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Nata

LumCAT: 1653-S	
Luminaire: 92.70.064.00	
Report No: NATA0100	Voltage(V): 36.0000
Test No: GC2018072813	Current(A): 0.3000
LampCAT: BRIDGELUX V6HD	Power (W): 10.8000
Lamp flux(lm): 1137.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 32	Width(mm): 32
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 985.64
Efficiency(%): 86.69%
Lumens(lm)/Power(W): 91.82
Central intensity(cd): 6429.900
Maximum intensity(cd): 6429.900
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=16.9
[C90/270]Total=16.9
Field angle(10%Imax): [C0/180]Total=35.0
[C90/270]Total=35.0
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.29 C90_270=0.29
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.22%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.667%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6429.899	6.153	6.153	.541%	.624%
2.0	6233.761	47.713	53.866	4.196%	5.465%
4.0	5642.730	86.325	140.191	7.592%	14.223%
6.0	4642.424	106.425	246.617	9.360%	25.021%
8.0	3473.852	106.031	352.647	9.325%	35.778%
10.0	2381.120	90.681	443.328	7.975%	44.979%
12.0	1553.430	70.833	514.161	6.230%	52.165%
14.0	1013.829	53.790	567.952	4.731%	57.622%
16.0	769.826	46.537	614.489	4.093%	62.344%
18.0	598.855	40.585	655.074	3.570%	66.461%
20.0	506.519	37.994	693.068	3.342%	70.316%
22.0	448.847	36.876	729.943	3.243%	74.057%
24.0	409.799	36.555	766.499	3.215%	77.766%
26.0	385.140	37.028	803.526	3.257%	81.523%
28.0	364.150	37.493	841.02	3.298%	85.327%
30.0	325.321	35.674	876.693	3.138%	88.946%
32.0	259.928	30.208	906.902	2.657%	92.011%
34.0	182.980	22.440	929.342	1.974%	94.288%
36.0	105.426	13.590	942.933	1.195%	95.667%
38.0	49.757	6.718	949.651	.591%	96.348%
40.0	21.775	3.070	952.721	.270%	96.660%
42.0	14.645	2.149	954.87	.189%	96.878%
44.0	12.181	1.856	956.725	.163%	97.066%
46.0	10.261	1.619	958.344	.142%	97.230%
48.0	9.325	1.520	959.864	.134%	97.384%
50.0	8.919	1.498	961.363	.132%	97.536%
52.0	8.554	1.478	962.841	.130%	97.686%
54.0	8.141	1.445	964.285	.127%	97.833%
56.0	7.804	1.419	965.704	.125%	97.977%
58.0	7.536	1.402	967.106	.123%	98.119%
60.0	7.433	1.412	968.518	.124%	98.262%
62.0	7.274	1.409	969.926	.124%	98.405%
64.0	7.130	1.405	971.332	.124%	98.548%
66.0	6.875	1.377	972.709	.121%	98.688%
68.0	6.407	1.303	974.012	.115%	98.820%
70.0	6.001	1.237	975.249	.109%	98.945%
72.0	5.643	1.177	976.426	.104%	99.065%
74.0	5.526	1.165	977.591	.102%	99.183%

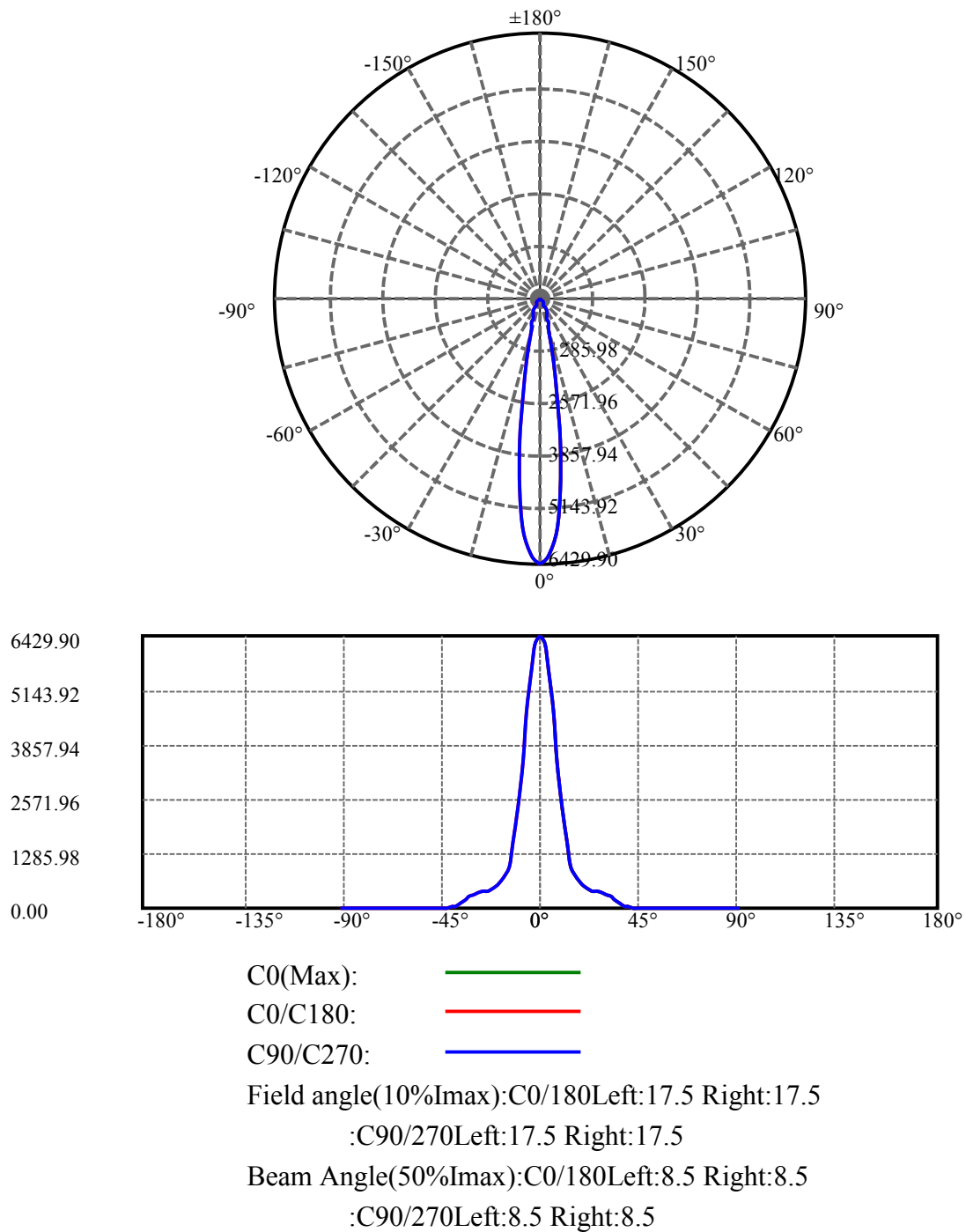
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.396	1.148	978.739	.101%	99.299%
78.0	5.272	1.131	979.87	.099%	99.414%
80.0	5.134	1.109	980.979	.098%	99.527%
82.0	5.003	1.087	982.065	.096%	99.637%
84.0	4.859	1.060	983.125	.093%	99.744%
86.0	4.721	1.033	984.158	.091%	99.849%
88.0	4.556	0.999	985.157	.088%	99.950%
90.0	4.453	0.488	985.645	.043%	100.000%

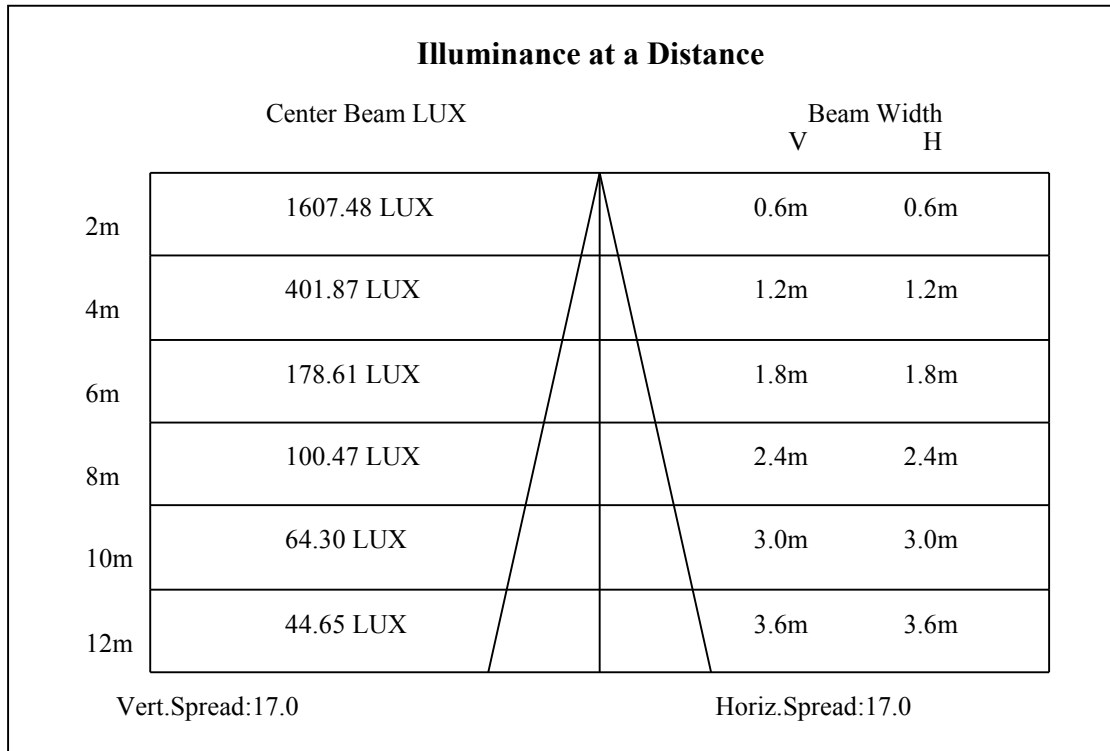
ZONAL LUMEN SUMMARY

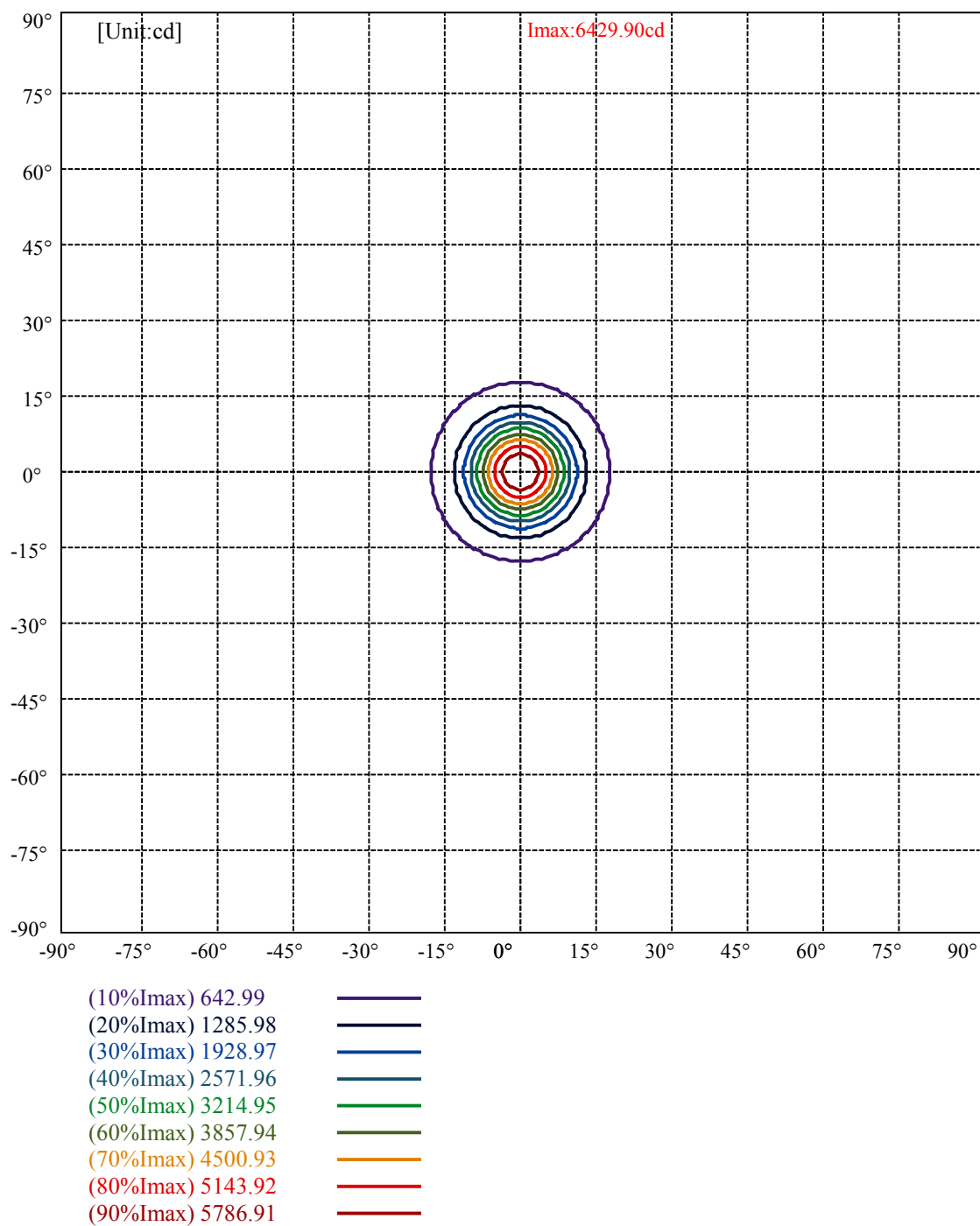
Zone	Lumens	%Lamp	%Fixt
0-30	876.69	77.11%	88.95%
0-40	952.72	83.79%	96.66%
0-60	968.52	85.18%	98.26%
0-90	985.16	86.65%	99.95%
0-120	985.16	86.65%	99.95%
0-180	985.64	86.69%	100.00%
60-90	18.05	1.59%	1.83%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.19	788.52	69.35%	80.00%

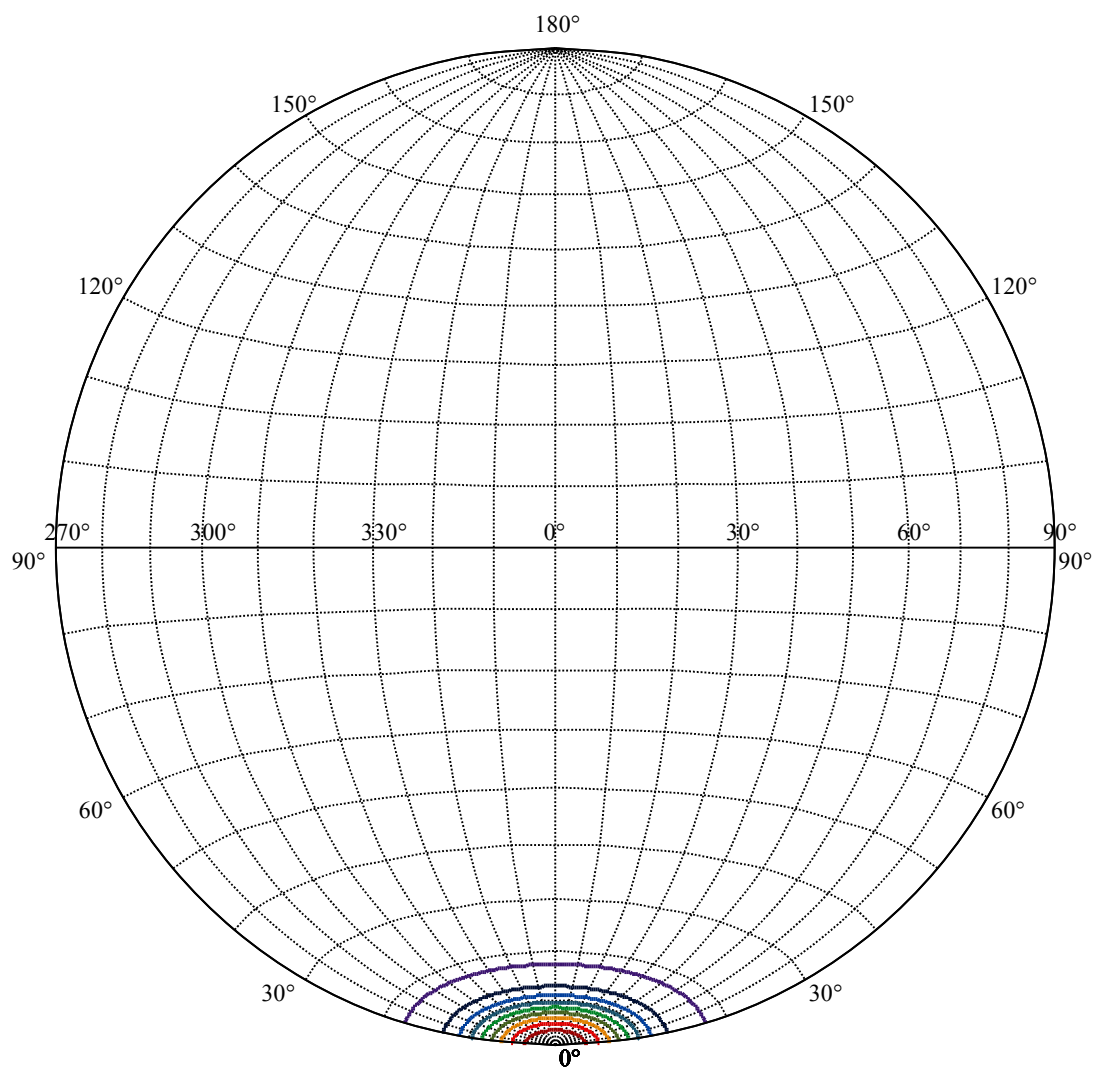
ZONAL LUMEN SUMMARY

0-10	443.33
10-20	249.74
20-30	183.63
30-40	76.03
40-50	8.64
50-60	7.16
60-70	6.73
70-80	5.73
80-90	4.18
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









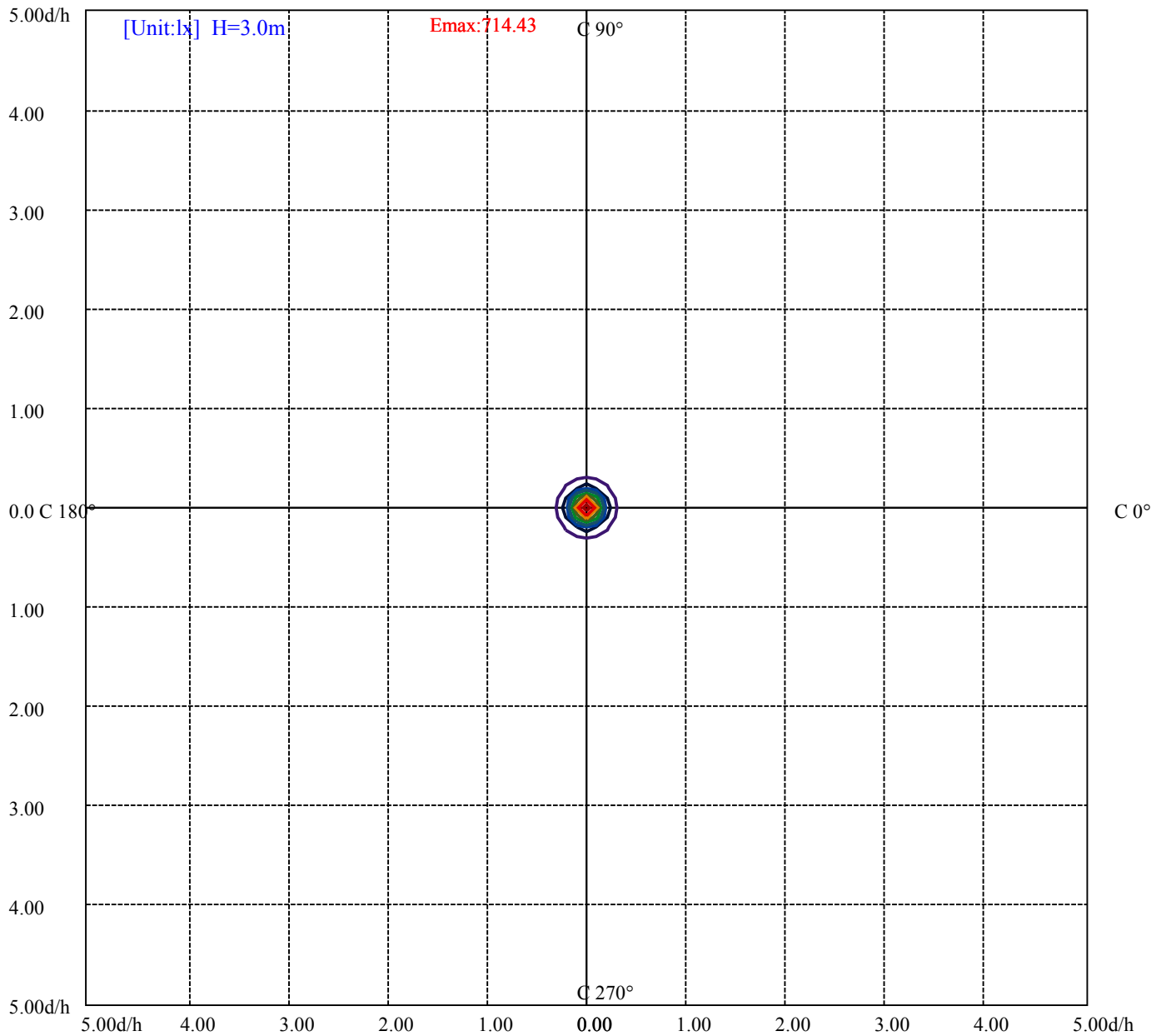
House

[Unit:cd]

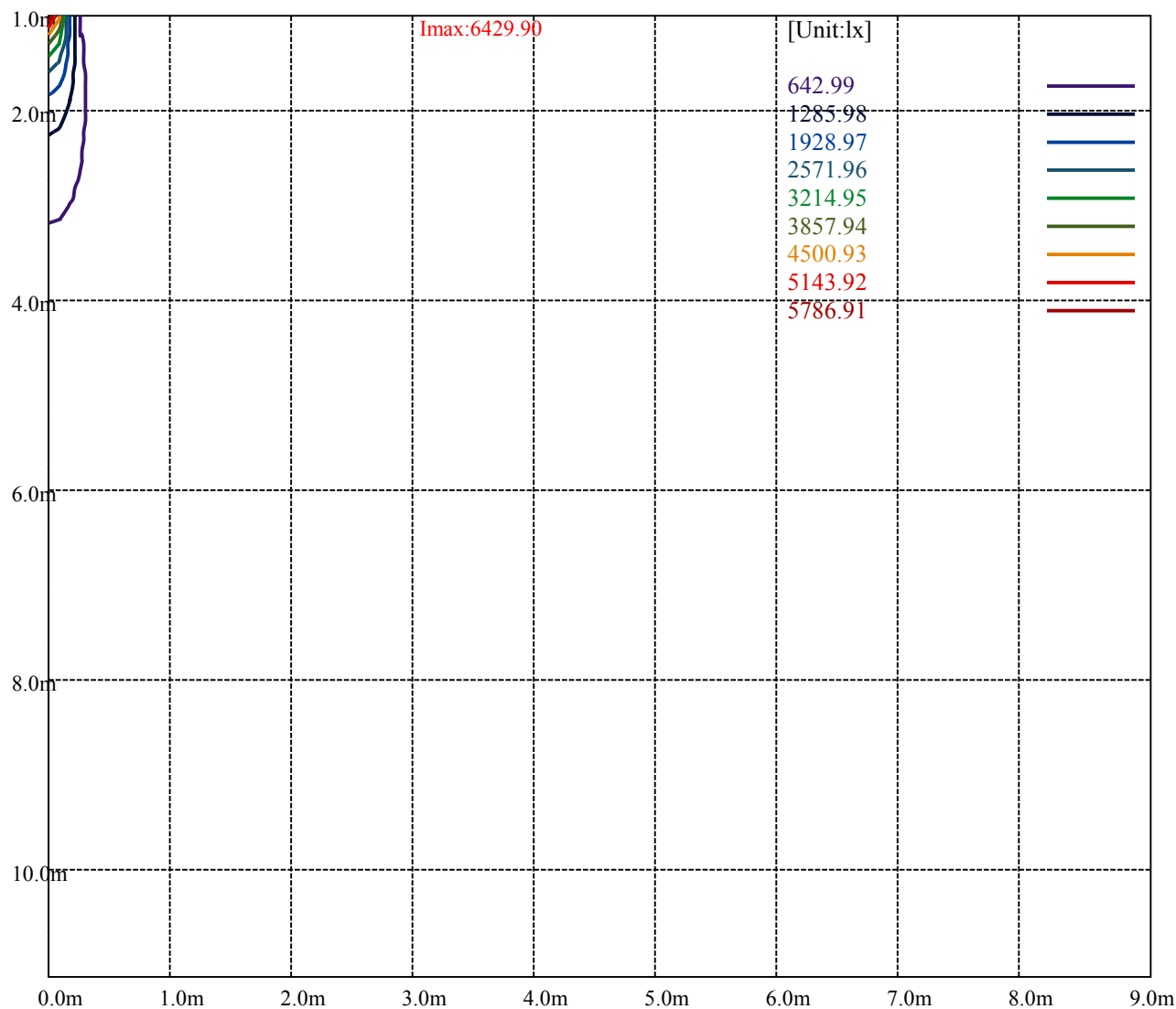
Road

Imax:6429.90

(10%Imax)	642.99	—
(20%Imax)	1285.98	—
(30%Imax)	1928.97	—
(40%Imax)	2571.96	—
(50%Imax)	3214.95	—
(60%Imax)	3857.94	—
(70%Imax)	4500.93	—
(80%Imax)	5143.92	—
(90%Imax)	5786.91	—



(10%Emax)	71.44322	—
(20%Emax)	142.8867	—
(30%Emax)	214.33	—
(40%Emax)	285.7722	—
(50%Emax)	357.2155	—
(60%Emax)	428.6589	—
(70%Emax)	500.1022	—
(80%Emax)	571.5456	—
(90%Emax)	642.9889	—



Luminance Table

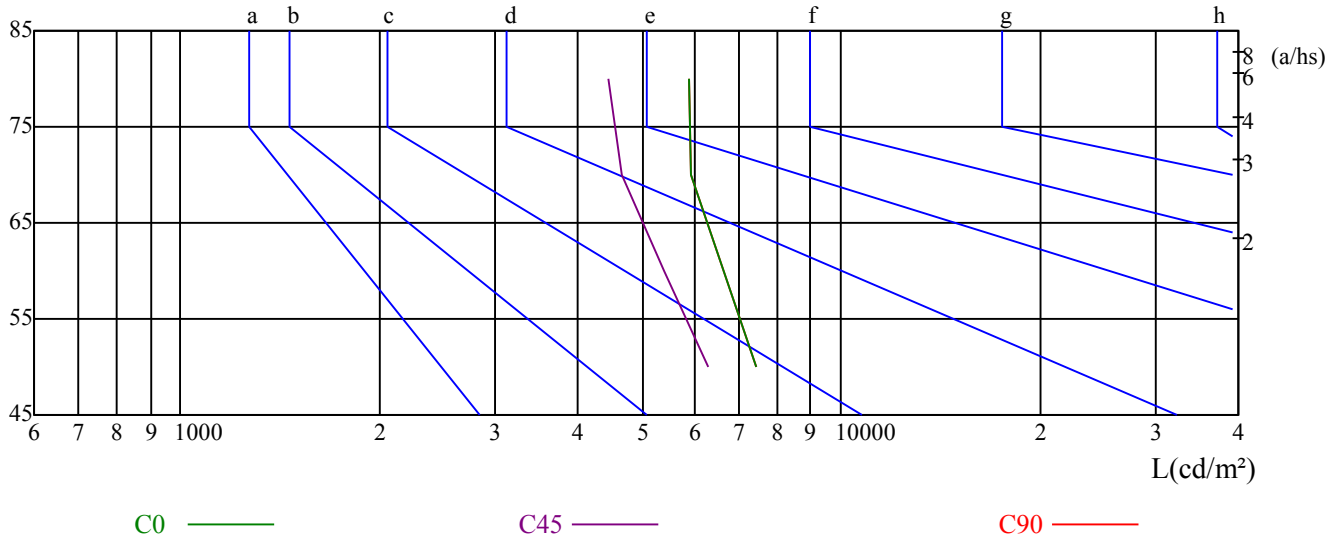
γ	45	50	55	60	65	70	75	80	85
C0	0	7448	0	6626	0	5931	0	5894	0
C45	0	6277	0	5409	0	4667	0	4432	0
C90	0	7448	0	6626	0	5931	0	5894	0

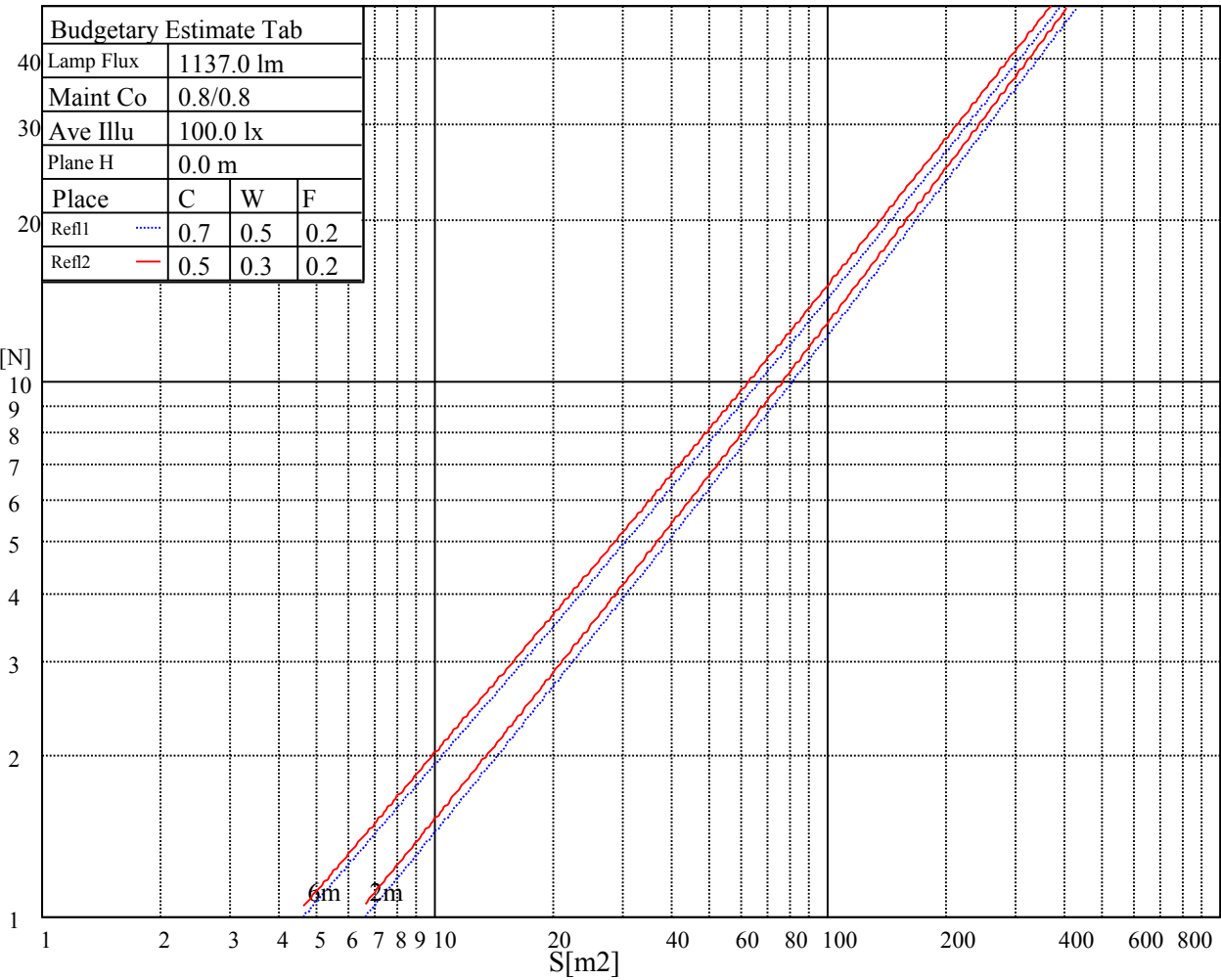
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
30104	30104	30104	37211	37211	37211	95387	95387	95387

Glare Table

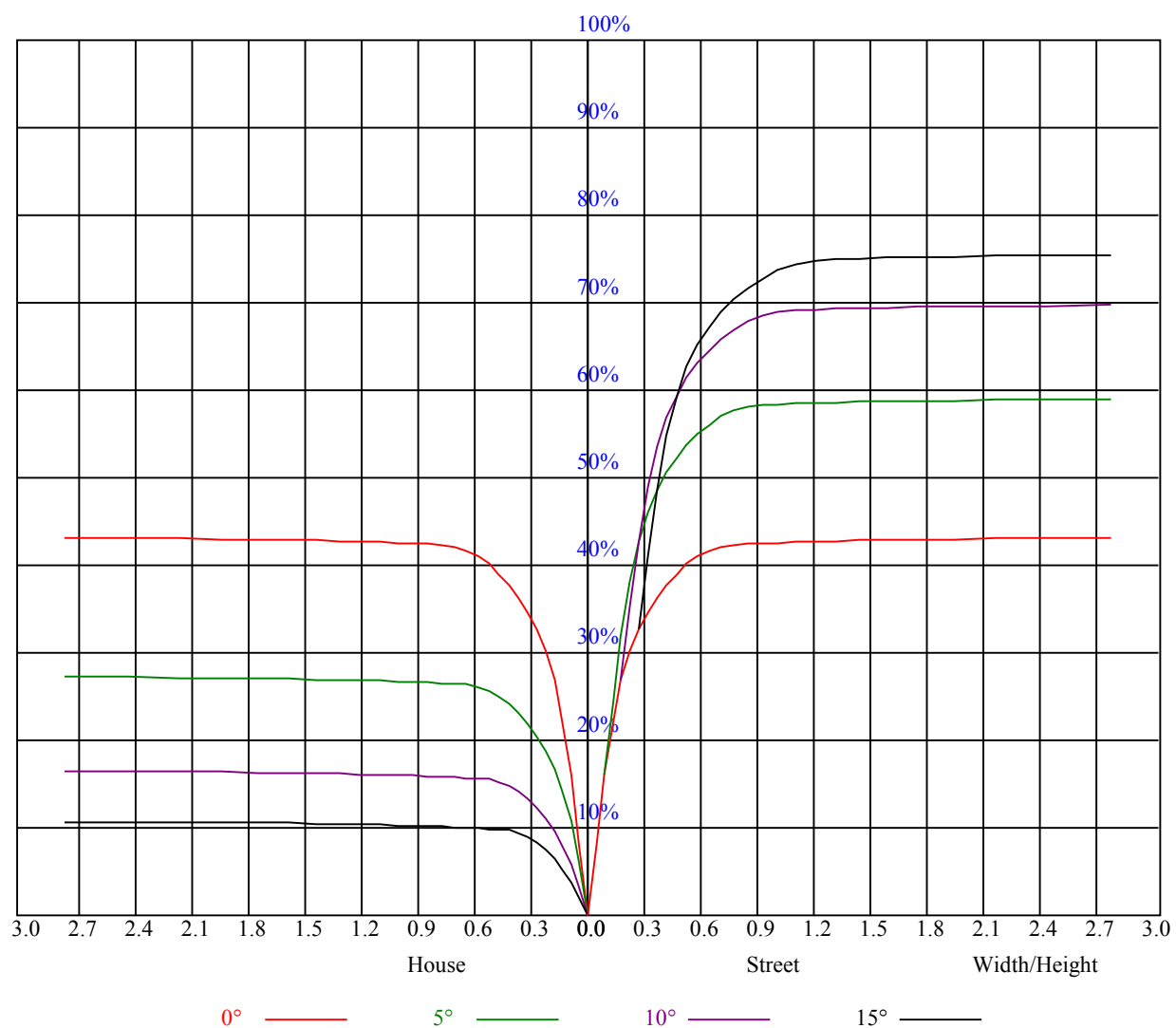
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.97	0.95	0.94	0.95	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.92	0.90	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.82	0.81	0.79
3	0.88	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.75	0.74
5	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.72
6	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.71	0.70
7	0.76	0.72	0.70	0.76	0.72	0.70	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.69	0.68
8	0.74	0.70	0.68	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66
9	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.64
10	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.68	0.65	0.63	0.63



Nata 1653-S

Intensity data(cd)									
Appendix Page: 15 Total:16									
C/ γ (°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	6463.07	6426.73	5968.11	5020.59	3892.49	2625.64	1686.93	1163.89	825.30
45.0	6449.86	5929.57	5158.78	3811.55	2598.66	1746.39	1166.65	841.26	674.99
90.0	6334.79	5680.72	4575.19	3274.75	2153.81	1383.02	968.39	735.88	594.83
135.0	6471.88	5954.35	5055.28	3830.27	2603.07	1664.91	1152.88	828.05	639.20
180.0	6463.07	6118.97	5212.19	4177.13	2819.44	1737.58	1095.79	850.90	671.47
225.0	6449.86	6548.41	6261.56	5421.40	4240.44	2963.69	1908.25	1049.54	825.96
270.0	6334.79	6633.75	6611.72	6067.22	5075.65	3880.38	2475.34	1570.21	1036.16
315.0	6471.88	6577.59	6299.00	5536.47	4407.26	3047.37	1973.22	1070.90	890.70
360.0	6463.07	6426.73	5968.11	5020.59	3892.49	2625.64	1686.93	1163.89	825.30
C/ γ (°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	663.98	564.33	498.26	448.71	420.08	395.30	376.04	316.57	229.42
45.0	557.72	492.20	452.01	418.98	395.30	374.38	317.12	224.52	144.85
90.0	499.25	440.56	395.19	365.02	343.00	311.67	241.59	167.98	96.29
135.0	534.05	459.17	411.27	378.79	359.52	342.45	280.79	205.53	132.36
180.0	550.62	480.09	440.01	408.68	383.96	365.41	311.12	227.99	147.77
225.0	601.22	504.81	441.50	407.47	387.76	376.15	361.56	308.26	226.83
270.0	715.18	553.87	472.38	415.68	380.44	355.11	338.60	307.21	241.59
315.0	668.83	557.12	480.15	435.06	411.05	392.72	375.76	321.36	244.73
360.0	663.98	564.33	498.26	448.71	420.08	395.30	376.04	316.57	229.42
C/ γ (°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	146.28	65.19	21.91	15.53	13.27	10.24	9.69	9.86	9.41
45.0	65.35	22.85	15.42	12.72	9.91	9.36	9.58	9.30	8.37
90.0	36.56	17.89	15.25	12.61	10.74	10.19	9.63	9.41	9.97
135.0	62.38	19.32	15.14	12.72	10.13	8.97	8.20	7.54	7.27
180.0	70.25	24.06	15.03	12.72	9.74	8.37	7.82	7.43	7.05
225.0	137.59	67.06	22.96	15.58	13.27	9.86	8.53	7.82	7.38
270.0	170.56	97.78	39.64	18.55	16.35	14.26	12.06	10.85	9.86
315.0	154.43	83.91	28.85	16.74	14.04	10.85	9.08	9.14	9.14
360.0	146.28	65.19	21.91	15.53	13.27	10.24	9.69	9.86	9.41
C/ γ (°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	8.53	7.43	6.61	6.28	6.22	6.17	6.11	6.00	5.89
45.0	7.65	6.72	6.33	6.22	6.22	6.33	6.06	5.78	5.62
90.0	9.80	9.41	8.64	8.04	7.32	6.55	6.11	5.78	5.73
135.0	7.10	7.10	7.49	8.31	8.31	7.98	7.10	6.22	5.73
180.0	6.83	6.66	6.55	6.44	6.33	6.22	6.11	6.06	5.89
225.0	6.99	6.77	6.66	6.77	7.54	8.42	8.97	8.15	6.94
270.0	9.36	9.80	10.30	10.41	9.69	8.81	7.93	6.83	6.11
315.0	8.86	8.53	7.71	6.99	6.55	6.55	6.61	6.44	6.11
360.0	8.53	7.43	6.61	6.28	6.22	6.17	6.11	6.00	5.89
C/ γ (°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	5.78	5.62	5.40	5.29	5.12	5.01	5.01	4.90	4.73
45.0	5.51	5.45	5.34	5.23	5.12	4.96	4.73	4.51	4.46
90.0	5.67	5.62	5.45	5.29	5.07	4.90	4.68	4.40	4.29
135.0	5.62	5.51	5.34	5.23	5.07	4.96	4.79	4.68	4.46
180.0	5.67	5.45	5.34	5.23	5.07	5.01	4.90	4.84	4.68
225.0	5.56	5.45	5.34	5.12	5.01	4.90	4.79	4.73	4.62
270.0	5.78	5.62	5.56	5.51	5.40	5.23	5.07	4.84	4.57
315.0	5.56	5.51	5.40	5.29	5.23	5.07	4.90	4.84	4.62
360.0	5.78	5.62	5.40	5.29	5.12	5.01	5.01	4.90	4.73

Intensity data(cd)

Appendix Page: 16 Total:16

C/ γ (°)	90.0
0.0	4.73
45.0	4.35
90.0	4.29
135.0	4.35
180.0	4.40
225.0	4.51
270.0	4.46
315.0	4.51
360.0	4.73