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NATA

LumCAT: 2-1701-E
Luminaire: 99.02.73.173+92.76.365.00
Report No: NATA0100
Test No: GC2018101208
LampCAT: LUMILEDS 1216
Lamp flux(lm): 3345.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 33.6000
Current(A): 0.6500
Power (W): 21.8400
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 44

Photometric Results

Lumens(lm): 2982.95
Efficiency(%): 89.18%
Lumens(lm)/Power(W): 138.15
Central intensity(cd): 6198.750
Maximum intensity(cd): 6198.750
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=36.8
[C90/270]Total=36.8
Field angle(10%Imax): [C0/180]Total=72.5
[C90/270]Total=72.5
Maximum s/h(1/2): C0_180=0.62 C90_270=0.62
Maximum s/h(1/4): C0_180=0.59 C90_270=0.59
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.20%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.487%

Equipment:
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

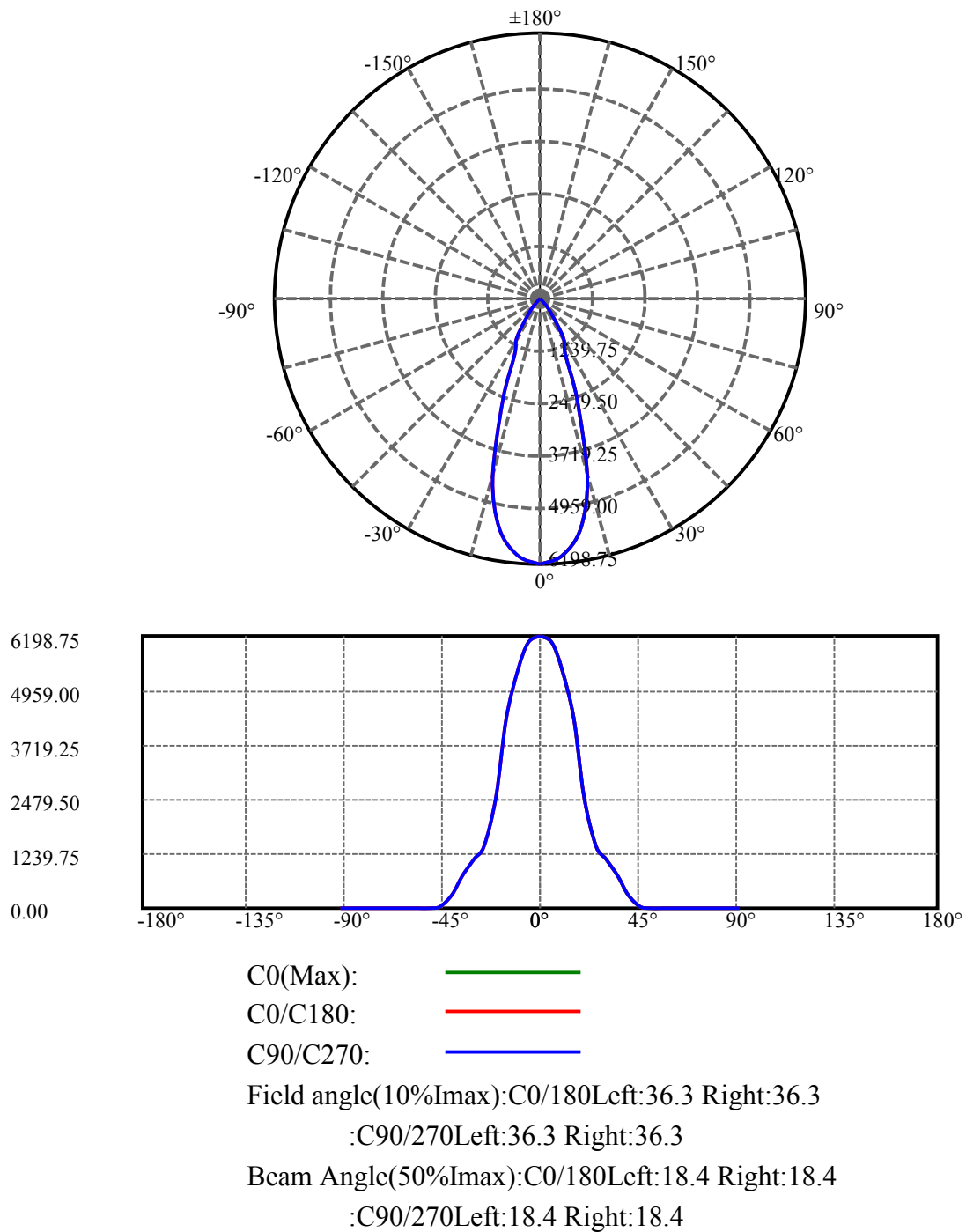
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6198.750	37.070	37.07	1.108%	1.243%
5.0	6041.250	288.611	325.68	8.628%	10.918%
10.0	5434.313	517.254	842.935	15.464%	28.258%
15.0	4318.594	612.672	1455.607	18.316%	48.798%
20.0	2529.492	474.214	1929.821	14.177%	64.695%
25.0	1421.578	329.313	2259.134	9.845%	75.735%
30.0	1115.142	305.626	2564.759	9.137%	85.981%
35.0	720.141	226.411	2791.17	6.769%	93.571%
40.0	323.909	114.125	2905.295	3.412%	97.397%
45.0	41.161	15.954	2921.249	.477%	97.932%
50.0	16.305	6.847	2928.095	.205%	98.161%
55.0	14.759	6.627	2934.722	.198%	98.383%
60.0	14.006	6.649	2941.371	.199%	98.606%
65.0	14.548	7.227	2948.598	.216%	98.848%
70.0	15.216	7.837	2956.435	.234%	99.111%
75.0	14.934	7.907	2964.342	.236%	99.376%
80.0	14.491	7.823	2972.165	.234%	99.638%
85.0	13.676	7.468	2979.632	.223%	99.889%
90.0	12.108	3.318	2982.951	.099%	100.000%

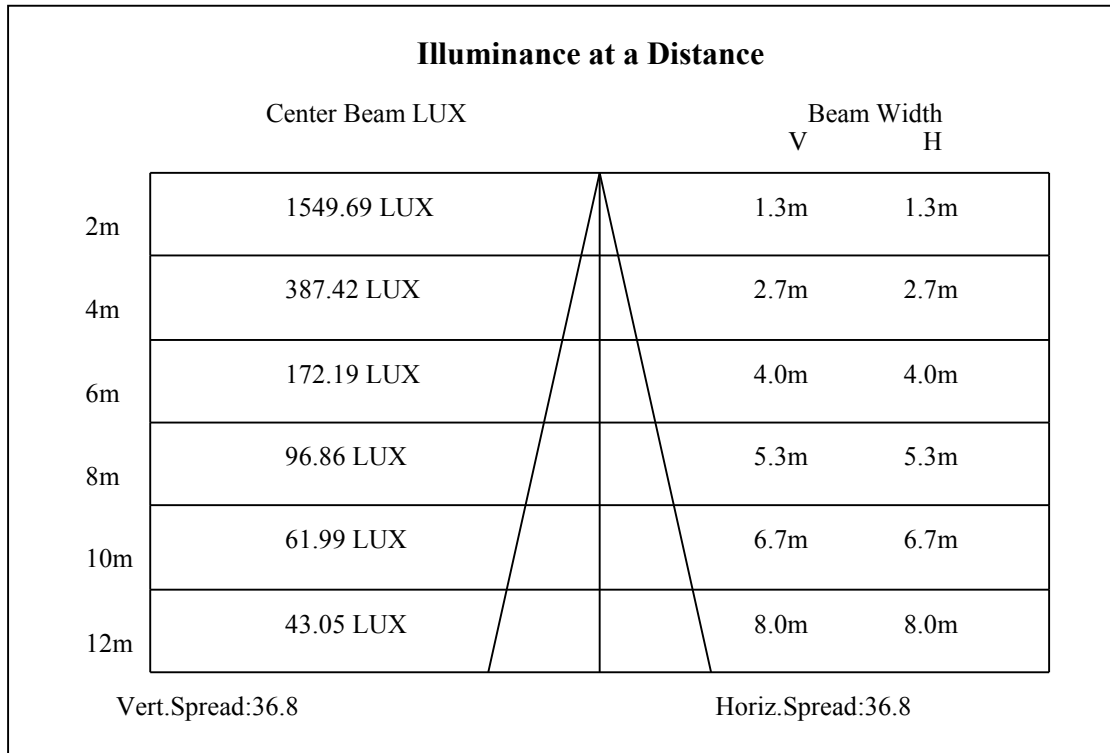
ZONAL LUMEN SUMMARY

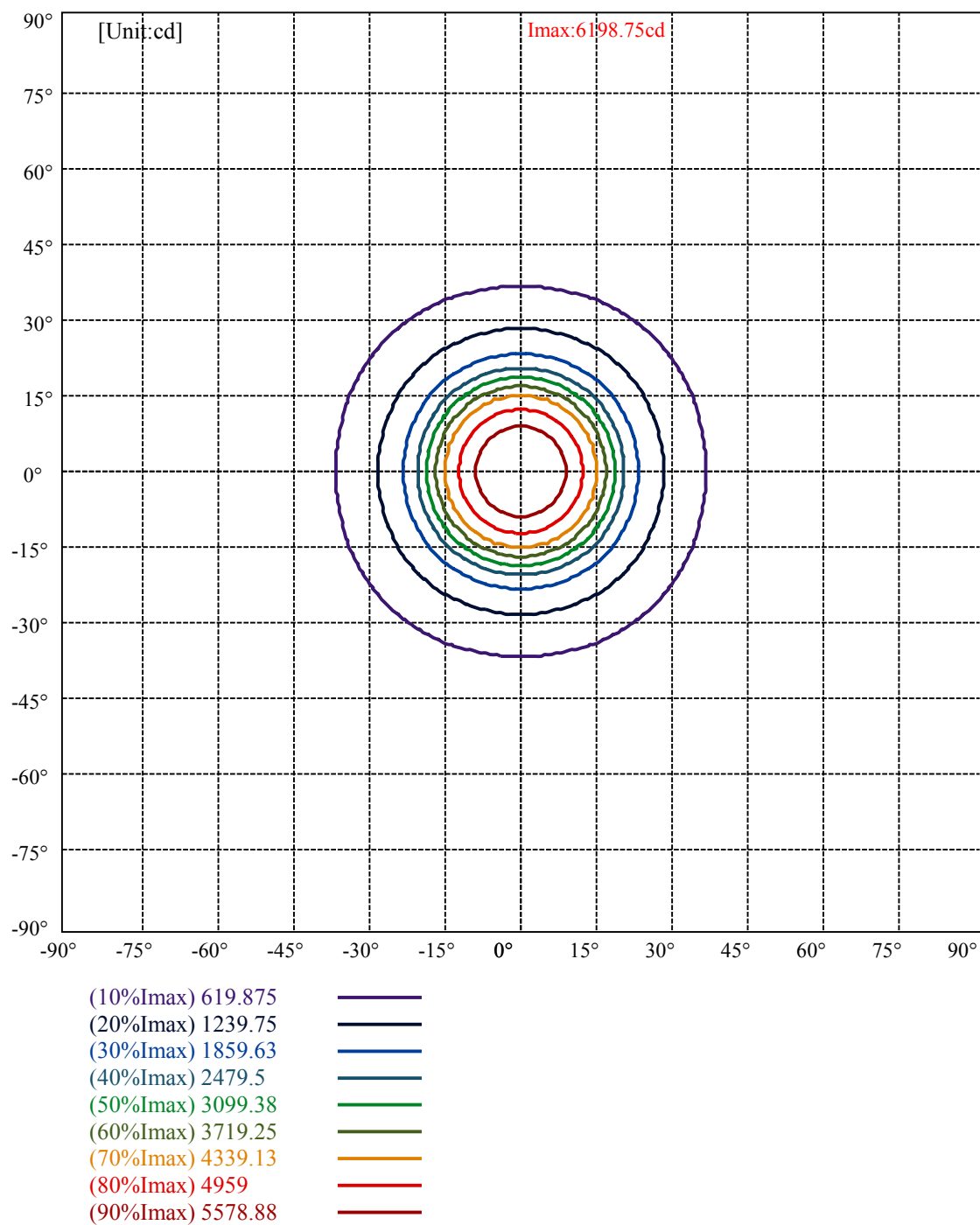
Zone	Lumens	%Lamp	%Fixt
0-30	2564.76	76.67%	85.98%
0-40	2905.29	86.85%	97.40%
0-60	2941.37	87.93%	98.61%
0-90	2979.63	89.08%	99.89%
0-120	2979.63	89.08%	99.89%
0-180	2982.95	89.18%	100.00%
60-90	44.91	1.34%	1.51%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.08	2386.36	71.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	842.93
10-20	1086.89
20-30	634.94
30-40	340.54
40-50	22.80
50-60	13.28
60-70	15.06
70-80	15.73
80-90	7.47
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



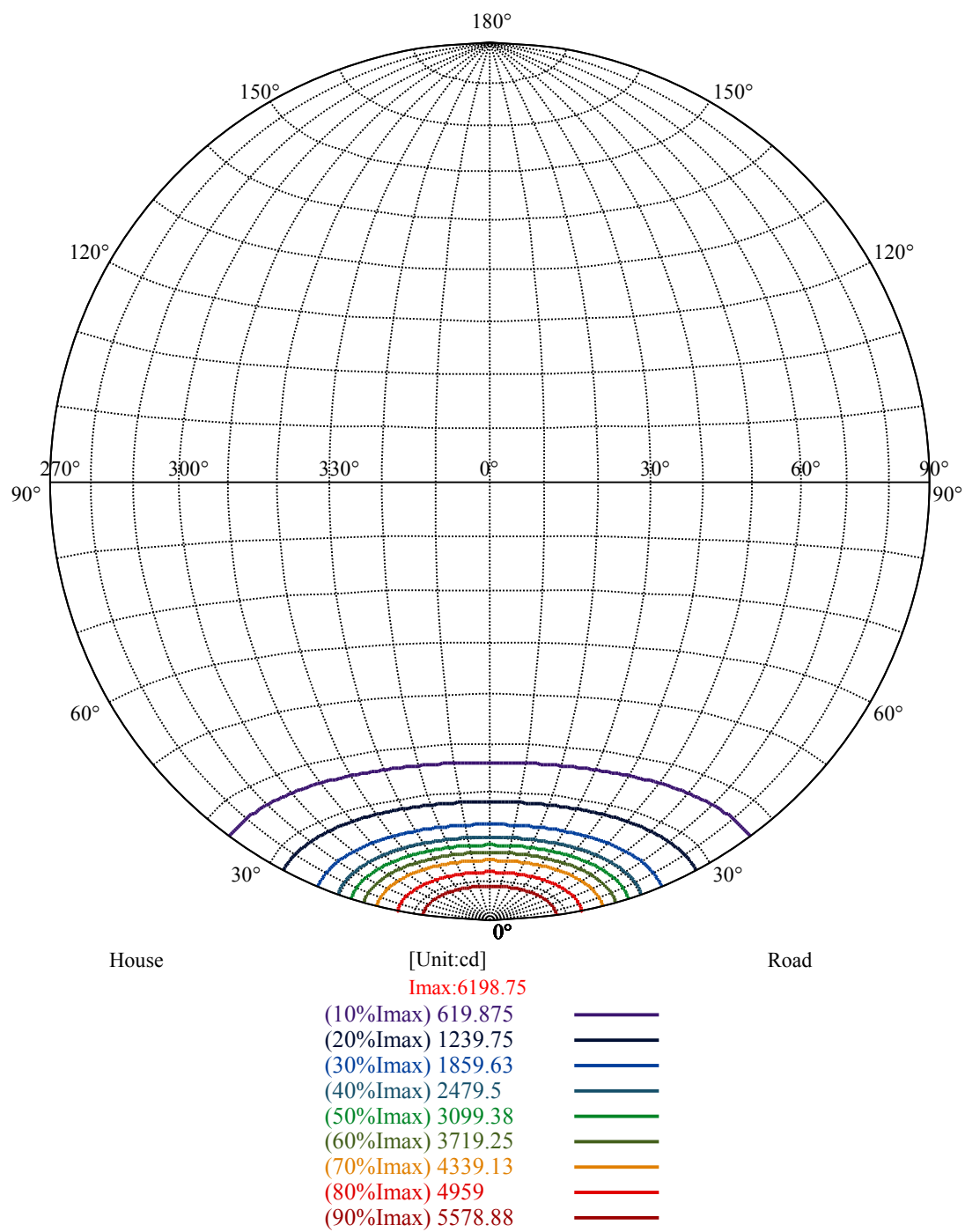


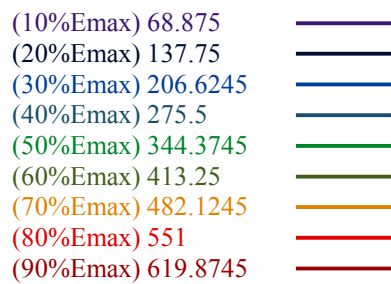


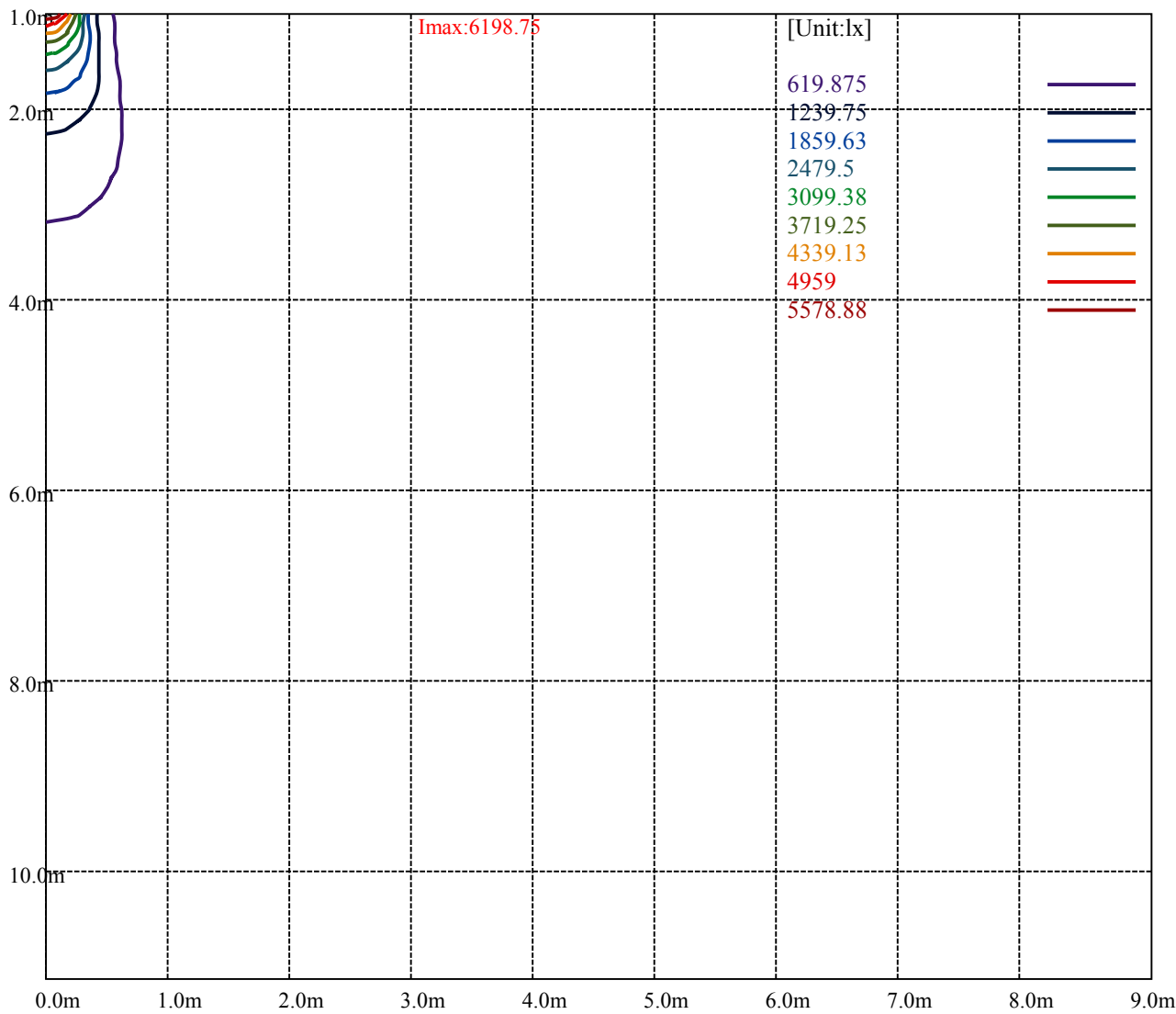
Equipment:
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50







Luminance Table

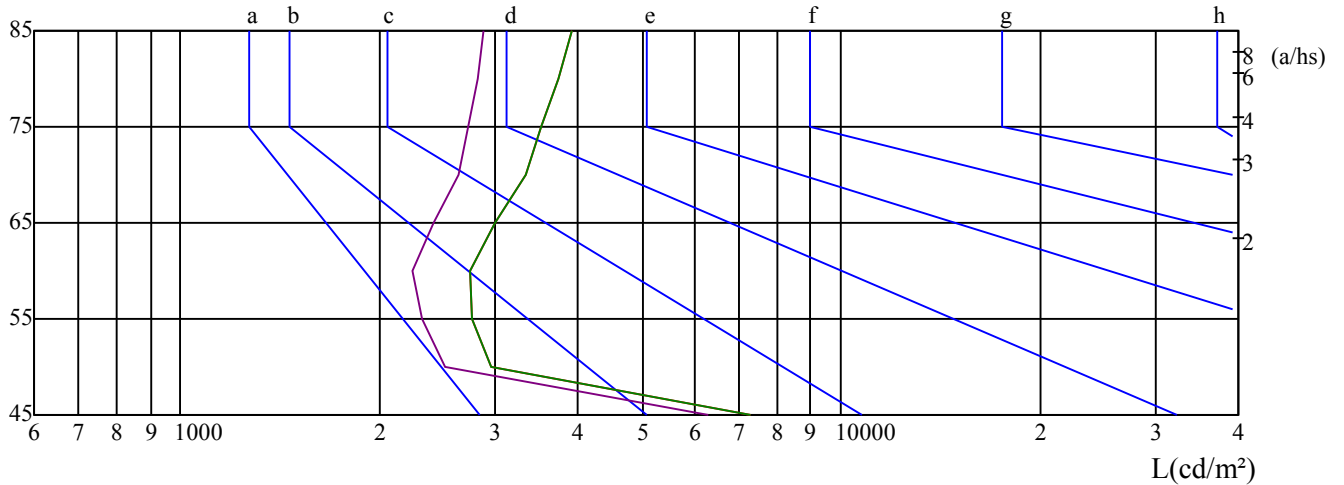
γ	45	50	55	60	65	70	75	80	85
C0	7295	2960	2767	2737	2992	3329	3520	3731	3913
C45	6289	2514	2314	2251	2417	2637	2727	2819	2869
C90	7295	2960	2767	2737	2992	3329	3520	3731	3913

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7025	7025	7025	11776	11776	11776	32023	32023	32023

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

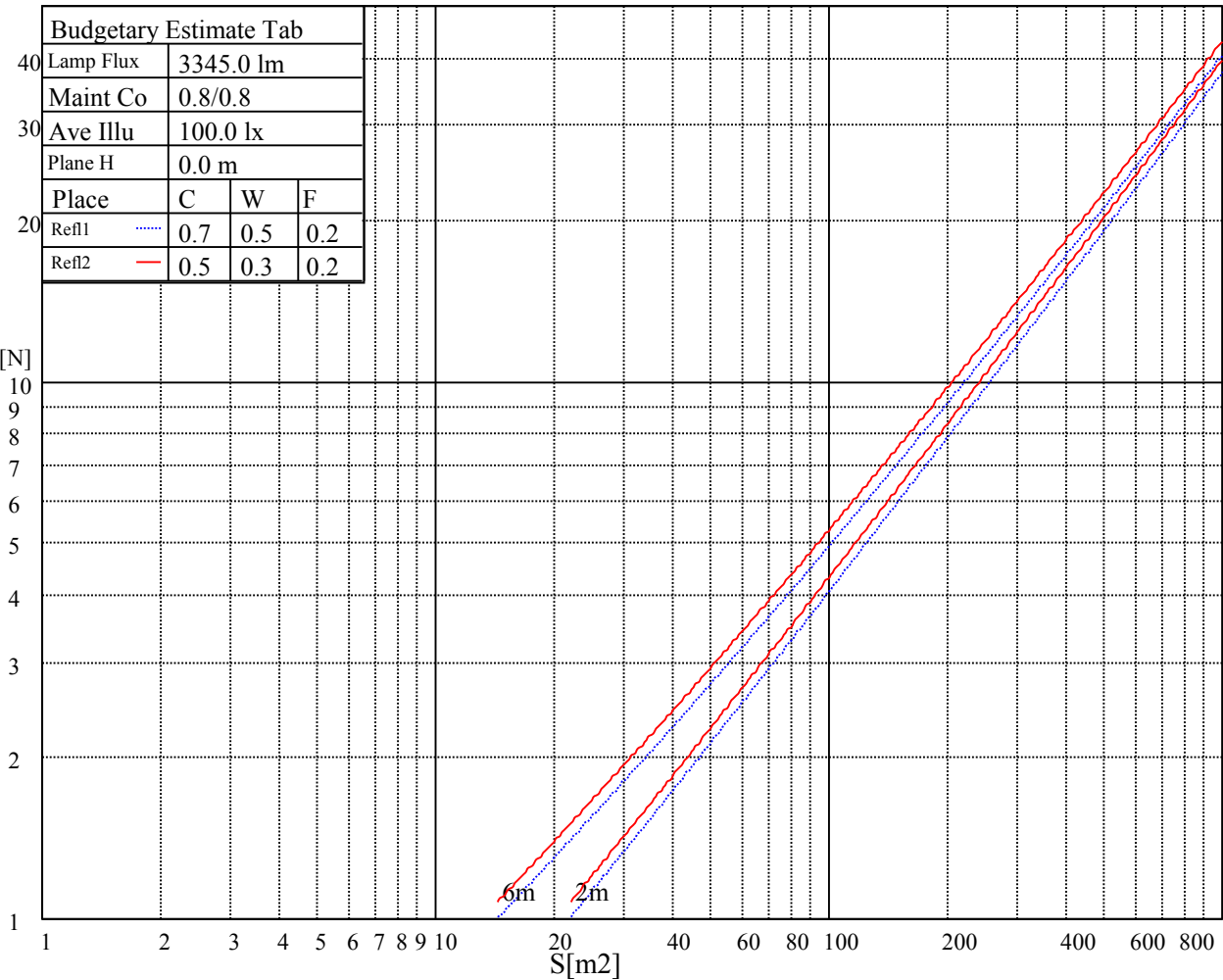
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

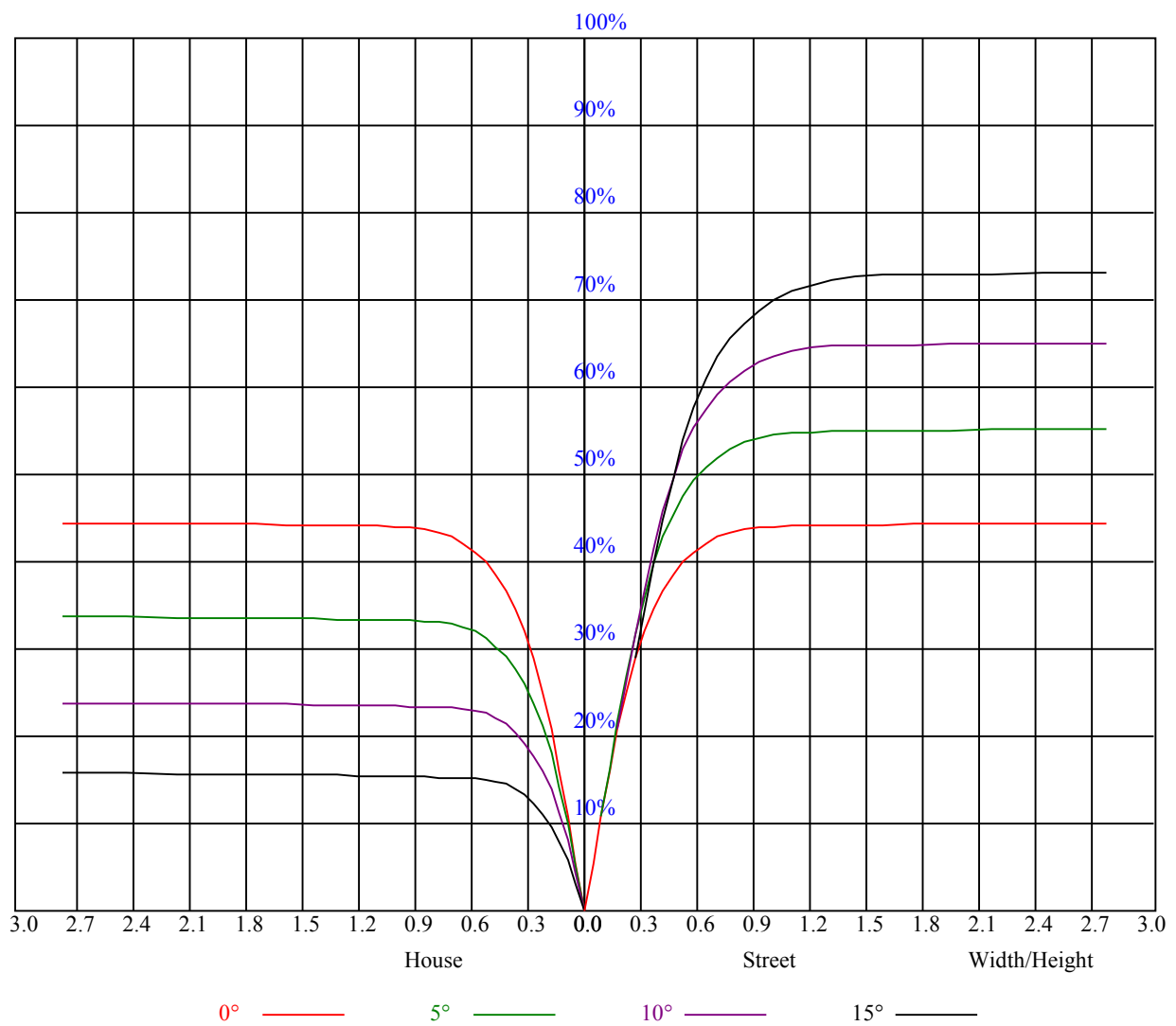
C0 ———

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	1.07	1.07	1.07	1.05	1.05	1.05	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	0.98	0.95	0.93	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84
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	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.77	0.76
4	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
6	0.77	0.73	0.70	0.77	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.70	0.66	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.64
8	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62
9	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58



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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	6197.06	6080.06	5527.13	4428.00	2609.44	1455.19	1129.50	729.56	353.81		
45.0	6201.00	6073.88	5544.56	4529.25	2869.88	1495.69	1158.75	788.63	387.00		
90.0	6195.38	6006.94	5371.31	4311.00	2619.00	1421.44	1116.28	709.03	321.24		
135.0	6201.56	6081.75	5615.44	4648.50	2915.44	1512.00	1188.00	802.69	388.69		
180.0	6197.06	6053.63	5381.44	4259.81	2387.81	1387.69	1102.28	697.95	308.14		
225.0	6201.00	6006.38	5297.63	3947.06	2194.88	1355.06	1066.50	675.23	274.16		
270.0	6195.38	6038.44	5419.13	4426.31	2471.06	1401.75	1118.25	735.19	313.31		
315.0	6201.56	5988.94	5317.88	3998.81	2168.44	1343.81	1041.58	622.86	244.91		
360.0	6197.06	6080.06	5527.13	4428.00	2609.44	1455.19	1129.50	729.56	353.81		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	43.26	15.98	14.51	13.84	13.39	13.73	13.95	14.06	13.33		
45.0	58.28	15.92	14.79	14.12	13.73	14.85	15.13	14.74	13.89		
90.0	39.32	16.43	15.02	14.12	15.47	16.76	15.75	15.19	14.46		
135.0	68.12	16.37	15.36	14.51	15.58	16.48	15.92	15.13	14.06		
180.0	37.69	16.14	14.85	13.89	13.84	15.13	14.91	14.40	13.33		
225.0	25.65	14.68	14.06	13.73	13.67	14.18	14.46	13.95	13.16		
270.0	31.33	17.21	15.02	13.95	15.24	15.30	14.63	14.29	13.61		
315.0	25.65	17.72	14.46	13.89	15.47	15.30	14.74	14.18	13.56		
360.0	43.26	15.98	14.51	13.84	13.39	13.73	13.95	14.06	13.33		
C/ γ (°)	90.0										
0.0	12.09										
45.0	12.15										
90.0	12.09										
135.0	12.09										
180.0	12.04										
225.0	12.15										
270.0	12.15										
315.0	12.09										
360.0	12.09										

Equipment:
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50