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NATA

LumCAT: 3-2056-A
Luminaire: 99.02.73.173+92.76.365.00
Report No: NATA0100
Test No: GC2018101115
LampCAT: CREE CXA3050
Lamp flux(lm): 2641.0
Number of Lamps: 1
Length(mm): 78
Phm Type: C

Voltage(V): 34.8000
Current(A): 0.6000
Power (W): 20.8800
PF: 0.0000
Ballast type: DC
Width(mm): 78
Height(mm): 0

Photometric Results

Lumens(lm): 2353.12
Efficiency(%): 89.10%
Lumens(lm)/Power(W): 113.60
Central intensity(cd): 3530.953
Maximum intensity(cd): 3530.953
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=49.2
[C90/270]Total=49.2
Field angle(10%Imax): [C0/180]Total=77.2
[C90/270]Total=77.2
Maximum s/h(1/2): C0_180=0.75 C90_270=0.75
Maximum s/h(1/4): C0_180=0.79 C90_270=0.79
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.81%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.828%

Equipment:
Temperature(°C): 25.0

Date: 2018/10/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

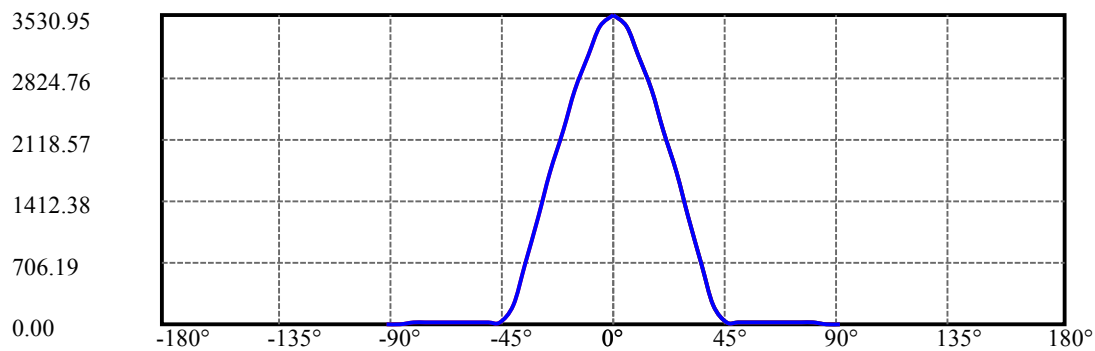
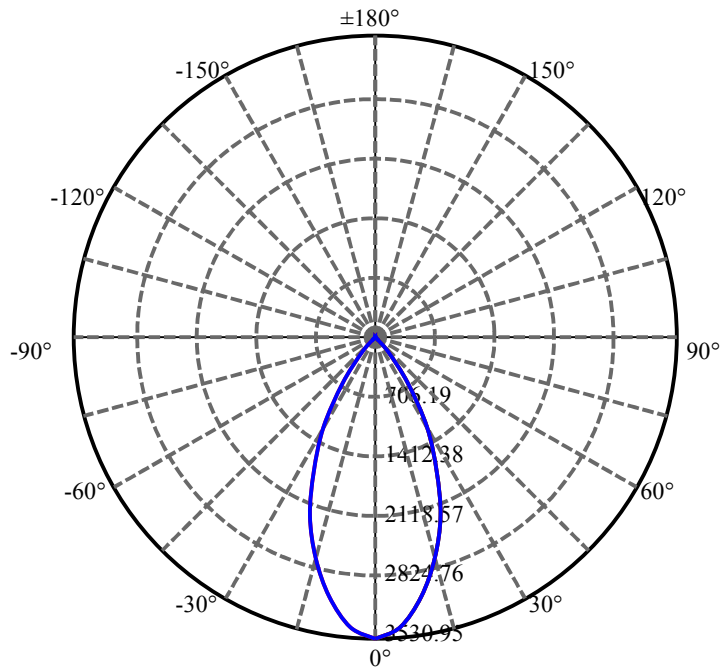
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3530.953	21.116	21.116	.800%	.897%
5.0	3398.484	162.357	183.473	6.148%	7.797%
10.0	3075.680	292.753	476.225	11.085%	20.238%
15.0	2670.891	378.915	855.14	14.347%	36.341%
20.0	2216.039	415.450	1270.59	15.731%	53.996%
25.0	1727.438	400.166	1670.756	15.152%	71.002%
30.0	1223.487	335.319	2006.075	12.697%	85.252%
35.0	669.220	210.402	2216.477	7.967%	94.193%
40.0	228.136	80.380	2296.858	3.044%	97.609%
45.0	20.475	7.936	2304.794	.300%	97.946%
50.0	12.164	5.108	2309.901	.193%	98.163%
55.0	11.679	5.244	2315.145	.199%	98.386%
60.0	11.208	5.320	2320.466	.201%	98.612%
65.0	11.496	5.711	2326.177	.216%	98.855%
70.0	11.820	6.088	2332.265	.231%	99.114%
75.0	11.644	6.165	2338.43	.233%	99.376%
80.0	11.306	6.103	2344.533	.231%	99.635%
85.0	10.807	5.901	2350.434	.223%	99.886%
90.0	9.802	2.686	2353.12	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2006.08	75.96%	85.25%
0-40	2296.86	86.97%	97.61%
0-60	2320.47	87.86%	98.61%
0-90	2350.43	89.00%	99.89%
0-120	2350.43	89.00%	99.89%
0-180	2353.12	89.10%	100.00%
60-90	35.29	1.34%	1.50%
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%
0-28.16	1882.50	71.28%	80.00%

ZONAL LUMEN SUMMARY

0-10	476.23
10-20	794.36
20-30	735.49
30-40	290.78
40-50	13.04
50-60	10.56
60-70	11.80
70-80	12.27
80-90	5.90
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

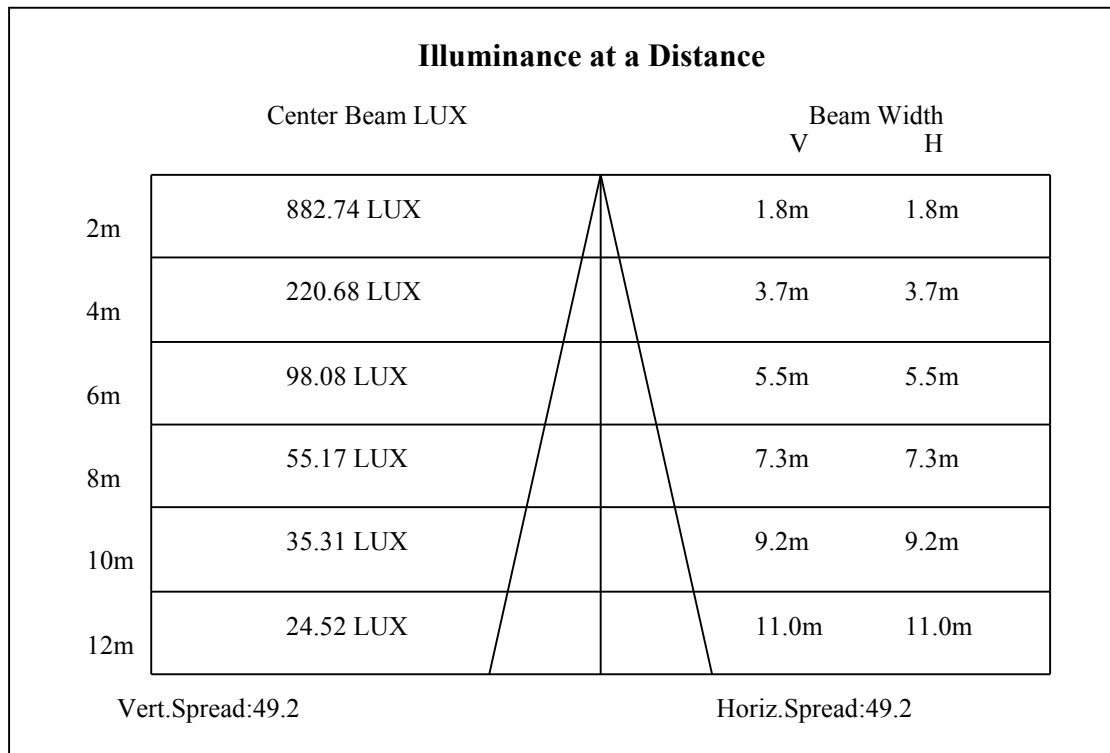
C0(Max): —————C0/C180: —————C90/C270: —————

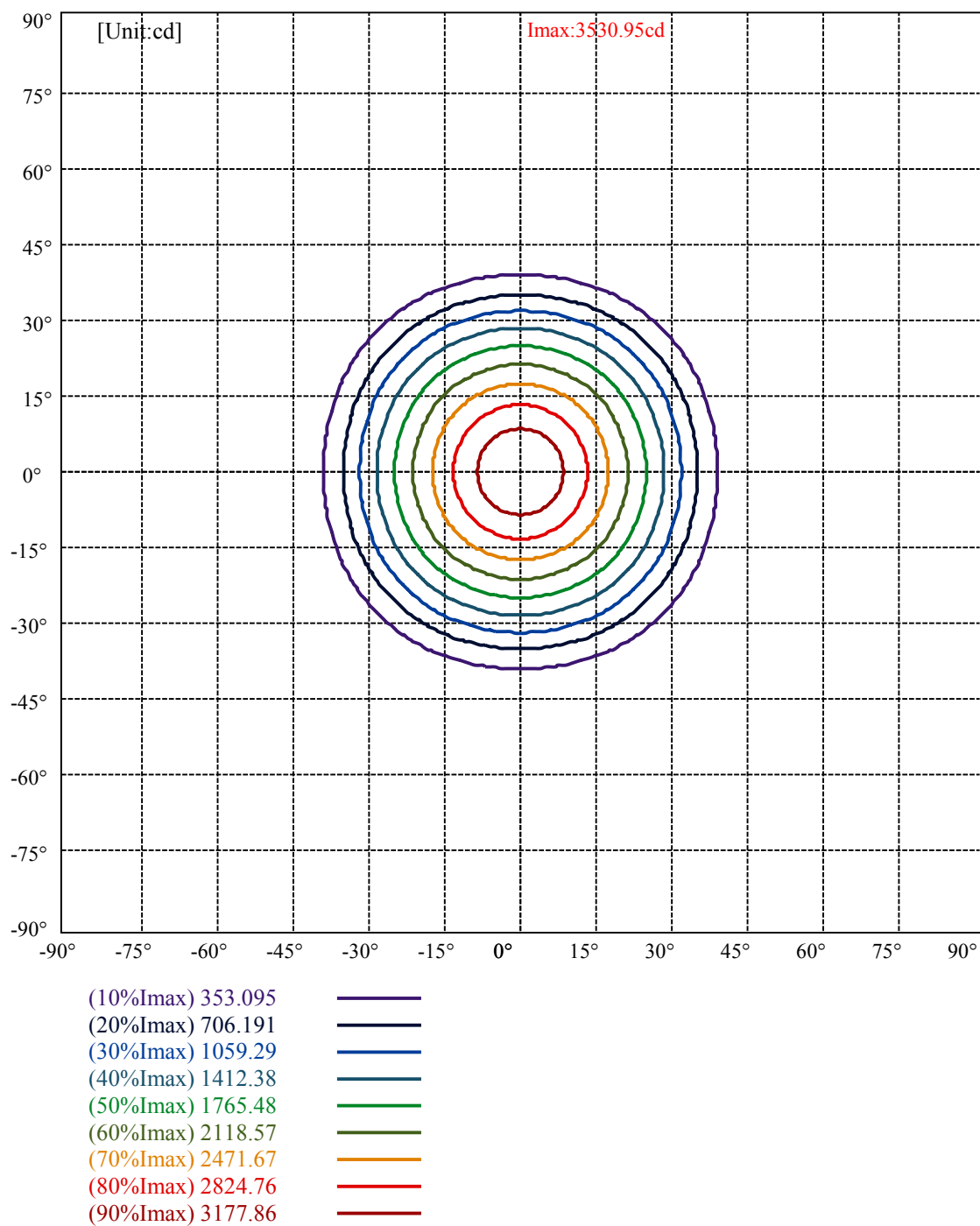
Field angle(10%Imax):C0/180Left:38.6 Right:38.6

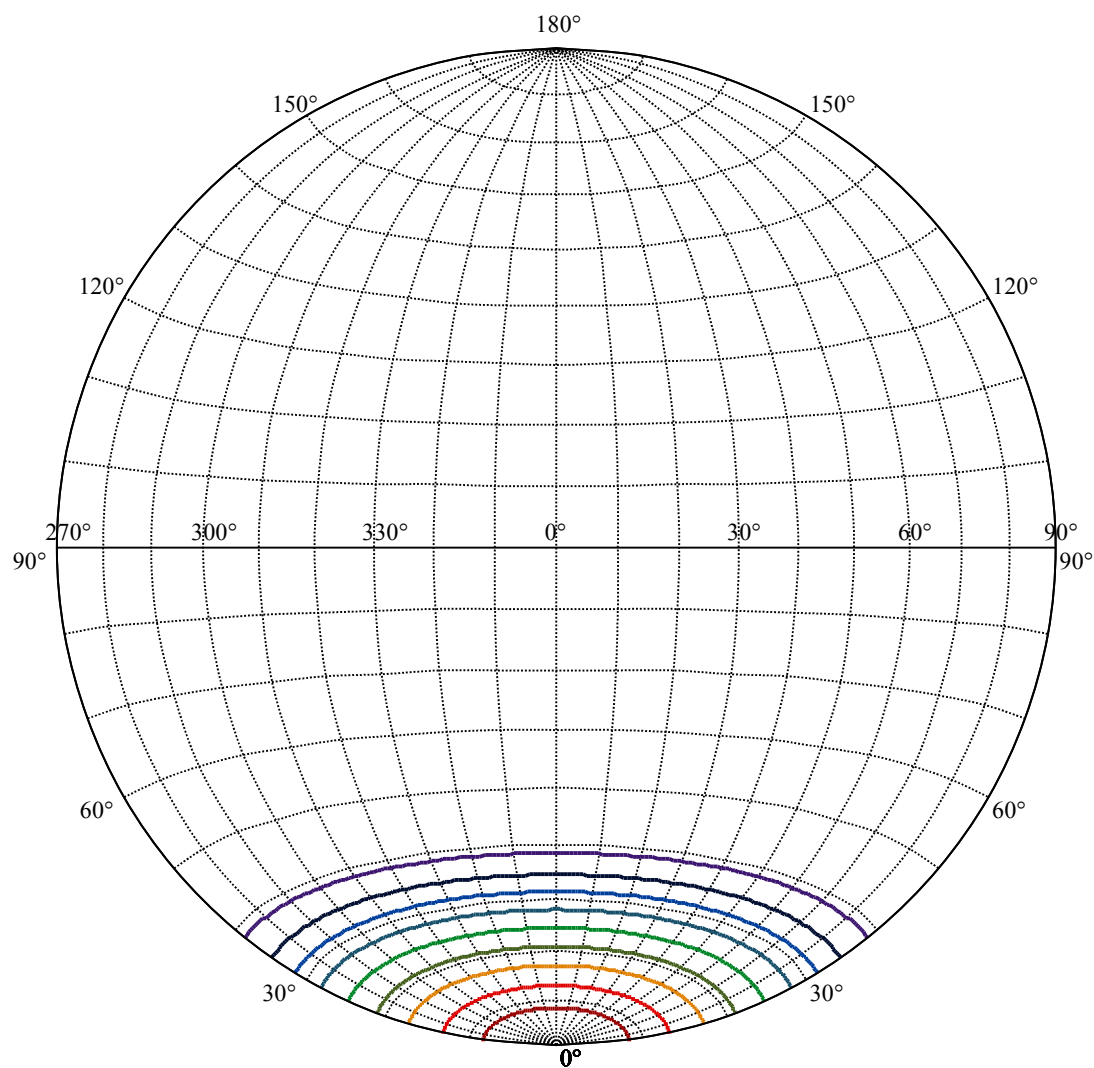
:C90/270Left:38.6 Right:38.6

Beam Angle(50%Imax):C0/180Left:24.6 Right:24.6

:C90/270Left:24.6 Right:24.6







House

[Unit:cd]

Road

Imax:3530.95

(10%Imax) 353.095

(20%Imax) 706.191

(30%Imax) 1059.29

(40%Imax) 1412.38

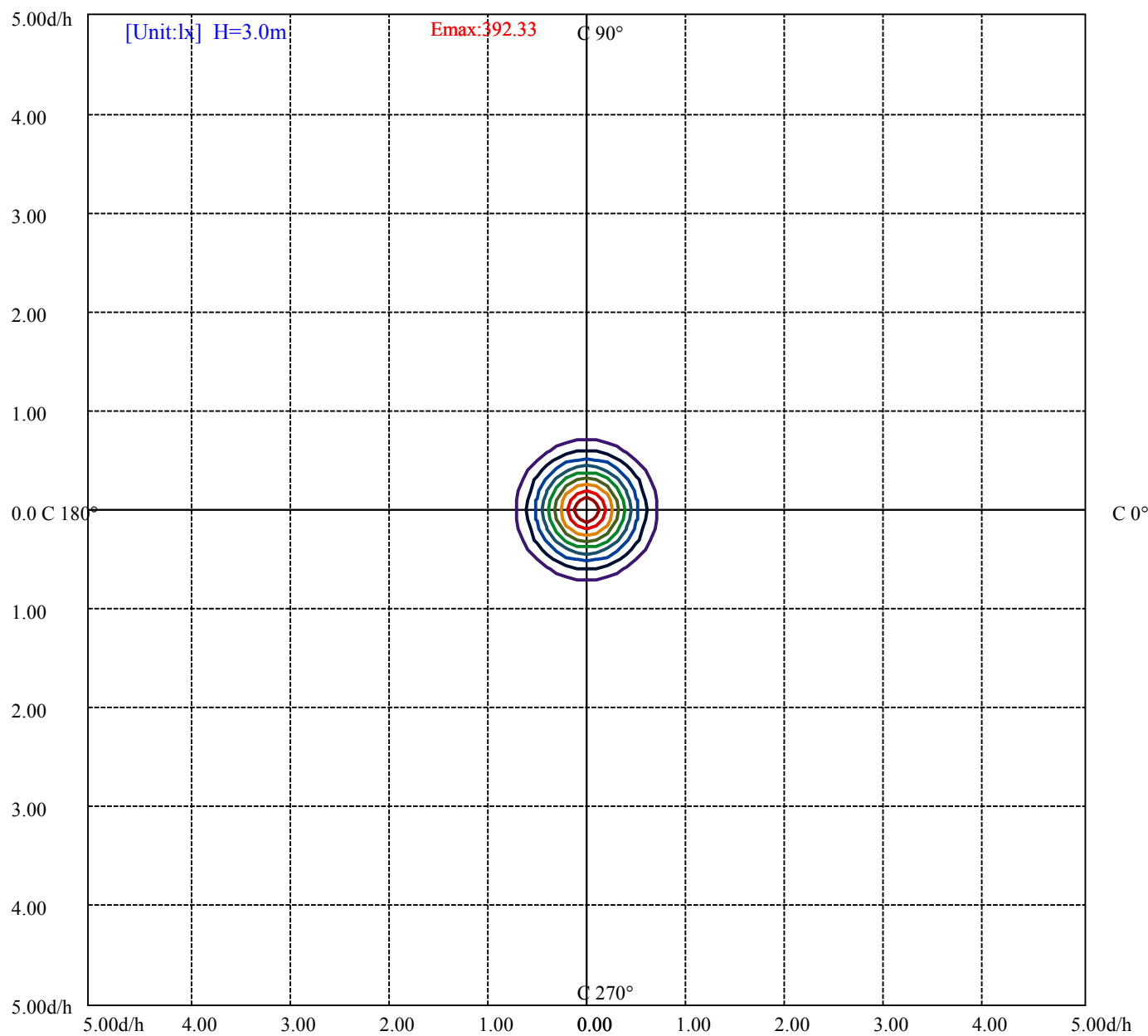
(50%Imax) 1765.48

(60%Imax) 2118.57

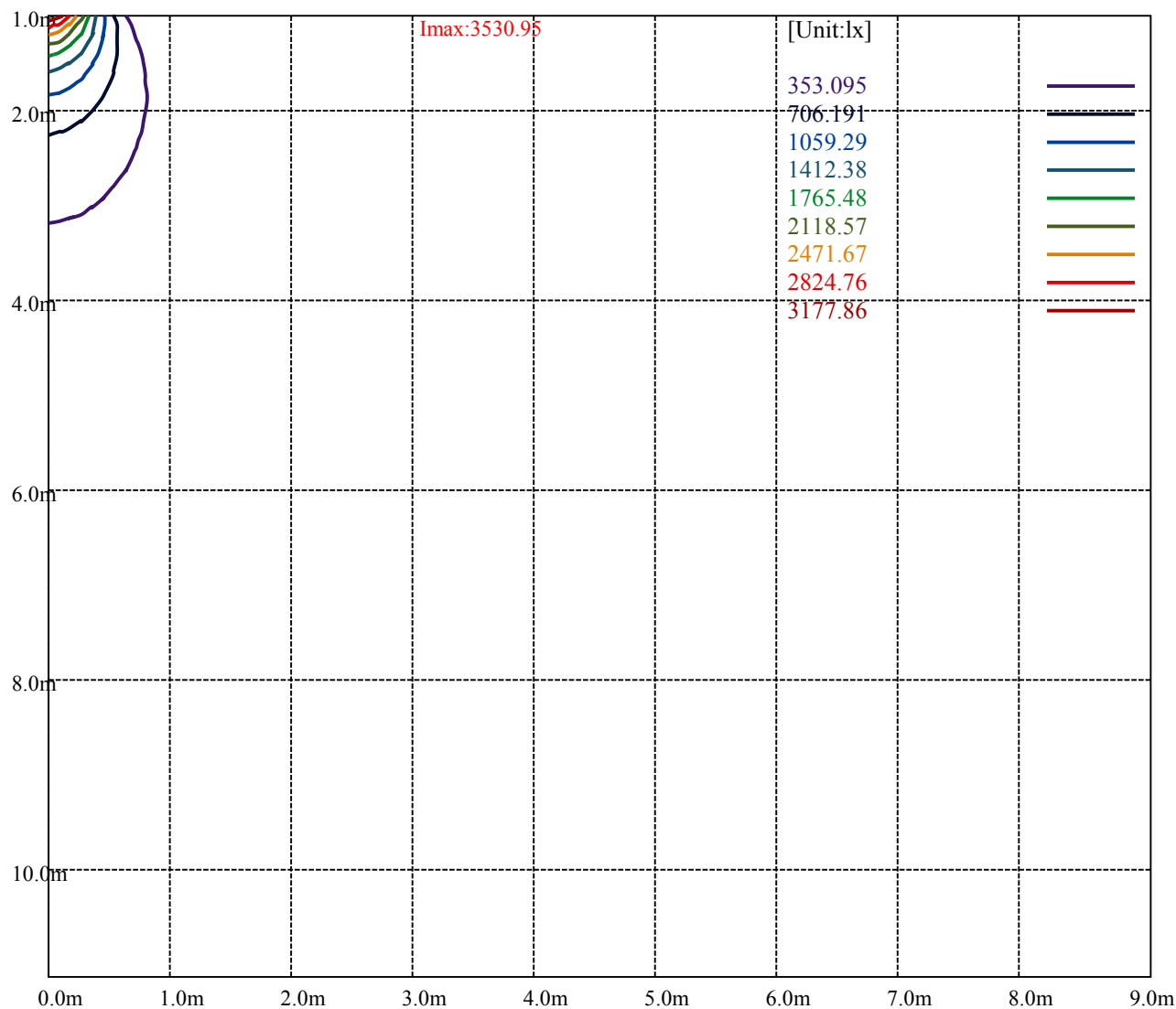
(70%Imax) 2471.67

(80%Imax) 2824.76

(90%Imax) 3177.86



(10%E _{max}) 39.23278	—
(20%E _{max}) 78.46555	—
(30%E _{max}) 117.6978	—
(40%E _{max}) 156.9311	—
(50%E _{max}) 196.1633	—
(60%E _{max}) 235.3967	—
(70%E _{max}) 274.6289	—
(80%E _{max}) 313.8622	—
(90%E _{max}) 353.0945	—



Luminance Table

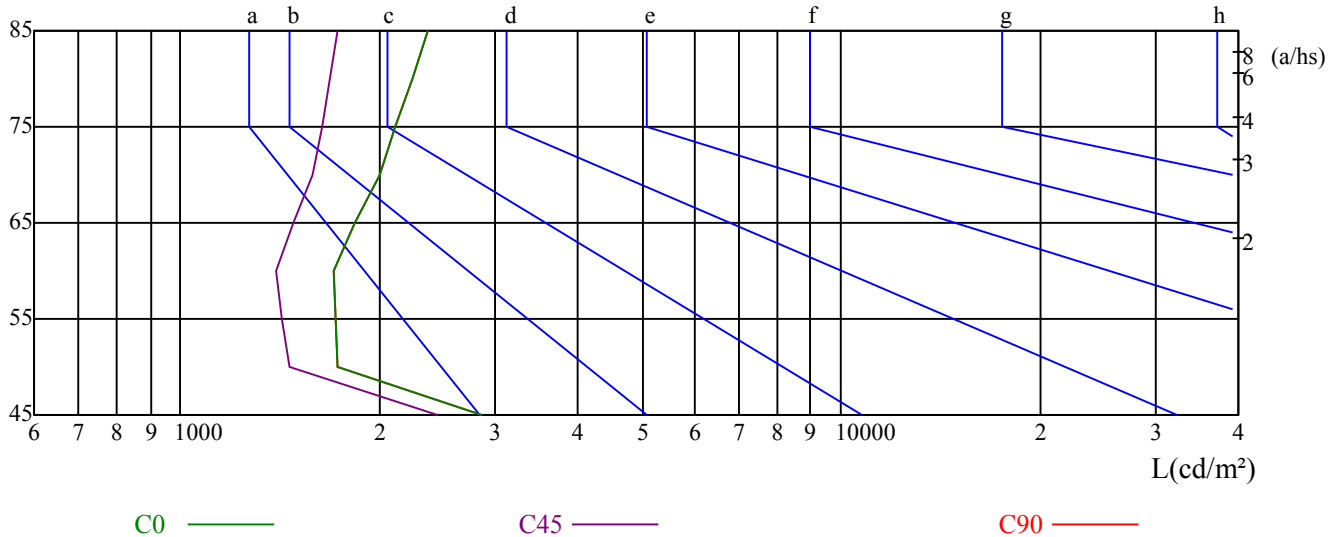
γ	45	50	55	60	65	70	75	80	85
C0	2856	1733	1714	1710	1840	2006	2120	2238	2364
C45	2450	1465	1426	1399	1480	1582	1636	1686	1731
C90	2856	1733	1714	1710	1840	2006	2120	2238	2364

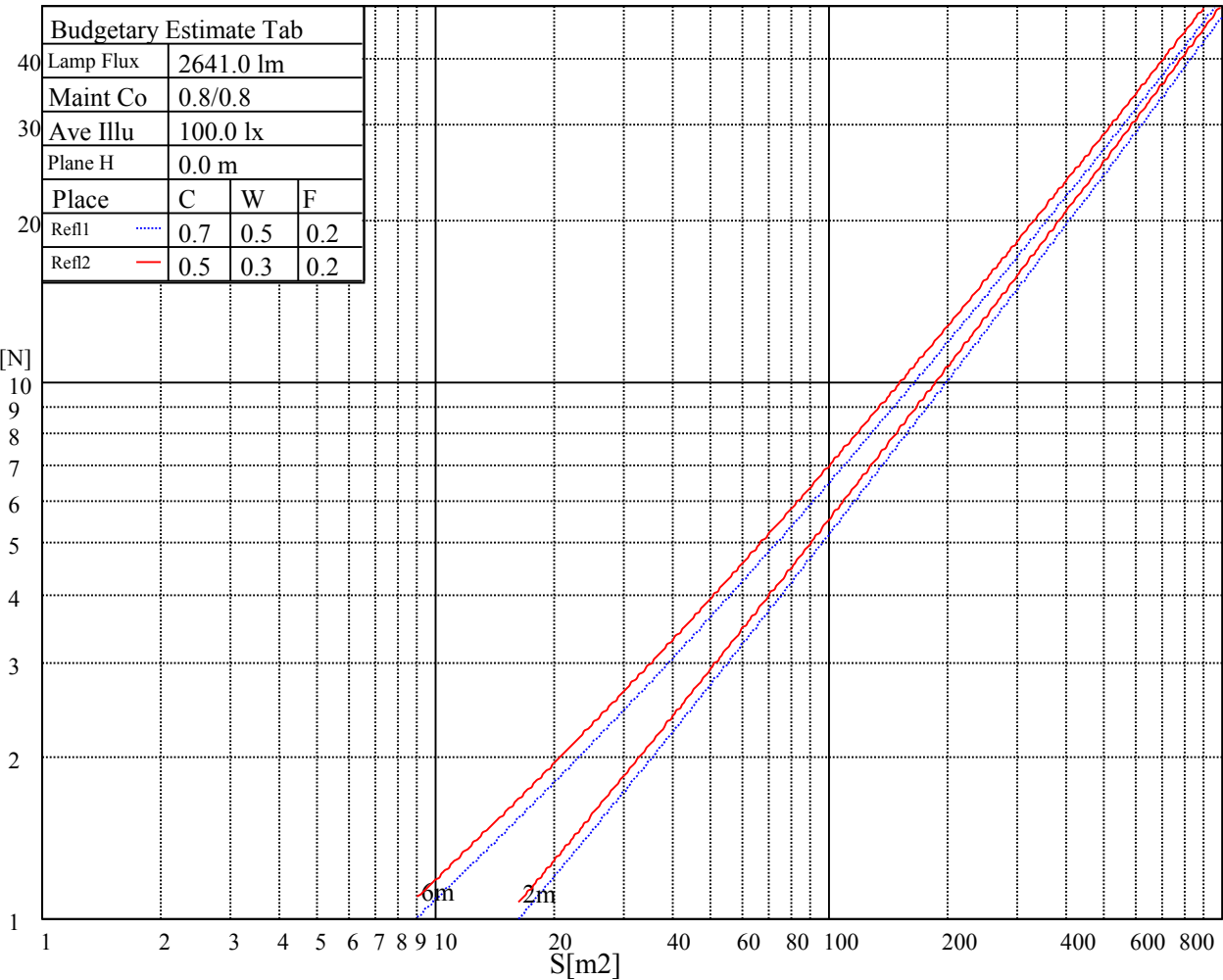
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4471	4471	4471	7394	7394	7394	20381	20381	20381

Glare Table

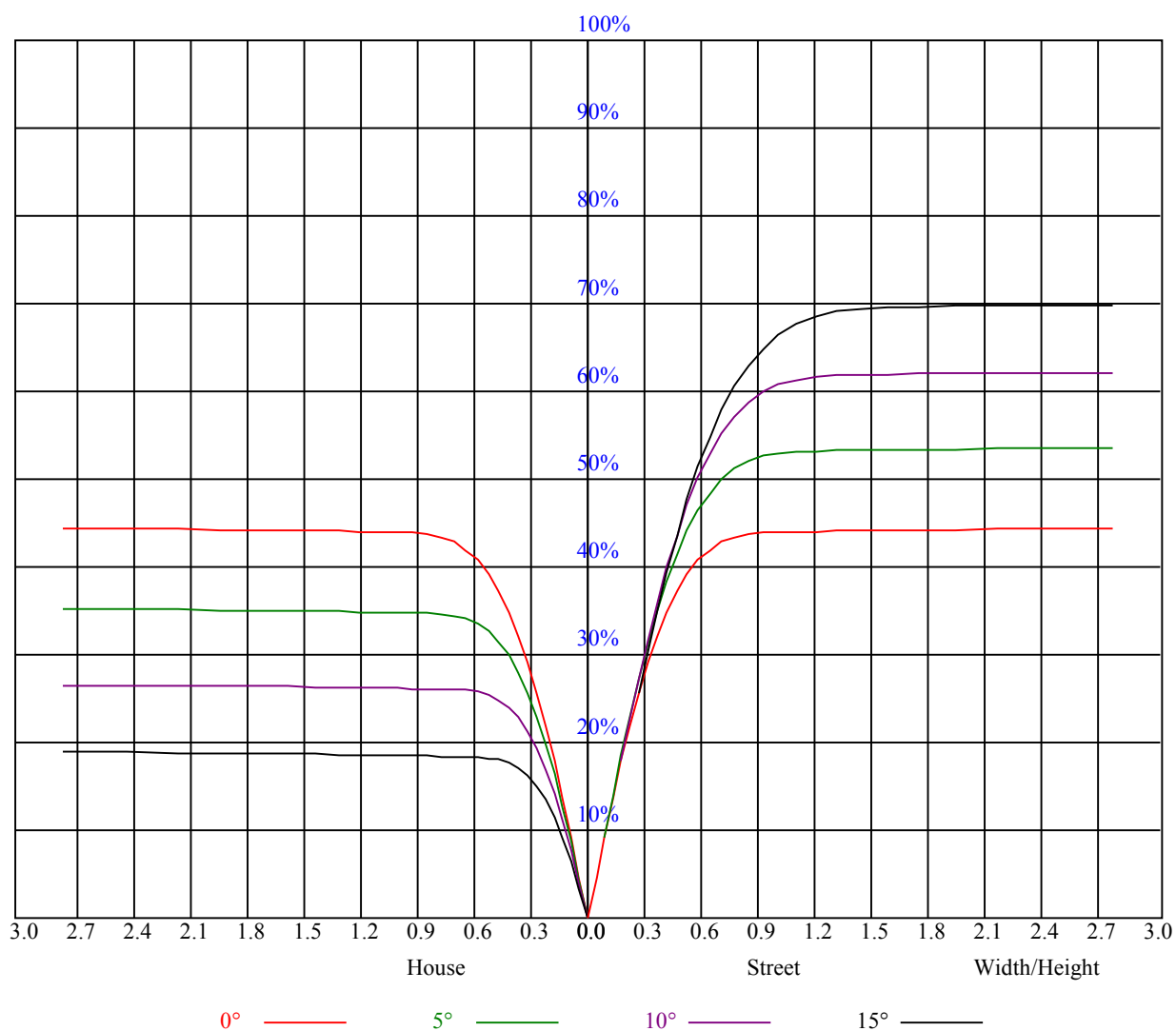
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	0.99	0.97	0.95	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.87	0.86	0.85	0.83
2	0.93	0.90	0.87	0.92	0.88	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.79
3	0.88	0.84	0.80	0.87	0.83	0.80	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
4	0.83	0.79	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.71
5	0.79	0.74	0.71	0.78	0.74	0.70	0.76	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.67
6	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.64
7	0.71	0.67	0.63	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.61
8	0.68	0.63	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.58
9	0.65	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.56
10	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.61	0.57	0.54	0.60	0.57	0.54	0.53



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	3528.00	3452.63	3168.56	2780.44	2343.94	1829.81	1397.81	825.75	295.31		
45.0	3533.63	3434.06	3159.56	2753.44	2310.19	1792.13	1382.63	769.50	299.81		
90.0	3529.69	3358.69	2982.94	2616.19	2142.00	1659.94	1096.14	598.89	161.04		
135.0	3532.50	3392.44	3069.00	2658.94	2212.31	1714.50	1240.88	630.00	286.31		
180.0	3528.00	3363.19	2995.31	2577.94	2079.56	1623.94	1097.38	527.79	125.72		
225.0	3533.63	3357.56	3016.13	2599.88	2117.25	1653.19	1101.60	562.22	145.01		
270.0	3529.69	3416.06	3130.88	2728.13	2283.75	1805.63	1350.56	741.38	295.31		
315.0	3532.50	3413.25	3083.06	2652.19	2239.31	1740.38	1120.89	698.23	216.56		
360.0	3528.00	3452.63	3168.56	2780.44	2343.94	1829.81	1397.81	825.75	295.31		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	29.98	12.26	11.59	11.19	10.86	11.03	11.14	11.14	10.74		
45.0	28.80	12.26	11.42	11.08	10.74	11.08	11.19	11.03	10.63		
90.0	14.46	12.04	11.53	11.03	11.48	11.98	11.53	11.19	10.80		
135.0	14.91	12.09	11.64	11.14	12.15	12.21	11.76	11.25	10.74		
180.0	13.61	11.87	11.48	11.14	11.25	11.98	11.87	11.42	10.58		
225.0	14.18	11.76	11.42	11.08	11.59	11.93	11.87	11.36	10.74		
270.0	26.16	12.66	12.43	11.64	12.15	12.43	11.98	11.64	11.19		
315.0	21.71	12.38	11.93	11.36	11.76	11.93	11.81	11.42	11.03		
360.0	29.98	12.26	11.59	11.19	10.86	11.03	11.14	11.14	10.74		
C/ γ (°)	90.0										
0.0	9.90										
45.0	9.79										
90.0	9.79										
135.0	9.73										
180.0	9.84										
225.0	9.79										
270.0	9.79										
315.0	9.79										
360.0	9.90										