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

Nata

LumCAT: 3-1546-A3
Luminaire: 99.02.73.172+92.76.365.00

Report No: NATA0100	Voltage(V): 34.5000
Test No: GC2018082818	Current(A): 0.5000
LampCAT: SAMSUNG LC026D	Power (W): 17.2500
Lamp flux(lm): 2486.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2303.68
Efficiency(%): 92.67%
Lumens(lm)/Power(W): 133.55
Central intensity(cd): 7415.684
Maximum intensity(cd): 7415.684
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=27.4
[C90/270]Total=27.4
Field angle(10%Imax): [C0/180]Total=62.3
[C90/270]Total=62.3
Maximum s/h(1/2): C0_180=0.46 C90_270=0.46
Maximum s/h(1/4): C0_180=0.46 C90_270=0.46
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 94.36%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.939%

Equipment: GMS1980	Date: 2018/8/28	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7415.684	44.347	44.347	1.784%	1.925%
5.0	7033.180	335.998	380.346	13.516%	16.510%
10.0	5401.721	514.152	894.498	20.682%	38.829%
15.0	3111.512	441.425	1335.923	17.756%	57.991%
20.0	1503.425	281.853	1617.776	11.338%	70.226%
25.0	962.675	223.006	1840.783	8.970%	79.906%
30.0	824.883	226.074	2066.857	9.094%	89.720%
35.0	466.128	146.550	2213.407	5.895%	96.081%
40.0	113.478	39.982	2253.39	1.608%	97.817%
45.0	14.900	5.775	2259.165	.232%	98.068%
50.0	11.569	4.858	2264.022	.195%	98.278%
55.0	10.998	4.938	2268.96	.199%	98.493%
60.0	10.660	5.060	2274.021	.204%	98.712%
65.0	10.433	5.183	2279.204	.208%	98.937%
70.0	10.302	5.307	2284.51	.213%	99.168%
75.0	10.199	5.400	2289.911	.217%	99.402%
80.0	10.123	5.465	2295.375	.220%	99.639%
85.0	10.206	5.573	2300.948	.224%	99.881%
90.0	9.979	2.735	2303.683	.110%	100.000%

Zonal flux distribution table

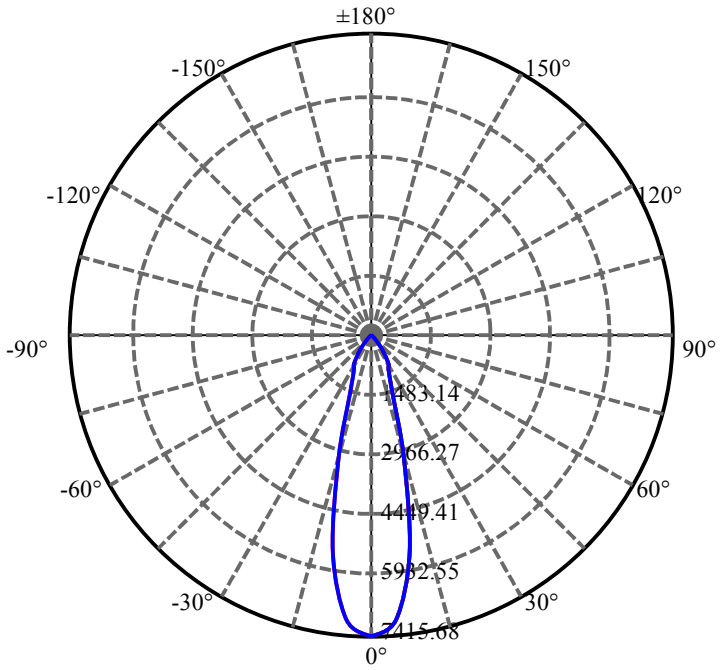
ZONAL LUMEN SUMMARY

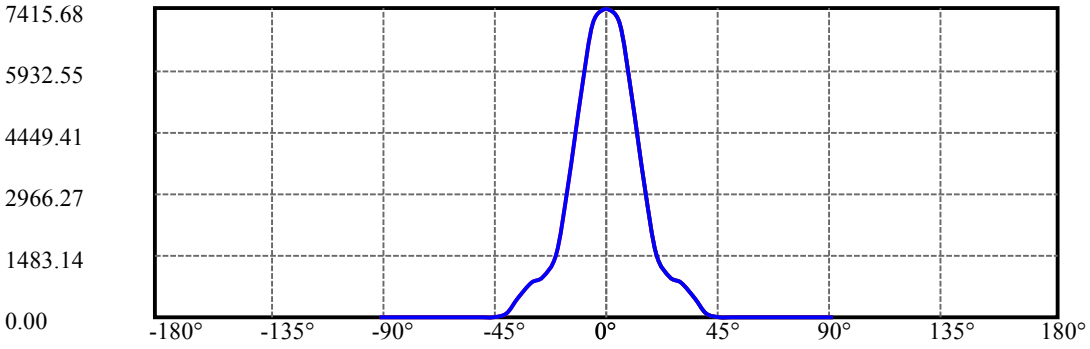
Zone	Lumens	%Lamp	%Fixt
0-30	2066.86	83.14%	89.72%
0-40	2253.39	90.64%	97.82%
0-60	2274.02	91.47%	98.71%
0-90	2300.95	92.56%	99.88%
0-120	2300.95	92.56%	99.88%
0-180	2303.68	92.67%	100.00%
60-90	31.99	1.29%	1.39%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.05	1842.95	74.13%	80.00%

ZONAL LUMEN SUMMARY

0-10	894.50
10-20	723.28
20-30	449.08
30-40	186.53
40-50	10.63
50-60	10.00
60-70	10.49
70-80	10.86
80-90	5.57
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:31.2 Right:31.2
:C90/270Left:31.2 Right:31.2

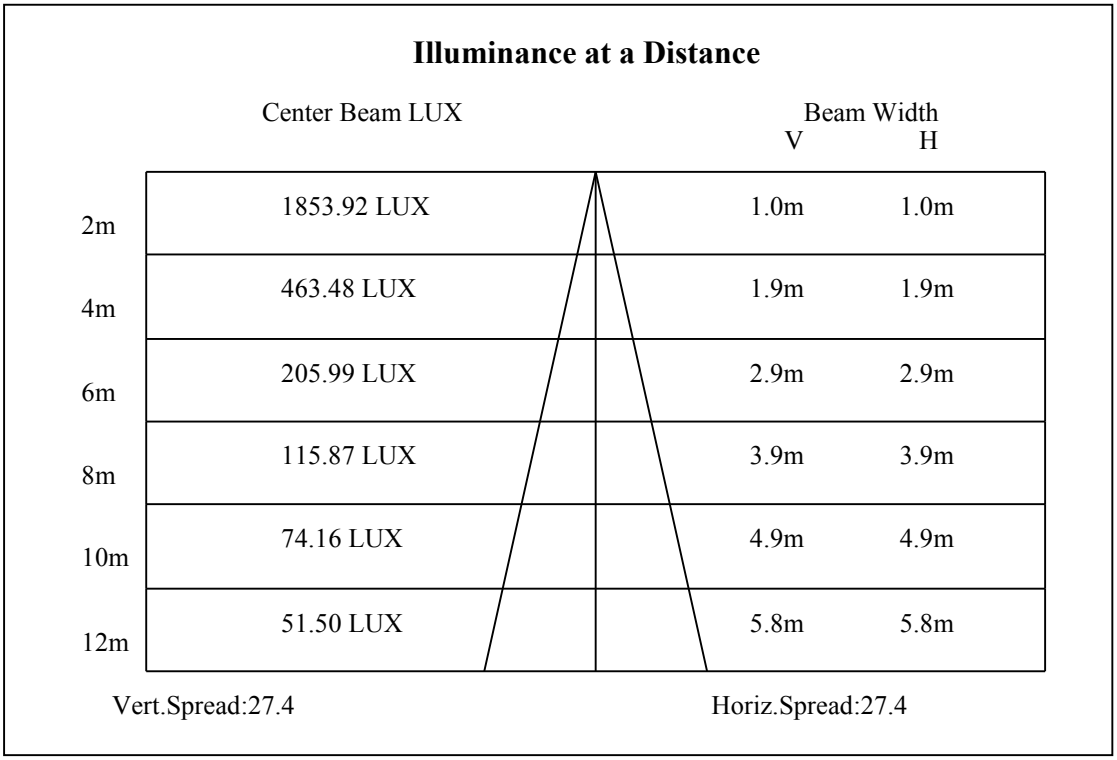
Beam Angle(50%Imax):C0/180Left:13.7 Right:13.7
:C90/270Left:13.7 Right:13.7

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

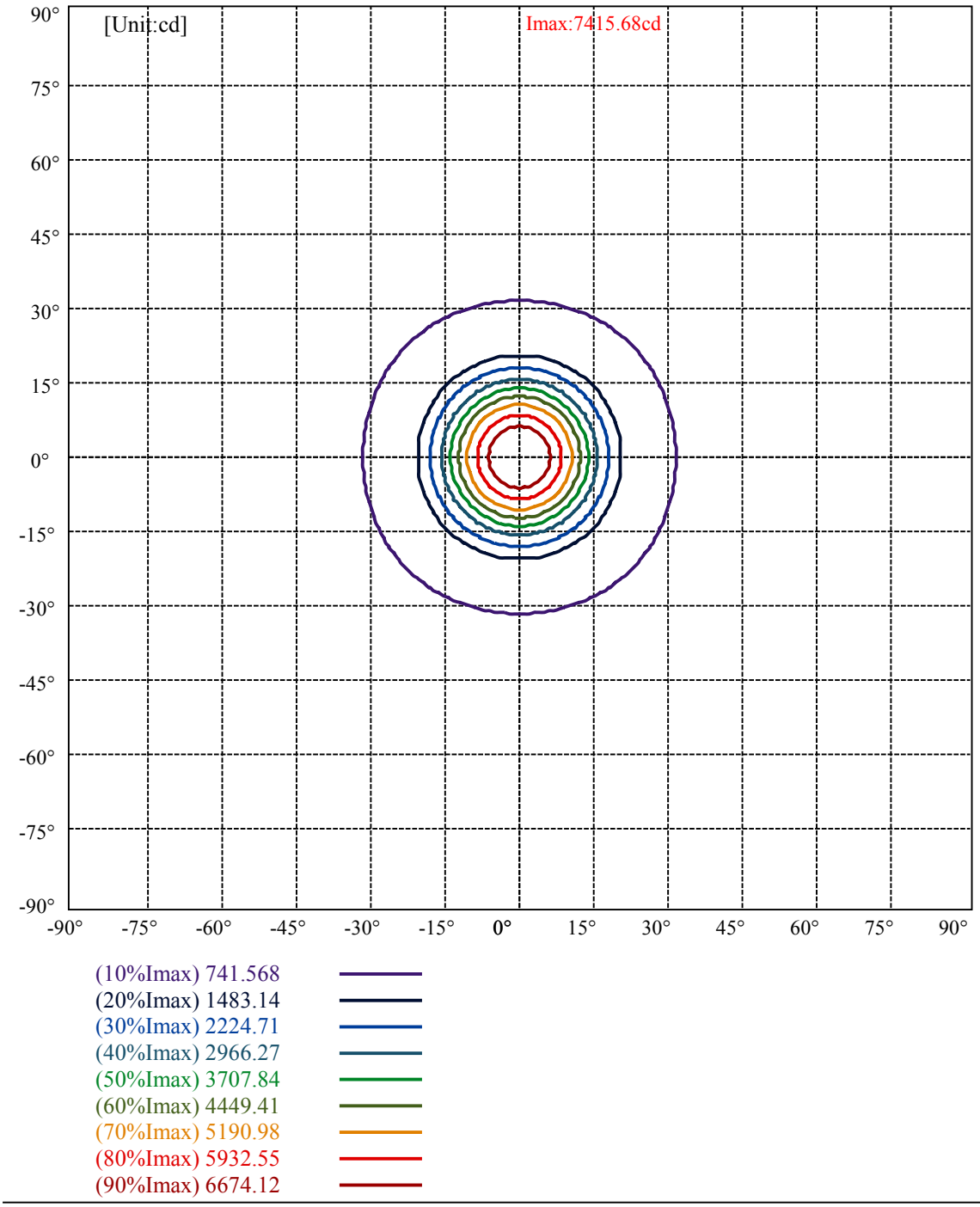
Operator: NT07
Distance(m): 7.42

Lux distance Curve



Equipment: GMS1980 Date: 2018/8/28 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)

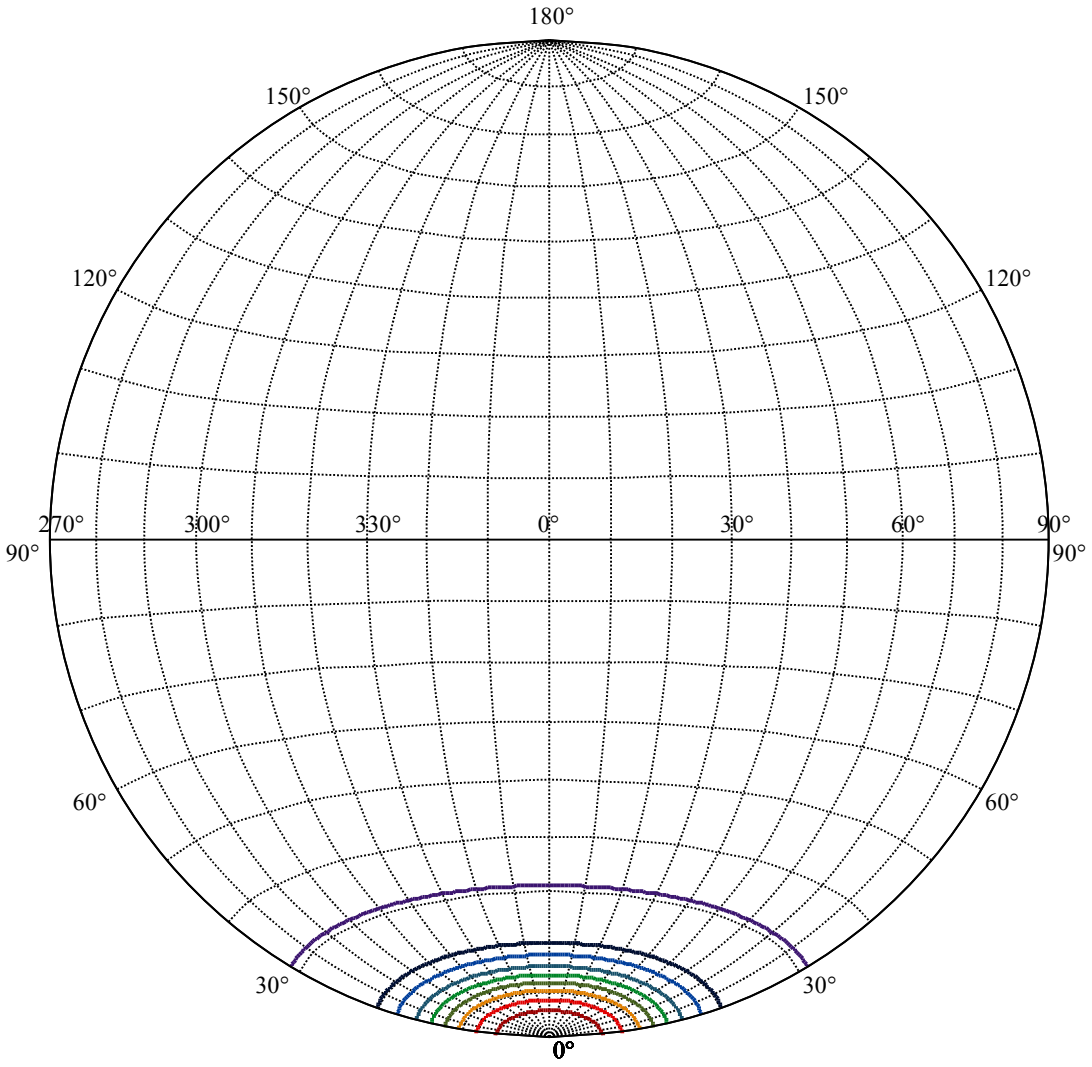


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



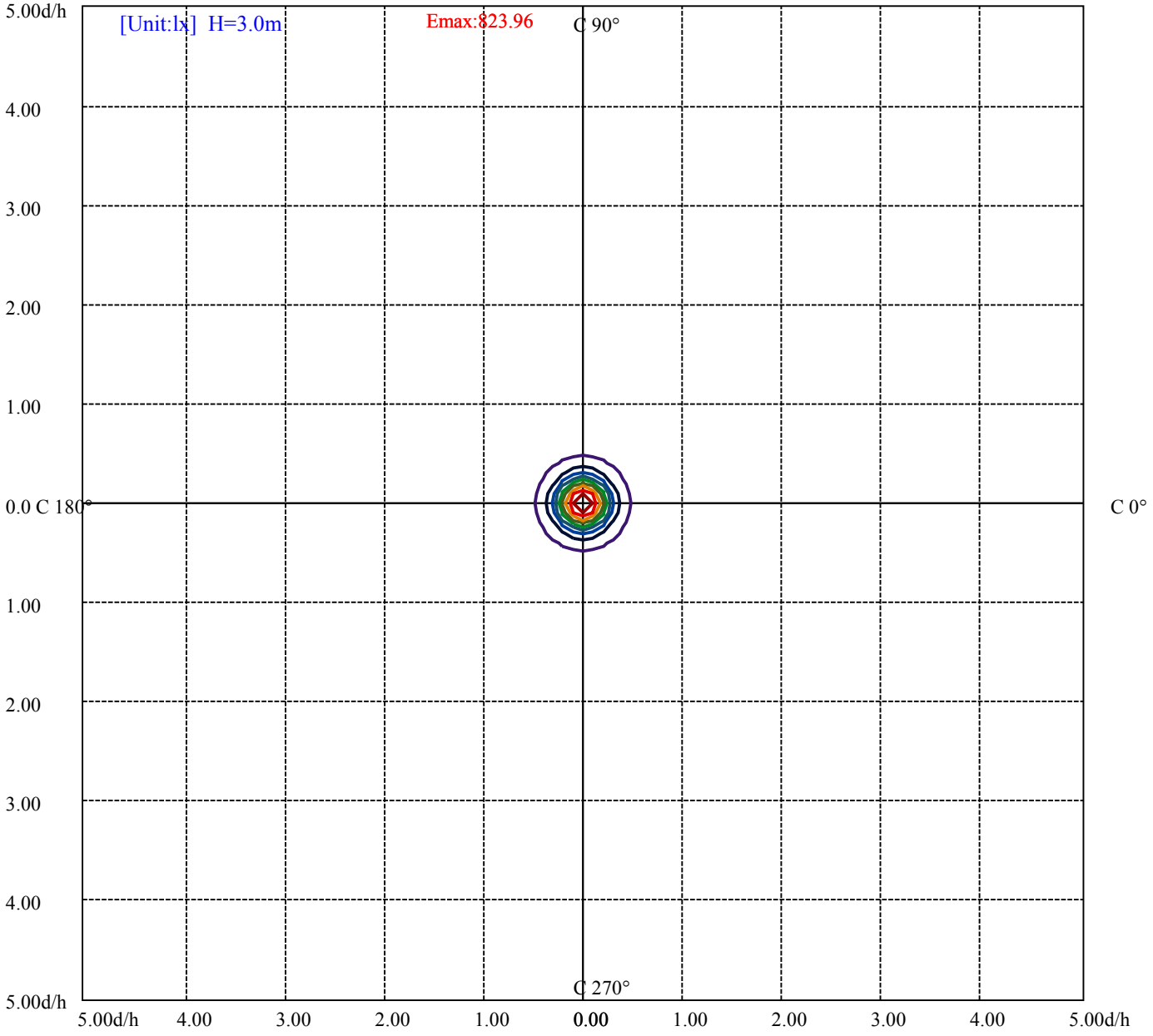
House [Unit:cd] Road

Imax:7415.68

(10%Imax) 741.568
(20%Imax) 1483.14
(30%Imax) 2224.71
(40%Imax) 2966.27
(50%Imax) 3707.84
(60%Imax) 4449.41
(70%Imax) 5190.98
(80%Imax) 5932.55
(90%Imax) 6674.12

Equipment: GMS1980 Date: 2018/8/28 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

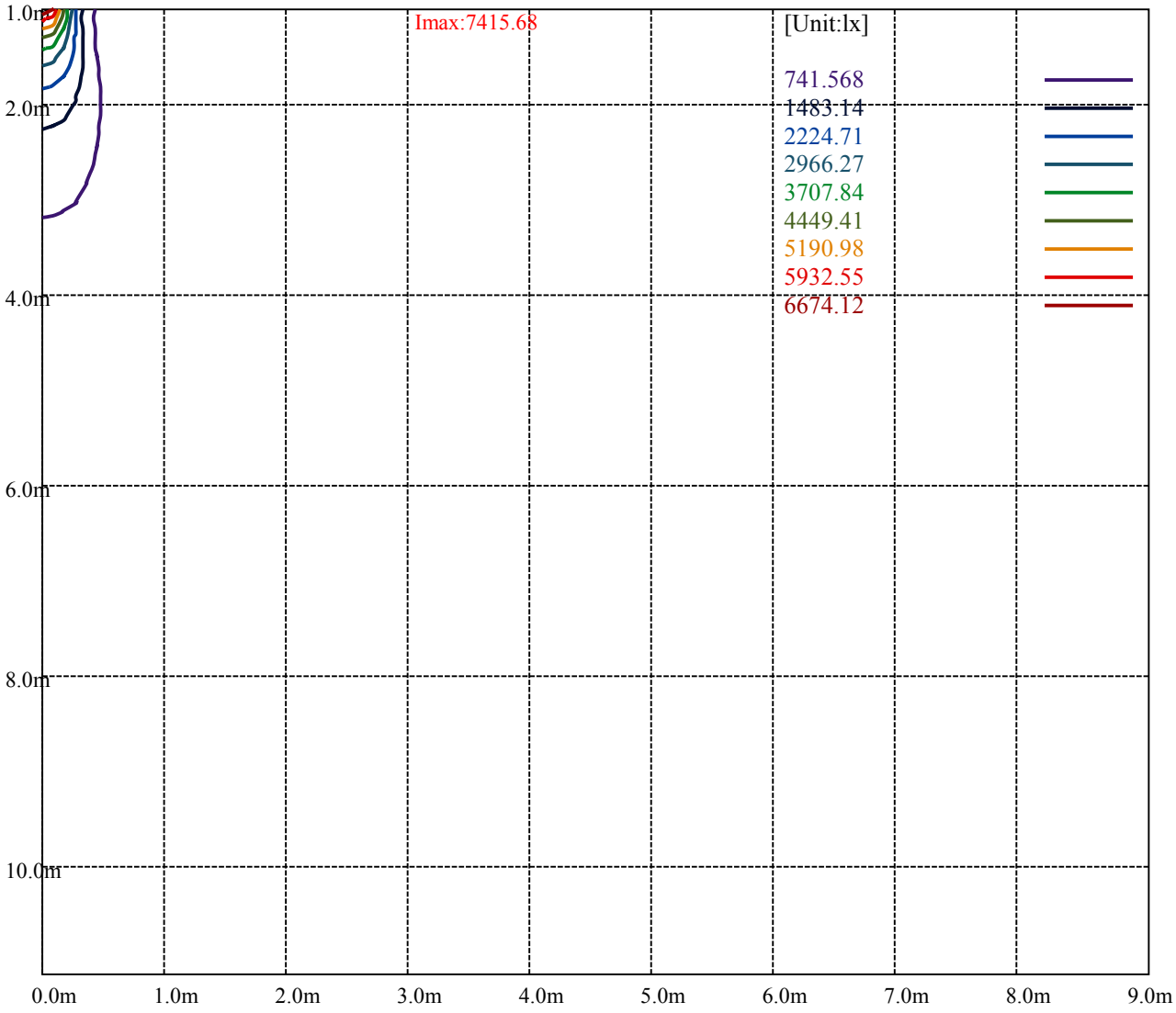
ISO illuminance diagram



(10%Emax) 82.39633
(20%Emax) 164.7922
(30%Emax) 247.1889
(40%Emax) 329.5856
(50%Emax) 411.9822
(60%Emax) 494.3778
(70%Emax) 576.7745
(80%Emax) 659.1711
(90%Emax) 741.5667

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2018/8/28
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

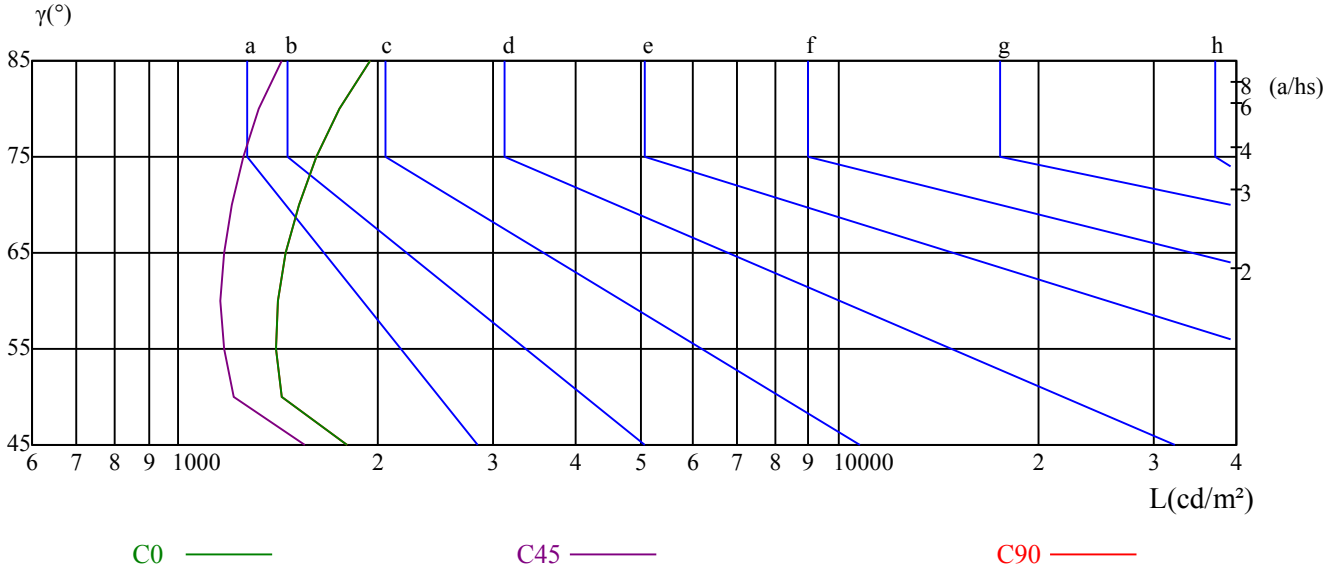
γ	45	50	55	60	65	70	75	80	85
C0	1805	1433	1404	1416	1455	1525	1622	1753	1956
C45	1551	1213	1170	1160	1172	1205	1253	1322	1433
C90	1805	1433	1404	1416	1455	1525	1622	1753	1956

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3499	3499	3499	5585	5585	5585	16596	16596	16596

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

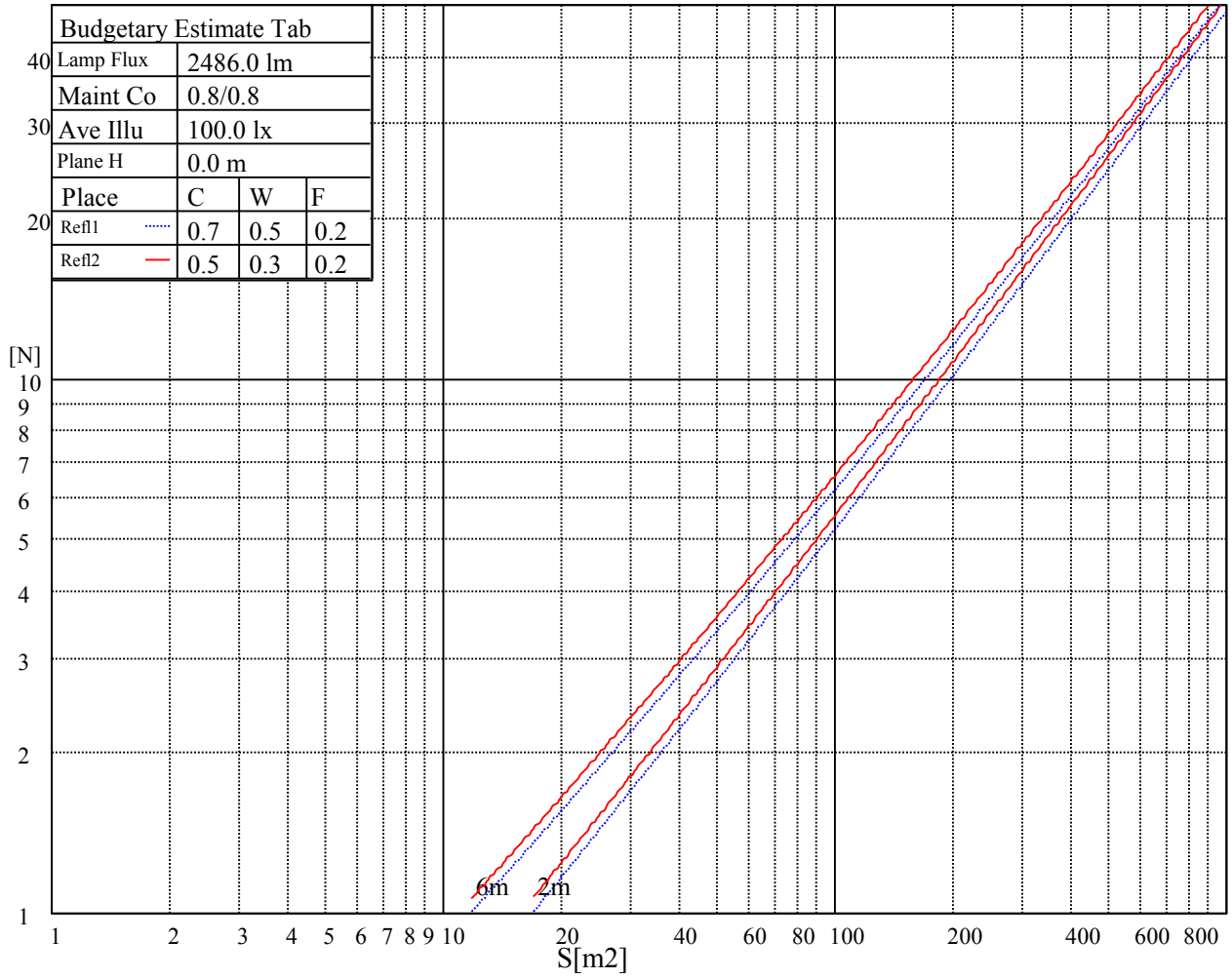
Luminance Limitting Curve



UGR Glare

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	-0.62	0.30	-0.25	0.61	0.92	-0.57	0.34	-0.21	0.65	0.97
	3H	1.72	2.53	2.11	2.86	3.23	1.76	2.56	2.14	2.90	3.27
	4H	2.99	3.73	3.39	4.09	4.48	3.02	3.77	3.43	4.12	4.52
	6H	4.32	5.00	4.74	5.38	5.78	4.36	5.04	4.78	5.42	5.81
	8H	5.00	5.63	5.43	6.03	6.44	5.02	5.66	5.46	6.05	6.46
	12H	6.04	6.66	6.48	7.04	7.47	6.04	6.65	6.48	7.04	7.47
4H	2H	-0.10	0.64	0.31	1.00	1.39	-0.07	0.68	0.34	1.03	1.42
	3H	2.53	3.14	2.94	3.55	3.96	2.56	3.17	2.97	3.58	3.98
	4H	3.96	4.51	4.40	4.93	5.38	3.99	4.54	4.43	4.96	5.41
	6H	5.39	5.86	5.86	6.31	6.78	5.42	5.89	5.89	6.34	6.81
	8H	6.18	6.61	6.65	7.06	7.54	6.19	6.63	6.67	7.08	7.56
	12H	7.22	7.59	7.71	8.08	8.56	7.21	7.58	7.70	8.07	8.55
8H	4H	4.41	4.84	4.89	5.30	5.77	4.43	4.87	4.91	5.32	5.80
	6H	6.08	6.42	6.59	6.92	7.41	6.10	6.44	6.61	6.95	7.43
	8H	7.02	7.32	7.55	7.85	8.34	7.03	7.33	7.57	7.86	8.36
	12H	8.19	8.45	8.71	8.95	9.53	8.18	8.44	8.70	8.94	9.52
12H	4H	4.50	4.87	4.99	5.36	5.84	4.53	4.90	5.02	5.39	5.87
	6H	6.45	6.56	6.79	7.03	7.58	6.47	6.58	6.81	7.05	7.60
	8H	7.29	7.55	7.82	8.05	8.63	7.30	7.56	7.83	8.06	8.64
Variation with the observer position at spacings:											
S = 1.0H		5.5/-7.8					5.5/-7.8				
S = 1.5H		7.9/-6.1					7.9/-6.1				
S = 2.0H		9.5/-4.9					9.5/-4.9				
Standard tables:		BK2					BK2				
Uncorrected UGR		-3.7					-3.7				

Budgetary Estimate Table

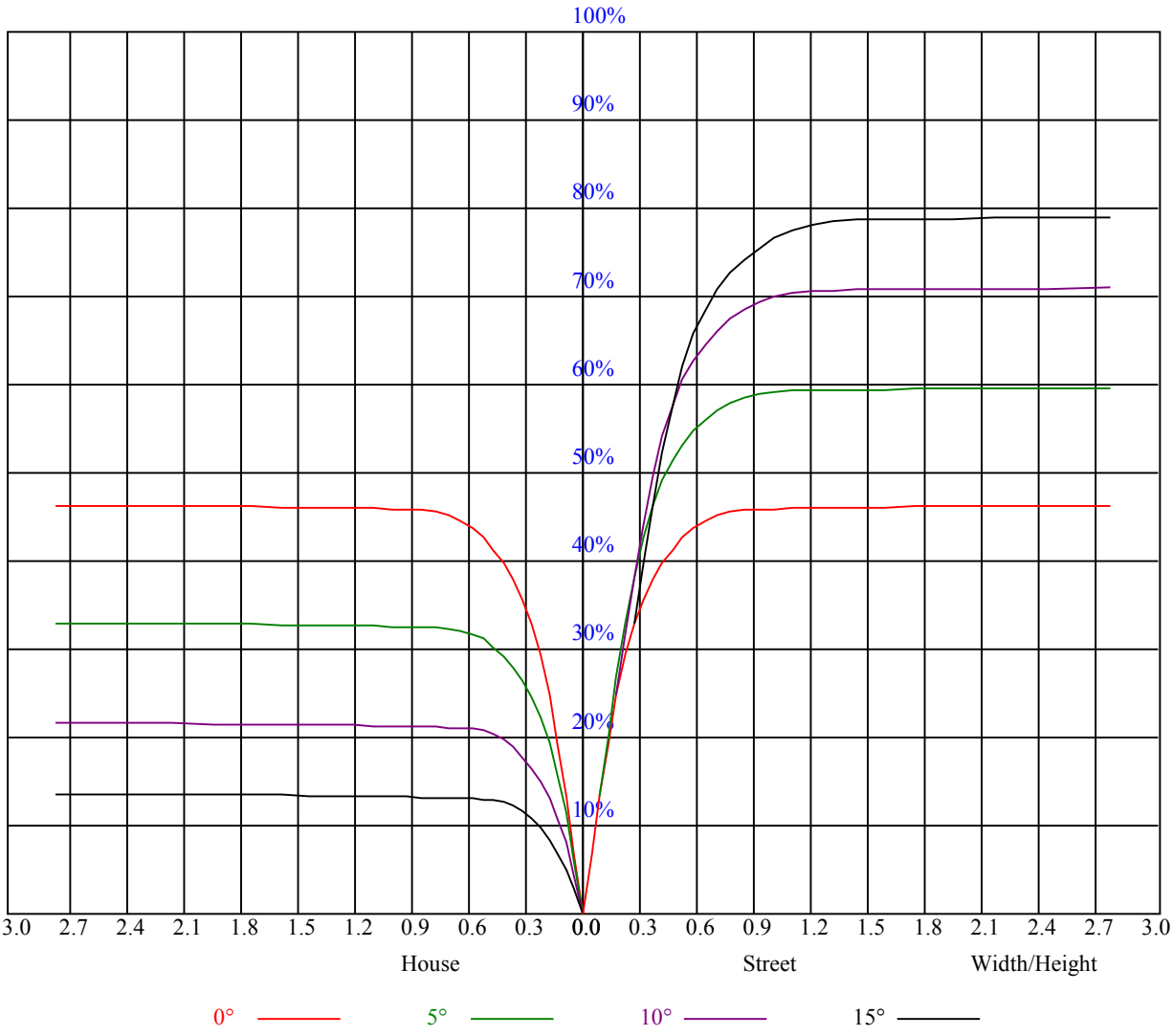


Equipment: GMS1980 Date: 2018/8/28 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	1.12	1.12	1.12	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.04	1.01	0.99	1.02	0.99	0.97	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.87
2	0.98	0.95	0.92	0.97	0.93	0.91	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.85	0.84
3	0.94	0.90	0.86	0.92	0.89	0.86	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.80
4	0.90	0.85	0.82	0.89	0.85	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.77
5	0.86	0.82	0.78	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.75
6	0.83	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.76	0.73	0.72
7	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
8	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
9	0.75	0.71	0.68	0.74	0.70	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.66
10	0.73	0.68	0.66	0.72	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/28
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

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	7407.29	7345.62	6089.79	3903.50	1936.88	1040.57	870.44	622.69	297.30
45.0	7397.93	7334.61	6112.36	3907.35	1915.41	1019.64	853.92	611.13	278.03
90.0	7422.15	7096.22	5428.56	3231.26	1557.55	950.22	826.62	476.73	78.79
135.0	7435.37	7053.28	5496.83	3172.35	1593.33	970.09	835.76	521.38	79.01
180.0	7407.29	6726.24	4688.60	2443.40	1081.47	903.86	761.15	272.53	31.82
225.0	7397.93	6651.36	4716.13	2383.39	1093.03	916.25	782.30	313.93	31.38
270.0	7422.15	6976.20	5379.56	2966.99	1418.80	959.63	846.22	458.07	59.74
315.0	7435.37	7081.90	5301.93	2883.85	1430.92	941.13	822.65	452.56	51.75
360.0	7407.29	7345.62	6089.79	3903.50	1936.88	1040.57	870.44	622.69	297.30

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	17.84	11.89	11.18	10.79	10.52	10.35	10.24	10.19	10.08
45.0	19.55	11.78	11.12	10.79	10.52	10.41	10.30	10.19	10.13
90.0	17.29	11.56	11.01	10.63	10.41	10.30	10.19	10.13	10.08
135.0	15.20	11.78	11.12	10.74	10.46	10.30	10.24	10.08	10.19
180.0	12.22	11.40	10.90	10.57	10.41	10.30	10.19	10.13	10.08
225.0	12.06	11.23	10.79	10.57	10.41	10.24	10.19	10.08	10.13
270.0	12.44	11.40	10.90	10.57	10.35	10.24	10.13	10.08	10.46
315.0	12.61	11.51	10.96	10.63	10.41	10.30	10.13	10.13	10.52
360.0	17.84	11.89	11.18	10.79	10.52	10.35	10.24	10.19	10.08

C/γ(°)	90.0
0.0	9.97
45.0	10.02
90.0	9.97
135.0	9.97
180.0	9.97
225.0	10.08
270.0	9.97
315.0	9.91
360.0	9.97