
NATA

LumCAT: 2-1429-A	
Luminaire:H48185AC	
Report No: NT2016042702	Voltage(V): 219.9000
Test No: GC2016042702	Current(A): 0.0950
LampCAT: CBAC-88-36185-240V-30	Power (W): 18.0000
Lamp flux(lm): 1472.0	PF: 0.8560
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1360.28
Efficiency(%): 92.41%
Lumens(lm)/Power(W): 75.57
Central intensity(cd): 7563.235
Maximum intensity(cd): 7563.235
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=17.3
 [C90/270]Total=17.3
Field angle(10%Imax): [C0/180]Total=39.0
 [C90/270]Total=39.0
Maximum s/h(1/2): C0_180=0.30 C90_270=0.30
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.16%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.081%

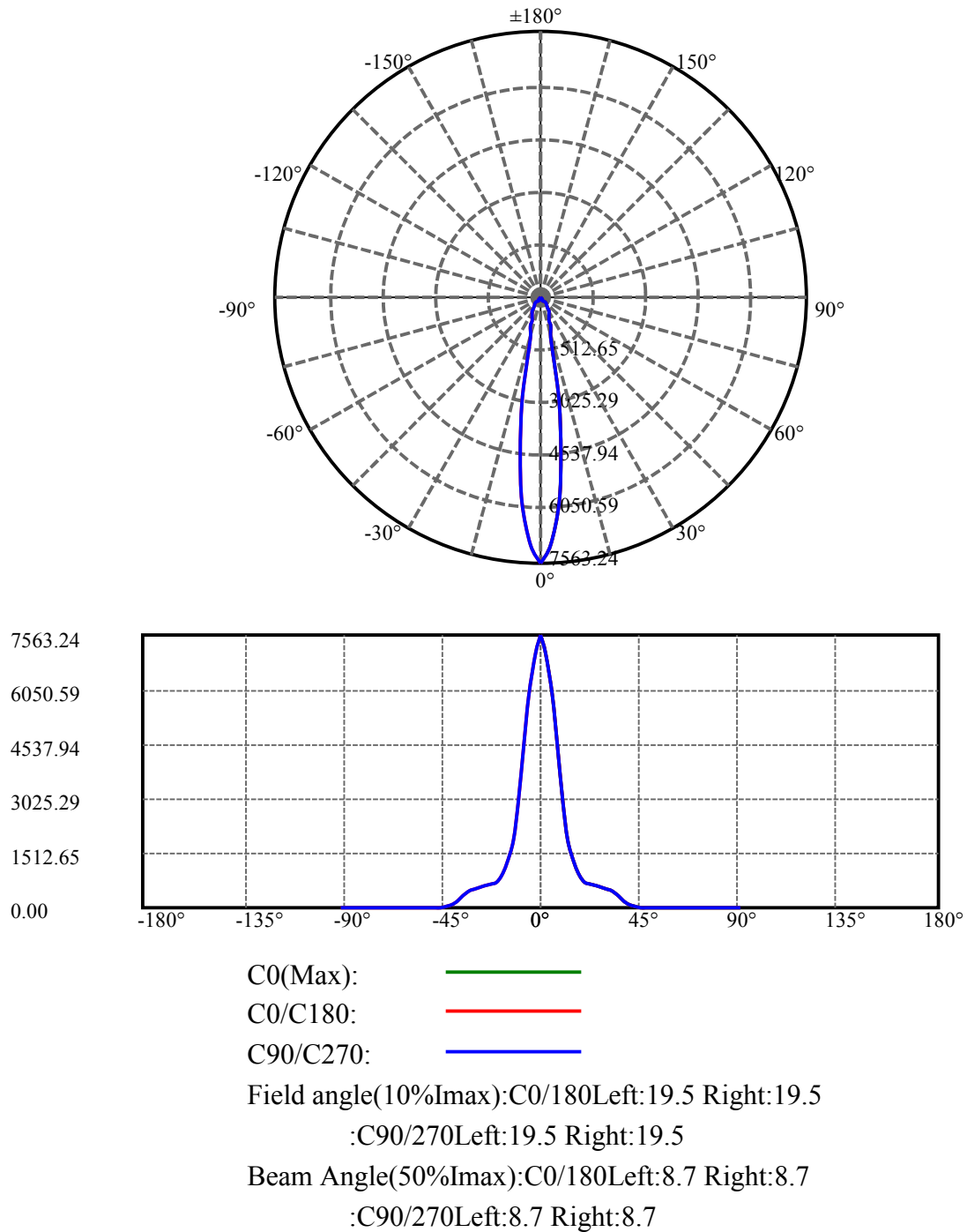
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7563.235	11.309	11.309	.768%	.831%
2.5	7038.823	84.167	95.476	5.718%	7.019%
5.0	5849.880	139.767	235.243	9.495%	17.294%
7.5	4446.493	159.103	394.346	10.809%	28.990%
10.0	3010.071	143.288	537.634	9.734%	39.524%
12.5	1887.333	111.982	649.616	7.607%	47.756%
15.0	1203.037	85.357	734.973	5.799%	54.031%
17.5	881.185	72.639	807.612	4.935%	59.371%
20.0	726.813	68.146	875.758	4.629%	64.381%
22.5	646.362	67.808	943.565	4.606%	69.365%
25.0	595.366	68.976	1012.541	4.686%	74.436%
27.5	558.822	70.736	1083.277	4.805%	79.636%
30.0	525.169	71.983	1155.26	4.890%	84.928%
32.5	457.409	67.373	1222.633	4.577%	89.881%
35.0	338.913	53.290	1275.923	3.620%	93.798%
37.5	207.459	34.621	1310.544	2.352%	96.344%
40.0	96.975	17.088	1327.632	1.161%	97.600%
42.5	37.321	6.912	1334.544	.470%	98.108%
45.0	12.216	2.368	1336.912	.161%	98.282%
47.5	6.056	1.224	1338.136	.083%	98.372%
50.0	5.829	1.224	1339.36	.083%	98.462%
52.5	5.891	1.281	1340.641	.087%	98.556%
55.0	6.042	1.357	1341.998	.092%	98.656%
57.5	6.366	1.472	1343.47	.100%	98.764%
60.0	6.290	1.493	1344.963	.101%	98.874%
62.5	5.547	1.349	1346.312	.092%	98.973%
65.0	5.113	1.270	1347.582	.086%	99.066%
67.5	5.010	1.269	1348.851	.086%	99.160%
70.0	4.962	1.278	1350.13	.087%	99.254%
72.5	4.948	1.294	1351.423	.088%	99.349%
75.0	5.045	1.336	1352.759	.091%	99.447%
77.5	5.079	1.359	1354.118	.092%	99.547%
80.0	5.120	1.382	1355.501	.094%	99.648%
82.5	5.155	1.401	1356.902	.095%	99.751%
85.0	5.162	1.410	1358.311	.096%	99.855%
87.5	4.804	1.316	1359.627	.089%	99.952%
90.0	4.783	0.656	1360.282	.045%	100.000%

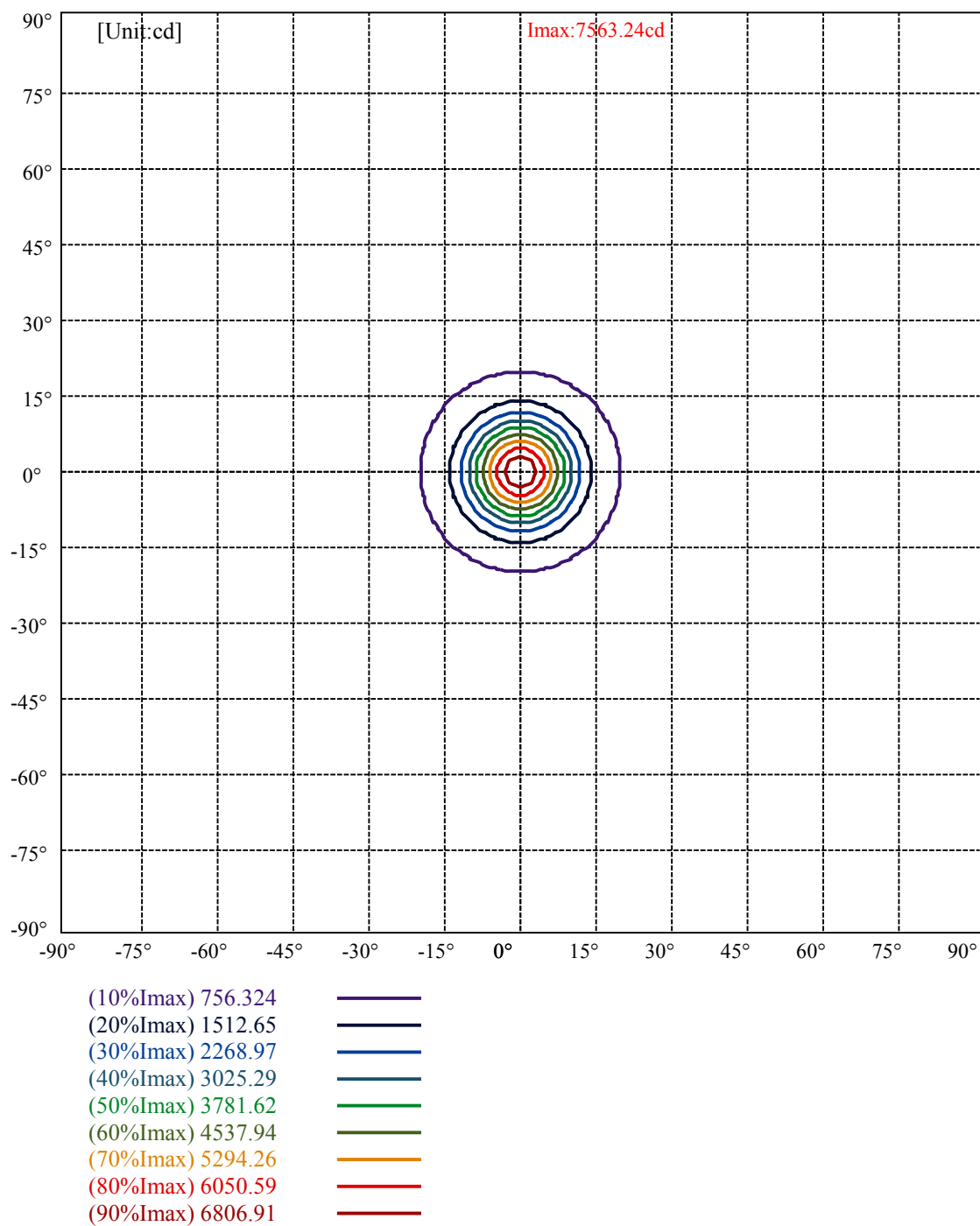
ZONAL LUMEN SUMMARY

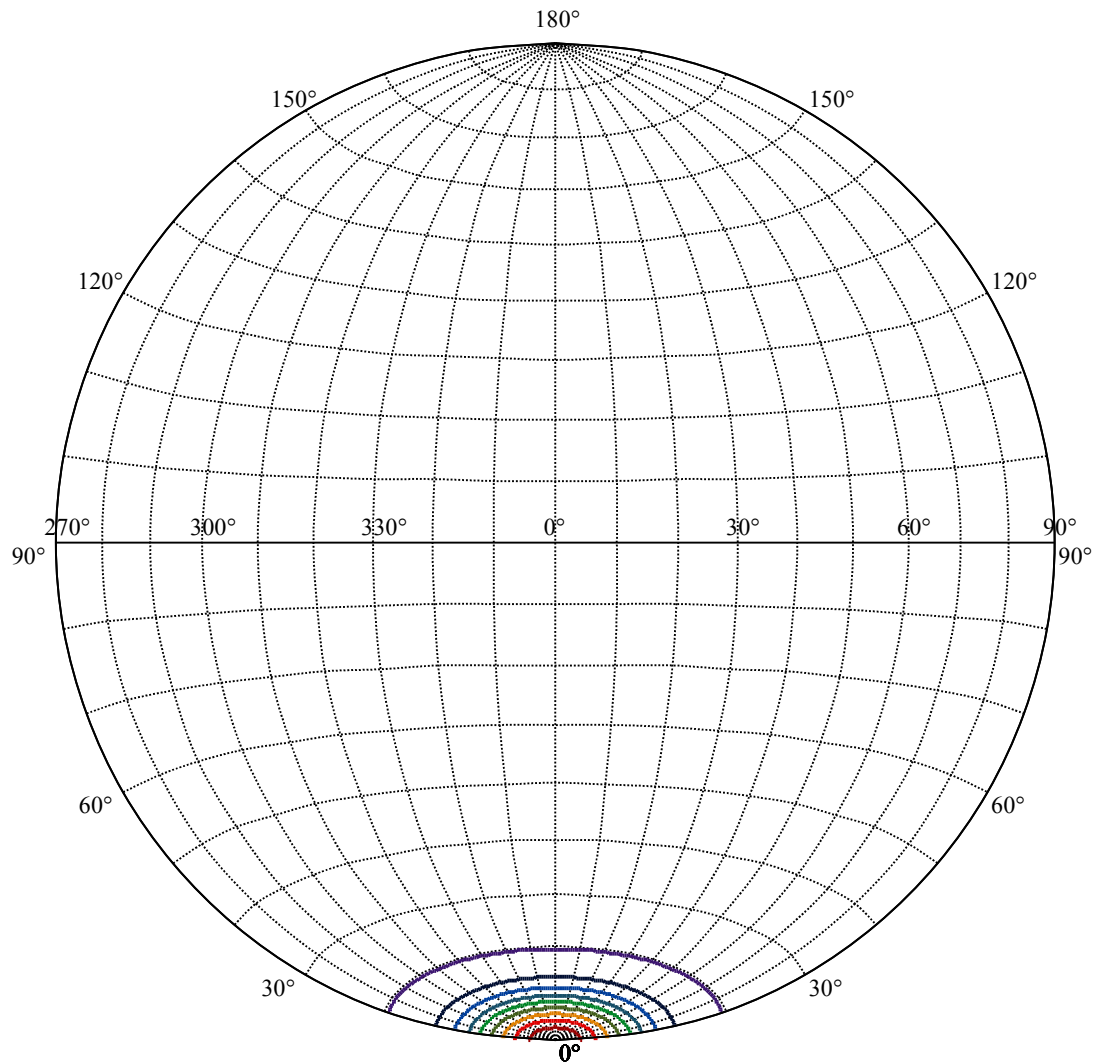
Zone	Lumens	%Lamp	%Fixt
0-30	1155.26	78.48%	84.93%
0-40	1327.63	90.19%	97.60%
0-60	1344.96	91.37%	98.87%
0-90	1359.63	92.37%	99.95%
0-120	1359.63	92.37%	99.95%
0-180	1360.28	92.41%	100.00%
60-90	16.16	1.10%	1.19%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.67	1088.23	73.93%	80.00%

ZONAL LUMEN SUMMARY

0-10	537.63
10-20	338.12
20-30	279.50
30-40	172.37
40-50	11.73
50-60	5.60
60-70	5.17
70-80	5.37
80-90	4.13
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







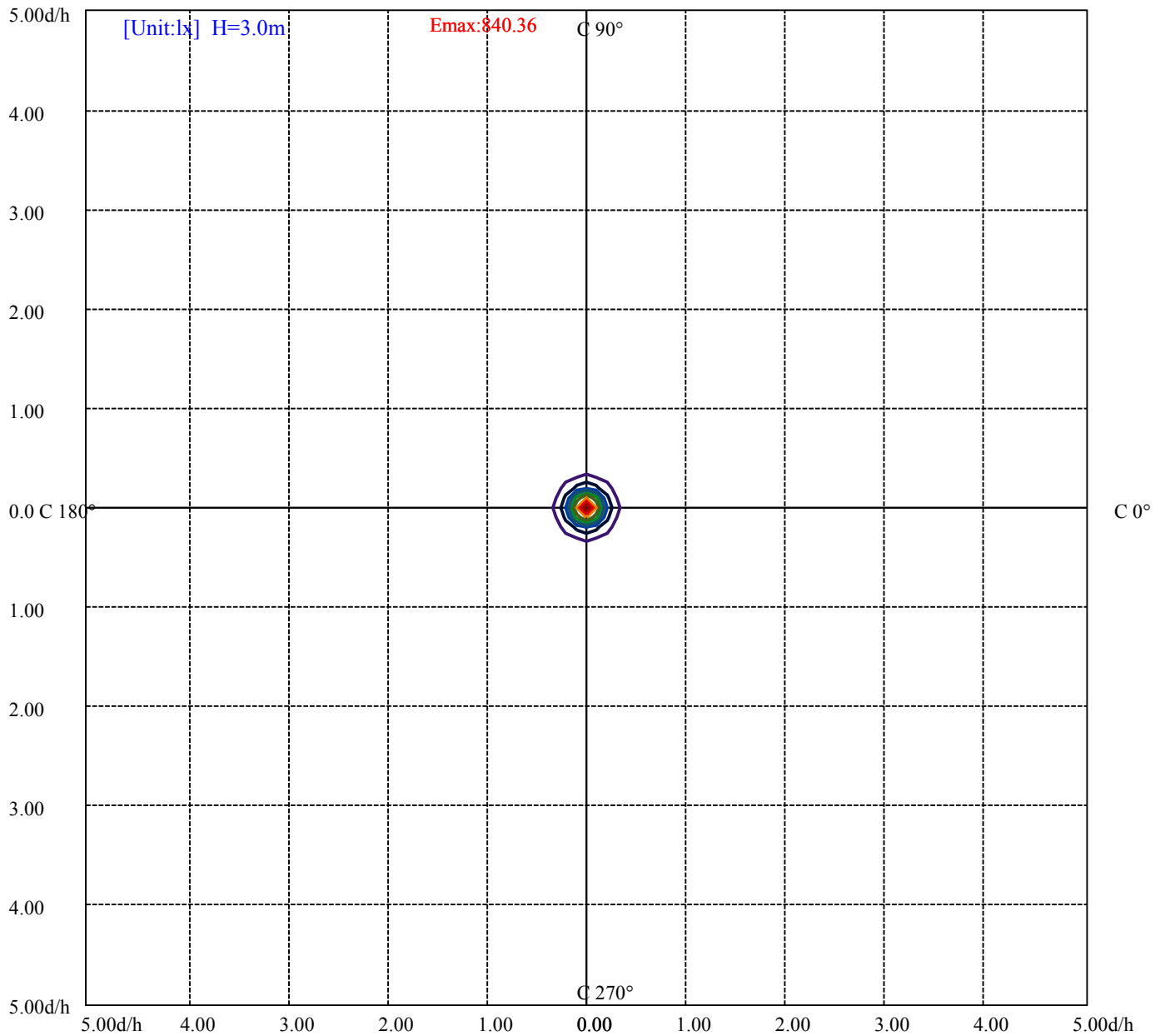
House

[Unit:cd]

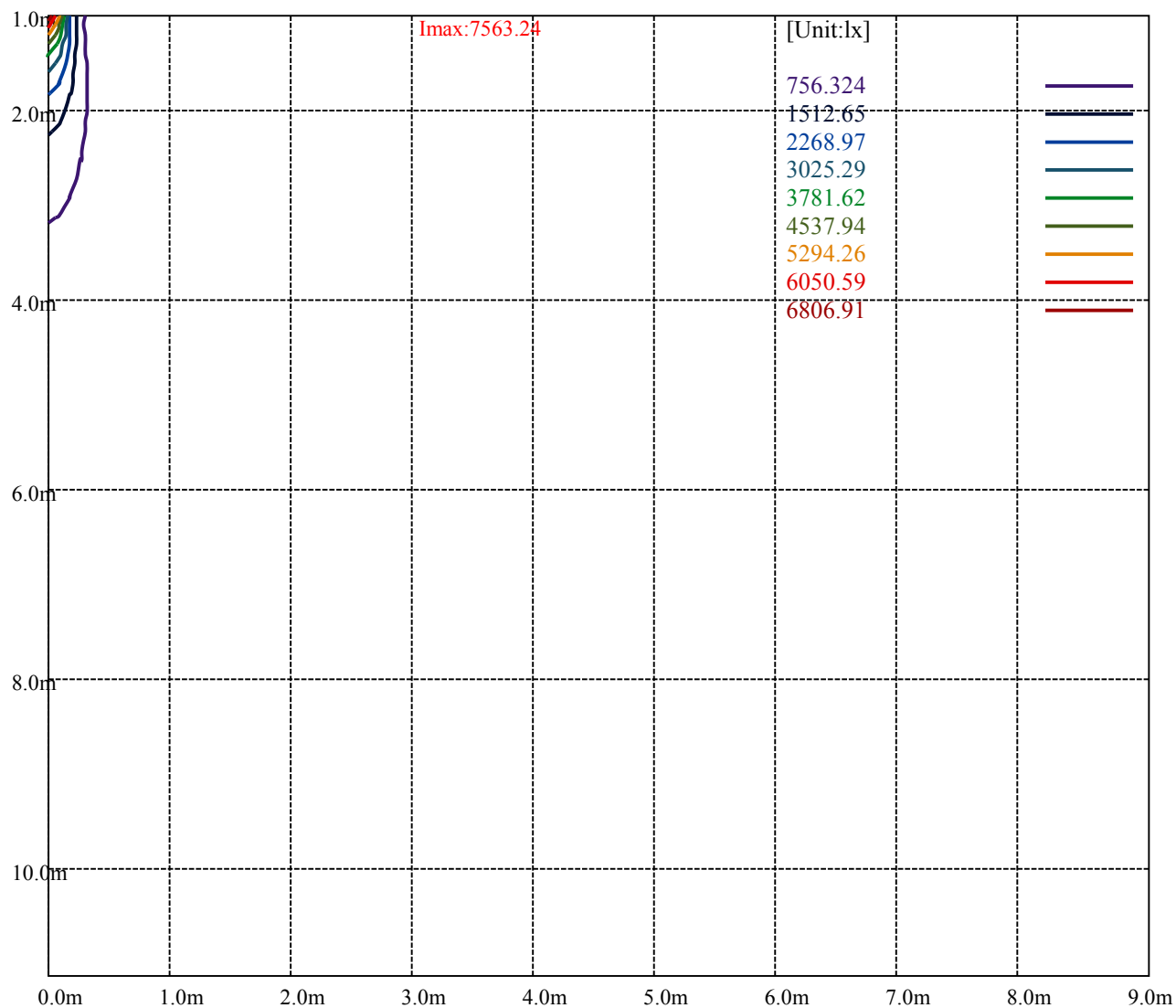
Road

Imax:7563.24

(10%Imax)	756.324	
(20%Imax)	1512.65	
(30%Imax)	2268.97	
(40%Imax)	3025.29	
(50%Imax)	3781.62	
(60%Imax)	4537.94	
(70%Imax)	5294.26	
(80%Imax)	6050.59	
(90%Imax)	6806.91	



(10%E _{max}) 84.03555	—
(20%E _{max}) 168.0711	—
(30%E _{max}) 252.1067	—
(40%E _{max}) 336.1422	—
(50%E _{max}) 420.1778	—
(60%E _{max}) 504.2133	—
(70%E _{max}) 588.2489	—
(80%E _{max}) 672.2844	—
(90%E _{max}) 756.32	—



Luminance Table

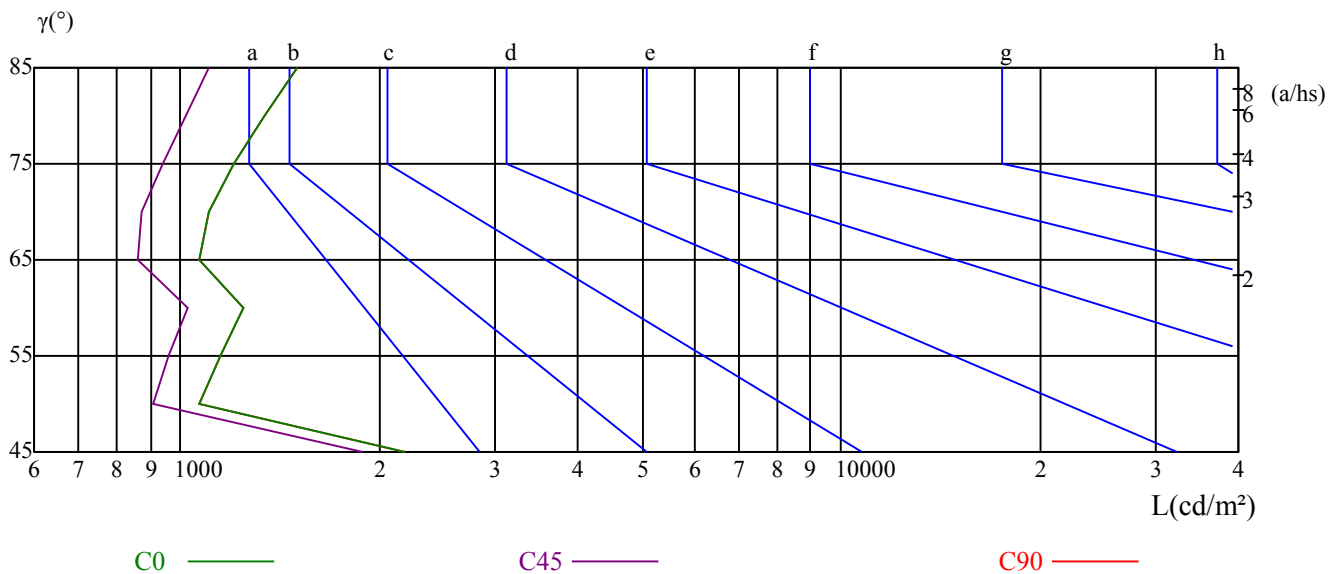
γ	45	50	55	60	65	70	75	80	85
C0	2184	1068	1145	1244	1066	1102	1208	1342	1507
C45	1887	909	960	1025	862	874	938	1015	1106
C90	2184	1068	1145	1244	1066	1102	1208	1342	1507

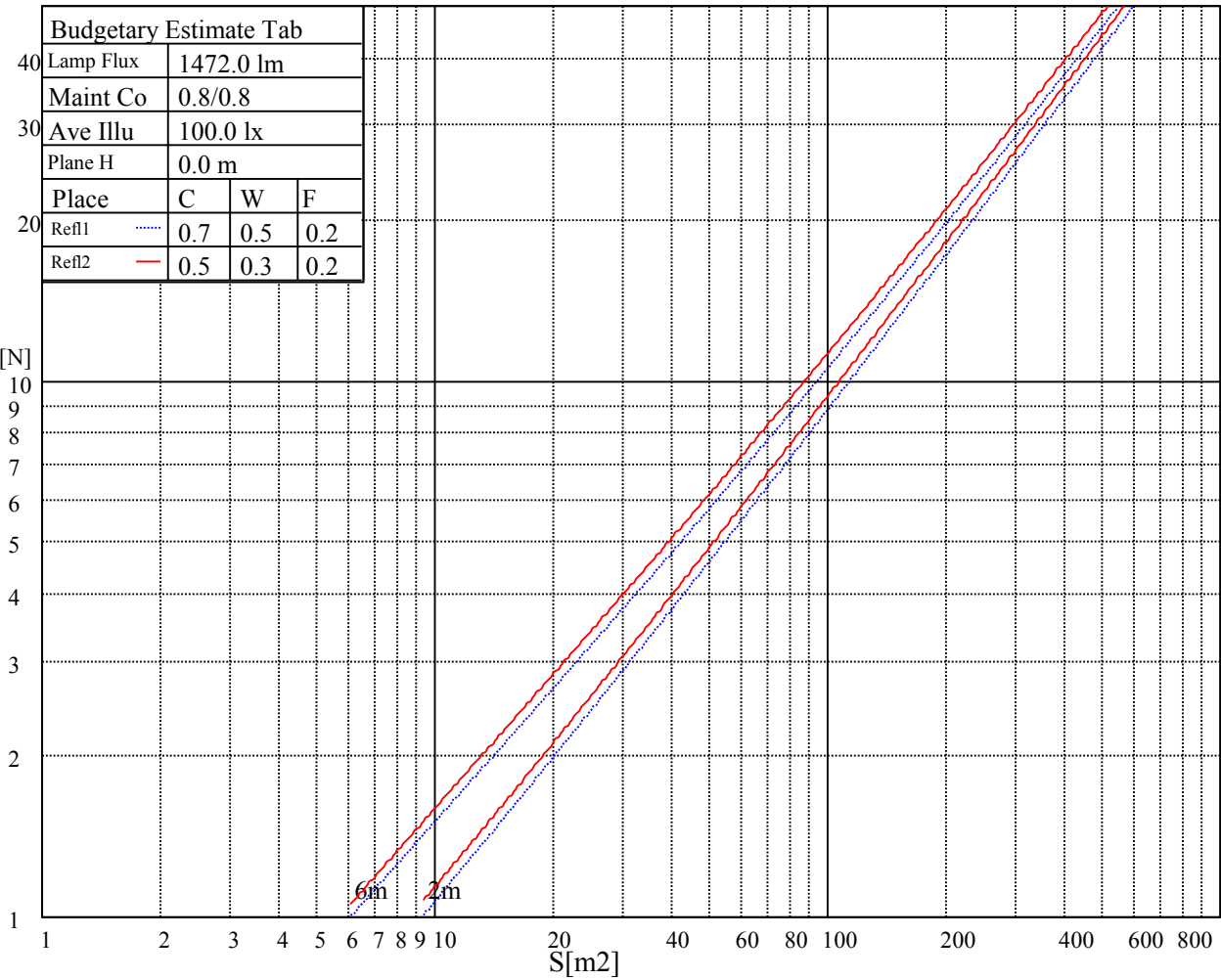
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2469	2469	2469	3978	3978	3978	12086	12086	12086

Glare Table

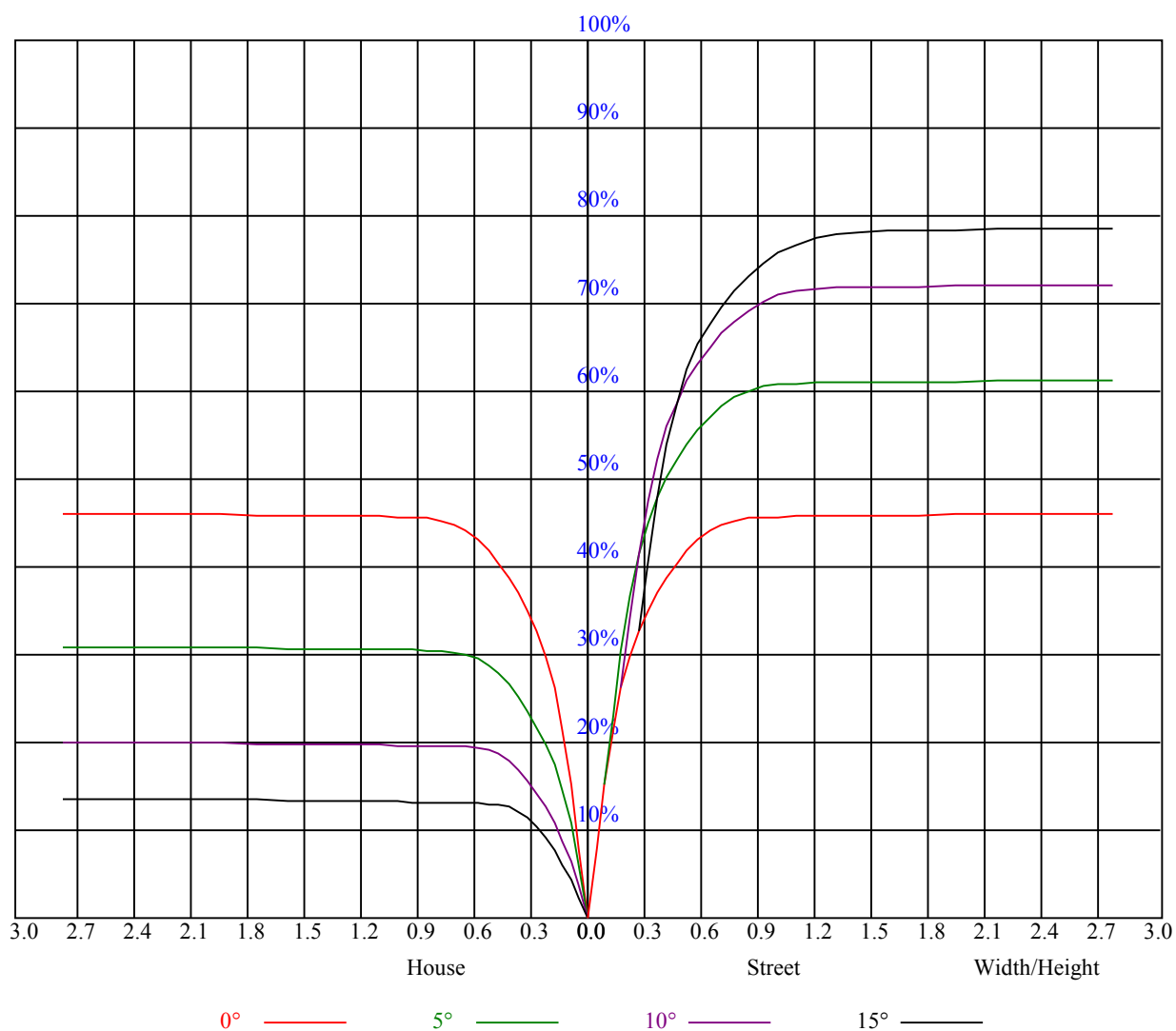
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.11	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	1.04	1.01	0.99	1.02	1.00	0.98	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
2	0.98	0.95	0.92	0.96	0.94	0.91	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.85	0.84
3	0.93	0.89	0.86	0.92	0.88	0.86	0.90	0.87	0.84	0.88	0.85	0.83	0.85	0.83	0.82	0.80
4	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.82	0.79	0.83	0.80	0.79	0.77
5	0.85	0.81	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.76	0.74
6	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.72
7	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.70	0.69
8	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
9	0.74	0.70	0.67	0.73	0.69	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.65
10	0.72	0.67	0.65	0.71	0.67	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63



NATA 2-1429-E

Appendix Page: 14 Total:14

Intensity data(cd)

C/ γ (°)	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0
0.0	7495.38	7472.81	6317.17	4943.51	3581.97	2296.40	1423.21	983.86	772.44
45.0	7648.44	6952.52	5615.20	4115.47	2629.49	1517.35	1020.20	801.62	683.80
90.0	7502.54	6474.63	5110.89	3554.44	2060.21	1316.40	914.16	737.26	658.64
135.0	7606.59	6568.23	5207.78	3881.48	2478.09	1515.70	1057.08	817.04	692.61
180.0	7495.38	6507.67	5172.55	3864.96	2490.20	1562.50	1069.97	827.00	696.63
225.0	7648.44	7256.98	6164.67	4780.00	3322.10	2097.65	1288.87	916.25	752.73
270.0	7502.54	7612.65	6792.31	5428.56	3916.16	2500.66	1457.34	987.71	780.15
315.0	7606.59	7465.10	6418.48	5003.53	3602.34	2292.00	1393.48	978.74	777.51
360.0	7495.38	7472.81	6317.17	4943.51	3581.97	2296.40	1423.21	983.86	772.44
C/ γ (°)	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5
0.0	668.94	605.07	564.33	527.99	483.40	372.73	281.34	144.08	54.45
45.0	624.34	582.50	550.01	521.93	445.41	295.65	152.34	62.21	25.66
90.0	608.76	571.87	541.59	507.45	393.21	244.18	105.27	44.43	16.19
135.0	625.99	583.05	547.81	516.98	422.28	294.55	164.95	72.84	24.28
180.0	623.57	575.95	539.66	507.84	403.62	298.41	181.36	71.79	24.33
225.0	666.95	613.27	576.33	540.16	494.79	380.94	228.70	107.75	45.31
270.0	686.00	627.64	586.90	552.77	523.04	429.44	282.44	134.61	50.16
315.0	666.35	603.58	563.94	526.23	493.53	395.42	263.28	138.08	58.19
360.0	668.94	605.07	564.33	527.99	483.40	372.73	281.34	144.08	54.45
C/ γ (°)	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
0.0	17.51	6.77	6.61	7.38	8.59	10.13	9.91	6.33	5.07
45.0	7.16	6.11	6.22	6.22	6.22	6.33	6.39	6.22	5.29
90.0	5.78	5.62	5.51	5.40	5.23	5.29	5.40	5.34	5.12
135.0	6.50	5.62	5.51	5.62	5.45	5.62	5.23	5.01	5.01
180.0	6.28	5.56	5.45	5.29	5.34	5.34	5.07	4.90	5.01
225.0	13.43	5.89	5.51	5.29	5.12	5.12	5.07	5.12	5.01
270.0	22.08	6.44	5.73	5.56	5.45	5.45	5.45	5.40	5.40
315.0	18.99	6.44	6.11	6.39	6.94	7.65	7.82	6.06	5.01
360.0	17.51	6.77	6.61	7.38	8.59	10.13	9.91	6.33	5.07
C/ γ (°)	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5
0.0	5.07	5.12	5.01	5.07	4.96	5.01	5.01	4.96	4.84
45.0	4.96	4.96	4.79	4.84	4.84	4.79	4.84	4.79	4.73
90.0	5.07	4.96	4.84	4.79	4.79	4.79	4.79	4.79	4.79
135.0	4.96	5.01	5.01	5.01	4.96	5.01	5.01	5.01	4.79
180.0	5.01	5.07	5.51	5.78	6.17	6.50	6.72	7.05	4.84
225.0	4.90	4.84	4.79	4.84	4.90	4.84	4.84	4.84	4.84
270.0	5.18	4.90	4.84	4.90	4.90	4.84	4.90	4.79	4.79
315.0	4.96	4.84	4.79	5.12	5.12	5.18	5.12	5.07	4.79
360.0	5.07	5.12	5.01	5.07	4.96	5.01	5.01	4.96	4.84
C/ γ (°)	90.0								
0.0	4.84								
45.0	4.79								
90.0	4.73								
135.0	4.73								
180.0	4.79								
225.0	4.79								
270.0	4.73								
315.0	4.84								
360.0	4.84								