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Nata

LumCAT: 1655-S
Luminaire: 92.70.044.00

Report No: NATA0100	Voltage(V): 38.5000
Test No: GC2018070618	Current(A): 0.2000
LampCAT: NICHIA NTCWT012B-V3	Power (W): 7.7000
Lamp flux(lm): 756.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 32	Width(mm): 32
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 641.50
Efficiency(%): 84.86%
Lumens(lm)/Power(W): 84.55
Central intensity(cd): 1700.142
Maximum intensity(cd): 1700.142
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=31.9
[C90/270]Total=31.9
Field angle(10%Imax): [C0/180]Total=64.3
[C90/270]Total=64.3
Maximum s/h(1/2): C0_180=0.53 C90_270=0.53
Maximum s/h(1/4): C0_180=0.54 C90_270=0.54
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 86.12%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.925%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1700.142	10.167	10.167	1.345%	1.585%
5.0	1575.852	75.284	85.451	9.958%	13.320%
10.0	1275.271	121.384	206.835	16.056%	32.242%
15.0	917.990	130.234	337.069	17.227%	52.543%
20.0	556.558	104.340	441.409	13.802%	68.808%
25.0	335.280	77.669	519.078	10.274%	80.916%
30.0	225.325	61.755	580.832	8.169%	90.542%
35.0	96.197	30.244	611.076	4.001%	95.257%
40.0	23.234	8.186	619.263	1.083%	96.533%
45.0	9.779	3.790	623.053	.501%	97.124%
50.0	7.226	3.034	626.087	.401%	97.597%
55.0	5.829	2.617	628.705	.346%	98.005%
60.0	4.921	2.336	631.04	.309%	98.369%
65.0	4.301	2.137	633.177	.283%	98.702%
70.0	3.937	2.028	635.205	.268%	99.018%
75.0	3.606	1.909	637.114	.253%	99.316%
80.0	3.352	1.809	638.923	.239%	99.598%
85.0	3.248	1.774	640.697	.235%	99.874%
90.0	2.946	0.807	641.504	.107%	100.000%

Zonal flux distribution table

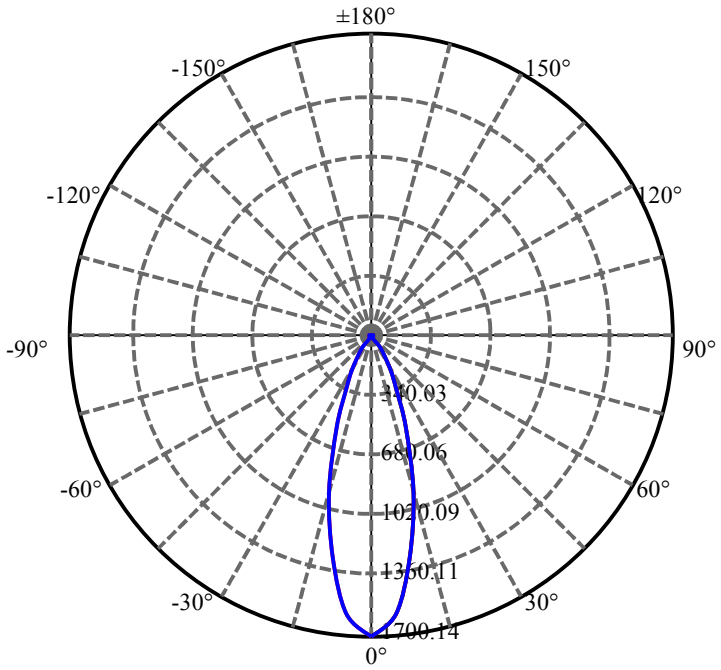
ZONAL LUMEN SUMMARY

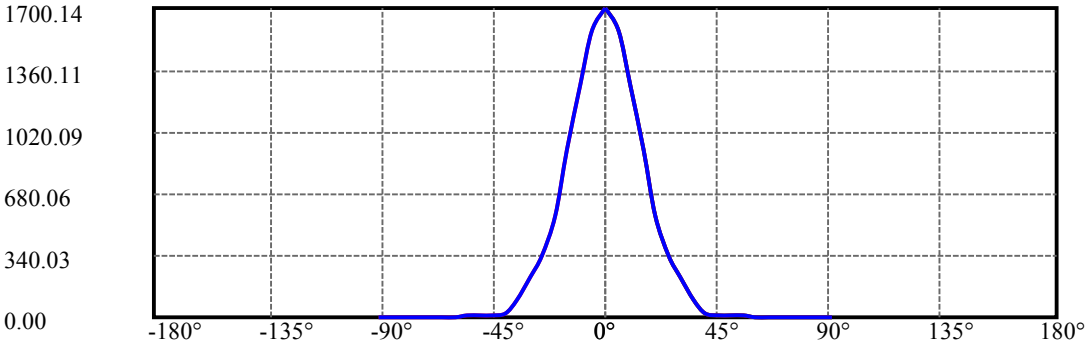
Zone	Lumens	%Lamp	%Fixt
0-30	580.83	76.83%	90.54%
0-40	619.26	81.91%	96.53%
0-60	631.04	83.47%	98.37%
0-90	640.70	84.75%	99.87%
0-120	640.70	84.75%	99.87%
0-180	641.50	84.86%	100.00%
60-90	11.99	1.59%	1.87%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.62	513.20	67.88%	80.00%

ZONAL LUMEN SUMMARY

0-10	206.84
10-20	234.57
20-30	139.42
30-40	38.43
40-50	6.82
50-60	4.95
60-70	4.16
70-80	3.72
80-90	1.77
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:

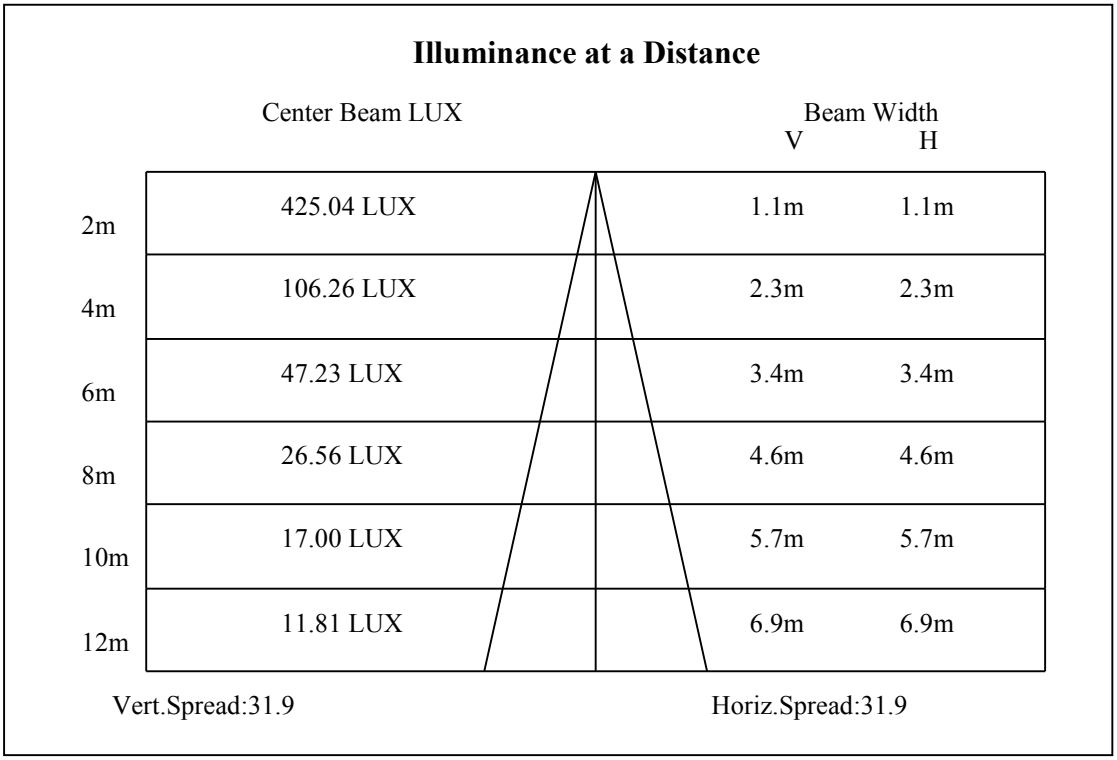
C90/C270:

Field angle(10%Imax):C0/180Left:32.1 Right:32.1
:C90/270Left:32.1 Right:32.1

Beam Angle(50%Imax):C0/180Left:15.9 Right:15.9
:C90/270Left:15.9 Right:15.9

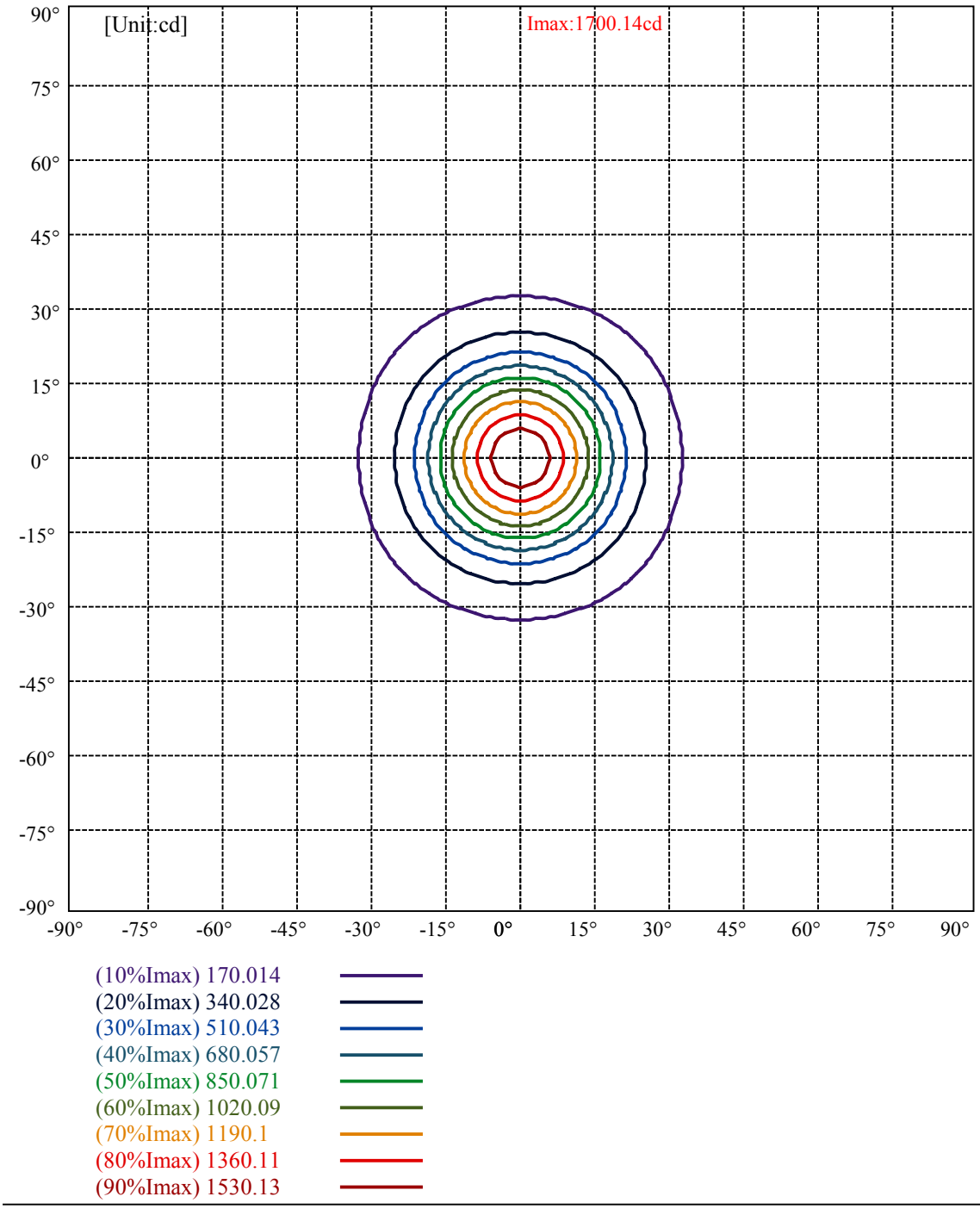
Equipment: GMS1980 Date: 2018/7/6 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Lux distance Curve



Equipment: GMS1980 Date: 2018/7/6 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

ISO-Intensity(V-H)

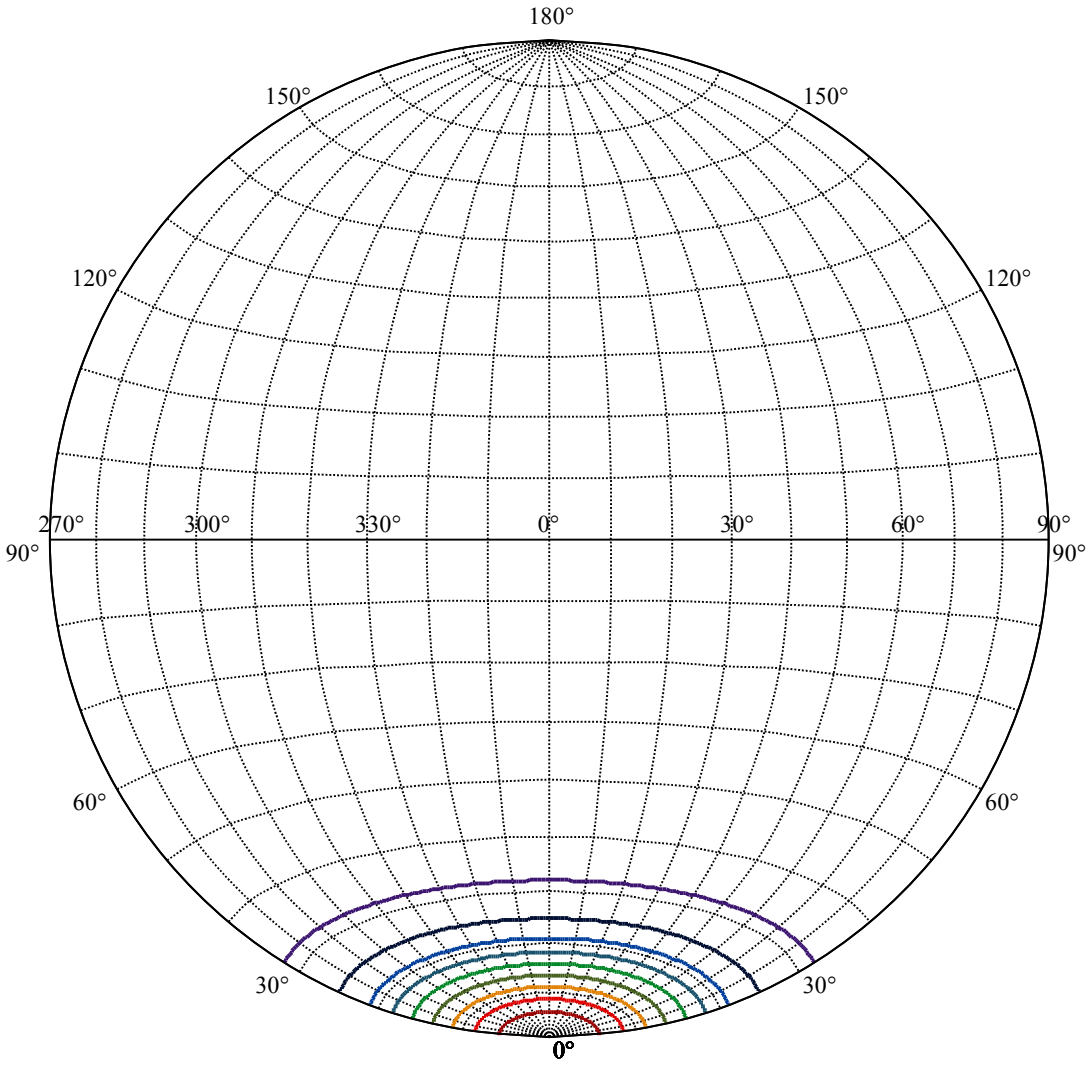


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/7/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1700.14

(10%Imax) 170.014
(20%Imax) 340.028
(30%Imax) 510.043
(40%Imax) 680.057
(50%Imax) 850.071
(60%Imax) 1020.09
(70%Imax) 1190.1
(80%Imax) 1360.11
(90%Imax) 1530.13

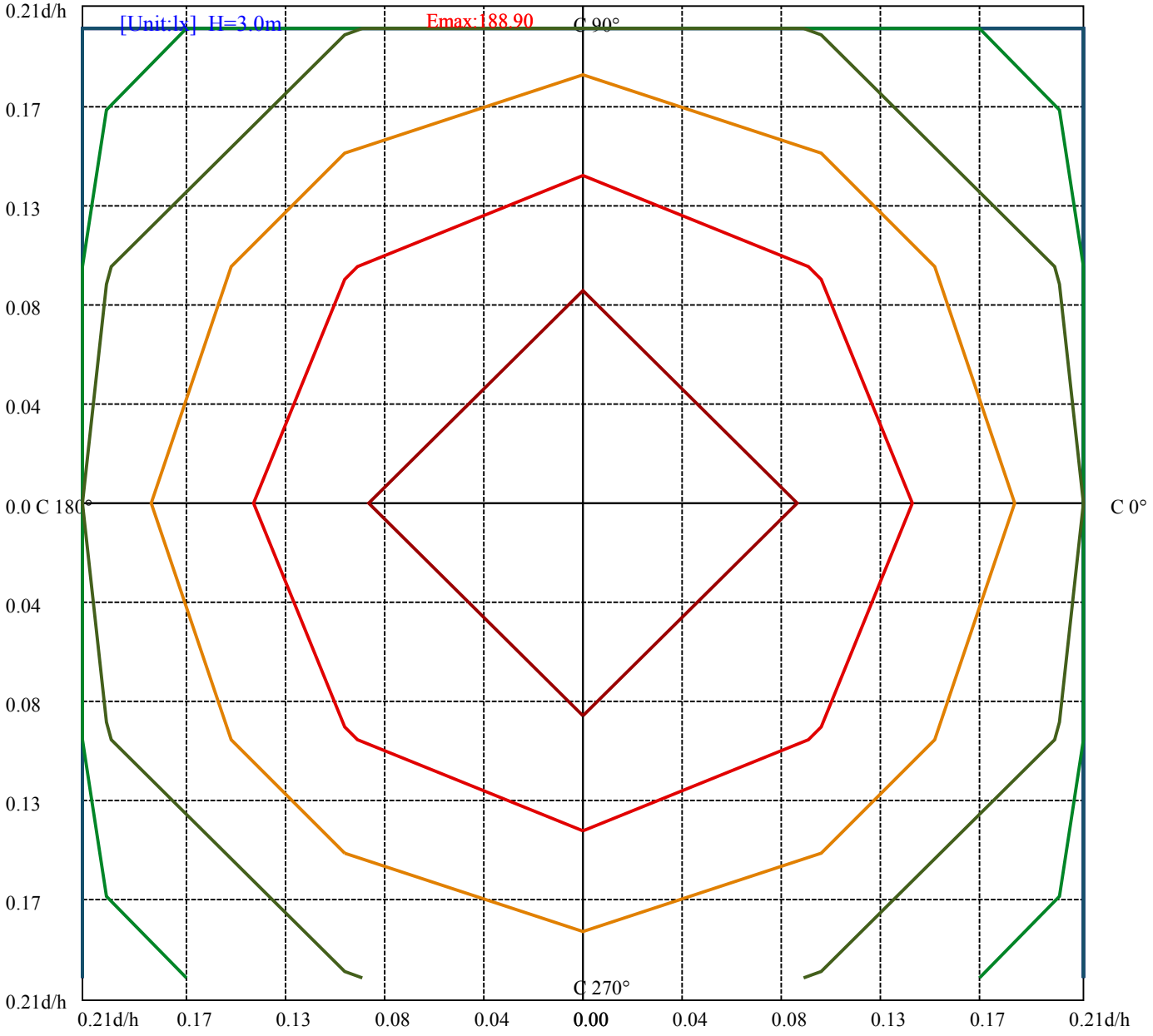
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/7/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Nata 1655-S

ISO illuminance diagram



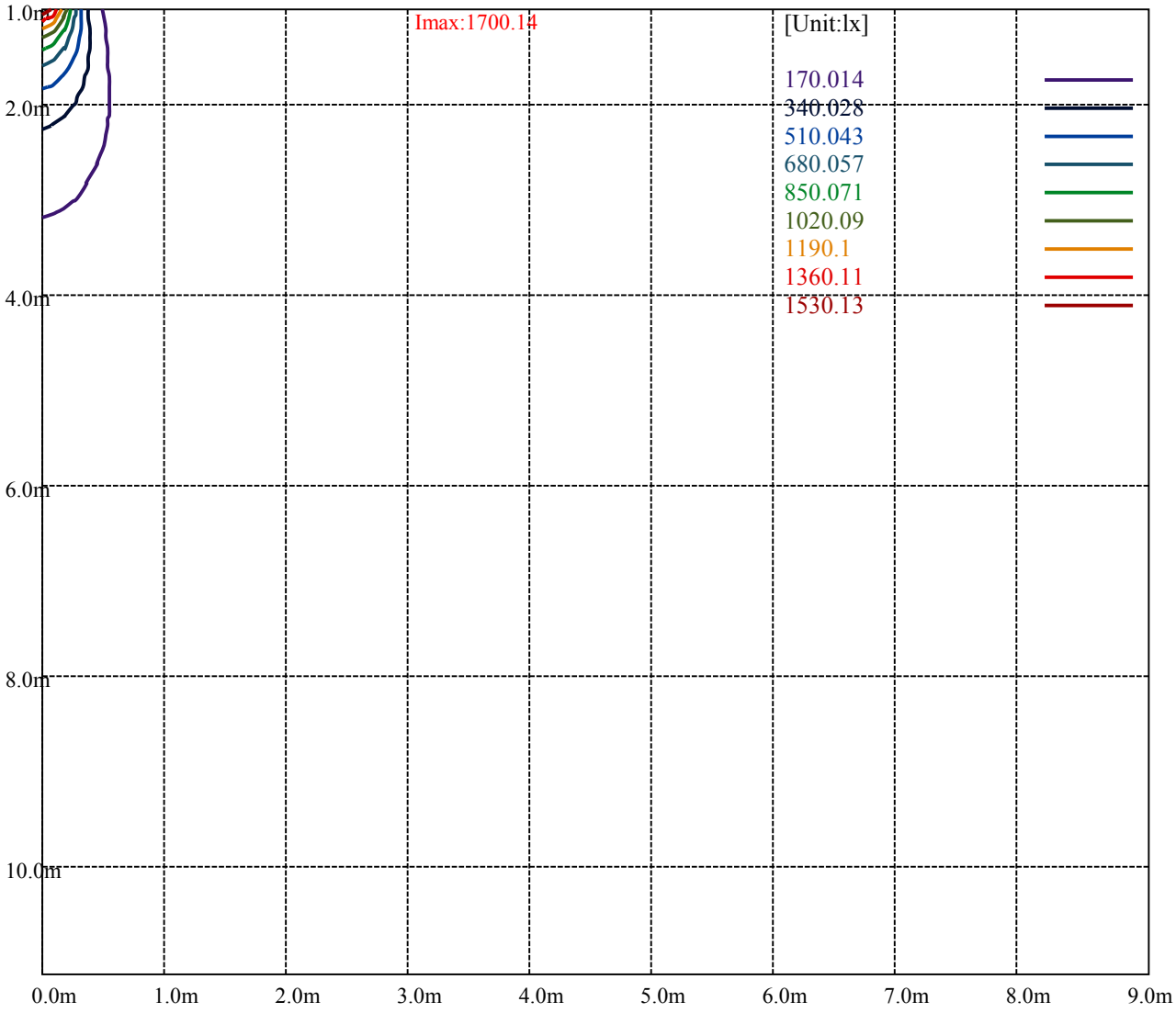
(10%Emax) 18.89045
(20%Emax) 37.78089
(30%Emax) 56.67122
(40%Emax) 75.56167
(50%Emax) 94.45211
(60%Emax) 113.3422
(70%Emax) 132.2333
(80%Emax) 151.1233
(90%Emax) 170.0133

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/7/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/7/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Nata 1655-S

Luminance Limitting Curve(no luminous side)

Luminance Table

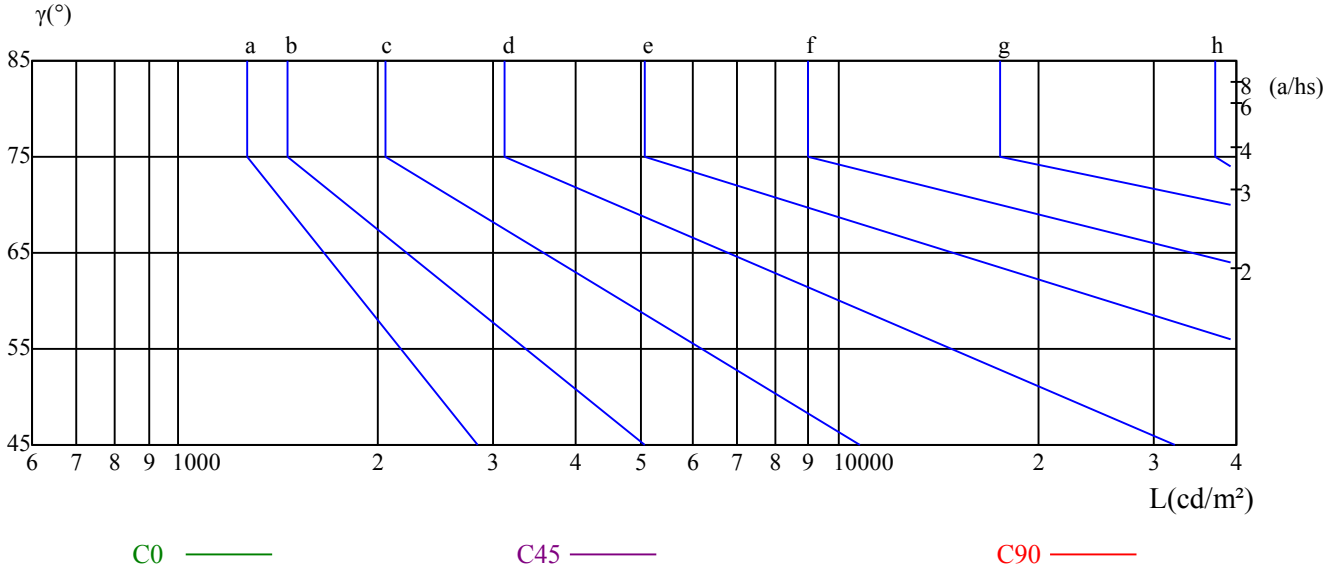
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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

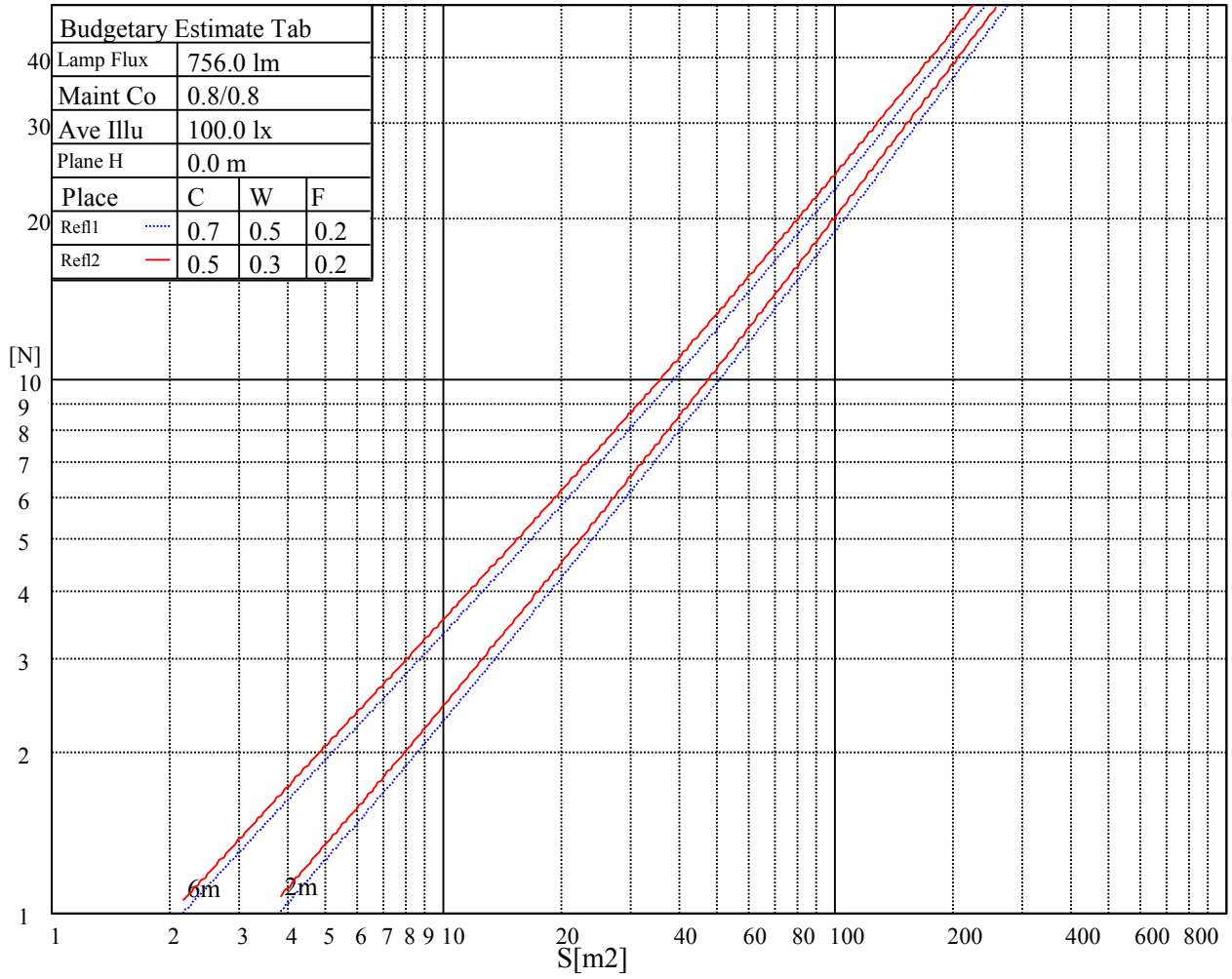


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/7/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Budgetary Estimate Table

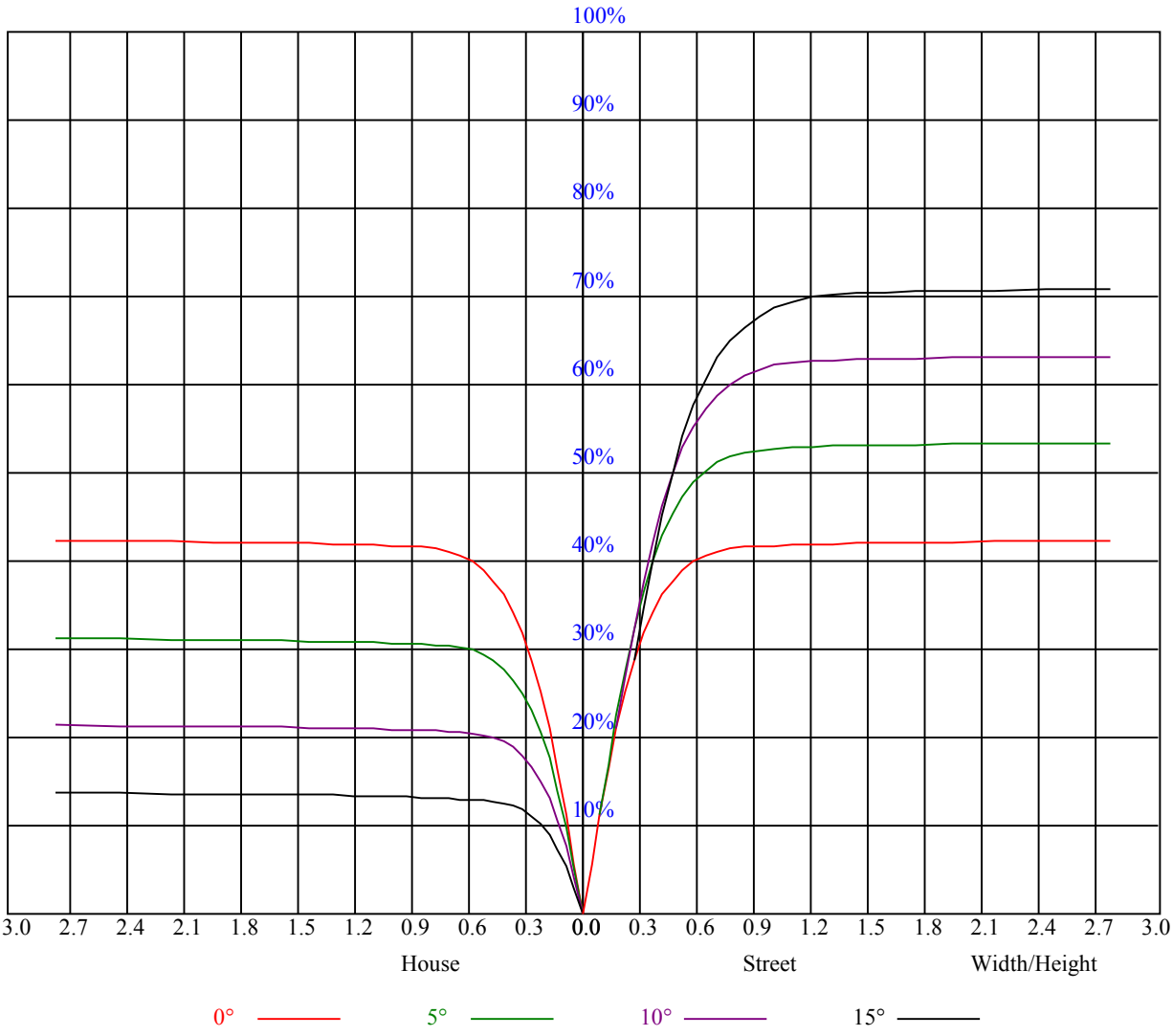


Equipment: GMS1980 Date: 2018/7/6 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.95	0.92	0.90	0.93	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80
2	0.90	0.86	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.79	0.81	0.79	0.78	0.76
3	0.85	0.81	0.78	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.77	0.75	0.78	0.76	0.74	0.73
4	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
5	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.67
6	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
7	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63
8	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61
9	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.59
10	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.57

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2018/7/6	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	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	1706.20	1690.78	1477.16	1109.94	692.61	388.70	279.69	158.29	26.54
45.0	1674.27	1758.50	1585.62	1255.29	798.87	457.52	291.80	196.17	68.77
90.0	1712.80	1664.91	1412.75	1043.48	640.09	348.12	243.90	128.12	23.18
135.0	1707.30	1606.00	1330.16	956.33	582.50	338.60	280.79	110.33	16.08
180.0	1706.20	1460.65	1084.06	761.76	436.65	299.73	182.57	35.79	12.33
225.0	1674.27	1381.37	1045.74	649.23	389.47	276.22	140.06	18.83	9.97
270.0	1712.80	1496.43	1172.15	759.78	444.86	280.79	168.25	46.03	13.60
315.0	1707.30	1548.19	1094.52	808.12	467.43	292.57	215.55	76.03	15.42
360.0	1706.20	1690.78	1477.16	1109.94	692.61	388.70	279.69	158.29	26.54

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	12.06	8.26	6.61	5.51	4.62	4.07	3.69	3.47	3.25
45.0	12.99	8.15	6.61	5.45	4.57	4.07	3.74	3.41	3.30
90.0	10.46	7.82	6.17	5.12	4.51	4.13	3.74	3.47	3.25
135.0	9.30	7.21	5.67	4.84	4.35	4.07	3.74	3.41	3.30
180.0	7.60	6.22	5.12	4.46	4.02	3.74	3.58	3.30	3.47
225.0	7.32	5.89	4.90	4.35	3.91	3.74	3.36	3.25	3.30
270.0	9.03	6.88	5.56	4.68	4.18	3.85	3.47	3.25	3.03
315.0	9.47	7.38	6.00	4.96	4.24	3.80	3.52	3.25	3.08
360.0	12.06	8.26	6.61	5.51	4.62	4.07	3.69	3.47	3.25

C/γ(°)	90.0
0.0	3.14
45.0	3.08
90.0	2.97
135.0	2.92
180.0	2.86
225.0	2.86
270.0	2.81
315.0	2.92
360.0	3.14