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Nata

LumCAT: 4-2267-M
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC2018091106
LampCAT: LUMINUS CXM-11-AC30
Lamp flux(lm): 2527.0
Number of Lamps: 1
Length(mm): 100
Phm Type: C

Voltage(V): 34.7000
Current(A): 0.5100
Power (W): 17.6970
PF: 0.0000
Ballast type: DC
Width(mm): 100
Height(mm): 0

Photometric Results

Lumens(lm): 2291.66
Efficiency(%): 90.69%
Lumens(lm)/Power(W): 131.42
Central intensity(cd): 6063.609
Maximum intensity(cd): 6063.609
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=29.9
[C90/270]Total=29.9
Field angle(10%Imax): [C0/180]Total=68.1
[C90/270]Total=68.1
Maximum s/h(1/2): C0_180=0.49 C90_270=0.49
Maximum s/h(1/4): C0_180=0.53 C90_270=0.53
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.04%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.139%

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2018/9/11
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6063.609	36.262	36.262	1.435%	1.582%
5.0	5562.492	265.739	302	10.516%	13.178%
10.0	4311.633	410.394	712.395	16.240%	31.086%
15.0	3019.641	428.392	1140.786	16.953%	49.780%
20.0	1933.664	362.512	1503.298	14.346%	65.599%
25.0	1204.812	279.098	1782.396	11.045%	77.777%
30.0	931.029	255.166	2037.562	10.098%	88.912%
35.0	531.584	167.129	2204.691	6.614%	96.205%
40.0	96.715	34.076	2238.767	1.348%	97.692%
45.0	13.859	5.371	2244.139	.213%	97.926%
50.0	12.087	5.075	2249.214	.201%	98.148%
55.0	11.095	4.982	2254.196	.197%	98.365%
60.0	10.547	5.007	2259.203	.198%	98.584%
65.0	10.308	5.121	2264.323	.203%	98.807%
70.0	10.322	5.317	2269.64	.210%	99.039%
75.0	13.500	7.148	2276.788	.283%	99.351%
80.0	12.059	6.509	2283.297	.258%	99.635%
85.0	10.252	5.598	2288.895	.222%	99.879%
90.0	10.097	2.767	2291.662	.110%	100.000%

Zonal flux distribution table

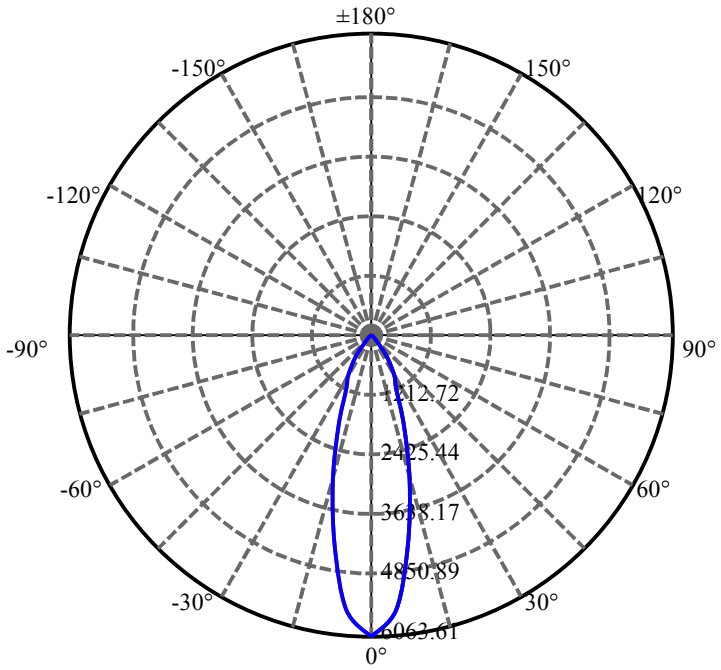
ZONAL LUMEN SUMMARY

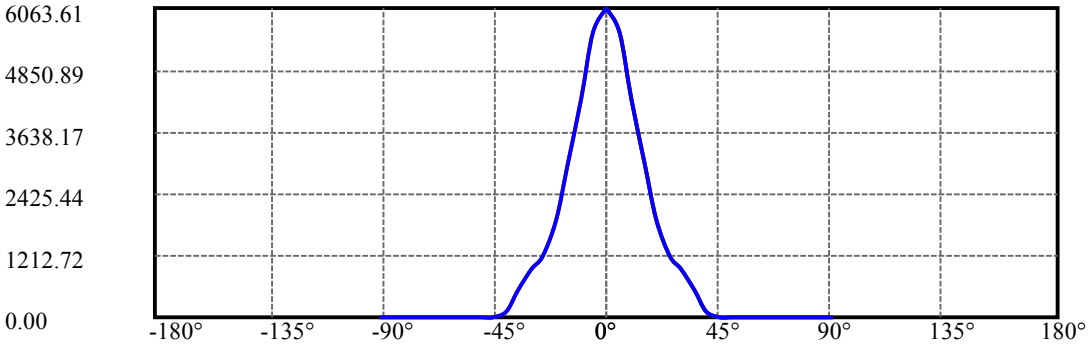
Zone	Lumens	%Lamp	%Fixt
0-30	2037.56	80.63%	88.91%
0-40	2238.77	88.59%	97.69%
0-60	2259.20	89.40%	98.58%
0-90	2288.89	90.58%	99.88%
0-120	2288.89	90.58%	99.88%
0-180	2291.66	90.69%	100.00%
60-90	34.70	1.37%	1.51%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.00	1833.33	72.55%	80.00%

ZONAL LUMEN SUMMARY

0-10	712.39
10-20	790.90
20-30	534.26
30-40	201.21
40-50	10.45
50-60	9.99
60-70	10.44
70-80	13.66
80-90	5.60
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):

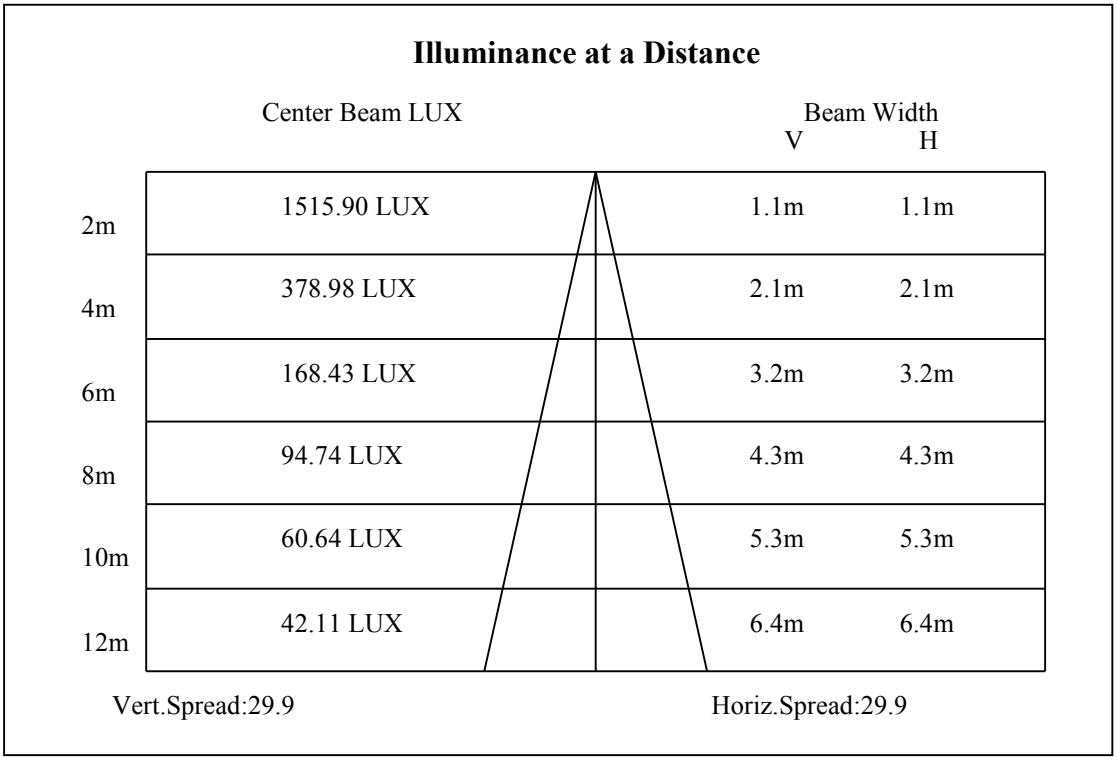
C0/C180:

C90/C270:

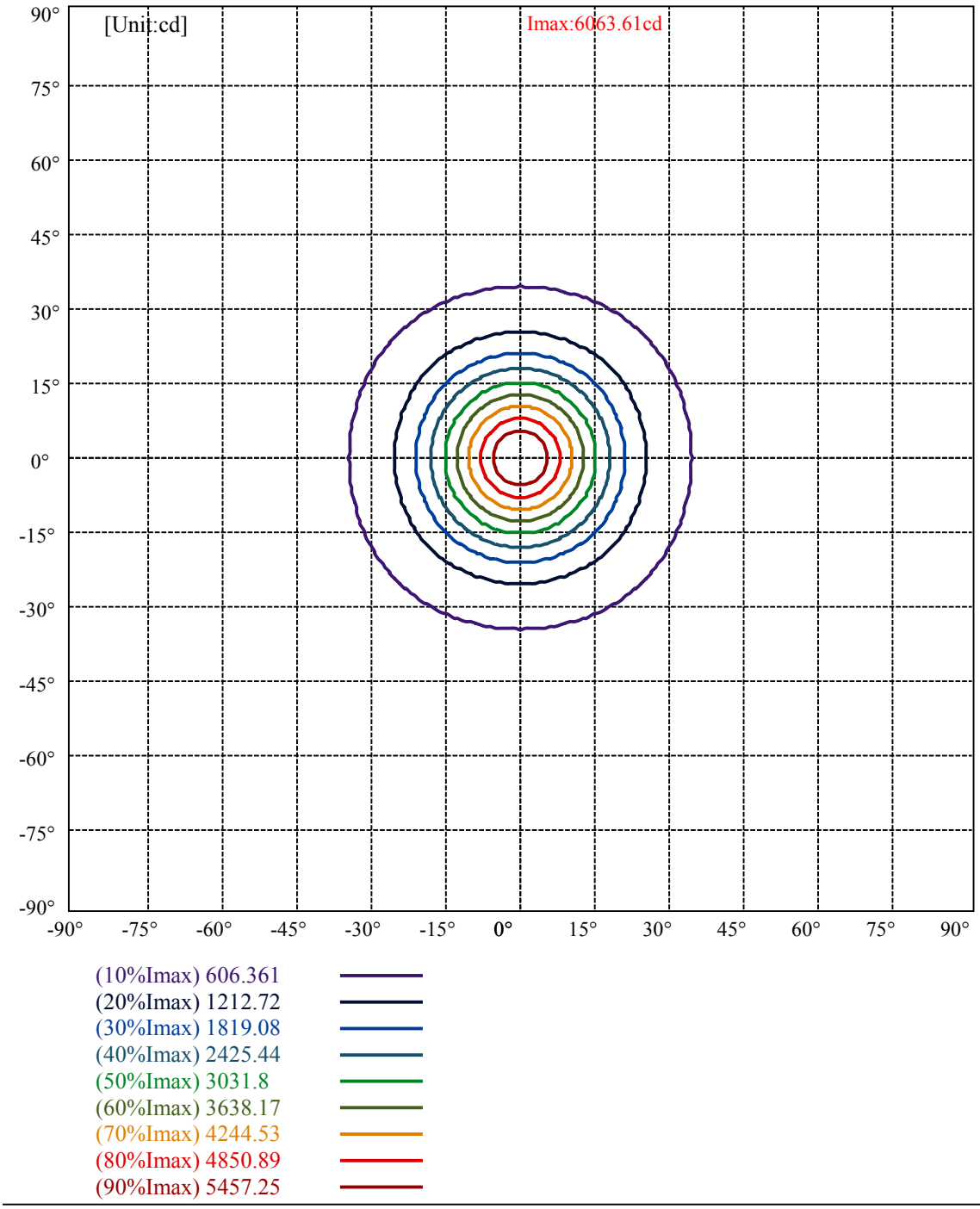
Field angle(10%Imax):C0/180Left:34.1 Right:34.1
:C90/270Left:34.1 Right:34.1

Beam Angle(50%Imax):C0/180Left:15.0 Right:15.0
:C90/270Left:15.0 Right:15.0

Lux distance Curve



ISO-Intensity(V-H)

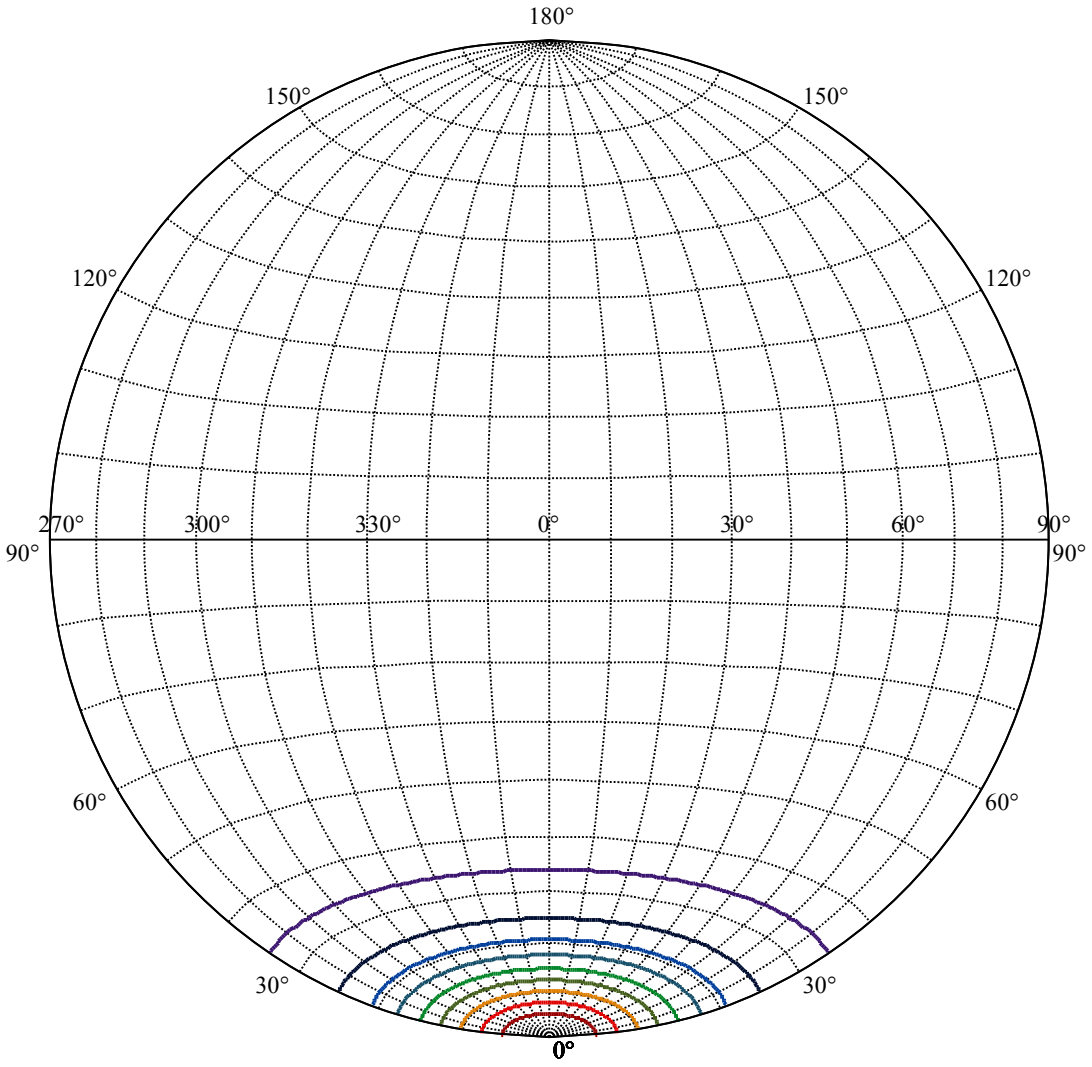


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/9/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

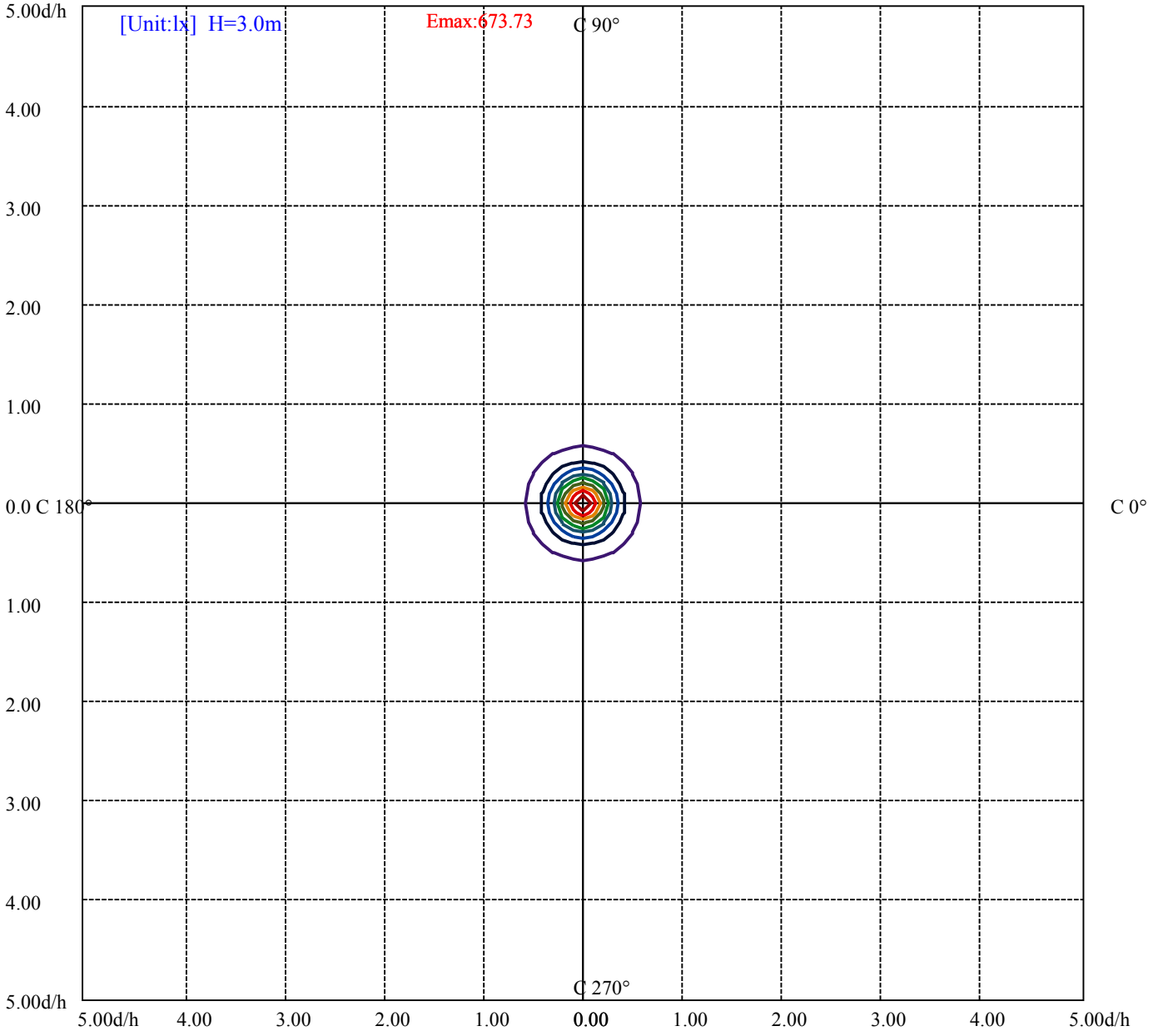
Imax:6063.61

(10%Imax) 606.361
(20%Imax) 1212.72
(30%Imax) 1819.08
(40%Imax) 2425.44
(50%Imax) 3031.8
(60%Imax) 3638.17
(70%Imax) 4244.53
(80%Imax) 4850.89
(90%Imax) 5457.25

Equipment: GMS1980 Date: 2018/9/11 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.50

Nata 4-2267-M

ISO illuminance diagram

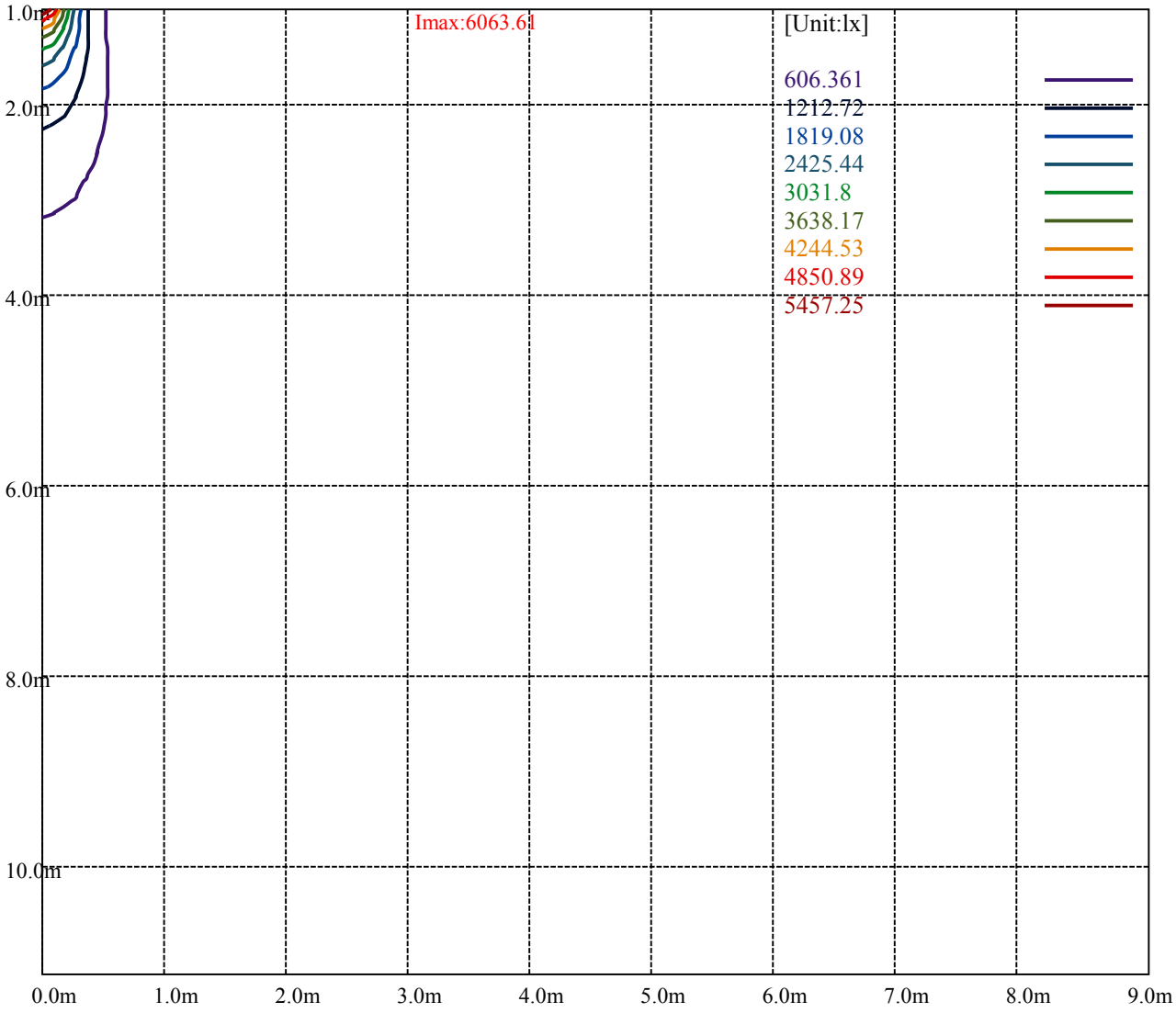


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/9/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/9/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

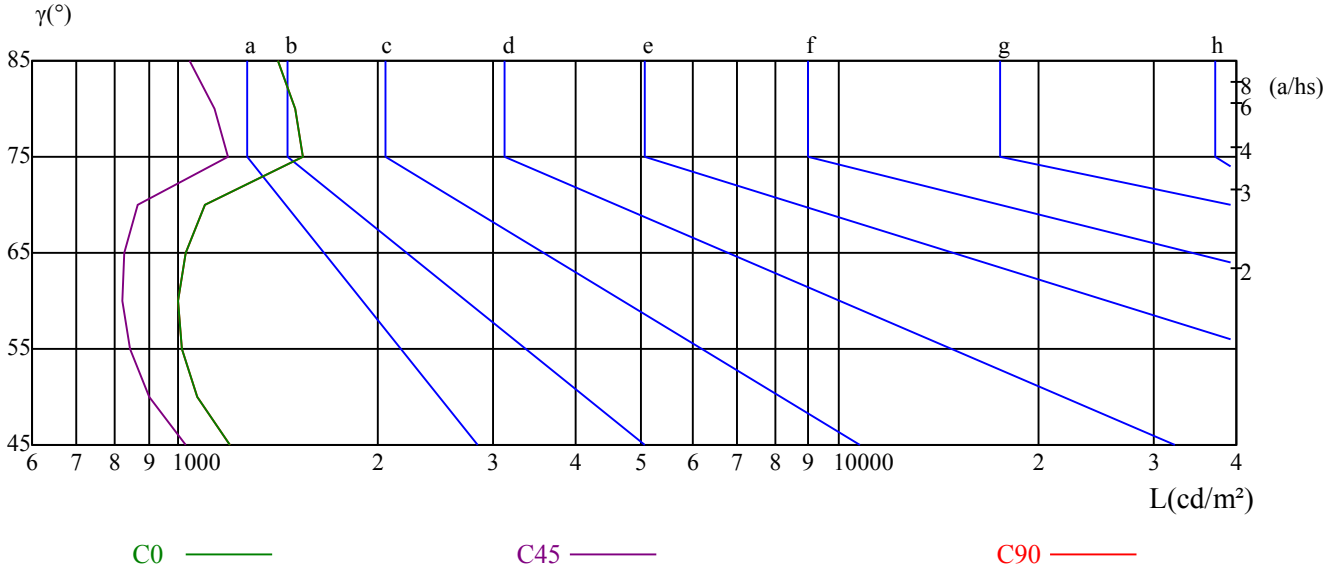
γ	45	50	55	60	65	70	75	80	85
C0	1195	1067	1011	1000	1028	1094	1539	1500	1415
C45	1029	905	844	822	829	866	1191	1132	1037
C90	1195	1067	1011	1000	1028	1094	1539	1500	1415

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2439	2439	2439	5216	5216	5216	11762	11762	11762

Glare Table

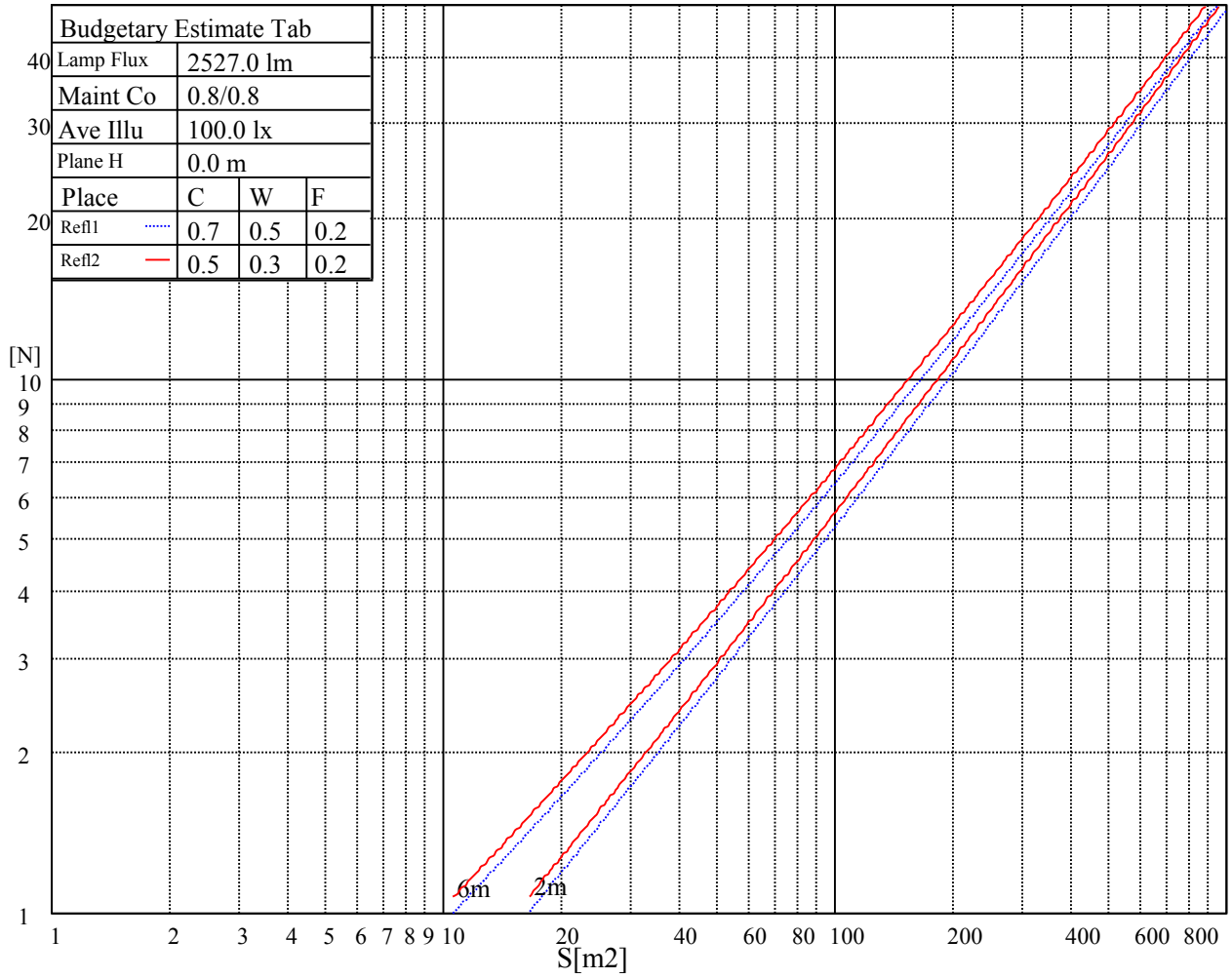
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limitting Curve



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	-1.73	-0.81	-1.37	-0.50	-0.19	-1.74	-0.82	-1.37	-0.51	-0.19
	3H	0.59	1.40	0.97	1.73	2.10	0.59	1.40	0.97	1.73	2.10
	4H	2.27	3.02	2.68	3.38	3.77	2.47	3.22	2.88	3.57	3.97
	6H	3.83	4.52	4.25	4.90	5.29	4.20	4.88	4.62	5.26	5.66
	8H	4.50	5.14	4.94	5.54	5.95	4.88	5.52	5.32	5.92	6.33
	12H	5.44	6.06	5.88	6.44	6.87	5.77	6.39	6.21	6.77	7.20
4H	2H	-1.23	-0.49	-0.83	-0.13	0.26	-1.24	-0.49	-0.83	-0.14	0.26
	3H	1.49	2.10	1.91	2.51	2.92	1.49	2.11	1.91	2.52	2.93
	4H	3.46	4.01	3.90	4.43	4.88	3.66	4.21	4.09	4.63	5.08
	6H	5.00	5.47	5.47	5.92	6.39	5.31	5.78	5.78	6.23	6.70
	8H	5.76	6.19	6.23	6.65	7.12	6.09	6.52	6.56	6.98	7.45
	12H	6.67	7.05	7.16	7.54	8.01	6.96	7.33	7.45	7.82	8.30
8H	4H	4.13	4.57	4.61	5.02	5.49	4.29	4.72	4.76	5.18	5.65
	6H	5.84	6.19	6.36	6.69	7.18	6.11	6.45	6.62	6.96	7.44
	8H	6.71	7.02	7.25	7.54	8.04	6.99	7.30	7.53	7.82	8.32
	12H	7.71	7.97	8.23	8.47	9.05	7.95	8.21	8.47	8.71	9.29
12H	4H	4.24	4.62	4.74	5.11	5.59	4.38	4.76	4.88	5.25	5.73
	6H	6.23	6.33	6.56	6.81	7.36	6.47	6.57	6.81	7.05	7.60
	8H	6.98	7.24	7.50	7.74	8.32	7.24	7.50	7.76	8.00	8.58
Variation with the observer position at spacings:											
S = 1.0H		5.6/-7.9					5.6/-7.9				
S = 1.5H		7.9/-5.9					7.9/-5.9				
S = 2.0H		9.5/-4.5					9.5/-4.5				
Standard tables:		BK2					BK2				
Uncorrected UGR		-4.0					-4.0				

Budgetary Estimate Table

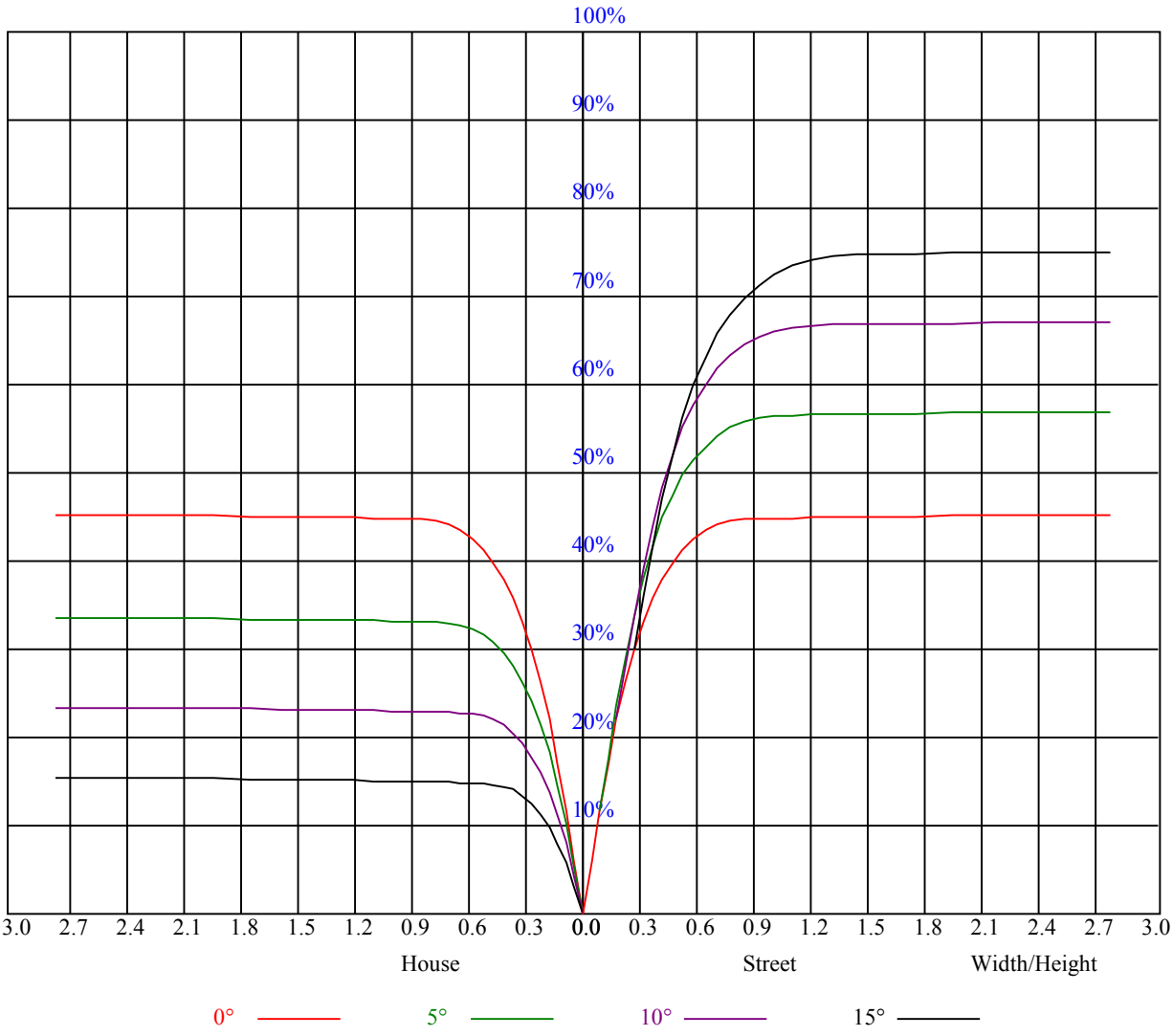


Equipment: GMS1980 Date: 2018/9/11 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.50

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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.01	0.99	0.97	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.85
2	0.96	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.86	0.88	0.86	0.84	0.86	0.84	0.83	0.81
3	0.91	0.87	0.83	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.82	0.80	0.83	0.81	0.79	0.78
4	0.87	0.82	0.79	0.86	0.82	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.74
5	0.83	0.78	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.72
6	0.79	0.75	0.72	0.79	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.66	0.63	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/9/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

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	6082.31	5565.94	4241.25	3064.50	1867.50	1242.56	918.00	541.13	28.13
45.0	6051.38	5837.06	4642.88	3384.56	2137.50	1375.31	1008.56	671.06	298.13
90.0	6078.38	5699.25	4407.19	3179.25	1978.88	1111.95	952.76	575.55	28.74
135.0	6042.38	5843.25	4685.63	3315.94	2205.00	1362.38	985.50	684.56	317.25
180.0	6082.31	5621.06	4370.63	3041.44	2005.31	1107.68	930.94	578.14	29.03
225.0	6051.38	5209.31	3996.00	2673.00	1698.19	1103.01	868.28	356.46	23.57
270.0	6078.38	5472.56	4214.25	2879.44	1856.81	1229.63	917.44	475.88	25.09
315.0	6042.38	5251.50	3935.25	2619.00	1720.13	1105.99	866.76	369.90	23.79
360.0	6082.31	5565.94	4241.25	3064.50	1867.50	1242.56	918.00	541.13	28.13

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	13.89	12.04	11.03	10.46	10.29	10.29	12.60	12.49	10.24
45.0	14.63	12.49	11.31	10.69	10.35	10.29	10.29	11.93	10.41
90.0	14.06	12.21	11.14	10.58	10.24	10.24	11.36	10.69	10.18
135.0	14.34	12.49	11.36	10.69	10.29	10.24	13.05	14.46	10.24
180.0	13.61	11.93	11.03	10.46	10.24	10.24	13.39	12.94	10.18
225.0	13.28	11.76	10.91	10.52	10.41	10.52	17.04	10.46	10.29
270.0	13.78	11.98	11.08	10.52	10.29	10.29	12.26	12.32	10.24
315.0	13.28	11.81	10.91	10.46	10.35	10.46	18.00	11.19	10.24
360.0	13.89	12.04	11.03	10.46	10.29	10.29	12.60	12.49	10.24

C/γ(°)	90.0
0.0	10.07
45.0	10.13
90.0	10.13
135.0	10.07
180.0	10.07
225.0	10.13
270.0	10.13
315.0	10.07
360.0	10.07