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NATA

LumCAT: 3-2054-A
Luminaire: 99.02.73.173+92.76.365.00
Report No: NATA0100
Test No: GC2018101211
LampCAT: LUMILEDS 1216
Lamp flux(lm): 3347.0
Number of Lamps: 1
Length(mm): 78
Phm Type: C

Voltage(V): 33.6000
Current(A): 0.6500
Power (W): 21.8400
PF: 0.0000
Ballast type: DC
Width(mm): 78
Height(mm): 0

Photometric Results

Lumens(lm): 2969.57
Efficiency(%): 88.72%
Lumens(lm)/Power(W): 135.97
Central intensity(cd): 10456.310
Maximum intensity(cd): 10456.310
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=24.4
 [C90/270]Total=24.4
Field angle(10%Imax): [C0/180]Total=61.2
 [C90/270]Total=61.2
Maximum s/h(1/2): C0_180=0.42 C90_270=0.42
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(%): 90.51%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.676%

Equipment:
Temperature(°C): 25.0

Date: 2018/10/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

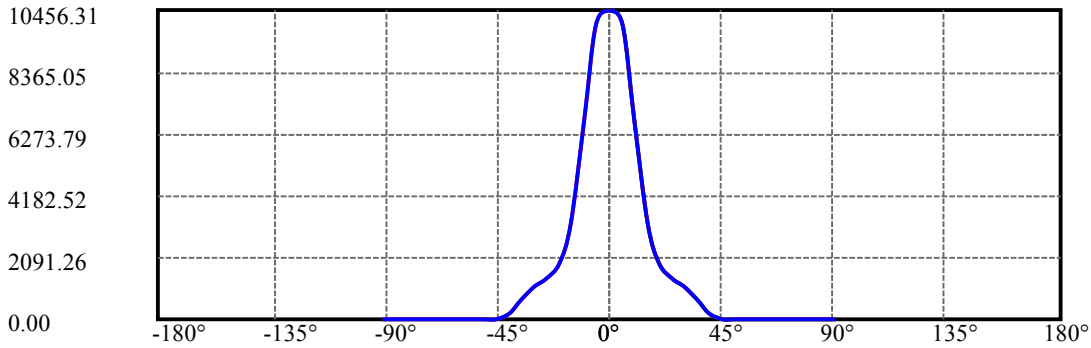
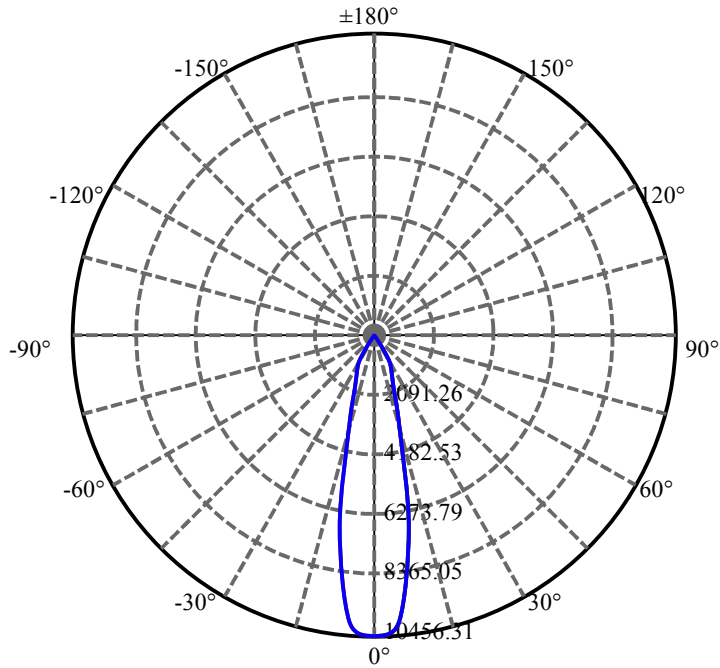
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10456.313	62.531	62.531	1.868%	2.106%
5.0	9930.094	474.394	536.924	14.174%	18.081%
10.0	6777.563	645.109	1182.034	19.274%	39.805%
15.0	3231.352	458.427	1640.46	13.697%	55.242%
20.0	1911.375	358.333	1998.793	10.706%	67.309%
25.0	1392.117	322.488	2321.281	9.635%	78.169%
30.0	1103.196	302.352	2623.633	9.034%	88.351%
35.0	635.379	199.762	2823.395	5.968%	95.078%
40.0	226.308	79.736	2903.131	2.382%	97.763%
45.0	17.191	6.663	2909.795	.199%	97.987%
50.0	14.513	6.094	2915.888	.182%	98.192%
55.0	13.936	6.257	2922.146	.187%	98.403%
60.0	13.577	6.445	2928.591	.193%	98.620%
65.0	14.667	7.286	2935.877	.218%	98.865%
70.0	15.005	7.729	2943.606	.231%	99.126%
75.0	14.646	7.755	2951.361	.232%	99.387%
80.0	14.070	7.595	2958.955	.227%	99.643%
85.0	13.416	7.326	2966.281	.219%	99.889%
90.0	11.995	3.288	2969.569	.098%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2623.63	78.39%	88.35%
0-40	2903.13	86.74%	97.76%
0-60	2928.59	87.50%	98.62%
0-90	2966.28	88.63%	99.89%
0-120	2966.28	88.63%	99.89%
0-180	2969.57	88.72%	100.00%
60-90	44.14	1.32%	1.49%
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%
0-25.90	2375.66	70.98%	80.00%

ZONAL LUMEN SUMMARY

0-10	1182.03
10-20	816.76
20-30	624.84
30-40	279.50
40-50	12.76
50-60	12.70
60-70	15.02
70-80	15.35
80-90	7.33
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: —————

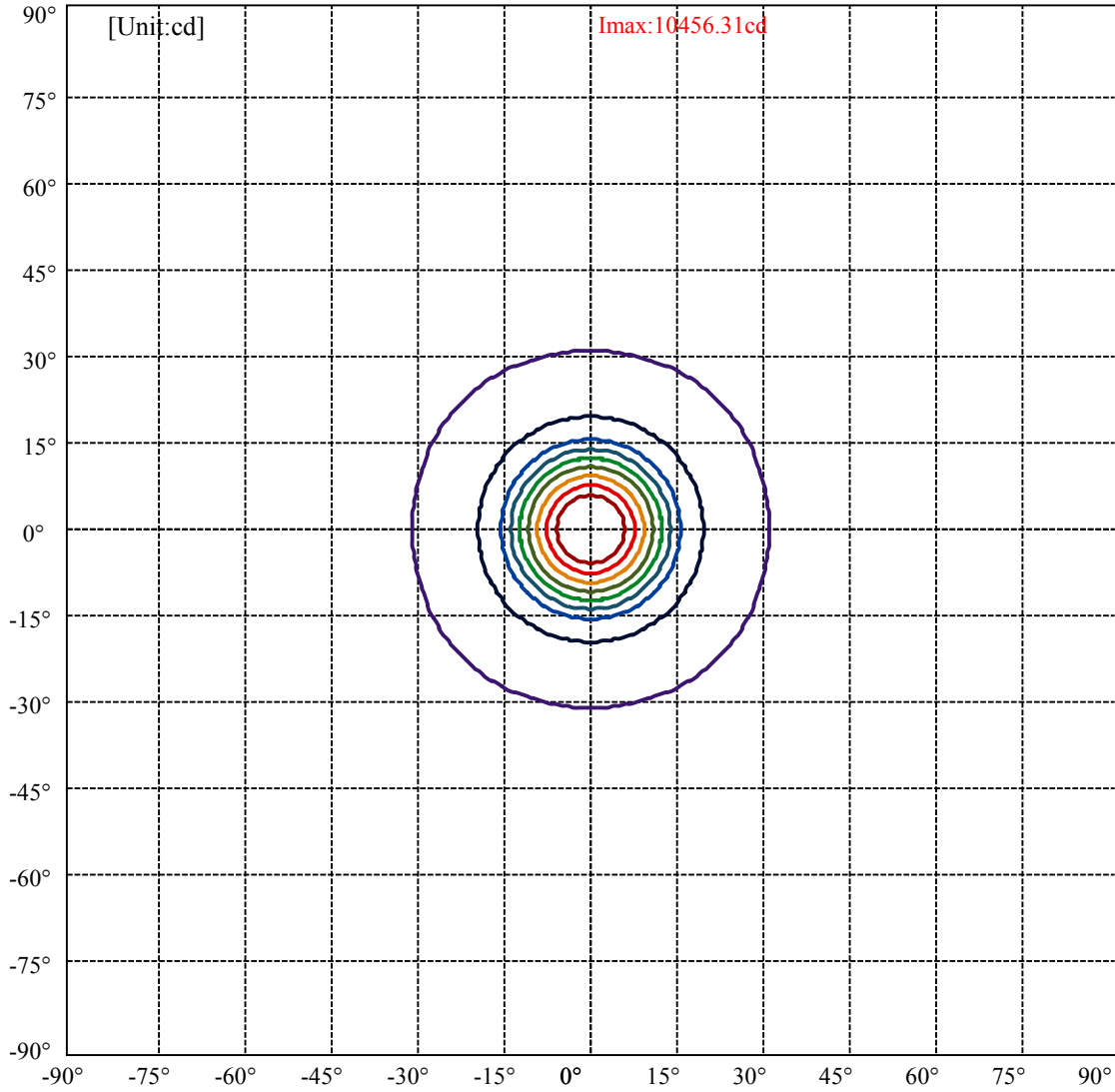
C90/C270: —————

Field angle(10%Imax):C0/180Left:30.6 Right:30.6

:C90/270Left:30.6 Right:30.6

Beam Angle(50%Imax):C0/180Left:12.2 Right:12.2

:C90/270Left:12.2 Right:12.2

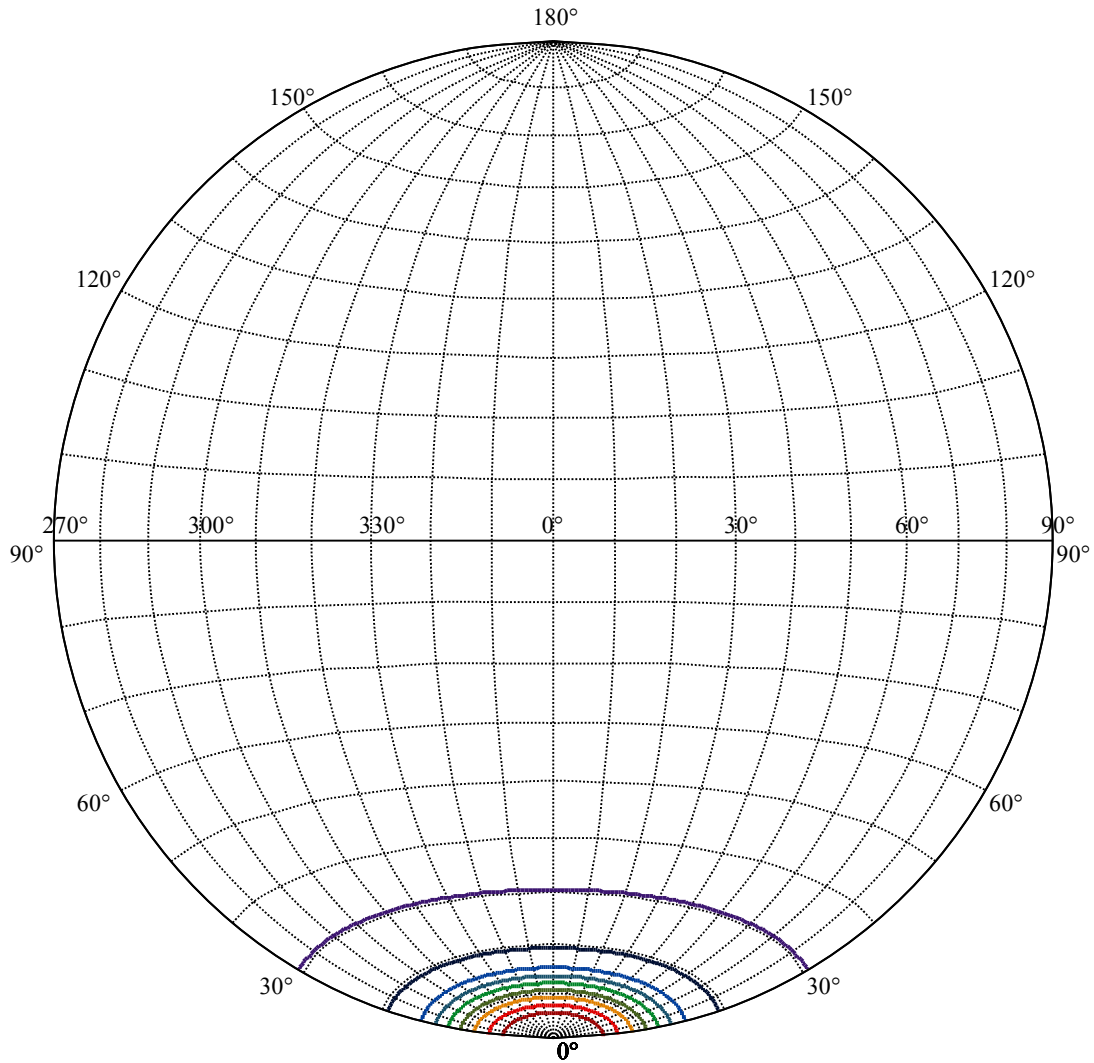


(10%Imax) 1045.63	—
(20%Imax) 2091.26	—
(30%Imax) 3136.89	—
(40%Imax) 4182.52	—
(50%Imax) 5228.16	—
(60%Imax) 6273.79	—
(70%Imax) 7319.42	—
(80%Imax) 8365.05	—
(90%Imax) 9410.68	—

Equipment:
Temperature(°C): 25.0

Date: 2018/10/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50



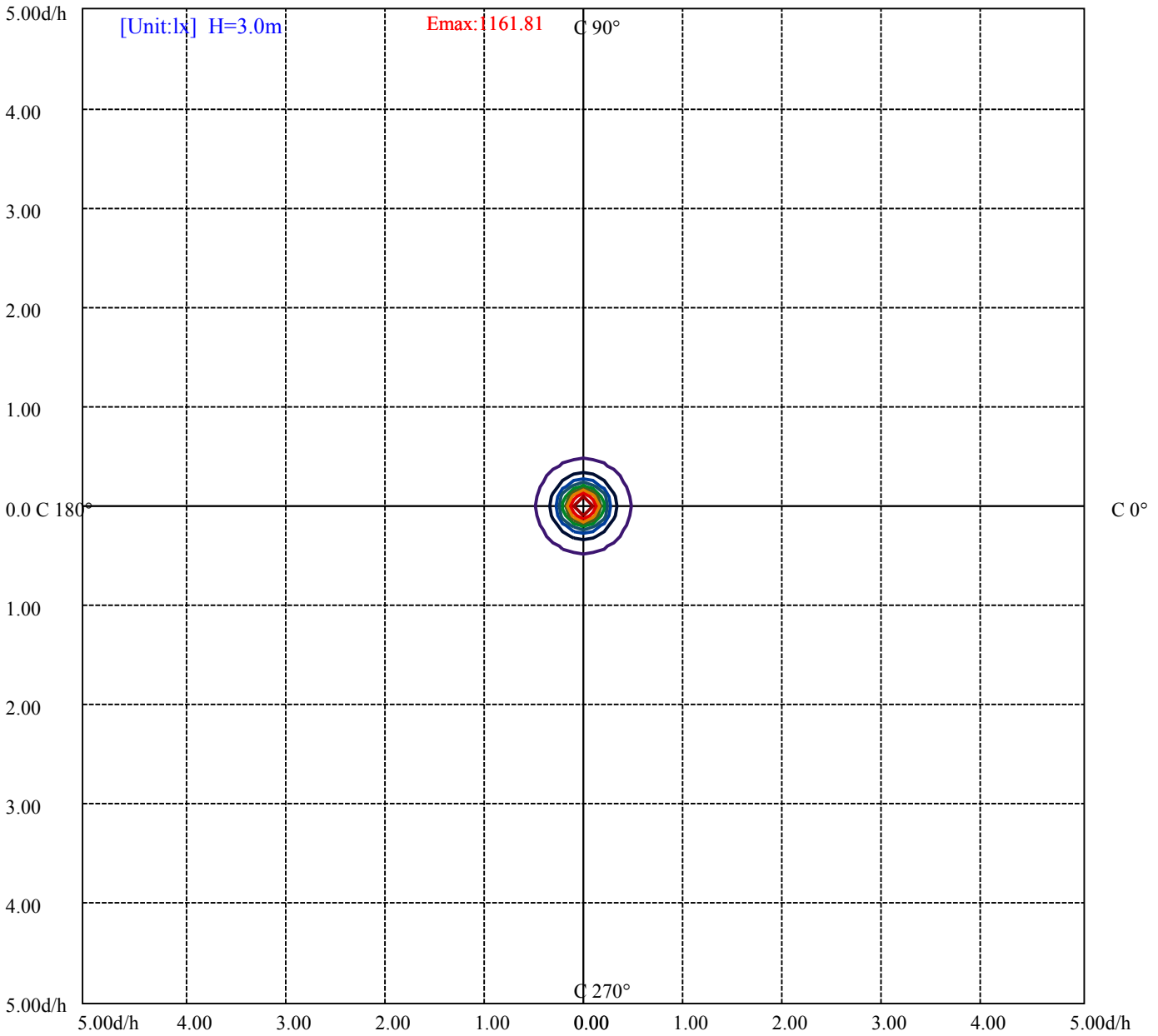
House

[Unit:cd]

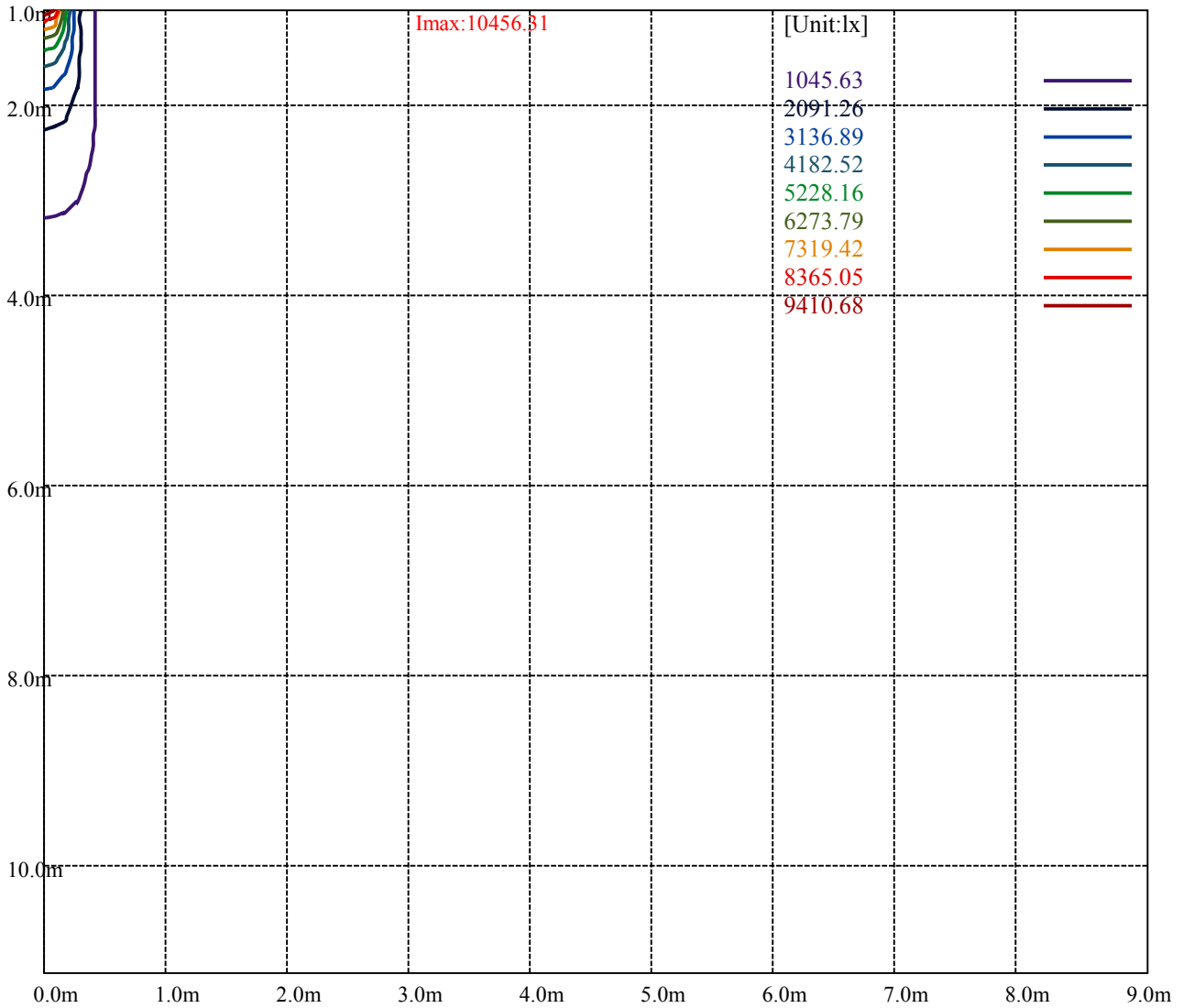
Road

Imax:10456.31

(10%Imax) 1045.63	—
(20%Imax) 2091.26	—
(30%Imax) 3136.89	—
(40%Imax) 4182.52	—
(50%Imax) 5228.16	—
(60%Imax) 6273.79	—
(70%Imax) 7319.42	—
(80%Imax) 8365.05	—
(90%Imax) 9410.68	—



(10%E _{max}) 116.1811	—
(20%E _{max}) 232.3622	—
(30%E _{max}) 348.5433	—
(40%E _{max}) 464.7245	—
(50%E _{max}) 580.9055	—
(60%E _{max}) 697.0867	—
(70%E _{max}) 813.2678	—
(80%E _{max}) 929.4489	—
(90%E _{max}) 1045.63	—



Luminance Table

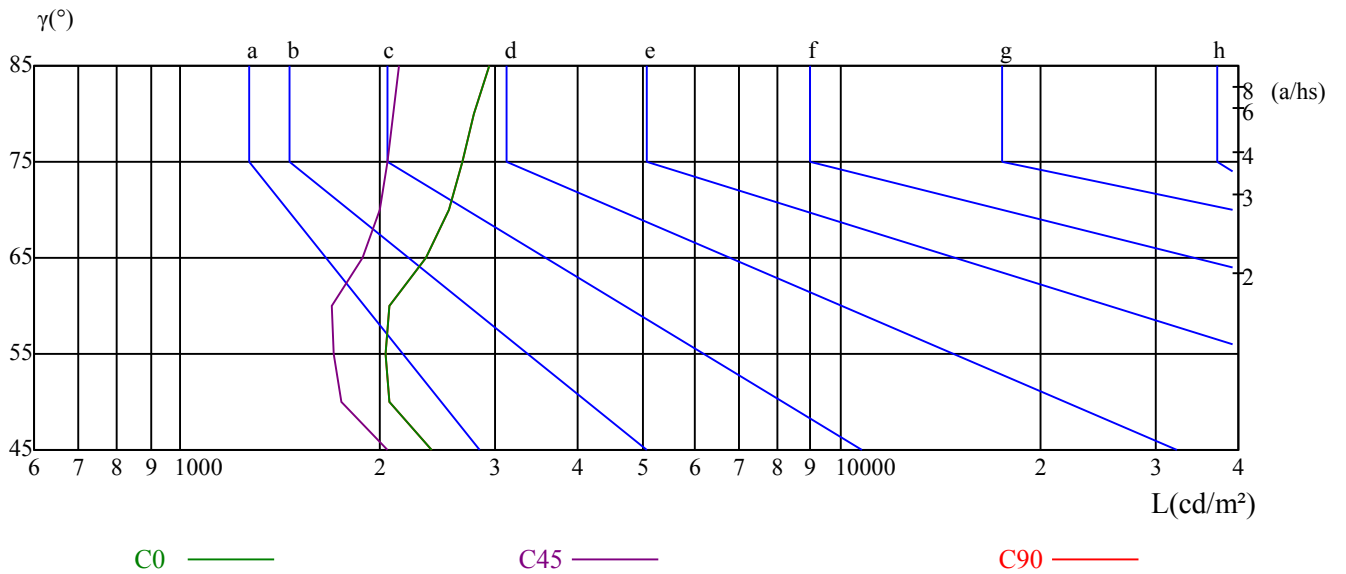
γ	45	50	55	60	65	70	75	80	85
C0	2398	2068	2046	2071	2348	2547	2667	2786	2935
C45	2057	1747	1702	1695	1888	2008	2058	2098	2148
C90	2398	2068	2046	2071	2348	2547	2667	2786	2935

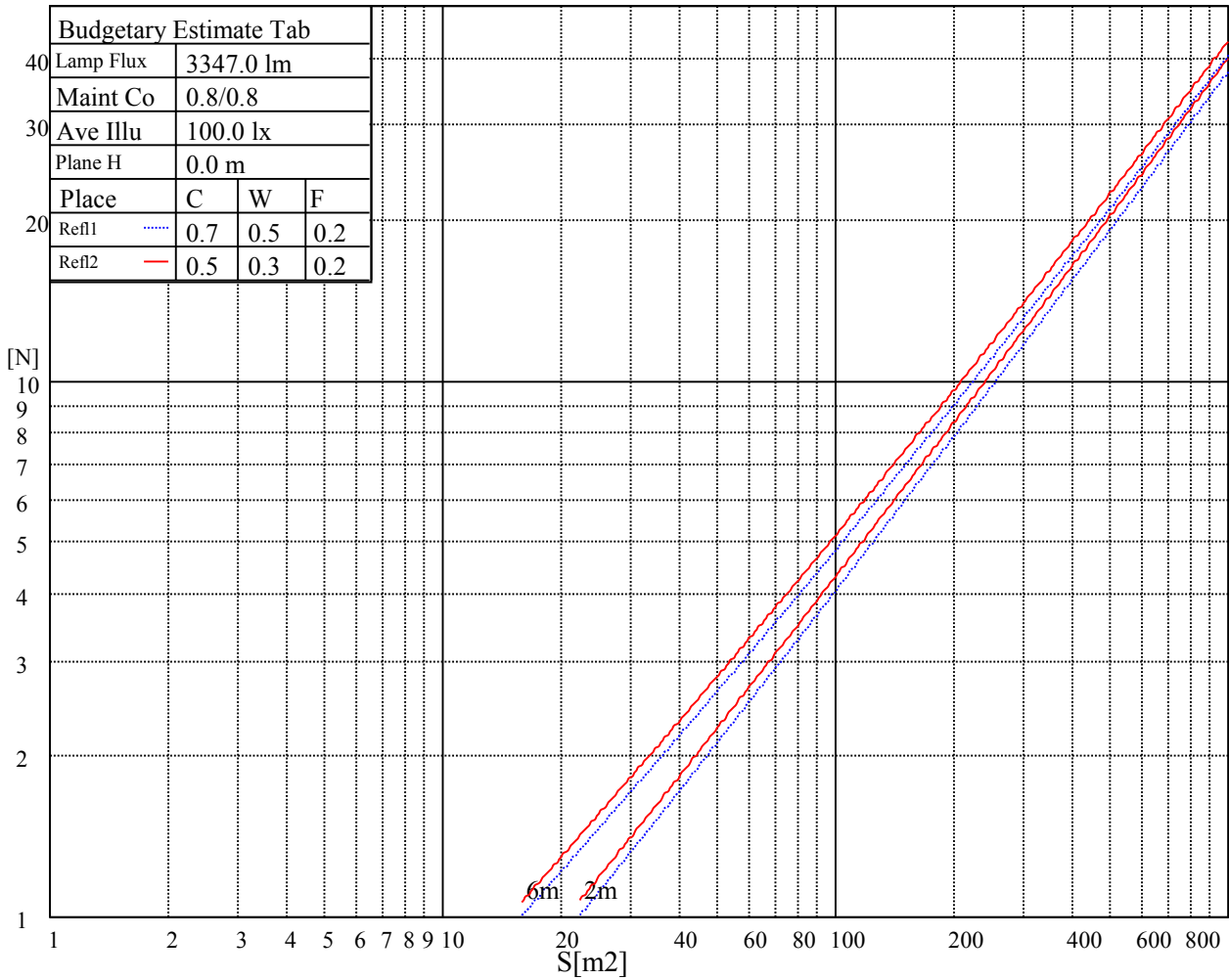
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5704	5704	5704	9301	9301	9301	25300	25300	25300

Glare Table

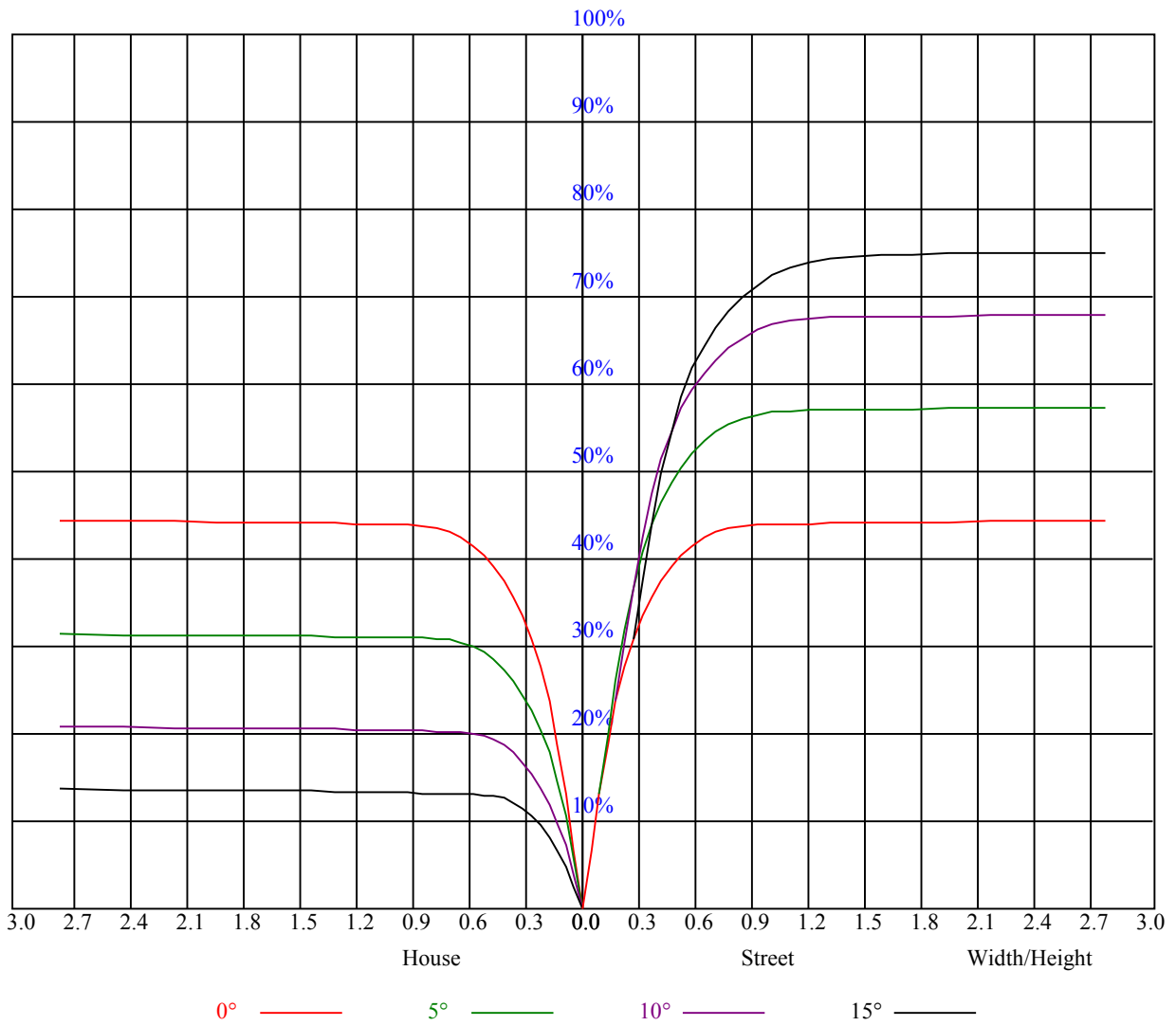
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	0.99	0.97	0.94	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.83
2	0.94	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.81	0.80
3	0.89	0.85	0.82	0.88	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.86	0.81	0.78	0.85	0.81	0.78	0.83	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.82	0.78	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	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	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.64
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.63	0.63
10	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61



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	10458.00	10079.44	7261.31	3599.44	2041.31	1449.00	1178.44	717.19	307.13
45.0	10458.00	10015.88	7340.06	3534.75	2021.06	1471.50	1160.44	699.75	290.25
90.0	10453.50	9719.44	6100.88	3000.38	1828.13	1352.81	1074.71	592.26	149.63
135.0	10455.75	9959.06	6869.81	3337.31	1935.56	1394.44	1111.50	671.06	300.38
180.0	10458.00	9730.69	6198.75	2881.69	1766.81	1337.63	1027.29	548.44	150.30
225.0	10458.00	9807.19	6382.69	2999.81	1780.31	1333.13	1042.31	554.57	133.88
270.0	10453.50	10152.56	7423.88	3441.94	2037.38	1418.63	1146.38	674.44	300.38
315.0	10455.75	9976.50	6643.13	3055.50	1880.44	1379.81	1084.50	625.33	178.54
360.0	10458.00	10079.44	7261.31	3599.44	2041.31	1449.00	1178.44	717.19	307.13

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	20.03	14.85	14.18	13.67	14.12	15.24	14.79	14.18	13.28
45.0	17.89	13.89	13.50	13.28	13.16	13.33	13.67	13.50	12.88
90.0	16.26	14.12	13.56	13.16	13.61	13.73	13.50	13.28	12.88
135.0	18.23	14.29	13.67	13.22	13.84	14.01	13.84	13.50	13.11
180.0	14.96	14.23	13.78	13.33	13.16	13.50	13.78	13.61	12.94
225.0	15.64	14.34	13.84	13.50	14.51	15.30	15.13	14.34	13.67
270.0	18.73	15.58	14.57	14.18	17.72	17.83	16.37	15.36	14.63
315.0	15.81	14.79	14.40	14.29	17.21	17.10	16.09	14.79	13.95
360.0	20.03	14.85	14.18	13.67	14.12	15.24	14.79	14.18	13.28

C/γ(°)	90.0
0.0	12.04
45.0	11.98
90.0	11.98
135.0	11.98
180.0	11.98
225.0	12.04
270.0	11.98
315.0	11.98
360.0	12.04