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Nata

LumCAT: 3-2042-M	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 34.1000
Test No: GC2018071908	Current(A): 0.3000
LampCAT: BRIDGELUX V9 HD	Power (W): 10.2300
Lamp flux(lm): 1166.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1047.74
Efficiency(%): 89.86%
Lumens(lm)/Power(W): 104.28
Central intensity(cd): 20074.940
Maximum intensity(cd): 20074.940
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=8.9
[C90/270]Total=8.9
Field angle(10%Imax): [C0/180]Total=17.2
[C90/270]Total=17.2
Maximum s/h(1/2): C0_180=0.15 C90_270=0.15
Maximum s/h(1/4): C0_180=0.16 C90_270=0.16
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.49%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.919%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	20074.939	19.211	19.211	1.648%	1.834%
2.0	17503.807	133.973	153.184	11.490%	14.620%
4.0	11265.434	172.345	325.528	14.781%	31.070%
6.0	5747.475	131.758	457.286	11.300%	43.645%
8.0	2402.248	73.323	530.609	6.288%	50.643%
10.0	1062.024	40.445	571.054	3.469%	54.504%
12.0	700.221	31.929	602.983	2.738%	57.551%
14.0	568.512	30.163	633.146	2.587%	60.430%
16.0	518.590	31.349	664.496	2.689%	63.422%
18.0	483.498	32.767	697.263	2.810%	66.549%
20.0	442.943	33.225	730.488	2.849%	69.720%
22.0	413.006	33.931	764.419	2.910%	72.959%
24.0	395.835	35.310	799.729	3.028%	76.329%
26.0	383.605	36.880	836.609	3.163%	79.849%
28.0	370.784	38.176	874.785	3.274%	83.493%
30.0	359.966	39.473	914.258	3.385%	87.260%
32.0	348.934	40.553	954.81	3.478%	91.131%
34.0	305.900	37.515	992.325	3.217%	94.711%
36.0	183.785	23.692	1016.017	2.032%	96.972%
38.0	49.152	6.637	1022.654	.569%	97.606%
40.0	11.355	1.601	1024.254	.137%	97.759%
42.0	8.988	1.319	1025.573	.113%	97.884%
44.0	6.779	1.033	1026.606	.089%	97.983%
46.0	5.864	0.925	1027.531	.079%	98.071%
48.0	5.623	0.916	1028.448	.079%	98.159%
50.0	5.416	0.910	1029.358	.078%	98.246%
52.0	5.258	0.909	1030.266	.078%	98.332%
54.0	5.113	0.907	1031.173	.078%	98.419%
56.0	5.003	0.910	1032.083	.078%	98.506%
58.0	4.914	0.914	1032.997	.078%	98.593%
60.0	4.845	0.920	1033.917	.079%	98.681%
62.0	4.769	0.924	1034.841	.079%	98.769%
64.0	4.707	0.928	1035.769	.080%	98.858%
66.0	4.652	0.932	1036.701	.080%	98.947%
68.0	4.611	0.938	1037.638	.080%	99.036%
70.0	4.583	0.945	1038.583	.081%	99.126%
72.0	4.535	0.946	1039.529	.081%	99.216%
74.0	4.522	0.953	1040.482	.082%	99.307%

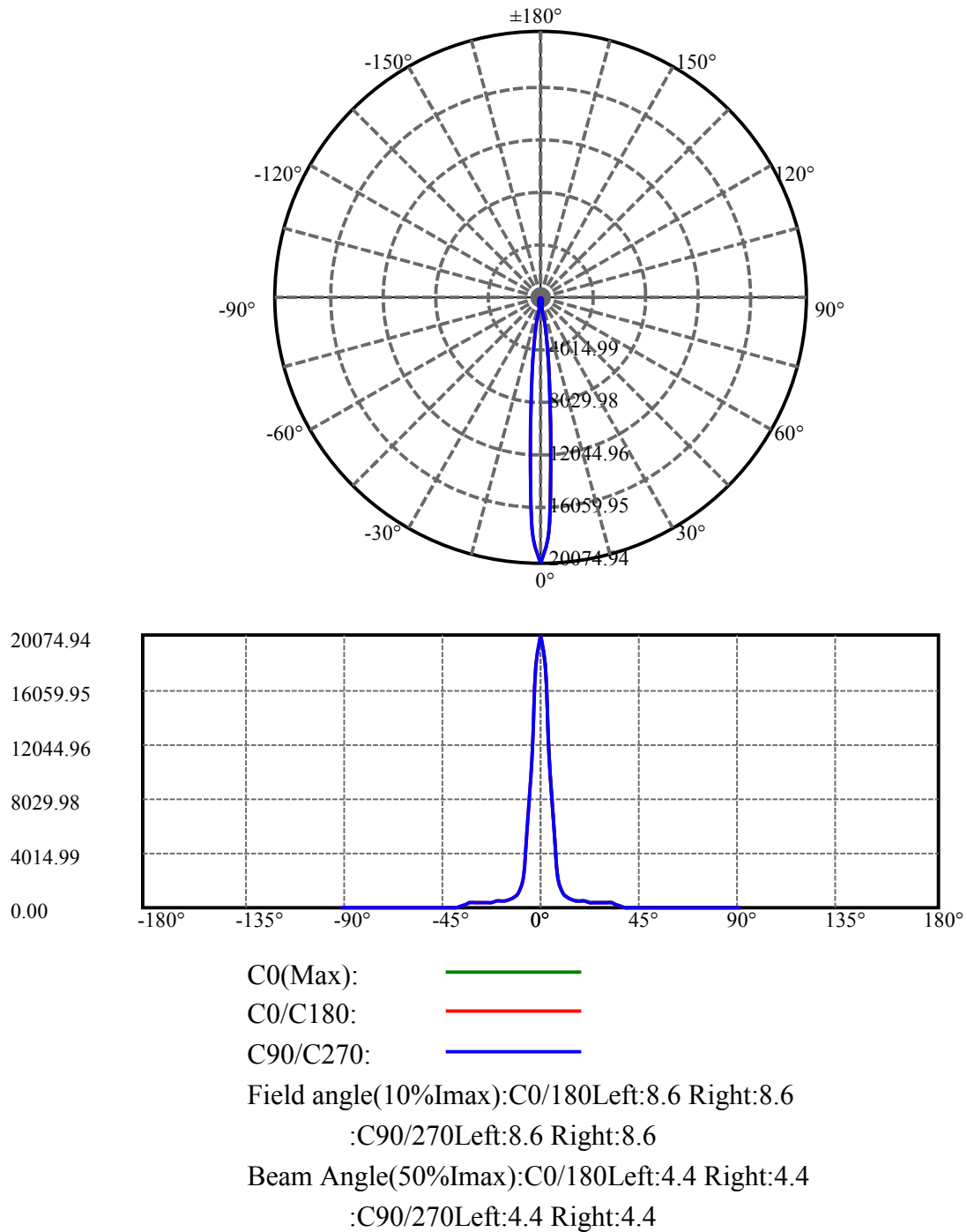
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.508	0.959	1041.441	.082%	99.399%
78.0	4.480	0.961	1042.403	.082%	99.491%
80.0	4.473	0.966	1043.369	.083%	99.583%
82.0	4.480	0.973	1044.342	.083%	99.676%
84.0	4.466	0.974	1045.316	.084%	99.769%
86.0	4.432	0.970	1046.286	.083%	99.861%
88.0	4.418	0.968	1047.254	.083%	99.954%
90.0	4.418	0.484	1047.738	.042%	100.000%

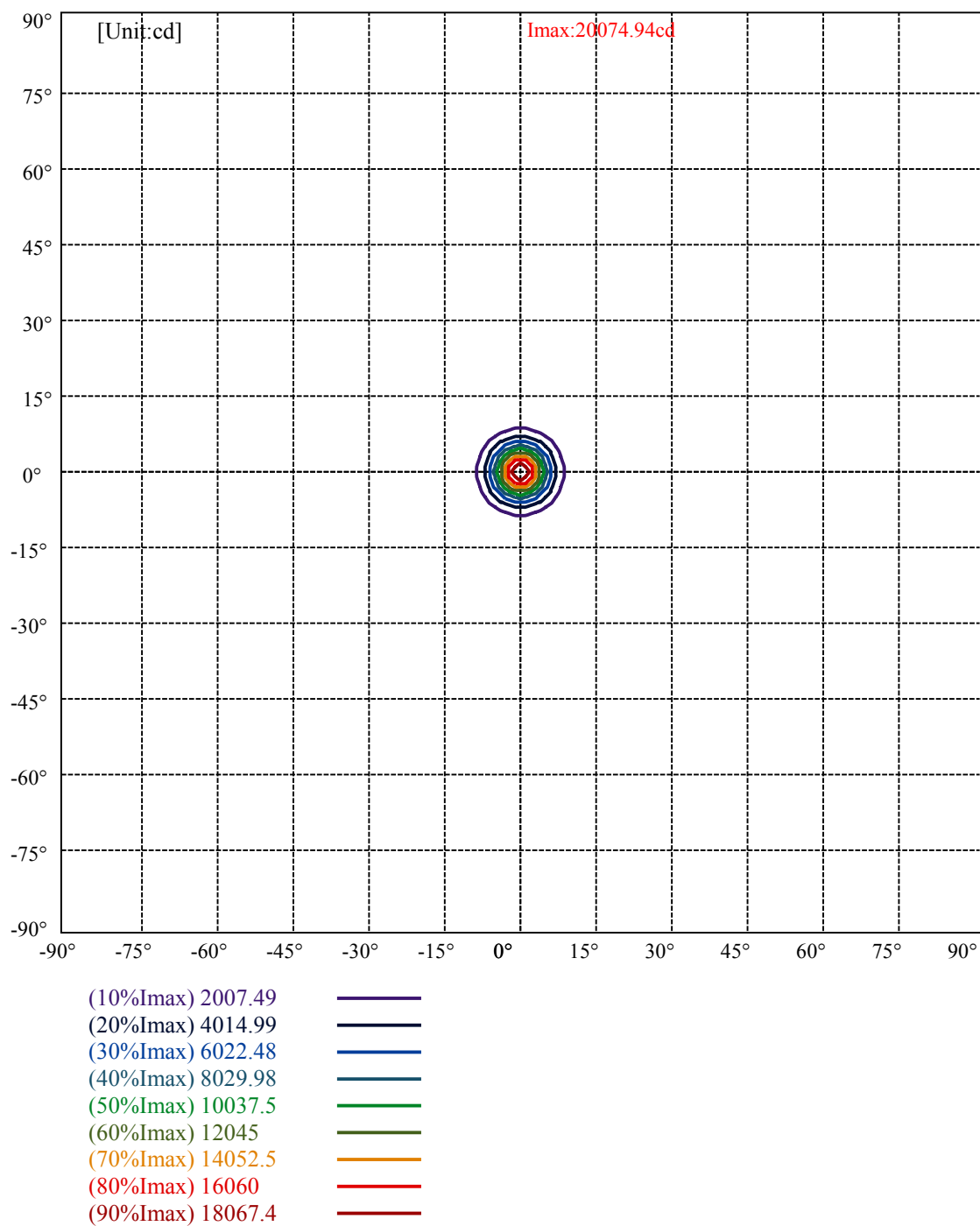
ZONAL LUMEN SUMMARY

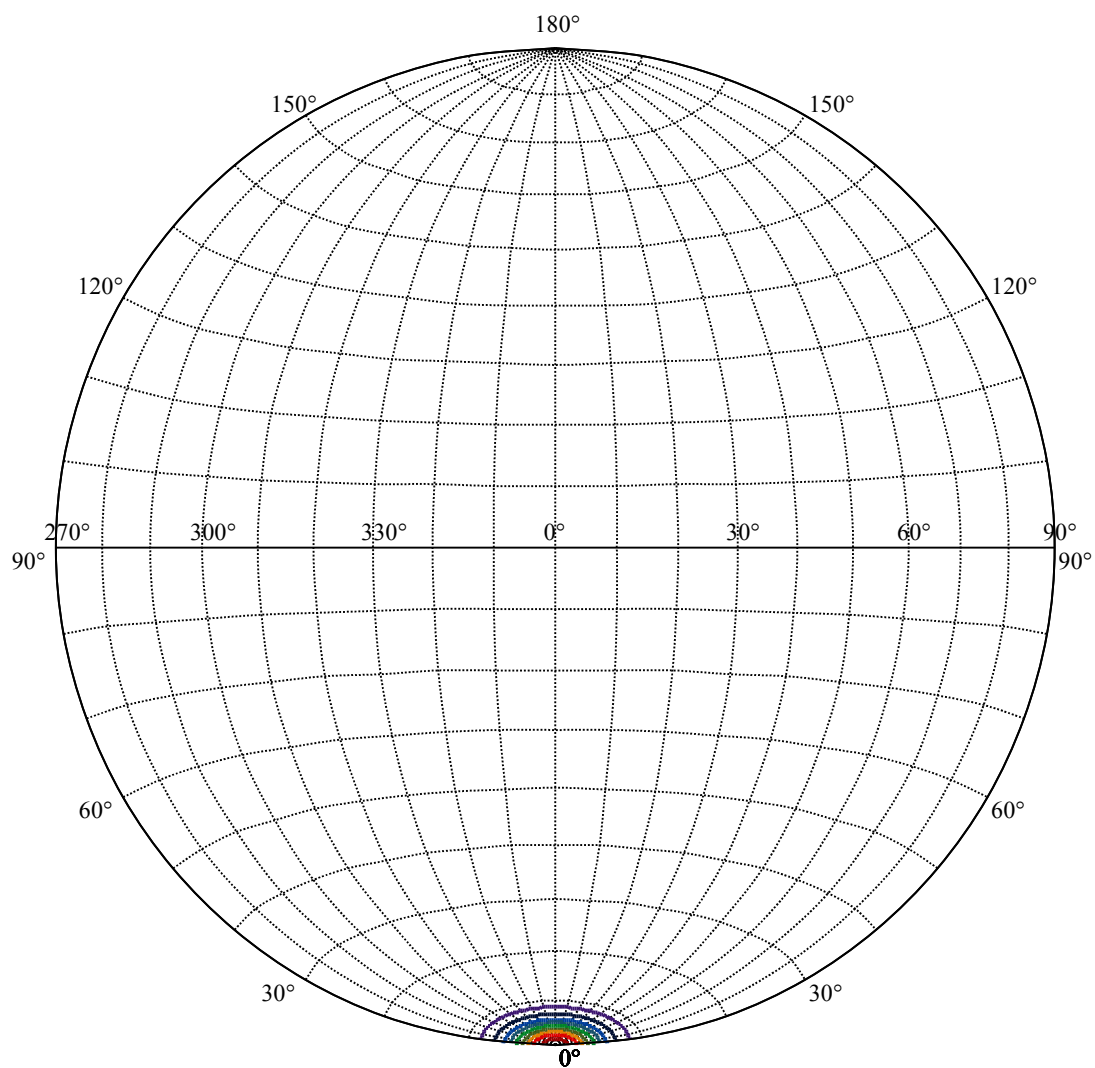
Zone	Lumens	%Lamp	%Fixt
0-30	914.26	78.41%	87.26%
0-40	1024.25	87.84%	97.76%
0-60	1033.92	88.67%	98.68%
0-90	1047.25	89.82%	99.95%
0-120	1047.25	89.82%	99.95%
0-180	1047.74	89.86%	100.00%
60-90	14.26	1.22%	1.36%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.08	838.19	71.89%	80.00%

ZONAL LUMEN SUMMARY

0-10	571.05
10-20	159.43
20-30	183.77
30-40	110.00
40-50	5.10
50-60	4.56
60-70	4.67
70-80	4.79
80-90	3.89
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







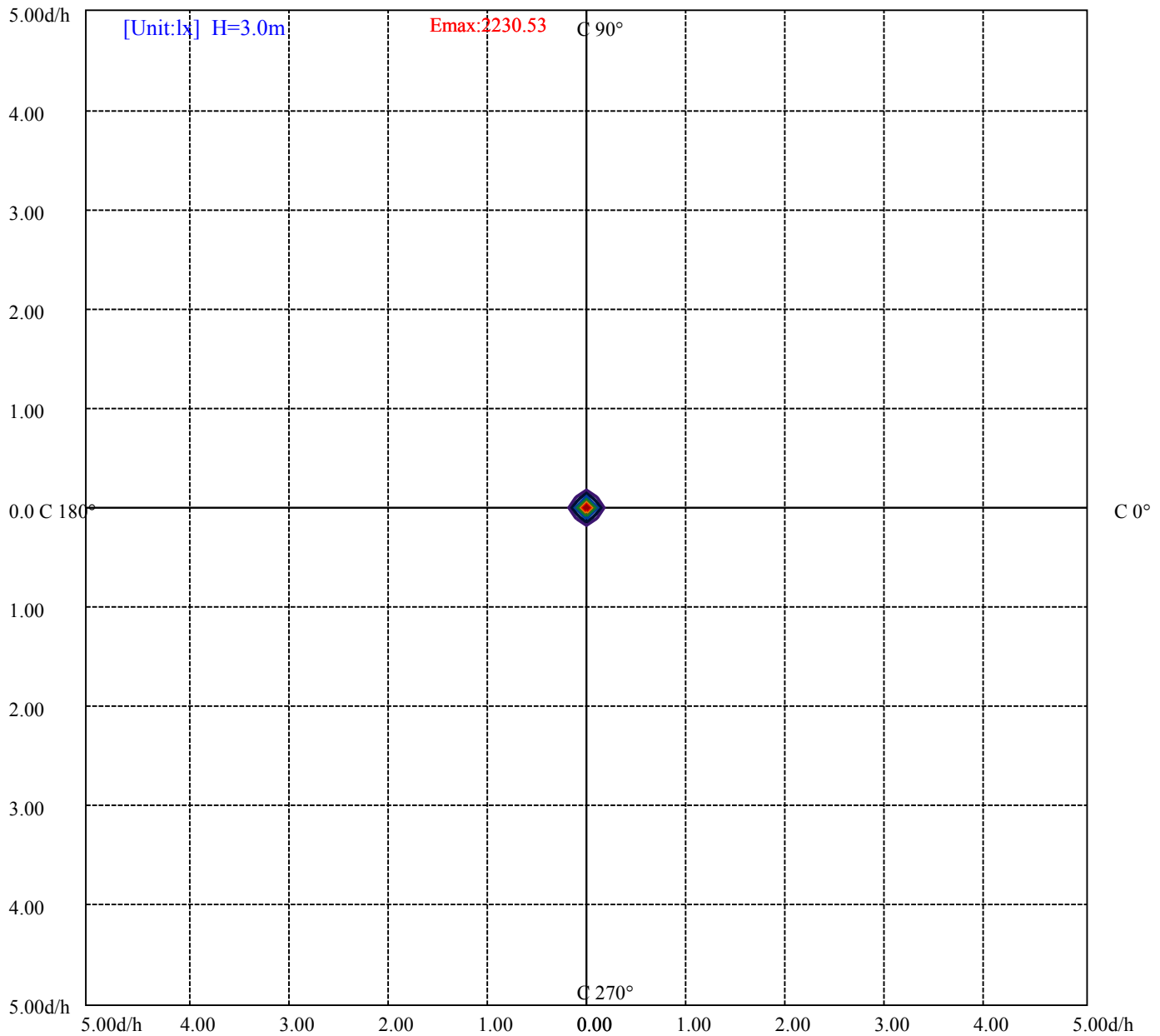
House

[Unit:cd]

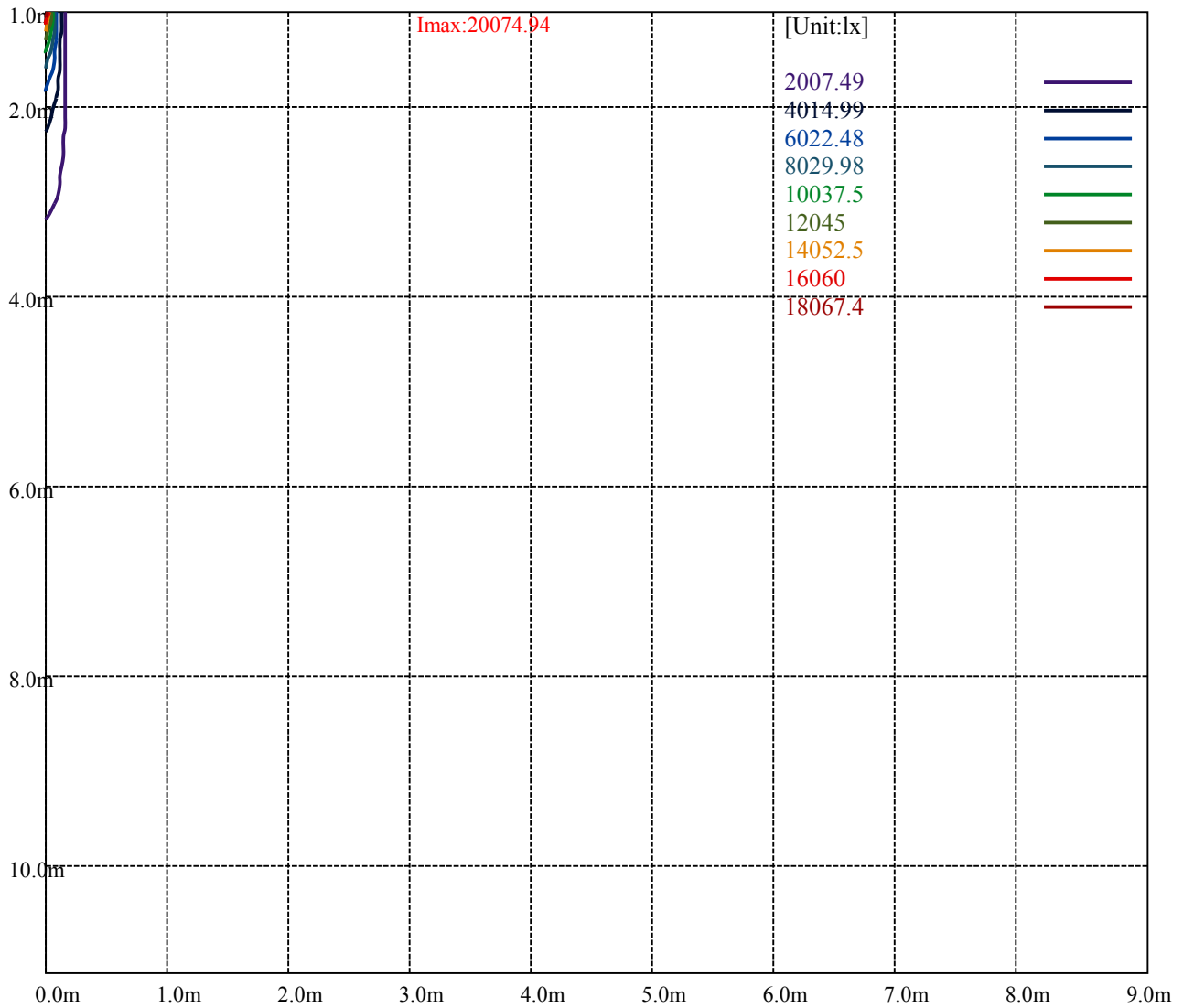
Road

Imax:20074.94

(10%Imax)	2007.49	—
(20%Imax)	4014.99	—
(30%Imax)	6022.48	—
(40%Imax)	8029.98	—
(50%Imax)	10037.5	—
(60%Imax)	12045	—
(70%Imax)	14052.5	—
(80%Imax)	16060	—
(90%Imax)	18067.4	—



(10%Emax) 223.0522	—
(20%Emax) 446.1056	—
(30%Emax) 669.1578	—
(40%Emax) 892.2111	—
(50%Emax) 1115.267	—
(60%Emax) 1338.311	—
(70%Emax) 1561.367	—
(80%Emax) 1784.422	—
(90%Emax) 2007.478	—



Luminance Table

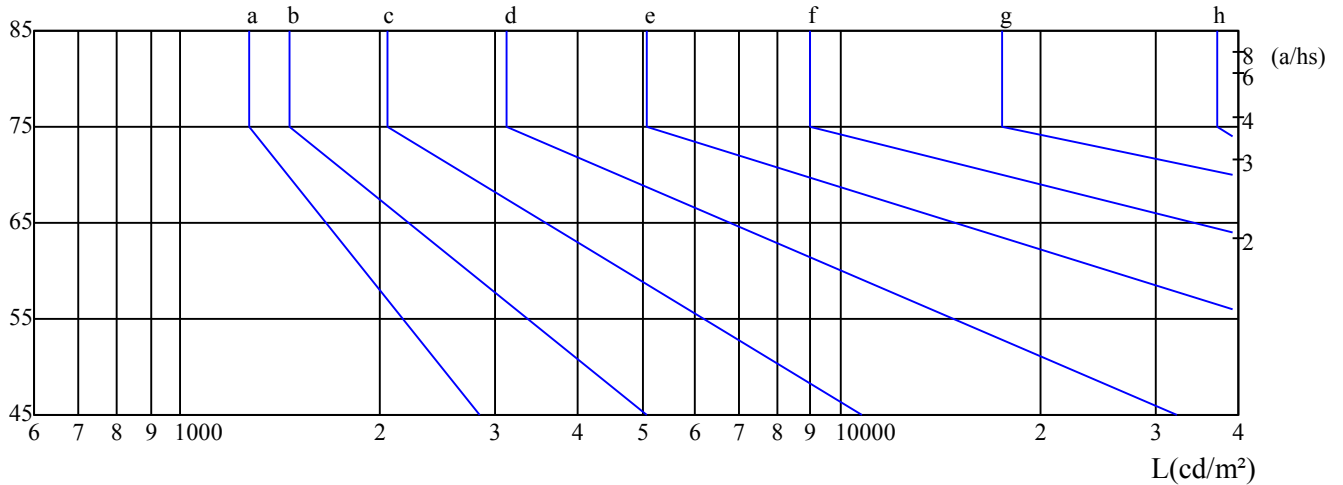
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

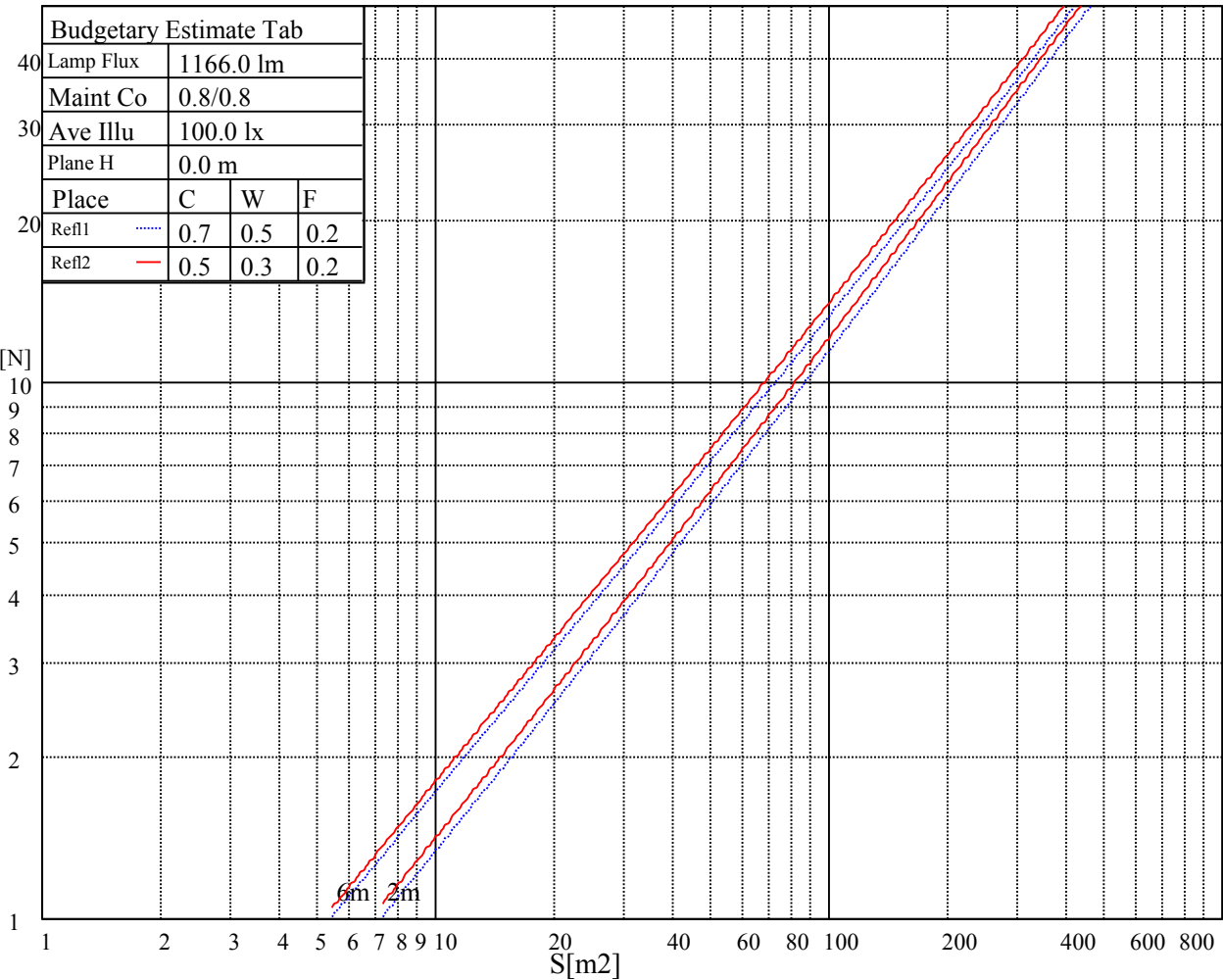
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

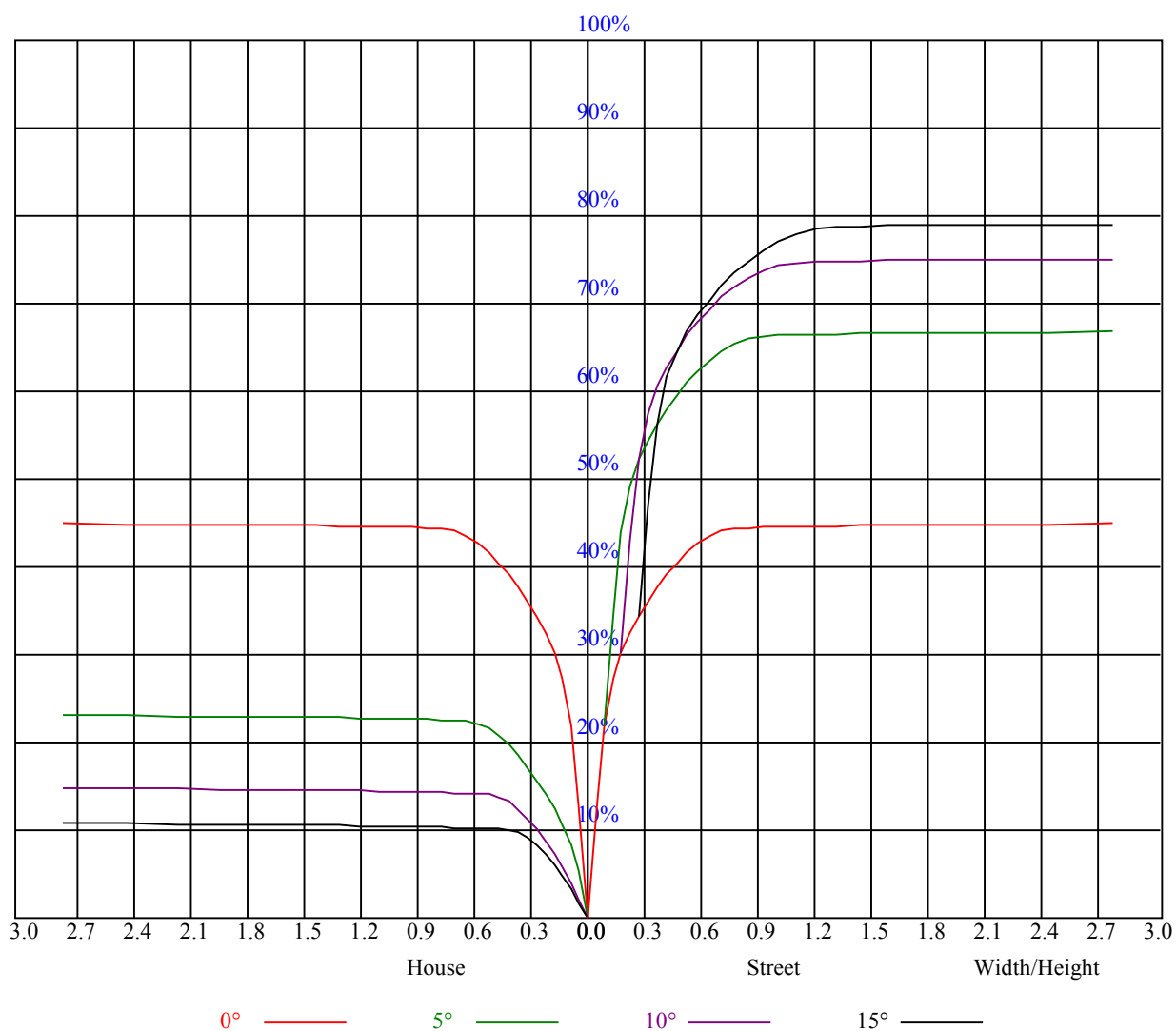
C0 ———

C45 ———

C90 ———



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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.01	0.99	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.89	0.88	0.87	0.85
2	0.96	0.93	0.90	0.94	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.92	0.88	0.85	0.91	0.87	0.84	0.88	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.79
4	0.88	0.84	0.81	0.87	0.84	0.81	0.86	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.81	0.78	0.84	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.75
6	0.82	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.76	0.74	0.73
7	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.77	0.74	0.72	0.71
8	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
9	0.76	0.72	0.69	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68
10	0.74	0.70	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.72	0.69	0.67	0.66



Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	19143.11	19930.42	15168.04	8781.50	3793.39	1500.29	872.64	646.36	566.53
45.0	20310.31	20271.77	15316.69	8462.17	3507.09	1448.53	820.34	616.63	550.56
90.0	20668.17	18730.19	10851.62	6575.39	2428.54	1070.24	713.81	580.18	525.24
135.0	20178.17	17491.42	11545.33	5494.63	2868.44	1051.58	690.41	550.56	500.46
180.0	19143.11	14132.98	7590.08	3380.46	1065.34	751.35	576.66	503.33	471.67
225.0	20310.31	15448.83	8581.64	3482.32	1305.94	795.68	588.33	515.33	484.22
270.0	20668.17	17089.51	10273.52	4690.81	2233.09	940.91	652.42	553.32	512.58
315.0	20178.17	16935.35	10796.56	5112.54	2016.17	937.61	687.16	582.39	537.46
360.0	19143.11	19930.42	15168.04	8781.50	3793.39	1500.29	872.64	646.36	566.53
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	528.54	476.79	434.39	407.42	393.65	377.69	367.23	355.11	344.10
45.0	510.37	459.72	425.04	401.91	387.05	371.63	361.17	349.61	340.25
90.0	487.19	443.26	412.15	392.00	380.22	366.13	355.17	344.21	326.70
135.0	467.98	430.54	403.56	388.15	378.24	365.02	354.56	344.65	316.02
180.0	443.31	414.52	396.13	386.06	373.39	363.48	352.03	341.29	242.74
225.0	451.19	423.49	403.45	392.06	380.38	370.03	358.42	348.78	263.44
270.0	482.84	443.20	412.92	399.71	388.15	377.69	366.13	355.66	302.26
315.0	496.55	452.01	416.39	399.38	387.76	374.60	365.02	352.14	311.67
360.0	528.54	476.79	434.39	407.42	393.65	377.69	367.23	355.11	344.10
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	282.99	114.79	14.53	9.97	7.87	6.17	5.84	5.56	5.40
45.0	282.99	94.42	11.78	9.86	7.43	6.06	5.78	5.51	5.34
90.0	200.96	53.07	11.34	9.25	6.77	5.89	5.62	5.45	5.29
135.0	182.02	48.89	11.18	8.97	6.94	5.84	5.62	5.45	5.29
180.0	95.36	12.61	10.74	8.42	5.89	5.62	5.45	5.23	5.12
225.0	91.89	13.65	10.90	8.48	6.00	5.73	5.51	5.34	5.18
270.0	166.60	22.41	10.46	8.70	6.66	5.84	5.62	5.40	5.23
315.0	167.48	33.36	9.91	8.26	6.66	5.78	5.56	5.40	5.23
360.0	282.99	114.79	14.53	9.97	7.87	6.17	5.84	5.56	5.40
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	5.23	5.07	5.01	4.90	4.79	4.73	4.62	4.62	4.57
45.0	5.23	5.07	4.96	4.90	4.79	4.73	4.68	4.68	4.62
90.0	5.18	5.01	4.96	4.84	4.79	4.73	4.68	4.62	4.62
135.0	5.12	5.01	4.90	4.84	4.79	4.73	4.68	4.62	4.62
180.0	5.01	4.96	4.84	4.79	4.73	4.68	4.62	4.57	4.51
225.0	5.01	4.96	4.84	4.79	4.73	4.68	4.62	4.57	4.57
270.0	5.07	5.01	4.90	4.84	4.79	4.68	4.68	4.62	4.57
315.0	5.07	4.96	4.90	4.84	4.73	4.68	4.62	4.57	4.57
360.0	5.23	5.07	5.01	4.90	4.79	4.73	4.62	4.62	4.57
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	4.51	4.51	4.51	4.46	4.46	4.46	4.40	4.40	4.40
45.0	4.57	4.57	4.51	4.46	4.51	4.51	4.46	4.46	4.46
90.0	4.57	4.51	4.51	4.51	4.51	4.51	4.51	4.46	4.40
135.0	4.51	4.51	4.51	4.51	4.46	4.46	4.46	4.40	4.40
180.0	4.51	4.51	4.46	4.46	4.46	4.46	4.40	4.40	4.40
225.0	4.51	4.51	4.51	4.46	4.46	4.46	4.46	4.46	4.40
270.0	4.57	4.57	4.51	4.51	4.51	4.51	4.57	4.46	4.46
315.0	4.51	4.46	4.51	4.46	4.40	4.46	4.46	4.40	4.40
360.0	4.51	4.51	4.51	4.46	4.46	4.46	4.40	4.40	4.40

Intensity data(cd)

Appendix Page: 16 Total:16

C/ γ (°)	90.0
0.0	4.40
45.0	4.40
90.0	4.40
135.0	4.40
180.0	4.40
225.0	4.46
270.0	4.40
315.0	4.46
360.0	4.40