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NATA

LumCAT: 3-1699-N
Luminaire: 92.70.045.00+92.70.089.00
Report No: NATA0100
Test No: GC2018102007
LampCAT: PHILIPS 1208 G7
Lamp flux(lm): 3673.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 35.2000
Current(A): 0.7000
Power (W): 24.6400
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 2798.94
Efficiency(%): 76.20%
Lumens(lm)/Power(W): 116.11
Central intensity(cd): 10828.970
Maximum intensity(cd): 10828.970
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=23.9
[C90/270]Total=23.9
Field angle(10%Imax): [C0/180]Total=48.0
[C90/270]Total=48.0
Maximum s/h(1/2): C0_180=0.41 C90_270=0.41
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 77.89%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.915%

Equipment:
Temperature(°C): 25.0

Date: 2018/10/20
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

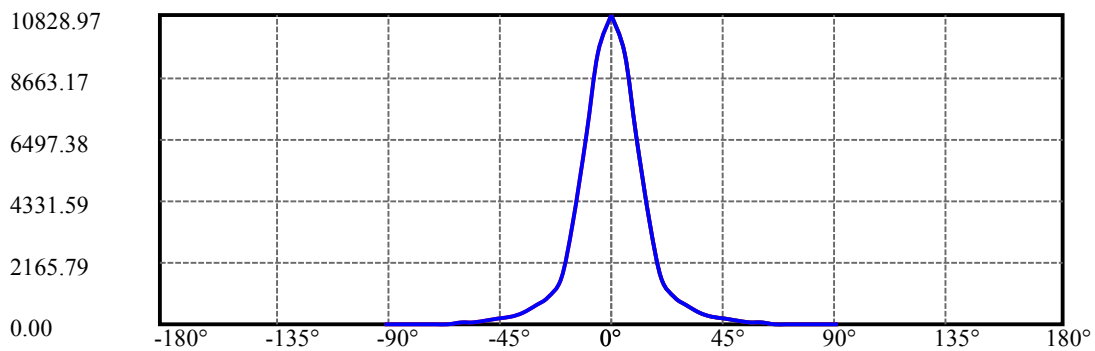
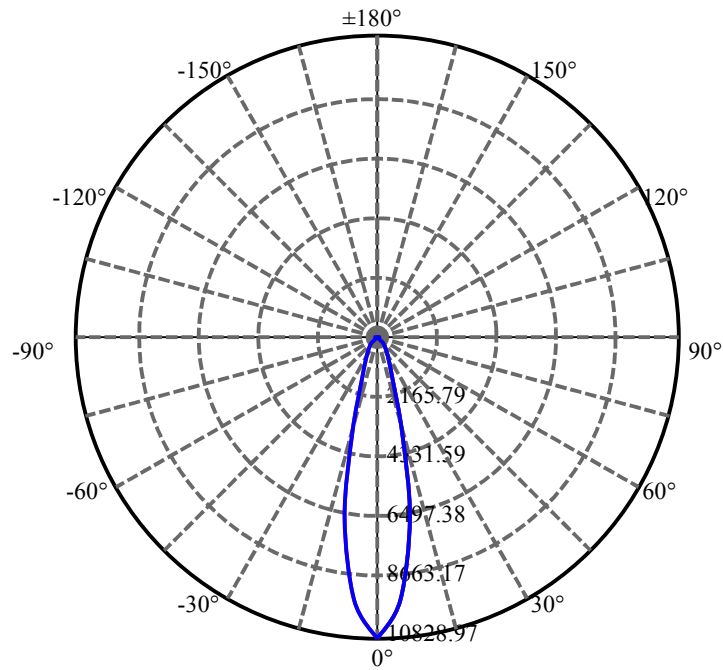
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10828.969	64.759	64.759	1.763%	2.314%
5.0	9513.563	454.494	519.254	12.374%	18.552%
10.0	6617.180	629.843	1149.097	17.148%	41.055%
15.0	3548.742	503.454	1652.552	13.707%	59.042%
20.0	1638.471	307.171	1959.722	8.363%	70.017%
25.0	943.193	218.493	2178.216	5.949%	77.823%
30.0	642.790	176.169	2354.384	4.796%	84.117%
35.0	425.102	133.652	2488.036	3.639%	88.892%
40.0	286.826	101.059	2589.095	2.751%	92.503%
45.0	175.901	68.178	2657.273	1.856%	94.938%
50.0	105.265	44.200	2701.473	1.203%	96.518%
55.0	59.168	26.567	2728.04	.723%	97.467%
60.0	33.975	16.128	2744.168	.439%	98.043%
65.0	26.198	13.015	2757.183	.354%	98.508%
70.0	22.880	11.785	2768.968	.321%	98.929%
75.0	19.920	10.547	2779.514	.287%	99.306%
80.0	16.777	9.056	2788.57	.247%	99.629%
85.0	13.444	7.341	2795.911	.200%	99.892%
90.0	11.060	3.031	2798.943	.083%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2354.38	64.10%	84.12%
0-40	2589.09	70.49%	92.50%
0-60	2744.17	74.71%	98.04%
0-90	2795.91	76.12%	99.89%
0-120	2795.91	76.12%	99.89%
0-180	2798.94	76.20%	100.00%
60-90	67.87	1.85%	2.42%
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%
0-26.73	2239.15	60.96%	80.00%

ZONAL LUMEN SUMMARY

0-10	1149.10
10-20	810.63
20-30	394.66
30-40	234.71
40-50	112.38
50-60	42.69
60-70	24.80
70-80	19.60
80-90	7.34
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:

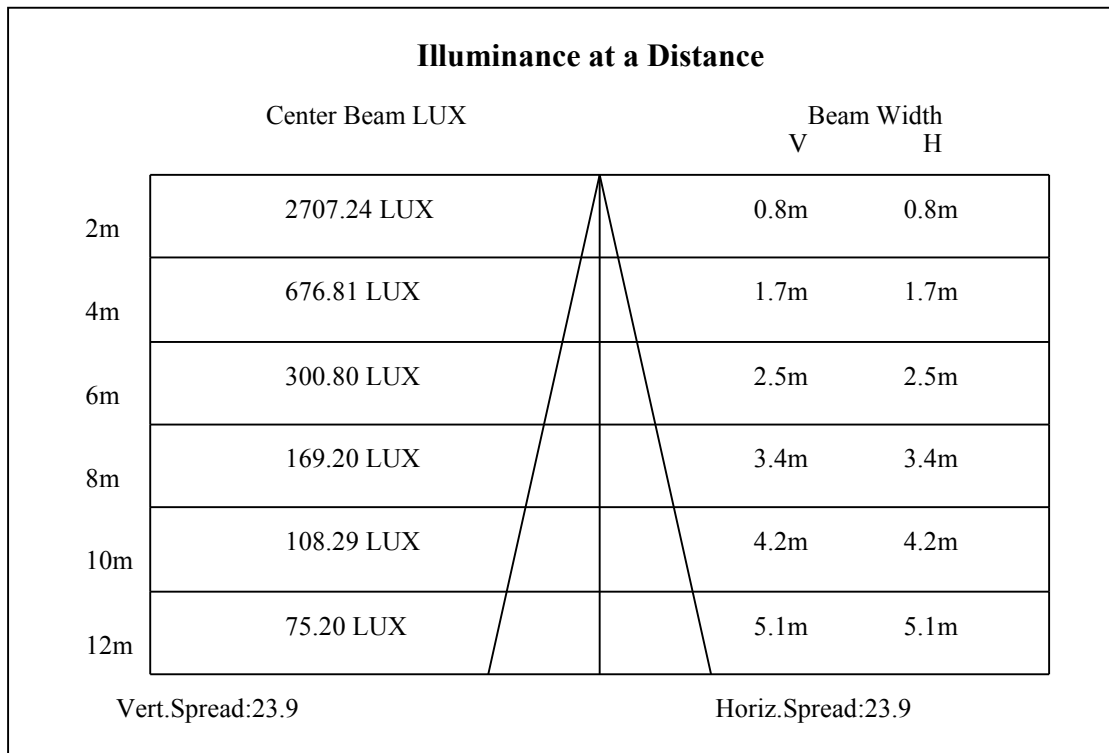
C90/C270:

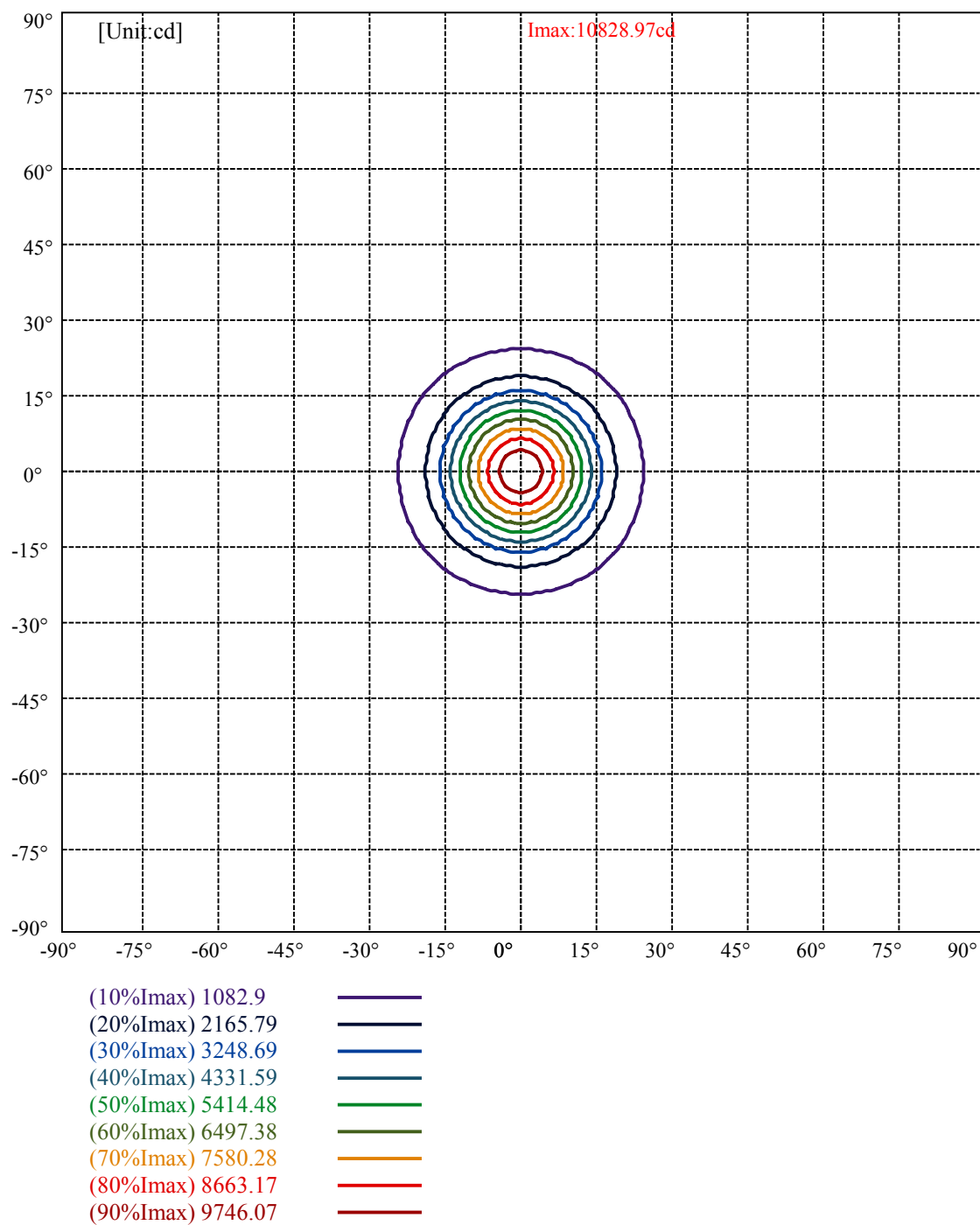
Field angle(10%Imax):C0/180Left:24.0 Right:24.0

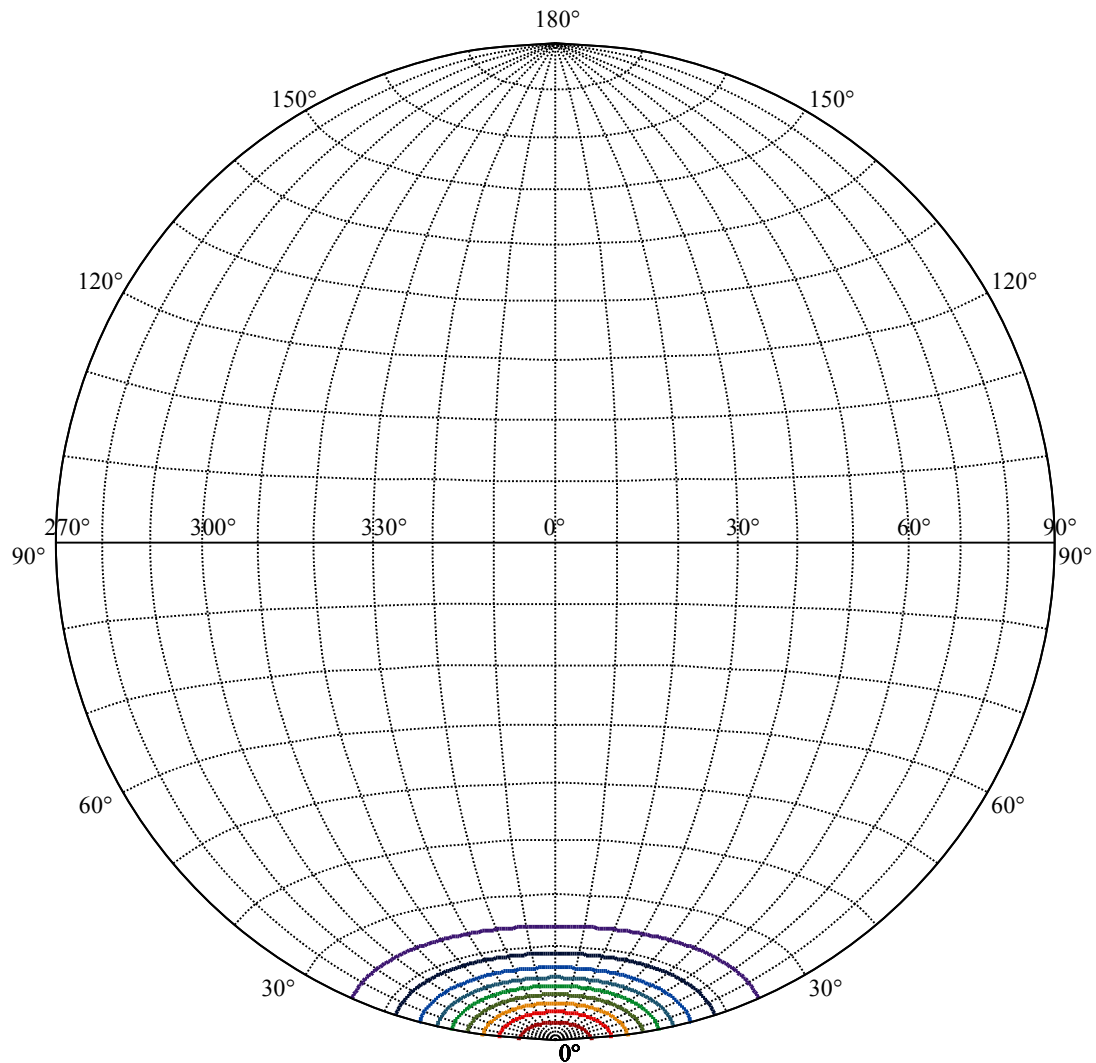
:C90/270Left:24.0 Right:24.0

Beam Angle(50%Imax):C0/180Left:12.0 Right:12.0

:C90/270Left:12.0 Right:12.0







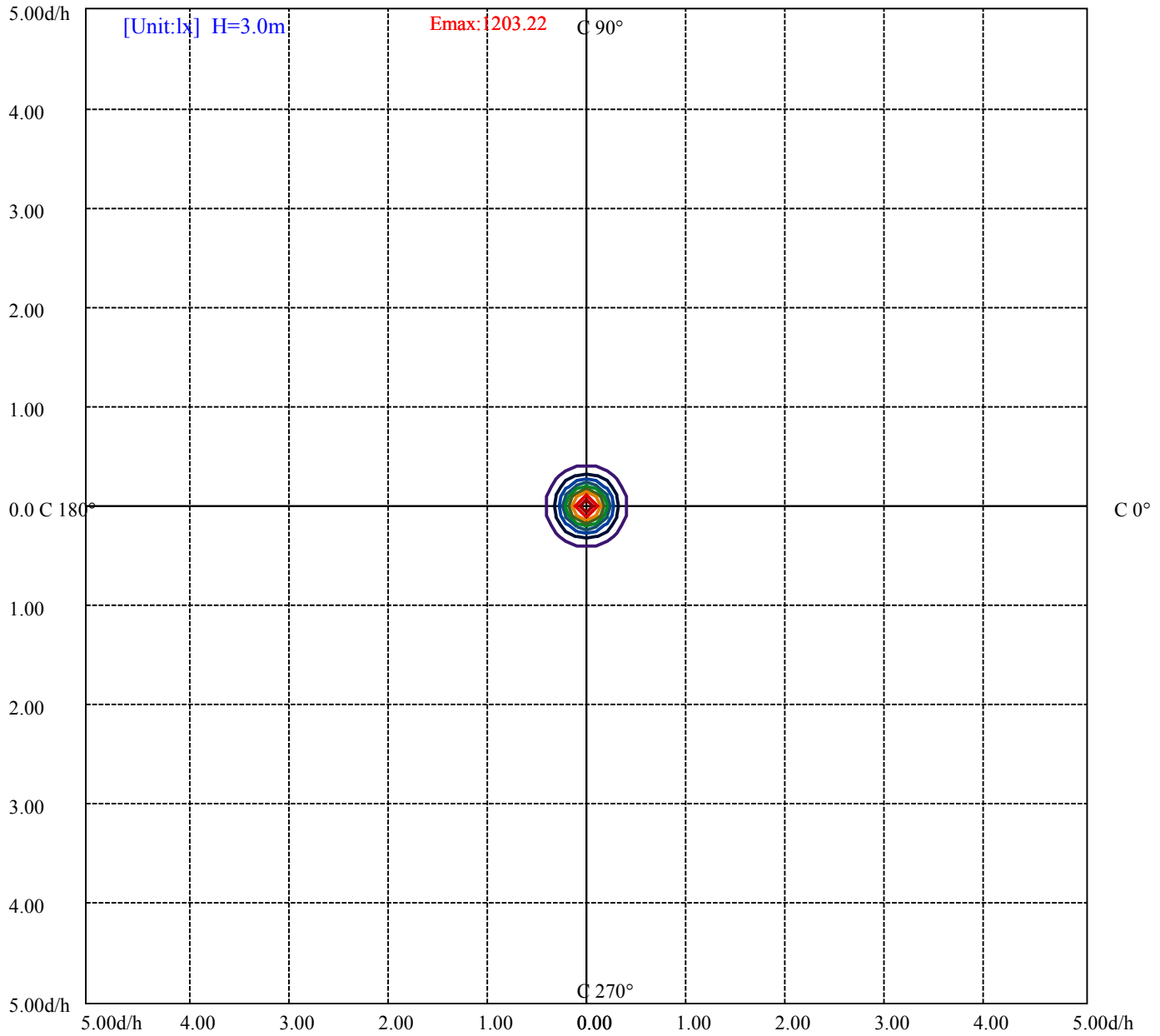
House

[Unit:cd]

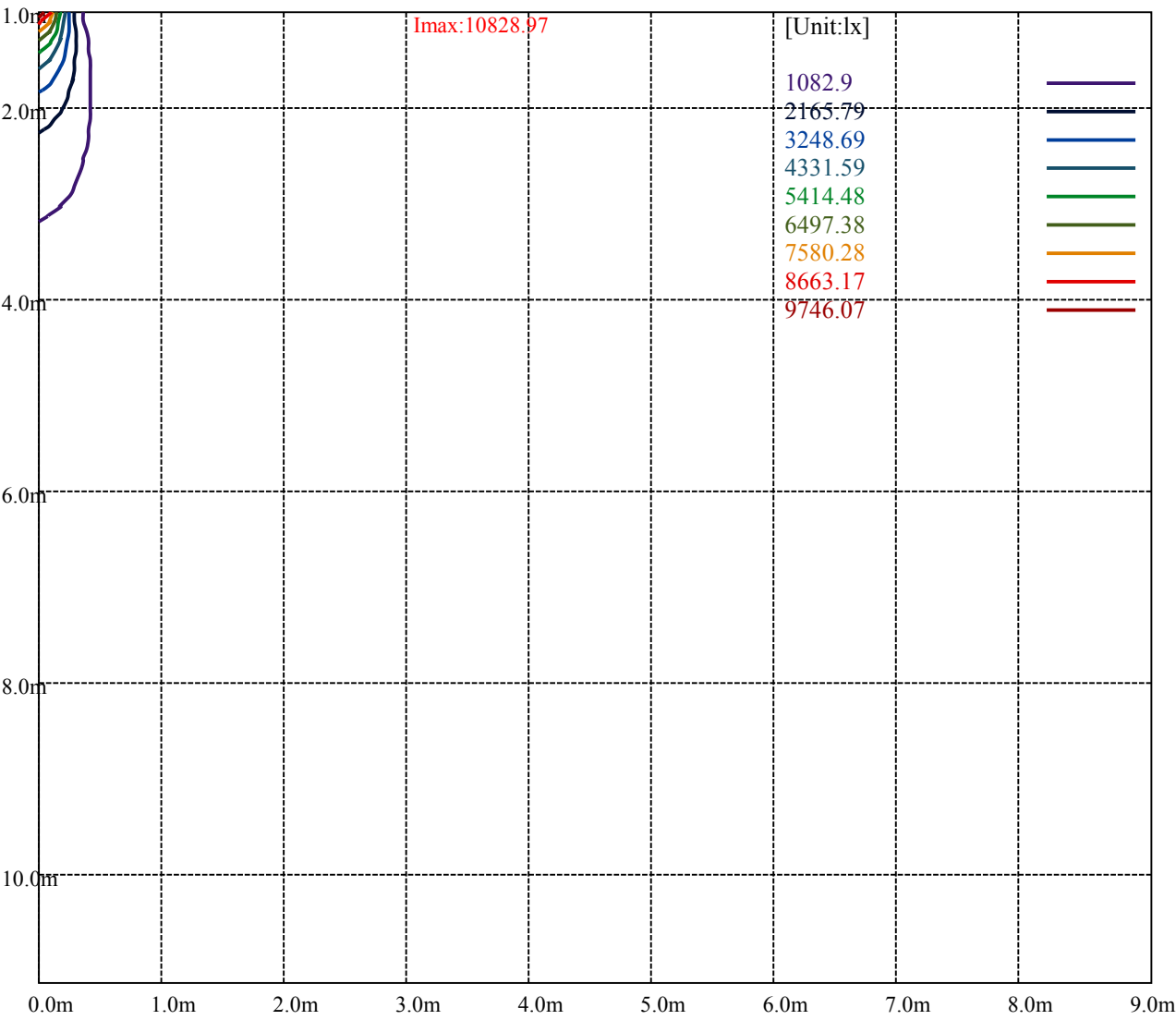
Road

Imax:10828.97

(10%Imax)	1082.9	—
(20%Imax)	2165.79	—
(30%Imax)	3248.69	—
(40%Imax)	4331.59	—
(50%Imax)	5414.48	—
(60%Imax)	6497.38	—
(70%Imax)	7580.28	—
(80%Imax)	8663.17	—
(90%Imax)	9746.07	—



(10%Emax)	120.3211	
(20%Emax)	240.6433	
(30%Emax)	360.9644	
(40%Emax)	481.2855	
(50%Emax)	601.6067	
(60%Emax)	721.9289	
(70%Emax)	842.25	
(80%Emax)	962.571	
(90%Emax)	1082.893	



Luminance Table

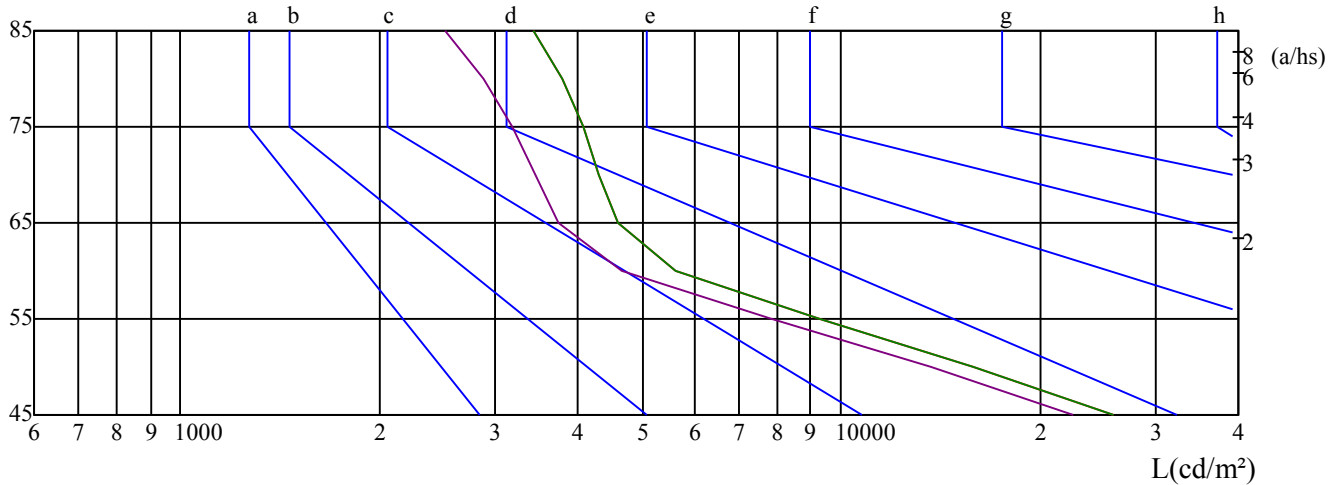
γ	45	50	55	60	65	70	75	80	85
C0	25810	15916	9300	5604	4583	4295	4068	3788	3423
C45	22522	13685	7873	4666	3747	3441	3184	2885	2522
C90	25810	15916	9300	5604	4583	4295	4068	3788	3423

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9933	9933	9933	12332	12332	12332	24716	24716	24716

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

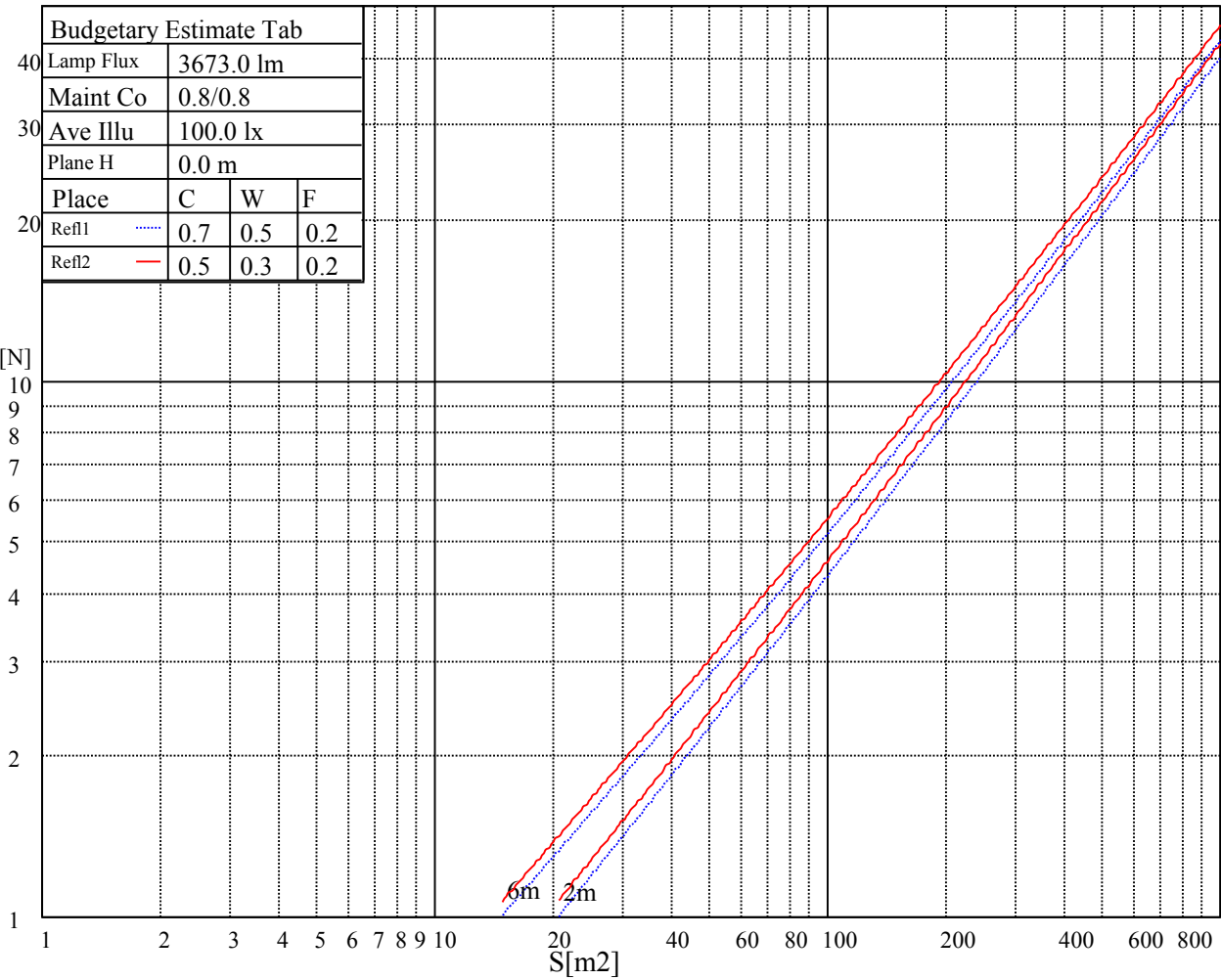
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

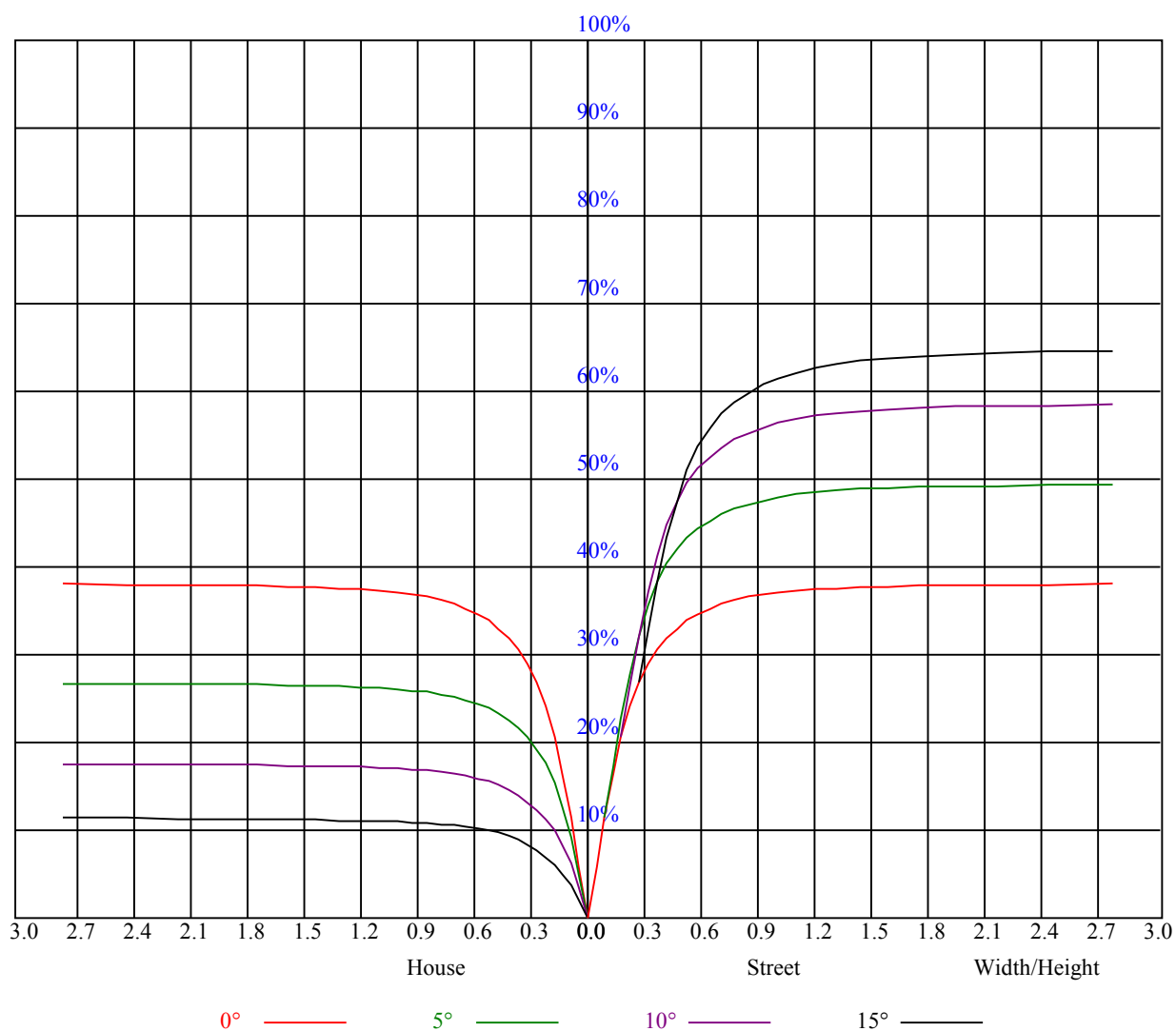
C0 ———

C45 ———

C90 ———



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	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.93	0.93	0.93	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.79	0.79	0.79	0.78
1	0.85	0.83	0.81	0.83	0.81	0.79	0.80	0.78	0.77	0.77	0.76	0.75	0.74	0.73	0.72	0.71
2	0.80	0.77	0.74	0.79	0.76	0.74	0.76	0.74	0.72	0.74	0.72	0.71	0.72	0.70	0.69	0.68
3	0.76	0.73	0.70	0.75	0.72	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.66	0.65
4	0.73	0.69	0.66	0.72	0.68	0.66	0.70	0.67	0.65	0.69	0.66	0.64	0.67	0.65	0.63	0.62
5	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.66	0.64	0.62	0.65	0.63	0.61	0.60
6	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.64	0.62	0.59	0.63	0.61	0.59	0.58
7	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.62	0.59	0.57	0.56
8	0.62	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.57	0.55	0.54
9	0.60	0.57	0.54	0.60	0.57	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.58	0.56	0.54	0.53
10	0.59	0.55	0.53	0.58	0.55	0.53	0.58	0.55	0.53	0.57	0.54	0.52	0.57	0.54	0.52	0.52



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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	10792.13	9937.69	7246.69	4191.19	1976.63	1037.25	711.56	469.13	316.69		
45.0	10860.19	9429.75	6729.75	3583.69	1699.88	956.25	672.75	443.81	296.44		
90.0	10780.88	8928.00	5728.50	2946.94	1265.63	849.26	579.38	385.93	260.27		
135.0	10877.06	9371.81	6446.25	3349.69	1645.88	912.94	622.13	418.50	284.06		
180.0	10792.13	9122.63	5943.94	2996.44	1116.39	852.86	570.71	376.65	258.92		
225.0	10860.19	9492.75	6634.69	3501.00	1652.06	935.21	639.68	418.56	277.03		
270.0	10780.88	10064.25	7418.25	4183.31	1967.63	1044.56	694.13	453.94	310.50		
315.0	10888.31	9761.63	6789.38	3637.69	1783.69	957.21	651.99	434.31	290.70		
360.0	10792.13	9937.69	7246.69	4191.19	1976.63	1037.25	711.56	469.13	316.69		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	205.37	118.80	66.77	37.01	26.94	23.23	20.25	17.16	13.61		
45.0	178.88	104.74	56.76	33.13	25.88	22.56	19.80	16.48	12.99		
90.0	157.16	92.93	50.91	29.76	25.09	22.11	19.01	16.09	12.60		
135.0	168.53	103.05	57.38	33.13	26.49	23.29	20.25	17.16	13.61		
180.0	155.98	93.94	53.94	31.61	25.65	22.67	19.46	16.31	13.22		
225.0	171.11	102.49	57.60	33.92	26.16	22.67	19.86	16.82	13.61		
270.0	191.87	116.61	68.63	38.64	27.00	23.46	20.59	17.33	14.01		
315.0	178.31	109.58	61.37	34.59	26.38	23.06	20.14	16.88	13.89		
360.0	205.37	118.80	66.77	37.01	26.94	23.23	20.25	17.16	13.61		
C/ γ (°)	90.0										
0.0	11.19										
45.0	10.97										
90.0	11.03										
135.0	11.03										
180.0	11.03										
225.0	10.97										
270.0	11.14										
315.0	11.14										
360.0	11.19										

Equipment:
Temperature(°C): 25.0

Date: 2018/10/20
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50