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Nata

LumCAT: 1689-M	
Luminaire: 92.70.127.00	
Report No: NT2016031406	Voltage(V): 37.4000
Test No: GC2017081406	Current(A): 0.3000
LampCAT: CREE CXA1512	Power (W): 11.2200
Lamp flux(lm): 1330.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 46	Width(mm): 46
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1235.19
Efficiency(%): 92.87%
Lumens(lm)/Power(W): 110.09
Central intensity(cd): 1141.275
Maximum intensity(cd): 1141.275
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=67.4
[C90/270]Total=67.4
Field angle(10%Imax): [C0/180]Total=94.9
[C90/270]Total=94.9
Maximum s/h(1/2): C0_180=0.94 C90_270=0.94
Maximum s/h(1/4): C0_180=1.01 C90_270=1.01
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.30%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.427%

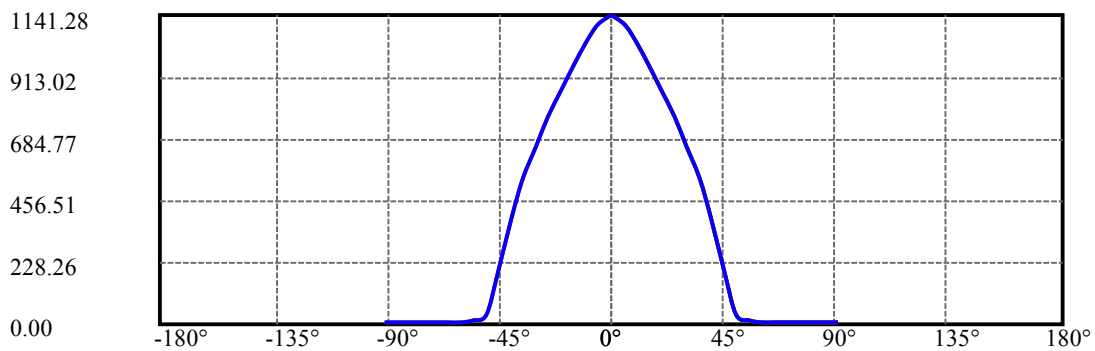
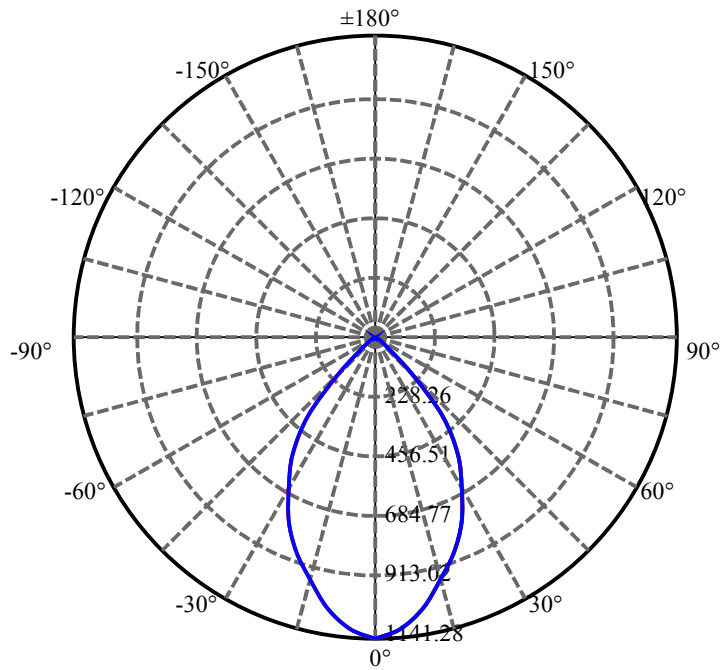
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1141.275	6.825	6.825	.513%	.553%
5.0	1108.594	52.961	59.786	3.982%	4.840%
10.0	1041.485	99.132	158.918	7.454%	12.866%
15.0	950.703	134.875	293.793	10.141%	23.785%
20.0	867.101	162.559	456.352	12.222%	36.946%
25.0	769.112	178.167	634.519	13.396%	51.370%
30.0	658.831	180.565	815.084	13.576%	65.988%
35.0	539.556	169.636	984.719	12.755%	79.722%
40.0	392.497	138.291	1123.01	10.398%	90.918%
45.0	191.191	74.104	1197.114	5.572%	96.917%
50.0	35.485	14.900	1212.014	1.120%	98.124%
55.0	12.918	5.800	1217.815	.436%	98.593%
60.0	7.395	3.510	1221.325	.264%	98.877%
65.0	5.537	2.751	1224.076	.207%	99.100%
70.0	4.918	2.533	1226.609	.190%	99.305%
75.0	4.640	2.457	1229.066	.185%	99.504%
80.0	4.529	2.445	1231.51	.184%	99.702%
85.0	4.487	2.450	1233.96	.184%	99.900%
90.0	4.494	1.232	1235.192	.093%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	815.08	61.28%	65.99%
0-40	1123.01	84.44%	90.92%
0-60	1221.32	91.83%	98.88%
0-90	1233.96	92.78%	99.90%
0-120	1233.96	92.78%	99.90%
0-180	1235.19	92.87%	100.00%
60-90	16.15	1.21%	1.31%
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%
0-35.12	988.15	74.30%	80.00%

ZONAL LUMEN SUMMARY

0-10	158.92
10-20	297.43
20-30	358.73
30-40	307.93
40-50	89.00
50-60	9.31
60-70	5.28
70-80	4.90
80-90	2.45
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



C0(Max):

C0/C180:

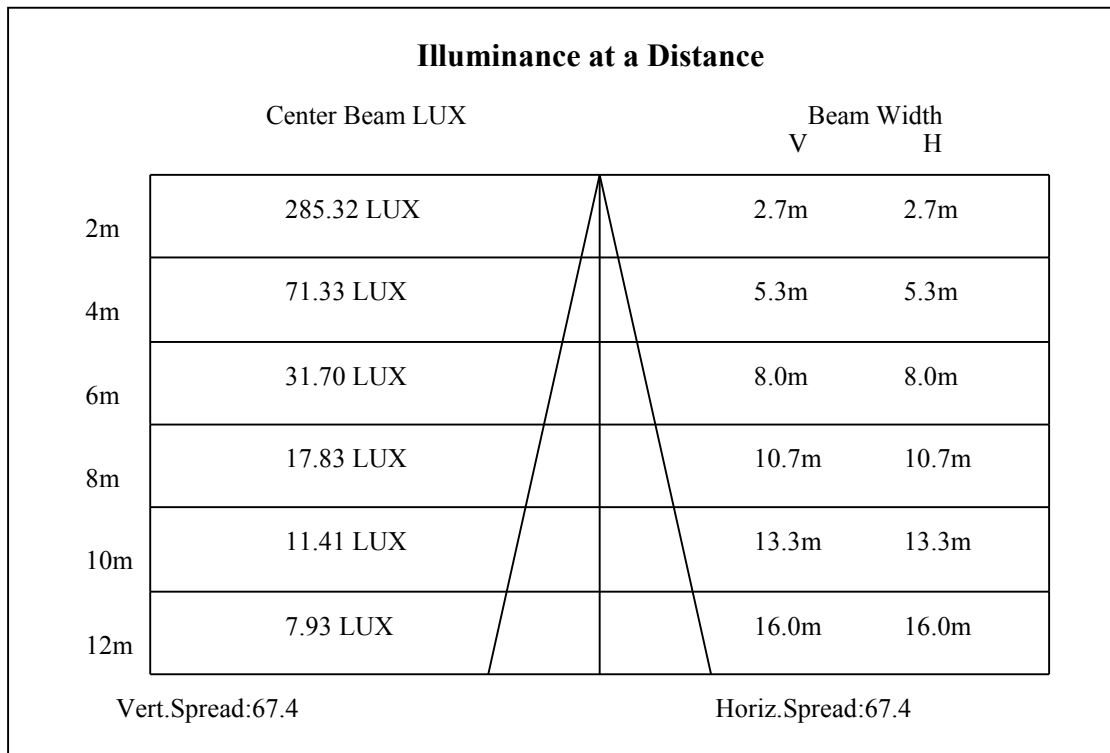
C90/C270:

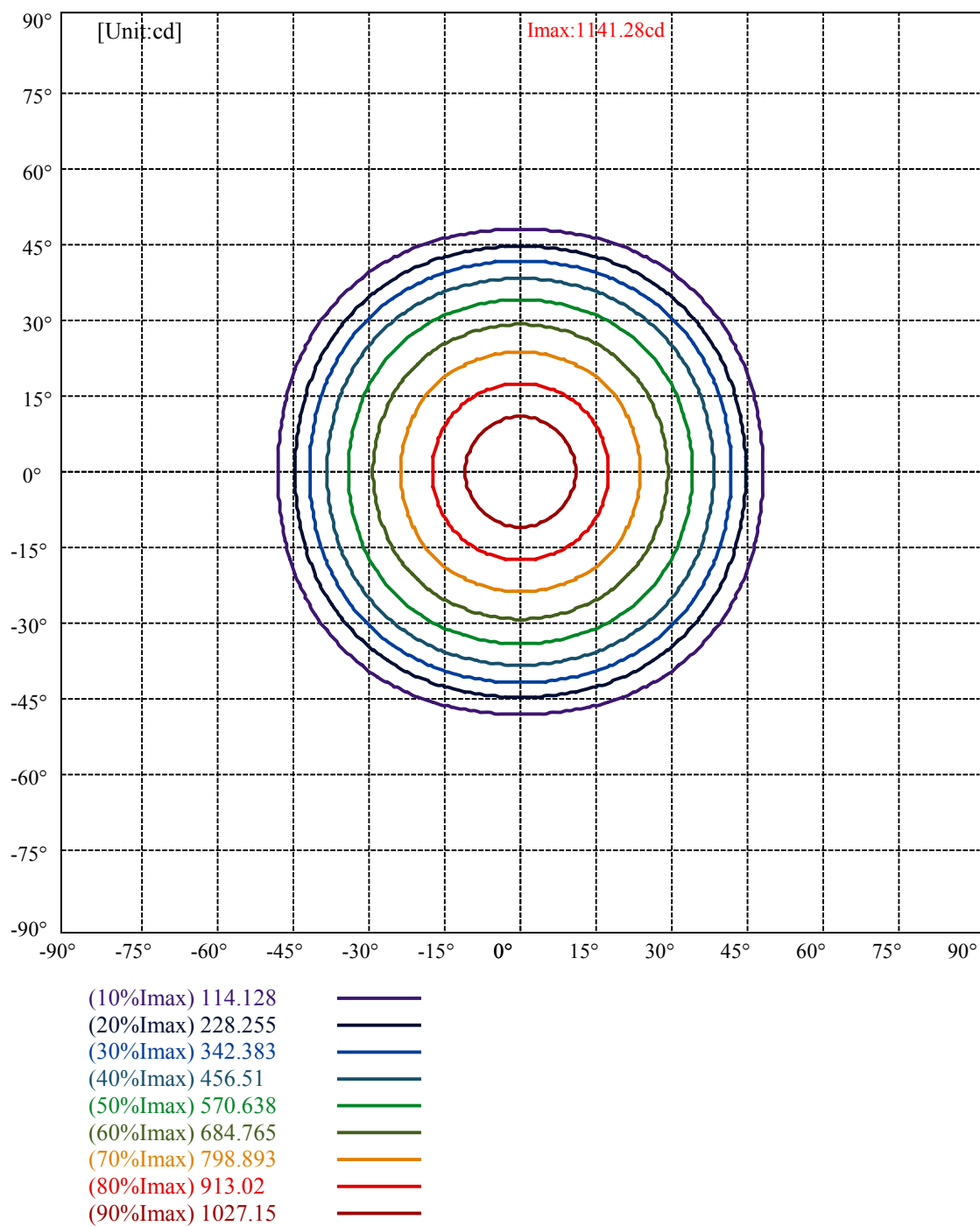
Field angle(10%Imax):C0/180Left:47.5 Right:47.5

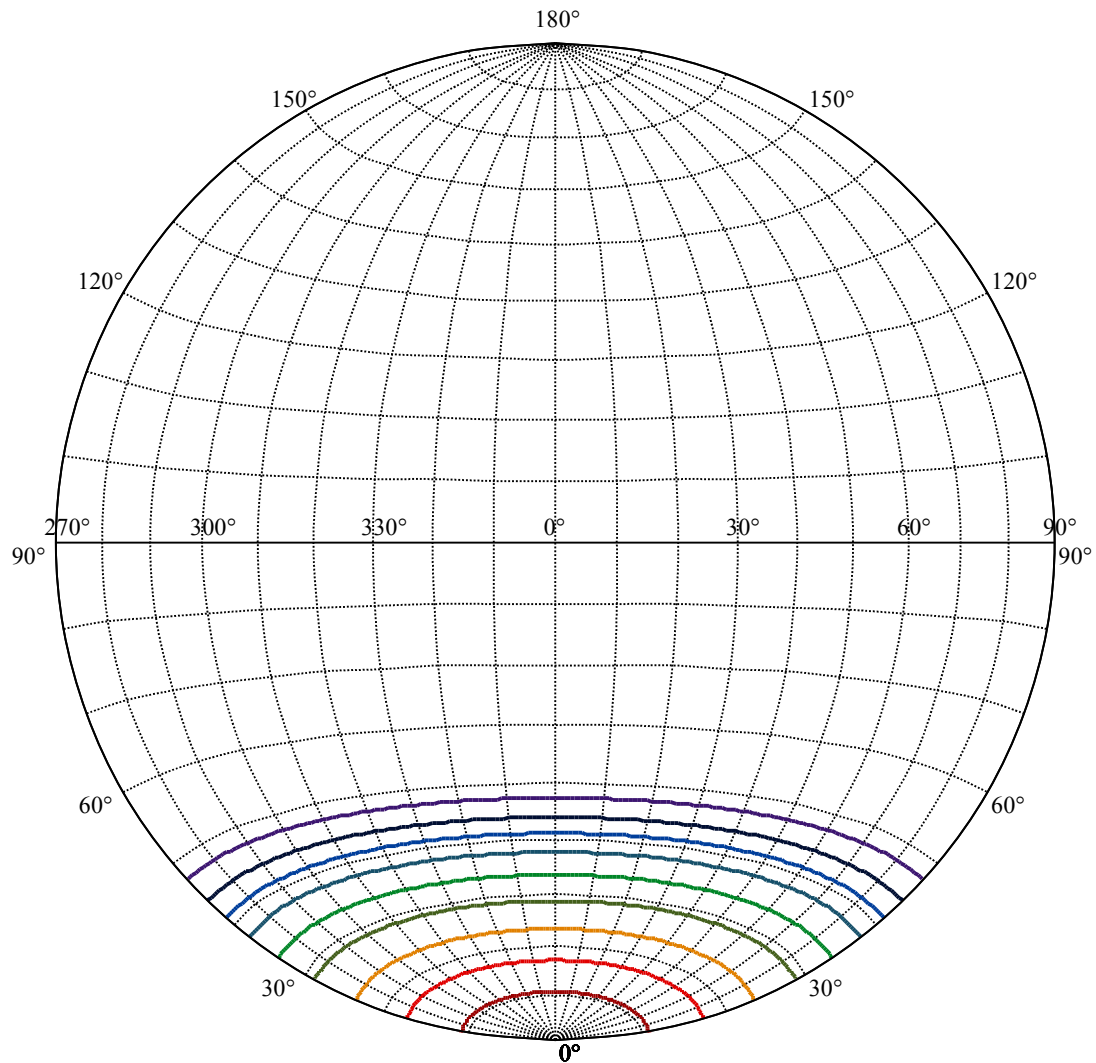
:C90/270Left:47.5 Right:47.5

Beam Angle(50%Imax):C0/180Left:33.7 Right:33.7

:C90/270Left:33.7 Right:33.7







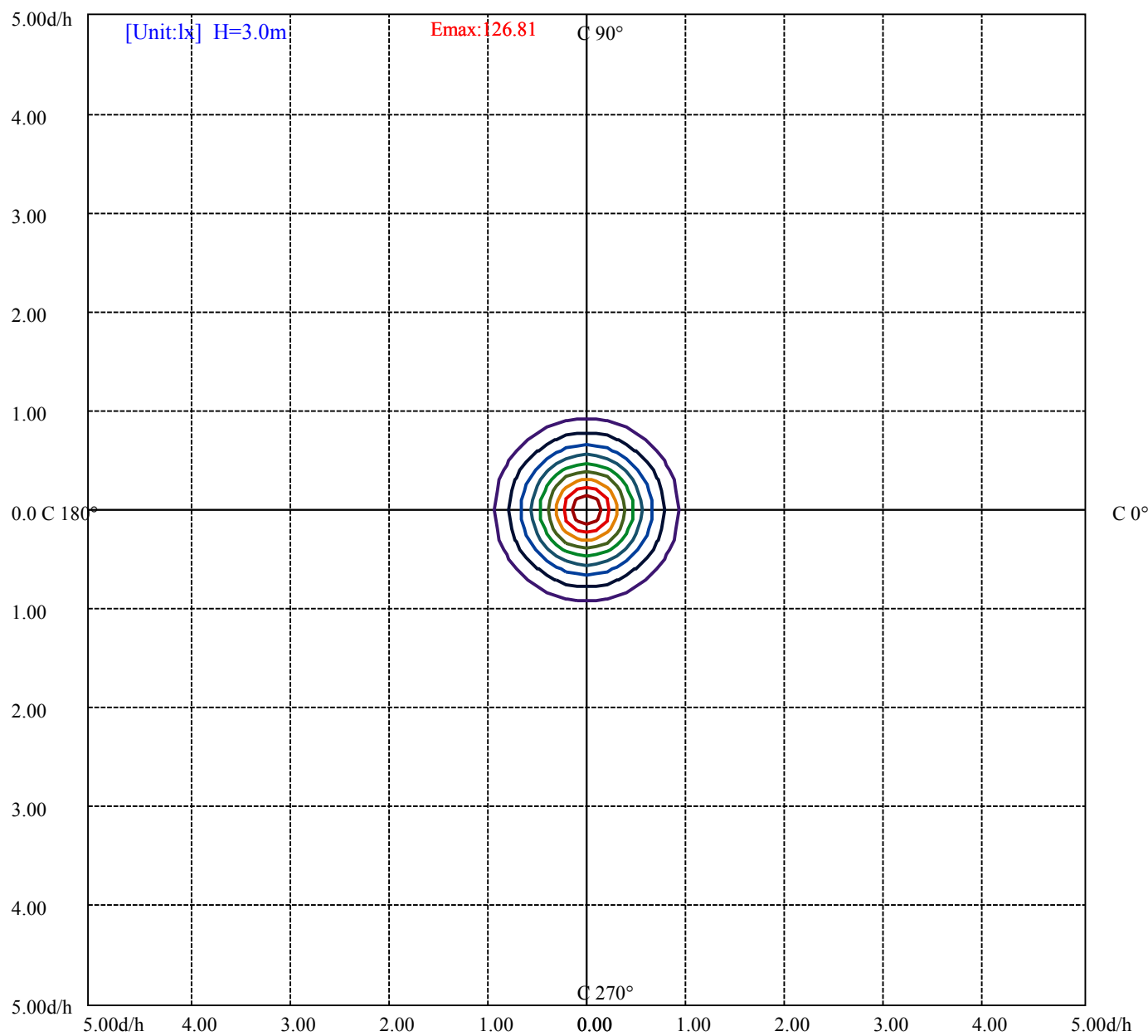
House

[Unit:cd]

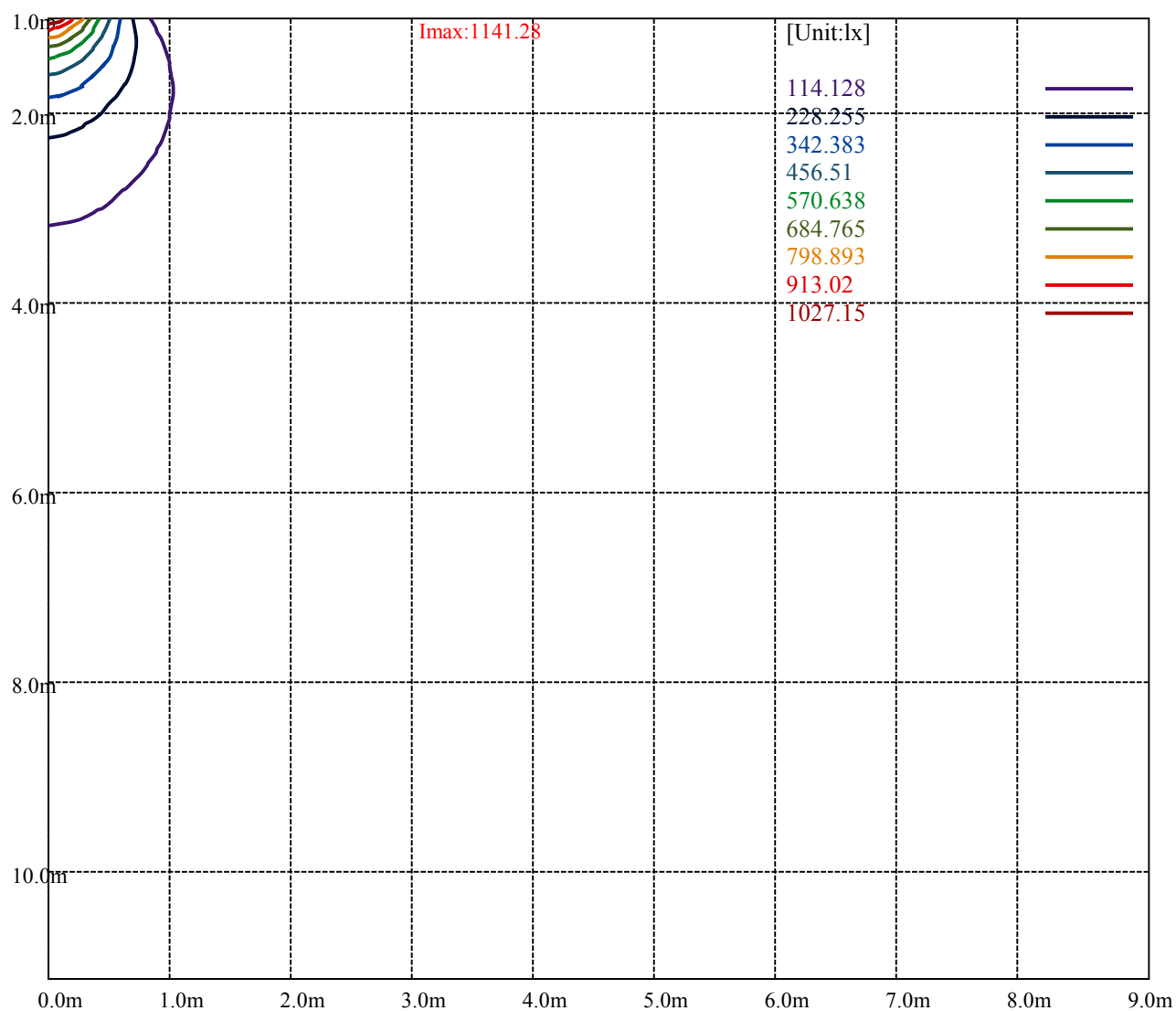
Road

Imax:1141.28

(10%Imax)	114.128	
(20%Imax)	228.255	
(30%Imax)	342.383	
(40%Imax)	456.51	
(50%Imax)	570.638	
(60%Imax)	684.765	
(70%Imax)	798.893	
(80%Imax)	913.02	
(90%Imax)	1027.15	



(10%E _{max}) 12.68078	
(20%E _{max}) 25.36167	
(30%E _{max}) 38.04244	
(40%E _{max}) 50.72334	
(50%E _{max}) 63.40411	
(60%E _{max}) 76.085	
(70%E _{max}) 88.76578	
(80%E _{max}) 101.4466	
(90%E _{max}) 114.1278	



Luminance Table

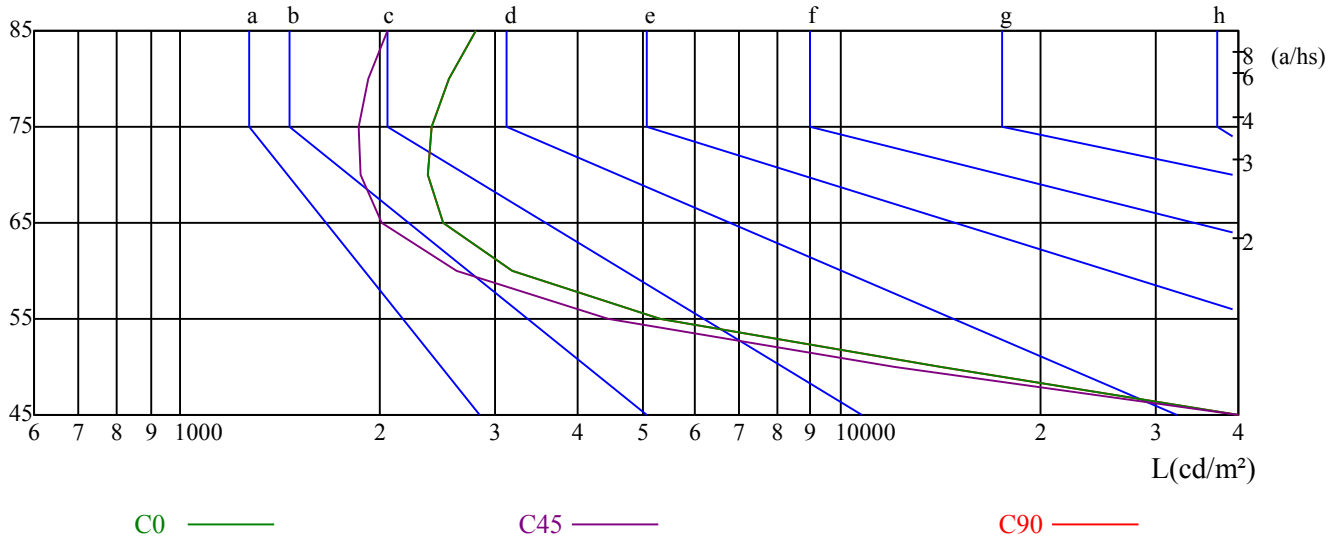
γ	45	50	55	60	65	70	75	80	85
C0	74713	14194	5334	3180	2504	2364	2400	2555	2809
C45	64331	12039	4454	2612	2020	1871	1858	1929	2059
C90	74713	14194	5334	3180	2504	2364	2400	2555	2809

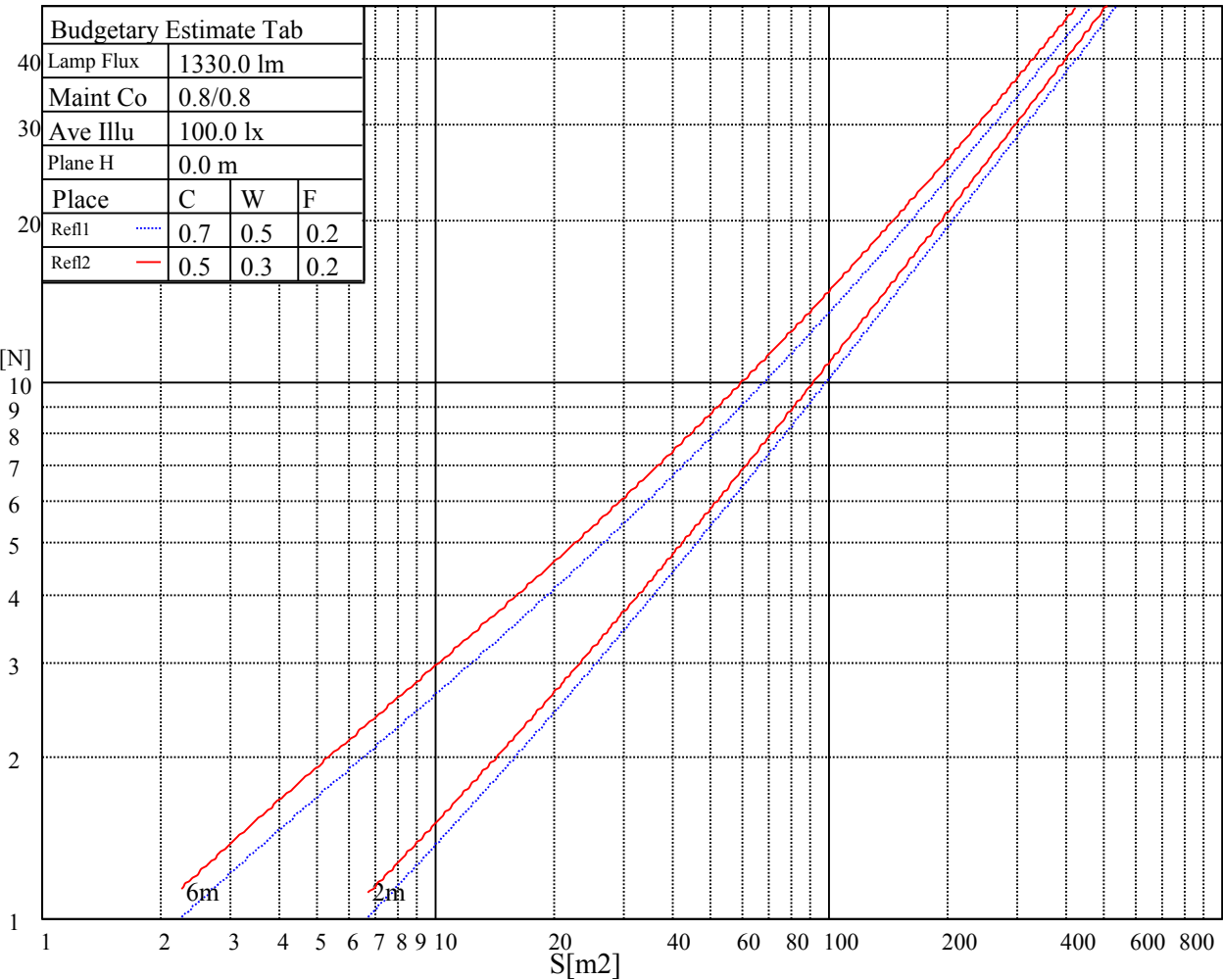
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5931	5931	5931	8116	8116	8116	23305	23305	23305

Glare Table

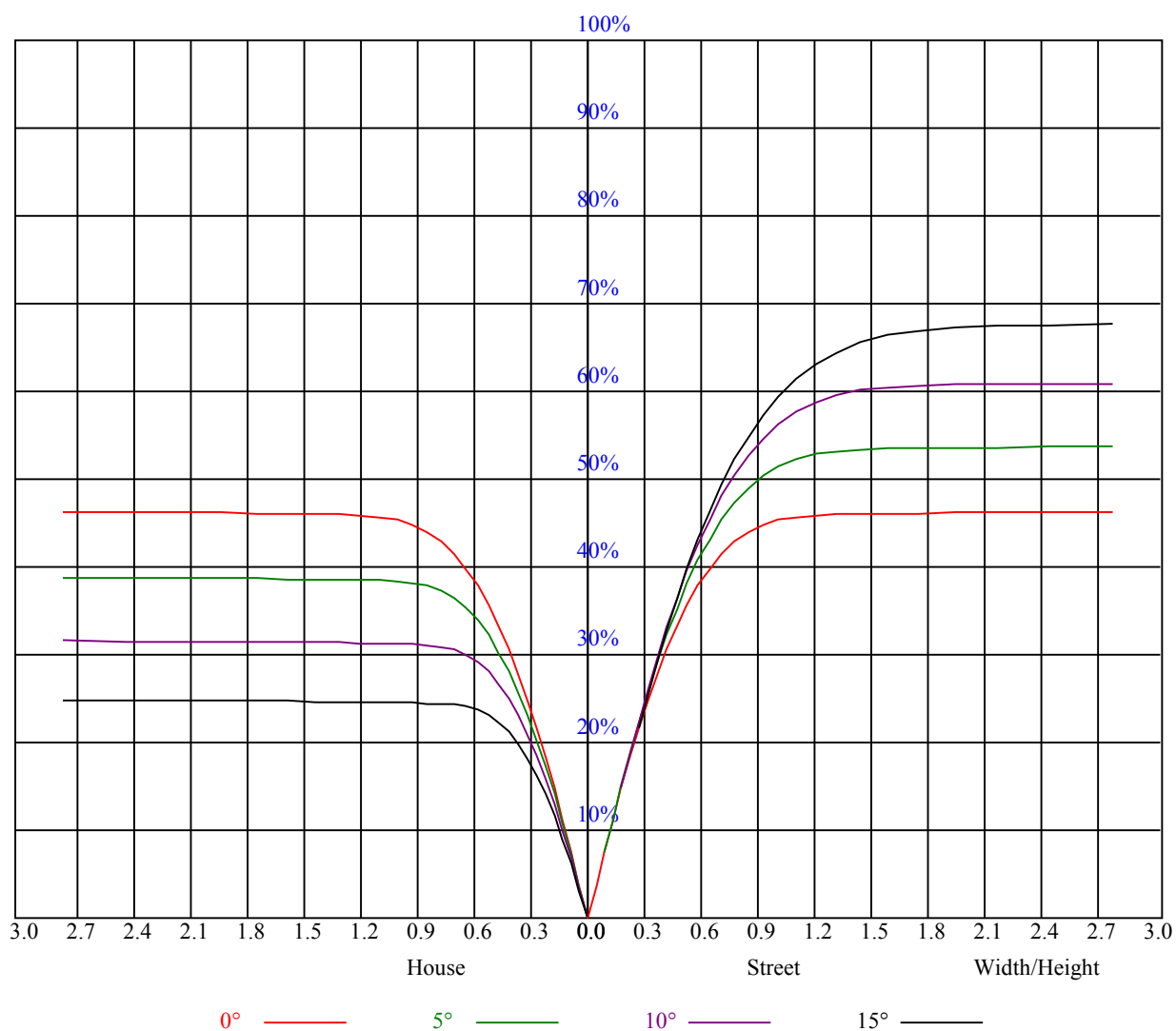
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



RHOC	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 RHOFC=20 CU															
0	1.11	1.11	1.11	1.08	1.08	1.08	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	1.00	0.98	1.00	0.98	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.86
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.80
3	0.88	0.84	0.80	0.87	0.83	0.79	0.85	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.75	0.74
4	0.83	0.77	0.73	0.81	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.69
5	0.77	0.71	0.67	0.76	0.71	0.67	0.75	0.70	0.66	0.73	0.69	0.66	0.71	0.68	0.65	0.64
6	0.72	0.67	0.62	0.72	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.61	0.68	0.64	0.61	0.60
7	0.68	0.62	0.58	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.57	0.64	0.60	0.57	0.56
8	0.64	0.58	0.54	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.52
9	0.60	0.55	0.51	0.60	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.50	0.57	0.53	0.50	0.49
10	0.57	0.51	0.48	0.57	0.51	0.48	0.56	0.51	0.48	0.55	0.51	0.47	0.54	0.50	0.47	0.46



Nata 1709-M

Intensity data(cd)

Appendix Page: 14 Total:14

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1142.53	1137.52	1084.65	1003.95	926.60	840.34	729.04	603.82	482.50
45.0	1137.52	1118.60	1058.49	978.91	902.11	806.95	688.97	562.64	432.97
90.0	1137.52	1088.77	1020.48	932.11	849.52	747.29	631.14	516.78	372.64
135.0	1147.54	1107.47	1028.44	928.27	838.67	738.50	626.64	513.11	367.30
180.0	1142.53	1088.27	997.33	900.16	806.50	697.31	591.35	482.00	282.93
225.0	1137.52	1099.73	1024.77	923.93	844.57	740.78	635.15	523.90	362.35
270.0	1137.52	1118.60	1057.94	970.01	880.96	790.81	686.18	563.19	425.73
315.0	1147.54	1109.80	1059.77	968.28	887.87	790.92	682.18	551.01	413.55
360.0	1142.53	1137.52	1084.65	1003.95	926.60	840.34	729.04	603.82	482.50
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	281.04	60.16	14.64	6.34	5.06	4.79	4.67	4.56	4.51
45.0	298.85	36.45	12.74	7.12	5.40	4.90	4.62	4.56	4.45
90.0	137.63	31.33	12.97	8.24	5.90	5.06	4.67	4.56	4.51
135.0	128.94	30.05	13.47	7.62	5.62	4.90	4.62	4.51	4.45
180.0	70.73	23.65	11.19	7.12	5.51	4.90	4.62	4.56	4.51
225.0	127.78	31.39	14.47	8.90	6.18	5.18	4.73	4.45	4.45
270.0	291.06	37.90	14.14	8.01	5.68	4.95	4.62	4.51	4.56
315.0	193.50	32.95	9.74	5.79	4.95	4.67	4.56	4.51	4.45
360.0	281.04	60.16	14.64	6.34	5.06	4.79	4.67	4.56	4.51
C/γ(°)	90.0								
0.0	4.51								
45.0	4.51								
90.0	4.45								
135.0	4.51								
180.0	4.51								
225.0	4.45								
270.0	4.51								
315.0	4.51								
360.0	4.51								