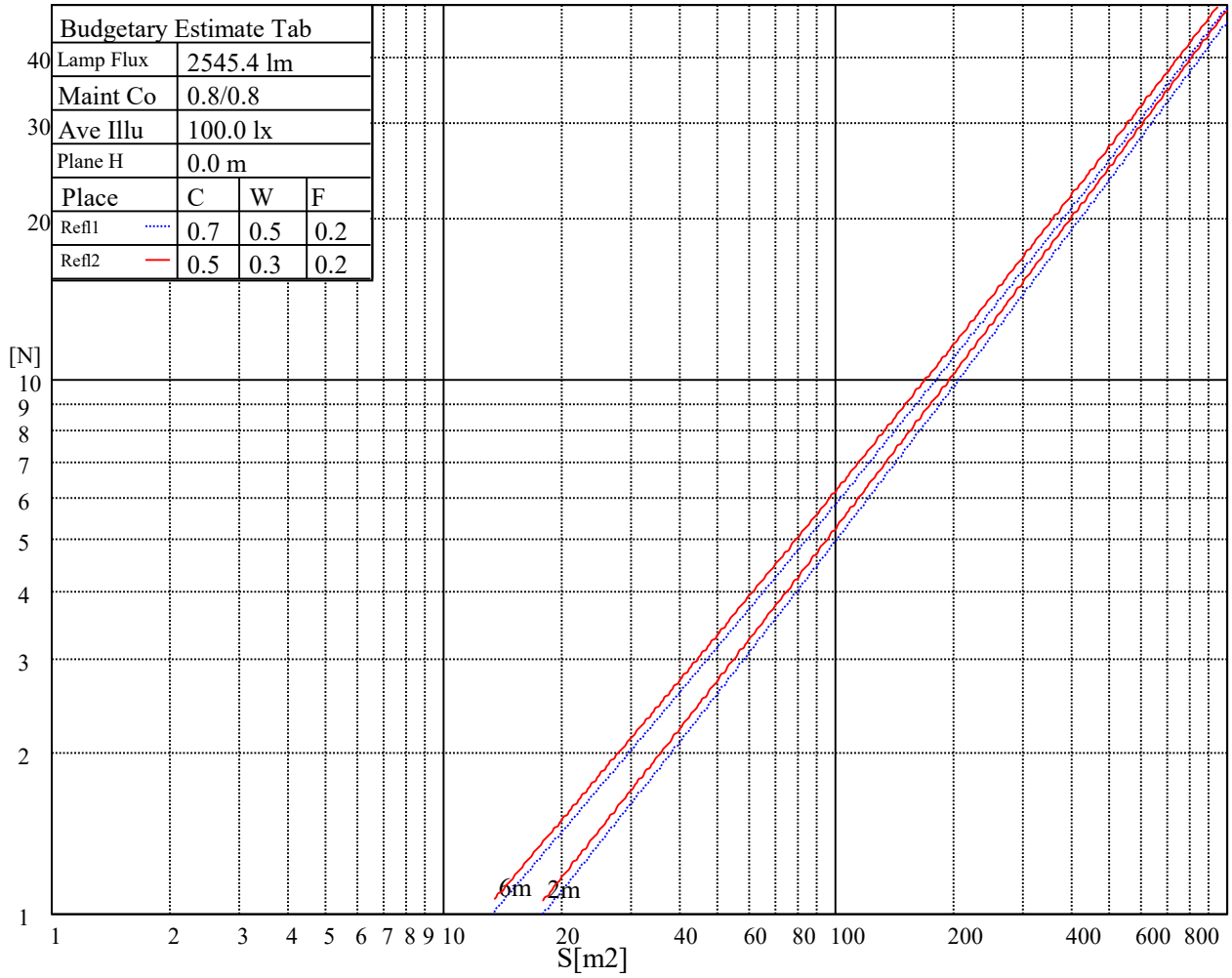
Glare Table

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



Budgetary Estimate Table

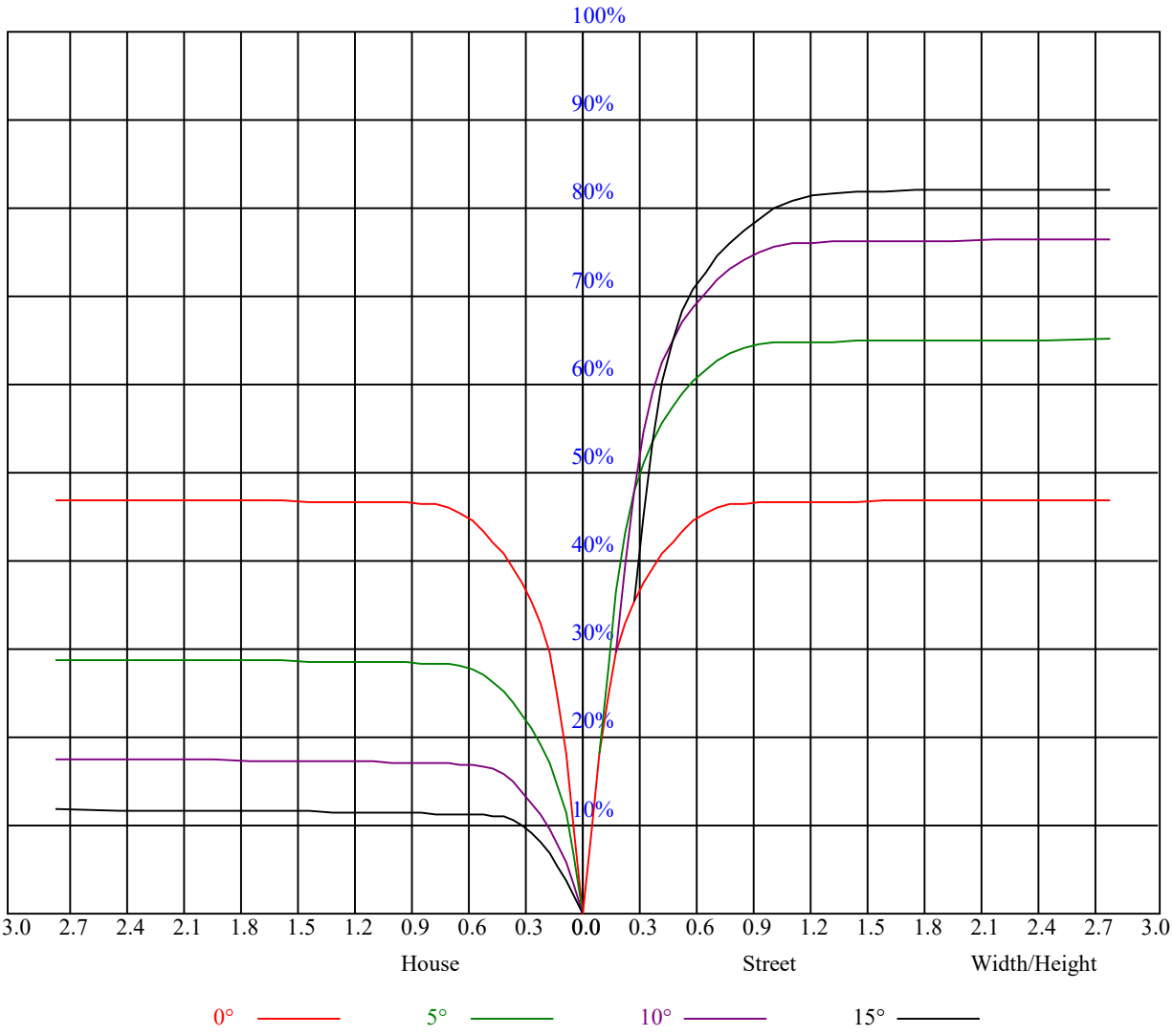


Equipment: GMS1980 Date: 2018/5/21 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

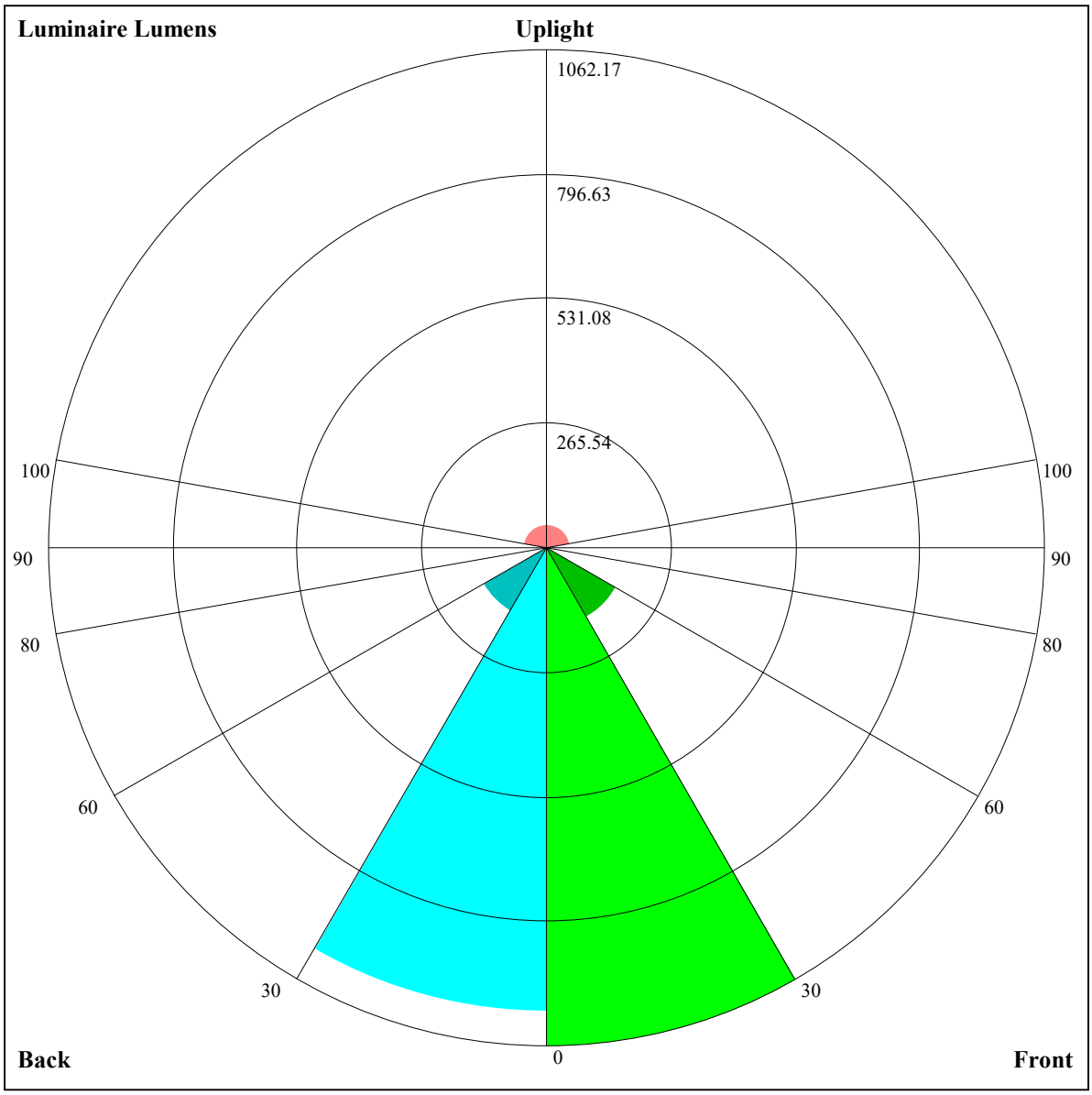
Utilization factor table for indoor luminaire

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	1.13	1.13	1.13	1.10	1.10	1.10	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.95
1	1.06	1.04	1.02	1.04	1.02	1.00	1.00	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.92	0.90
2	1.01	0.98	0.95	0.99	0.96	0.94	0.96	0.94	0.92	0.93	0.92	0.90	0.91	0.89	0.88	0.87
3	0.96	0.93	0.90	0.95	0.92	0.89	0.93	0.90	0.87	0.90	0.88	0.86	0.88	0.86	0.85	0.84
4	0.92	0.88	0.85	0.91	0.88	0.85	0.89	0.86	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.81
5	0.89	0.85	0.82	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.84	0.81	0.79	0.78
6	0.86	0.82	0.79	0.85	0.81	0.78	0.84	0.80	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.76
7	0.83	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.80	0.77	0.75	0.74
8	0.81	0.76	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.78	0.75	0.73	0.72
9	0.78	0.74	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.76	0.73	0.71	0.70
10	0.76	0.72	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2018/5/21	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42



Luminaire Lumens:
FL=1062.17,FM=169.19,FH=10.17,FVH=5.32
BL=989.18,BM=156.46,BH=10.15,BVH=5.31
UL=10.6,UH=50.45

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	18878.84	18730.19	16847.26	13516.35	10262.51	6392.05	3782.37	2835.40	1714.46
45.0	19088.05	19016.48	17150.07	13890.73	10620.38	6683.85	3958.56	2807.88	1751.89
90.0	19275.25	18856.82	16544.45	13395.22	9393.72	5849.19	3608.40	2300.26	1714.46
135.0	19060.53	18598.05	16428.83	12888.70	9596.33	5858.00	3485.07	2305.21	1672.06
180.0	18878.84	17271.19	14132.98	10612.67	6788.45	4032.88	2537.00	1786.03	1430.92
225.0	19088.05	17370.29	14166.01	10548.26	6746.06	3977.82	2477.54	1772.82	1434.22
270.0	19275.25	17843.78	14986.35	11038.81	7586.77	4465.07	2780.35	1926.42	1440.83
315.0	19060.53	17717.15	14799.16	10914.93	7504.19	4523.98	2730.25	1862.01	1452.94
360.0	18878.84	18730.19	16847.26	13516.35	10262.51	6392.05	3782.37	2835.40	1714.46

C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1375.86	1175.45	1049.37	957.98	906.23	861.63	833.00	804.92	692.61
45.0	1380.81	1170.50	1044.42	960.18	907.33	863.83	831.35	804.37	695.36
90.0	1346.68	1094.30	1019.86	940.47	889.49	853.04	819.18	788.24	685.56
135.0	1345.58	1147.93	1027.90	945.32	898.52	857.78	828.60	797.22	670.59
180.0	1192.52	1054.72	968.39	911.51	866.20	837.02	805.97	706.76	540.49
225.0	1200.78	1056.81	968.44	914.43	872.53	845.94	814.89	708.69	536.58
270.0	1207.94	1073.05	985.51	925.50	884.21	850.07	821.99	750.42	565.98
315.0	1197.48	1058.02	973.34	920.76	872.20	843.57	813.35	736.71	576.55
360.0	1375.86	1175.45	1049.37	957.98	906.23	861.63	833.00	804.92	692.61

C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	508.72	307.21	119.58	26.98	17.23	12.94	12.00	11.45	11.07
45.0	516.43	317.68	132.14	27.14	18.11	13.49	12.00	11.62	11.23
90.0	488.96	294.11	115.51	25.27	16.57	12.61	11.78	11.29	11.01
135.0	485.05	280.24	101.03	22.96	16.41	12.22	11.73	11.29	10.96
180.0	331.94	148.49	34.19	18.83	13.54	11.89	11.40	11.01	10.74
225.0	317.62	124.59	31.27	19.21	13.10	12.17	11.62	11.18	10.90
270.0	362.27	162.86	38.43	19.93	14.37	12.11	11.67	11.18	10.85
315.0	363.04	162.53	40.96	19.82	13.87	12.06	11.51	11.07	10.79
360.0	508.72	307.21	119.58	26.98	17.23	12.94	12.00	11.45	11.07

C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	10.79	10.52	10.35	10.19	10.13	10.02	9.97	9.91	9.86
45.0	10.90	10.68	10.46	10.35	10.24	10.13	10.08	10.02	9.97
90.0	10.68	10.46	10.30	10.19	10.13	10.02	9.97	9.91	9.91
135.0	10.68	10.52	10.35	10.19	10.13	10.02	9.97	9.91	9.86
180.0	10.52	10.35	10.24	10.13	10.02	9.97	9.91	9.91	9.86
225.0	10.63	10.41	10.30	10.19	10.08	10.02	9.97	9.91	9.86
270.0	10.63	10.46	10.30	10.19	10.08	10.02	9.97	9.91	9.91
315.0	10.52	10.35	10.19	10.08	10.02	9.97	9.91	9.86	9.80
360.0	10.79	10.52	10.35	10.19	10.13	10.02	9.97	9.91	9.86

C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	9.86	9.80	9.80	9.74	9.74	9.74	9.74	9.74	9.69
45.0	9.91	9.91	9.86	9.86	9.80	9.80	9.80	9.80	9.80
90.0	9.86	9.80	9.80	9.80	9.80	9.74	9.74	9.74	9.69
135.0	9.86	9.86	9.80	9.80	9.74	9.74	9.74	9.74	9.69
180.0	9.80	9.80	9.74	9.74	9.74	9.74	9.74	9.69	9.69
225.0	9.86	9.80	9.80	9.74	9.80	9.74	9.74	9.80	9.74
270.0	9.86	9.86	9.80	9.80	9.74	9.74	9.74	9.74	9.74
315.0	9.80	9.80	9.80	9.74	9.74	9.74	9.69	9.69	9.69
360.0	9.86	9.80	9.80	9.74	9.74	9.74	9.74	9.74	9.69

Intensity data(cd)

C/γ(°)	90.0
0.0	9.74
45.0	9.74
90.0	9.69
135.0	9.69
180.0	9.69
225.0	9.74
270.0	9.74
315.0	9.69
360.0	9.74