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NATA

LumCAT: 3-1920-E	
Luminaire:92.76.323.00	
Report No: NATA0100	Voltage(V): 36.1000
Test No: GC2018111012	Current(A): 0.6000
LampCAT: Philips SLM 1205 G7	Power (W): 21.6600
Lamp flux(lm): 2840.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 76	Width(mm): 76
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2537.20
Efficiency(%): 89.34%
Lumens(lm)/Power(W): 118.05
Central intensity(cd): 3715.875
Maximum intensity(cd): 3715.875
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=52.4
[C90/270]Total=52.4
Field angle(10%Imax): [C0/180]Total=75.1
[C90/270]Total=75.1
Maximum s/h(1/2): C0_180=0.80 C90_270=0.80
Maximum s/h(1/4): C0_180=0.81 C90_270=0.81
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.04%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.865%

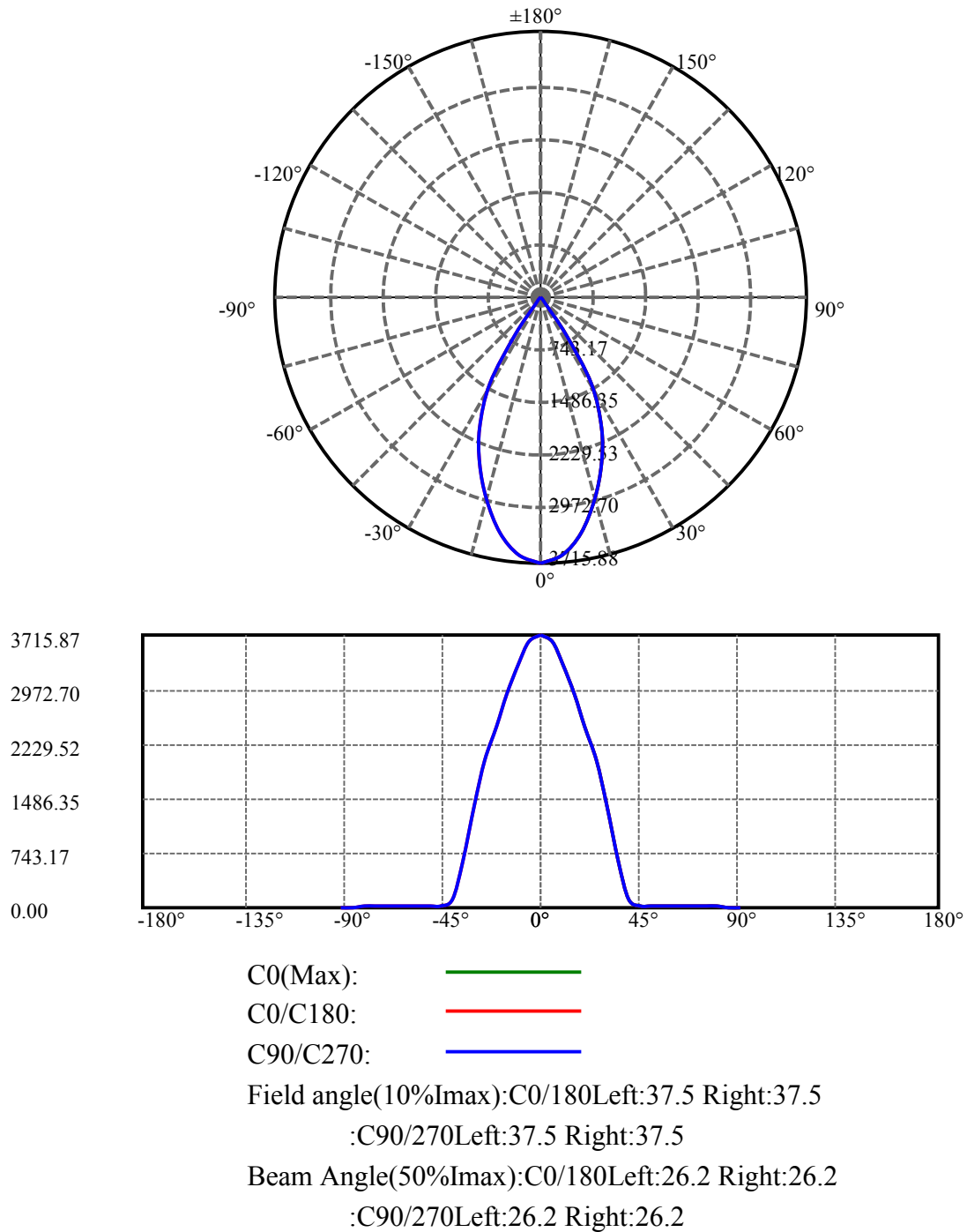
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3715.875	22.222	22.222	.782%	.876%
5.0	3613.992	172.652	194.874	6.079%	7.681%
10.0	3334.078	317.348	512.222	11.174%	20.188%
15.0	2909.250	412.731	924.952	14.533%	36.456%
20.0	2467.617	462.614	1387.567	16.289%	54.689%
25.0	2003.063	464.015	1851.582	16.339%	72.977%
30.0	1399.219	383.482	2235.064	13.503%	88.092%
35.0	628.109	197.477	2432.54	6.953%	95.875%
40.0	124.017	43.696	2476.236	1.539%	97.597%
45.0	22.388	8.677	2484.913	.306%	97.939%
50.0	13.830	5.807	2490.721	.204%	98.168%
55.0	12.860	5.774	2496.495	.203%	98.396%
60.0	12.452	5.911	2502.406	.208%	98.629%
65.0	12.734	6.326	2508.732	.223%	98.878%
70.0	12.270	6.320	2515.052	.223%	99.127%
75.0	12.136	6.425	2521.477	.226%	99.380%
80.0	11.939	6.445	2527.922	.227%	99.634%
85.0	11.468	6.262	2534.184	.220%	99.881%
90.0	11.004	3.016	2537.2	.106%	100.000%

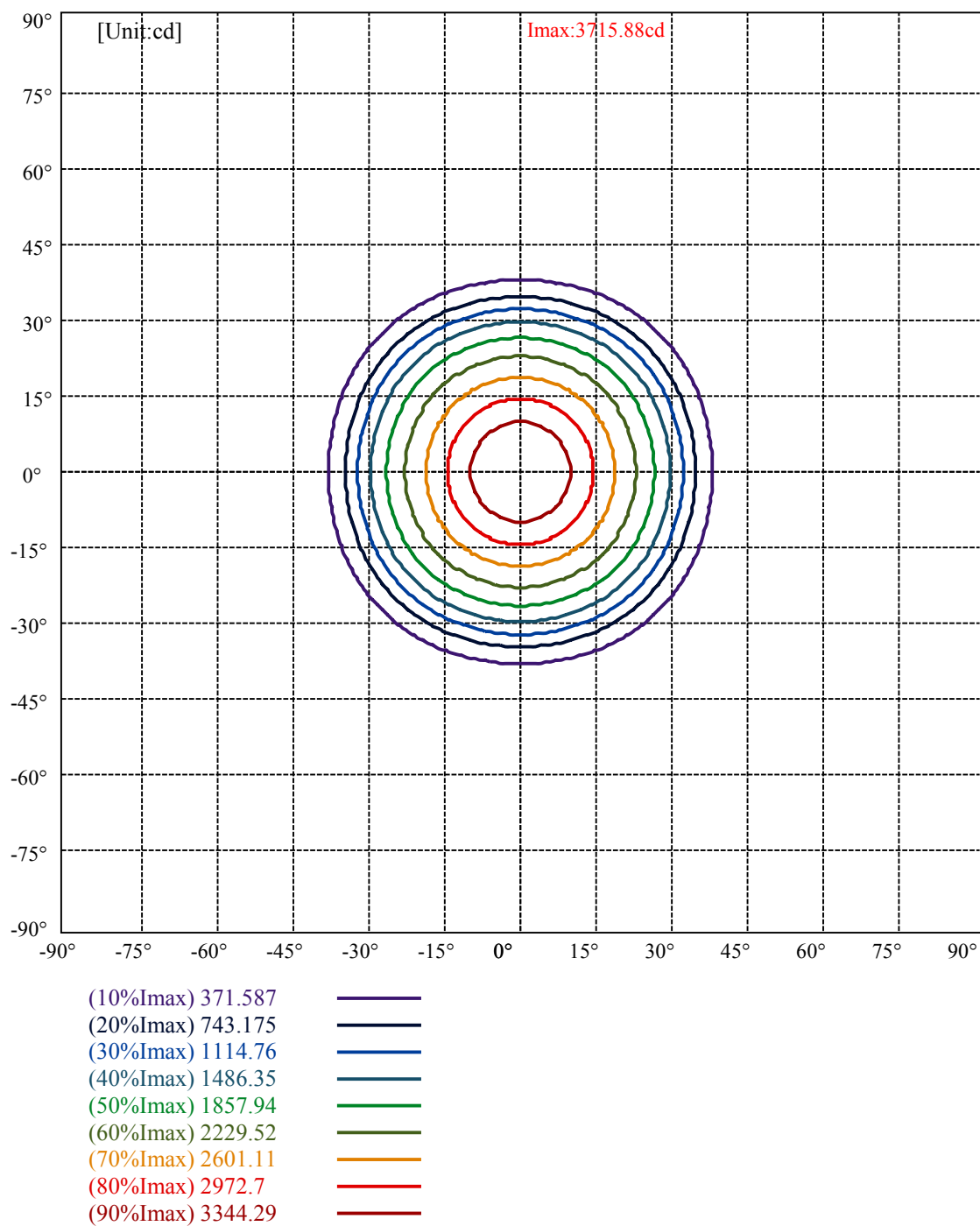
ZONAL LUMEN SUMMARY

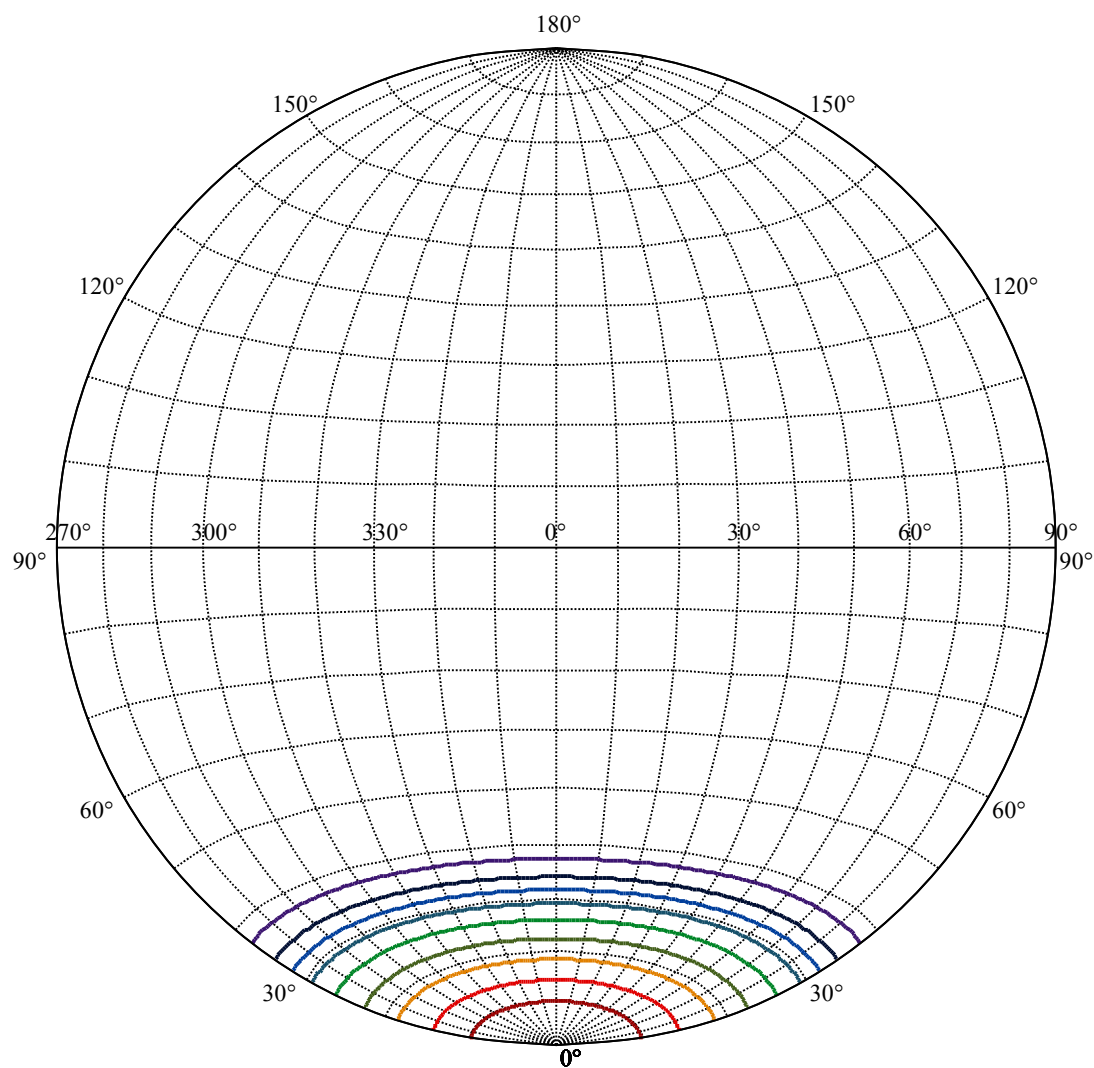
Zone	Lumens	%Lamp	%Fixt
0-30	2235.06	78.70%	88.09%
0-40	2476.24	87.19%	97.60%
0-60	2502.41	88.11%	98.63%
0-90	2534.18	89.23%	99.88%
0-120	2534.18	89.23%	99.88%
0-180	2537.20	89.34%	100.00%
60-90	37.69	1.33%	1.49%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.32	2029.76	71.47%	80.00%

ZONAL LUMEN SUMMARY

0-10	512.22
10-20	875.34
20-30	847.50
30-40	241.17
40-50	14.48
50-60	11.69
60-70	12.65
70-80	12.87
80-90	6.26
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:3715.88

(10%Imax) 371.587

(20%Imax) 743.175

(30%Imax) 1114.76

(40%Imax) 1486.35

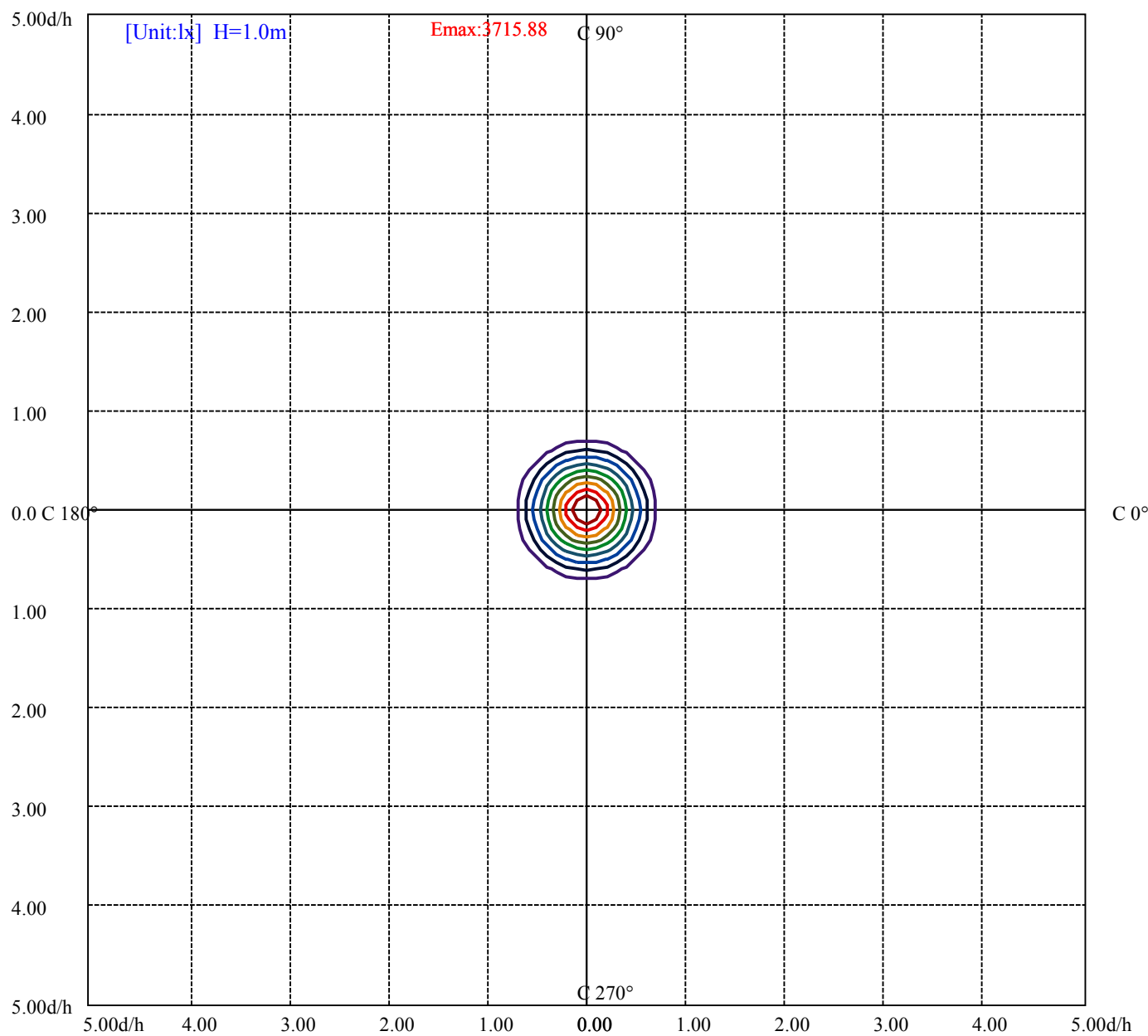
(50%Imax) 1857.94

(60%Imax) 2229.52

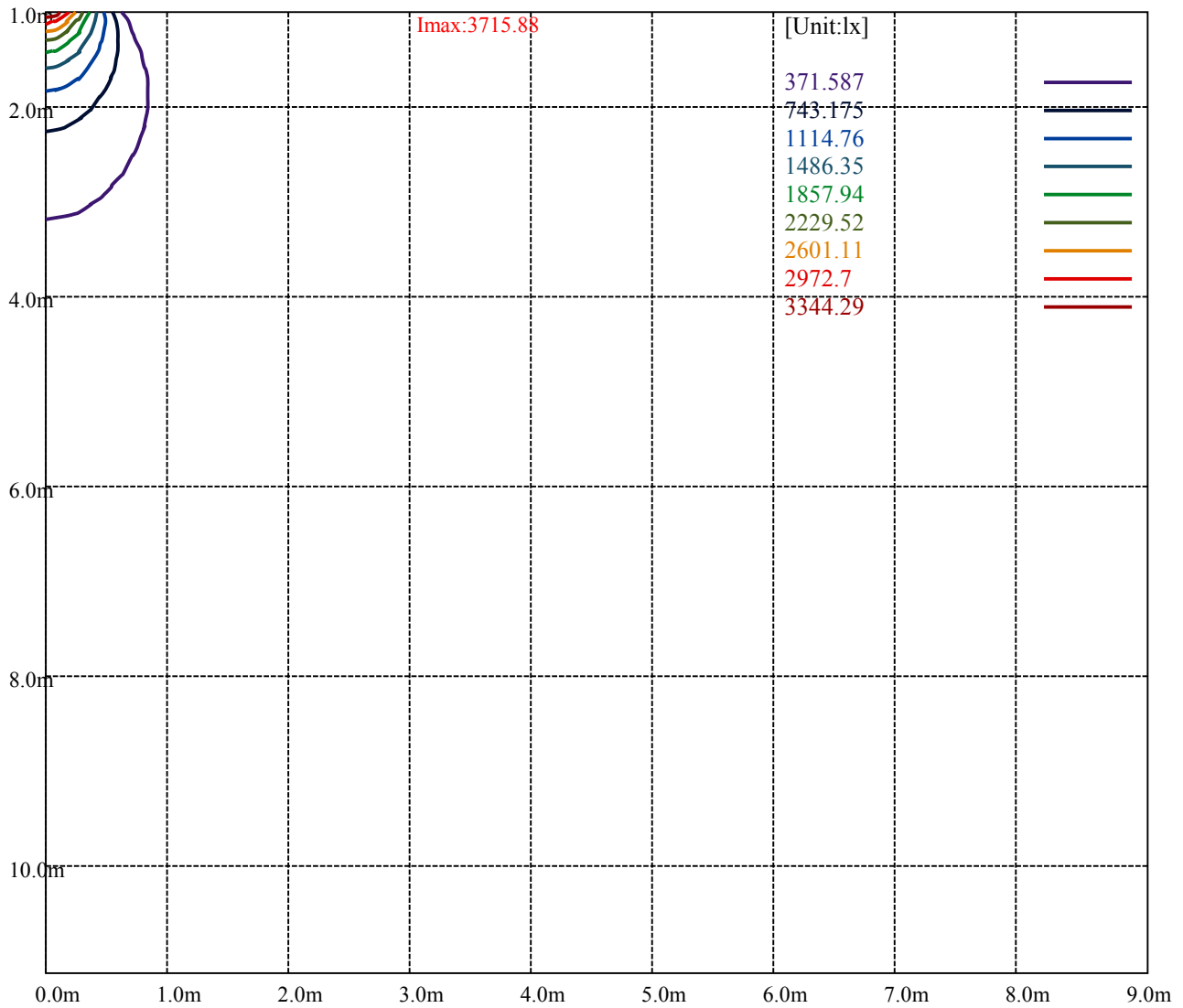
(70%Imax) 2601.11

(80%Imax) 2972.7

(90%Imax) 3344.29



(10%Emax)	371.587	—
(20%Emax)	743.174	—
(30%Emax)	1114.76	—
(40%Emax)	1486.35	—
(50%Emax)	1857.94	—
(60%Emax)	2229.52	—
(70%Emax)	2601.11	—
(80%Emax)	2972.7	—
(90%Emax)	3344.28	—



Luminance Table

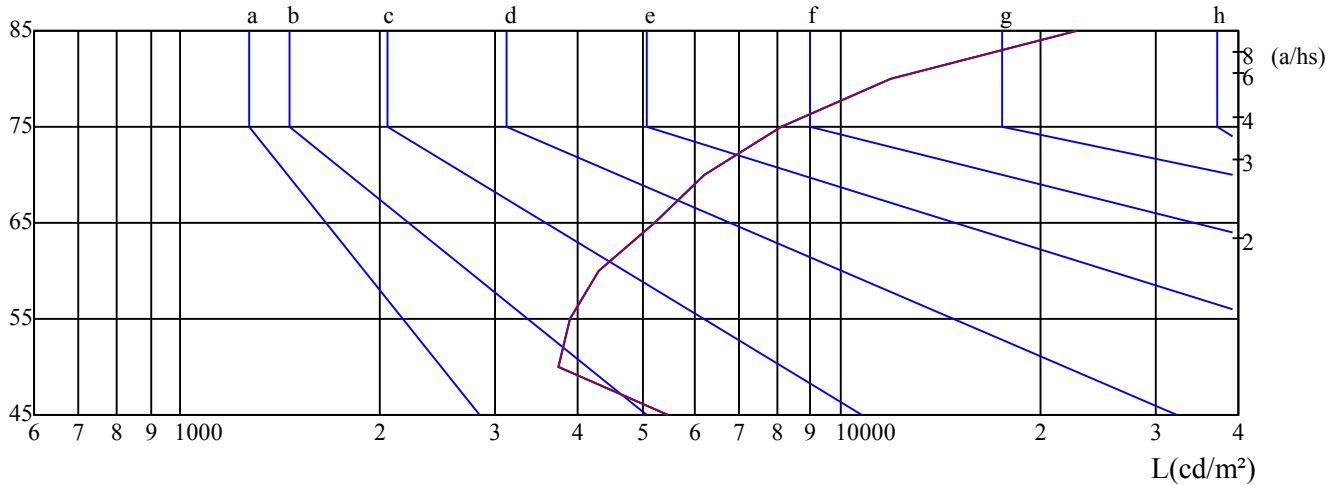
γ	45	50	55	60	65	70	75	80	85
C0	5481	3725	3882	4312	5216	6211	8118	11903	22781
C45	5481	3725	3882	4312	5216	6211	8118	11903	22781
C90	5481	3725	3882	4312	5216	6211	8118	11903	22781

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5216	5216	5216	8118	8118	8118	22781	22781	22781

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

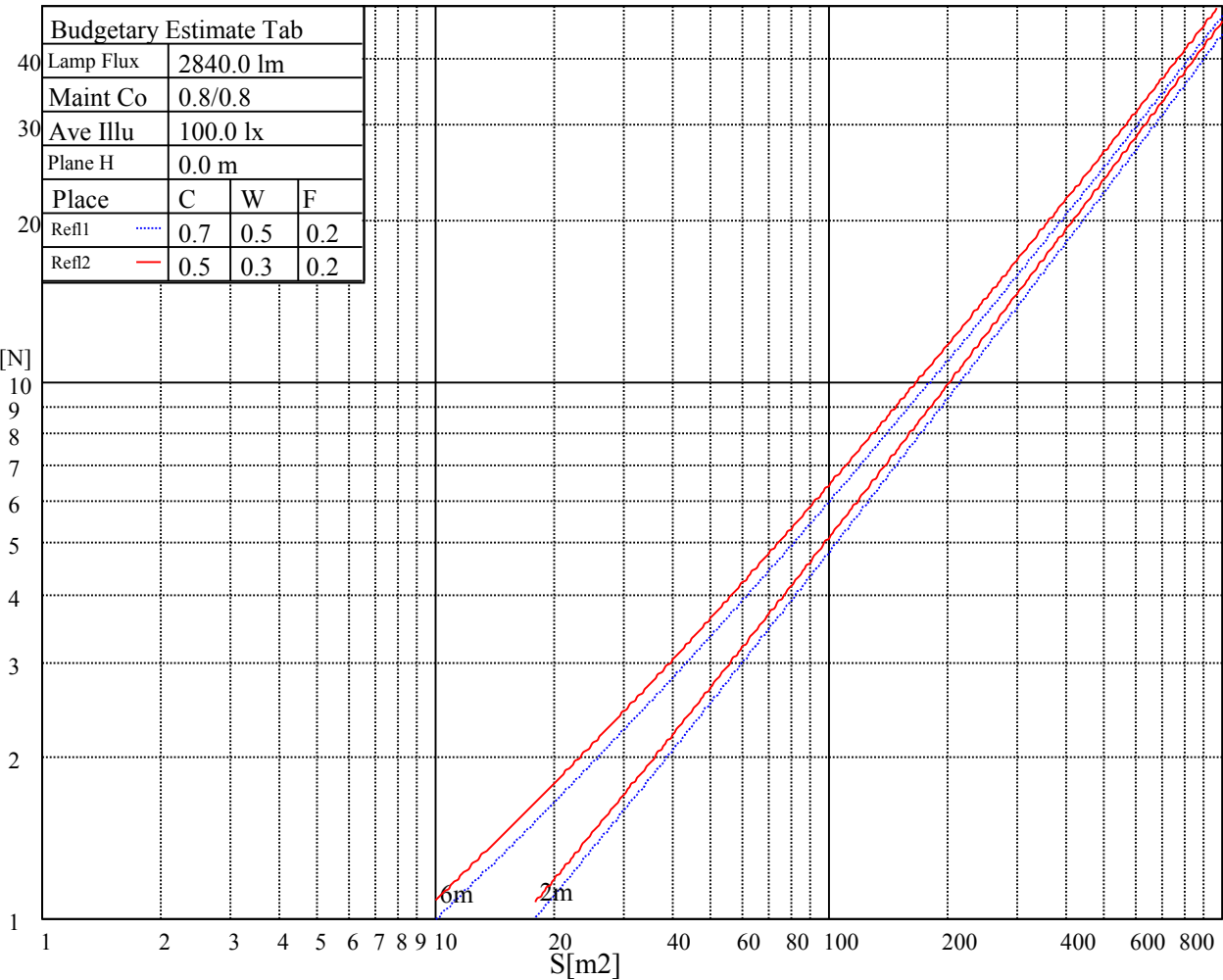
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

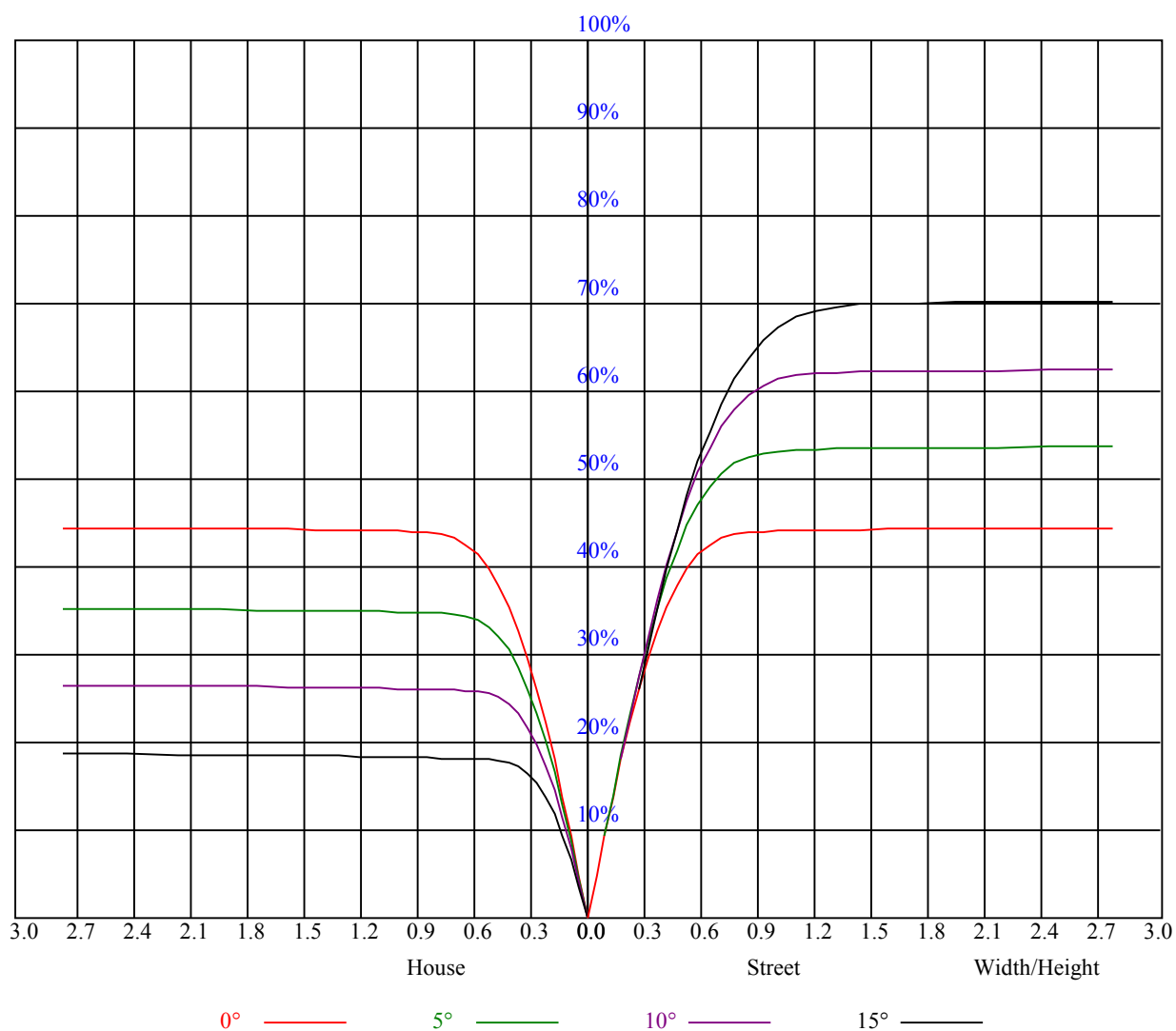
C0 ———

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



NATA 3-1920-A

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	3701.25	3708.56	3506.63	3138.19	2707.88	2251.69	1703.81	1112.63	315.00		
45.0	3727.69	3613.50	3329.44	2899.13	2473.31	1985.63	1449.56	587.81	64.74		
90.0	3709.69	3511.13	3192.75	2708.44	2274.19	1800.00	1108.41	282.09	45.17		
135.0	3724.88	3565.13	3237.19	2750.06	2313.00	1834.31	1211.06	312.75	42.47		
180.0	3701.25	3511.69	3149.44	2673.00	2259.00	1753.88	984.09	271.52	34.31		
225.0	3727.69	3629.25	3349.69	2925.00	2460.38	2016.00	1347.19	613.91	63.84		
270.0	3709.69	3691.13	3474.00	3116.81	2634.19	2206.13	1720.69	956.81	294.75		
315.0	3724.88	3681.56	3433.50	3063.38	2619.00	2176.88	1668.94	887.34	131.85		
360.0	3701.25	3708.56	3506.63	3138.19	2707.88	2251.69	1703.81	1112.63	315.00		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	33.64	14.96	13.16	12.54	12.21	11.93	11.70	11.48	11.31		
45.0	18.90	13.61	12.83	12.38	12.04	11.98	11.59	11.36	11.19		
90.0	16.26	13.50	12.99	12.77	16.37	12.32	11.59	11.48	11.31		
135.0	15.86	13.50	12.94	12.83	13.28	14.68	15.92	15.47	12.66		
180.0	14.91	13.28	12.71	12.32	12.09	11.98	11.76	11.59	11.42		
225.0	20.48	13.44	12.54	12.09	11.81	11.64	11.42	11.31	11.14		
270.0	29.81	14.18	12.77	12.26	11.98	11.87	11.59	11.48	11.48		
315.0	29.25	14.18	12.94	12.43	12.09	11.76	11.53	11.36	11.25		
360.0	33.64	14.96	13.16	12.54	12.21	11.93	11.70	11.48	11.31		
C/γ(°)	90.0										
0.0	11.08										
45.0	10.97										
90.0	10.97										
135.0	11.03										
180.0	11.03										
225.0	10.91										
270.0	11.03										
315.0	11.03										
360.0	11.08										