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## Nata

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LumCAT: 2-1793-N	
Luminaire: 92.70.135.00	
Report No: NT0100	Voltage(V):
Test No: GC201712292	Current(A):
LampCAT: NICHIA NVEWJ048Z-V1	Power (W): 21.7000
Lamp flux(lm): 3200.0	PF:
Number of Lamps: 1	Ballast type:
Length(mm): 69	Width(mm): 69
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 2703.69  
Efficiency(%): 84.49%  
Lumens(lm)/Power(W): 124.77  
Central intensity(cd): 16507.280  
Maximum intensity(cd): 16507.280  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=17.6  
                                  [C90/270]Total=17.6  
Field angle(10%Imax): [C0/180]Total=41.9  
                                  [C90/270]Total=41.9  
Maximum s/h(1/2): C0\_180=0.30 C90\_270=0.30  
Maximum s/h(1/4): C0\_180=0.32 C90\_270=0.32  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 84.61%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.295%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16507.285	3.949	3.949	.123%	.146%
1.0	16338.676	31.270	35.219	.977%	1.303%
2.0	15723.419	60.175	95.394	1.880%	3.528%
3.0	14960.201	85.860	181.254	2.683%	6.704%
4.0	14077.922	107.690	288.944	3.365%	10.687%
5.0	12765.790	122.010	410.954	3.813%	15.200%
6.0	11528.672	132.150	543.103	4.130%	20.087%
7.0	10518.594	140.574	683.677	4.393%	25.287%
8.0	9223.254	140.764	824.441	4.399%	30.493%
9.0	8030.045	137.753	962.194	4.305%	35.588%
10.0	6920.590	131.785	1093.979	4.118%	40.462%
11.0	5861.443	122.646	1216.625	3.833%	44.999%
12.0	5011.509	114.261	1330.887	3.571%	49.225%
13.0	4255.653	104.980	1435.867	3.281%	53.108%
14.0	3626.840	96.218	1532.084	3.007%	56.666%
15.0	3163.334	89.783	1621.867	2.806%	59.987%
16.0	2821.503	85.285	1707.152	2.665%	63.142%
17.0	2503.552	80.268	1787.42	2.508%	66.110%
18.0	2205.766	74.747	1862.167	2.336%	68.875%
19.0	2002.195	71.483	1933.649	2.234%	71.519%
20.0	1806.951	67.772	2001.421	2.118%	74.026%
21.0	1638.410	64.388	2065.809	2.012%	76.407%
22.0	1503.659	61.770	2127.579	1.930%	78.692%
23.0	1372.831	58.823	2186.402	1.838%	80.867%
24.0	1267.330	56.527	2242.929	1.766%	82.958%
25.0	1177.085	54.552	2297.48	1.705%	84.976%
26.0	1100.860	52.921	2350.401	1.654%	86.933%
27.0	1027.958	51.177	2401.578	1.599%	88.826%
28.0	916.620	47.190	2448.768	1.475%	90.571%
29.0	796.728	42.358	2491.126	1.324%	92.138%
30.0	670.181	36.746	2527.872	1.148%	93.497%
31.0	547.777	30.938	2558.81	.967%	94.641%
32.0	422.255	24.538	2583.348	.767%	95.549%
33.0	310.855	18.566	2601.914	.580%	96.236%
34.0	218.374	13.391	2615.305	.418%	96.731%
35.0	127.001	7.988	2623.293	.250%	97.026%
36.0	61.629	3.972	2627.266	.124%	97.173%
37.0	37.397	2.468	2629.734	.077%	97.265%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	29.311	1.979	2631.713	.062%	97.338%
39.0	23.894	1.649	2633.362	.052%	97.399%
40.0	21.334	1.504	2634.865	.047%	97.454%
41.0	20.185	1.452	2636.318	.045%	97.508%
42.0	19.077	1.400	2637.717	.044%	97.560%
43.0	18.244	1.364	2639.082	.043%	97.610%
44.0	17.646	1.344	2640.426	.042%	97.660%
45.0	16.944	1.314	2641.74	.041%	97.709%
46.0	16.427	1.296	2643.036	.040%	97.757%
47.0	16.070	1.289	2644.325	.040%	97.804%
48.0	15.719	1.281	2645.606	.040%	97.852%
49.0	15.443	1.278	2646.884	.040%	97.899%
50.0	15.244	1.281	2648.164	.040%	97.946%
51.0	15.051	1.283	2649.447	.040%	97.994%
52.0	14.920	1.289	2650.736	.040%	98.041%
53.0	14.776	1.294	2652.03	.040%	98.089%
54.0	14.693	1.304	2653.334	.041%	98.138%
55.0	14.597	1.311	2654.645	.041%	98.186%
56.0	14.556	1.323	2655.968	.041%	98.235%
57.0	14.487	1.332	2657.301	.042%	98.284%
58.0	14.445	1.343	2658.644	.042%	98.334%
59.0	14.411	1.355	2659.999	.042%	98.384%
60.0	14.377	1.365	2661.364	.043%	98.435%
61.0	14.335	1.375	2662.739	.043%	98.485%
62.0	14.328	1.387	2664.126	.043%	98.537%
63.0	14.308	1.398	2665.524	.044%	98.588%
64.0	14.273	1.407	2666.931	.044%	98.640%
65.0	14.205	1.412	2668.343	.044%	98.693%
66.0	14.149	1.417	2669.76	.044%	98.745%
67.0	14.101	1.423	2671.184	.044%	98.798%
68.0	14.039	1.427	2672.611	.045%	98.851%
69.0	13.977	1.431	2674.042	.045%	98.903%
70.0	13.936	1.436	2675.478	.045%	98.957%
71.0	13.881	1.439	2676.917	.045%	99.010%
72.0	13.826	1.442	2678.359	.045%	99.063%
73.0	13.778	1.445	2679.804	.045%	99.117%
74.0	13.737	1.448	2681.252	.045%	99.170%
75.0	13.675	1.449	2682.701	.045%	99.224%

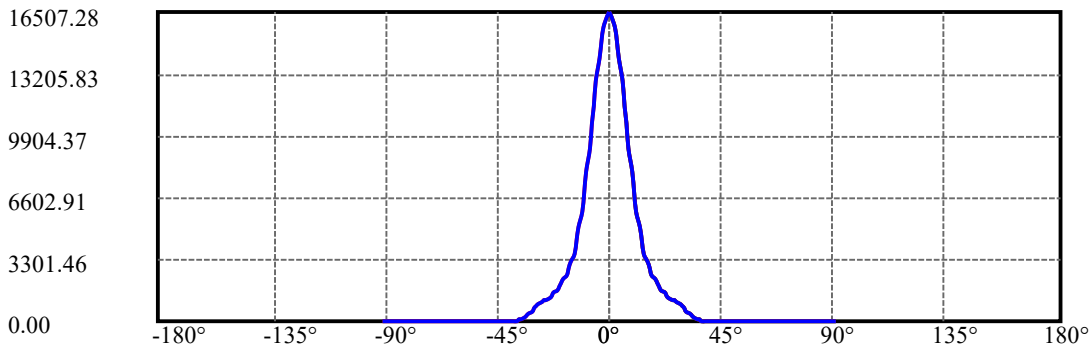
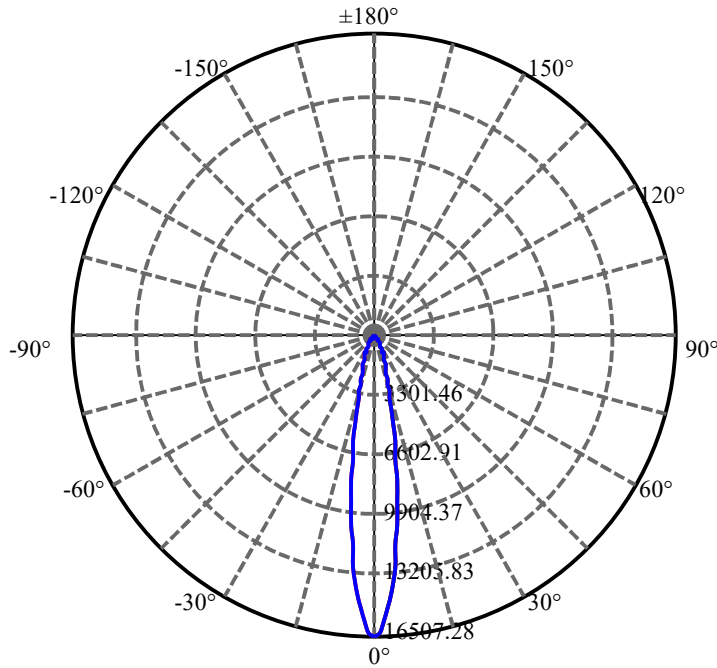
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.633	1.451	2684.151	.045%	99.277%
77.0	13.599	1.453	2685.605	.045%	99.331%
78.0	13.565	1.455	2687.06	.045%	99.385%
79.0	13.516	1.455	2688.515	.045%	99.439%
80.0	13.468	1.454	2689.969	.045%	99.493%
81.0	13.427	1.454	2691.423	.045%	99.546%
82.0	13.379	1.453	2692.876	.045%	99.600%
83.0	13.344	1.452	2694.329	.045%	99.654%
84.0	13.296	1.450	2695.779	.045%	99.707%
85.0	13.262	1.449	2697.227	.045%	99.761%
86.0	13.207	1.445	2698.672	.045%	99.814%
87.0	13.138	1.439	2700.111	.045%	99.868%
88.0	13.103	1.436	2701.547	.045%	99.921%
89.0	13.055	1.431	2702.978	.045%	99.974%
90.0	12.952	0.710	2703.689	.022%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2527.87	79.00%	93.50%
0-40	2634.87	82.34%	97.45%
0-60	2661.36	83.17%	98.43%
0-90	2702.98	84.47%	99.97%
0-120	2702.98	84.47%	99.97%
0-180	2703.69	84.49%	100.00%
60-90	42.98	1.34%	1.59%
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%
0-22.60	2162.95	67.59%	80.00%

ZONAL LUMEN SUMMARY

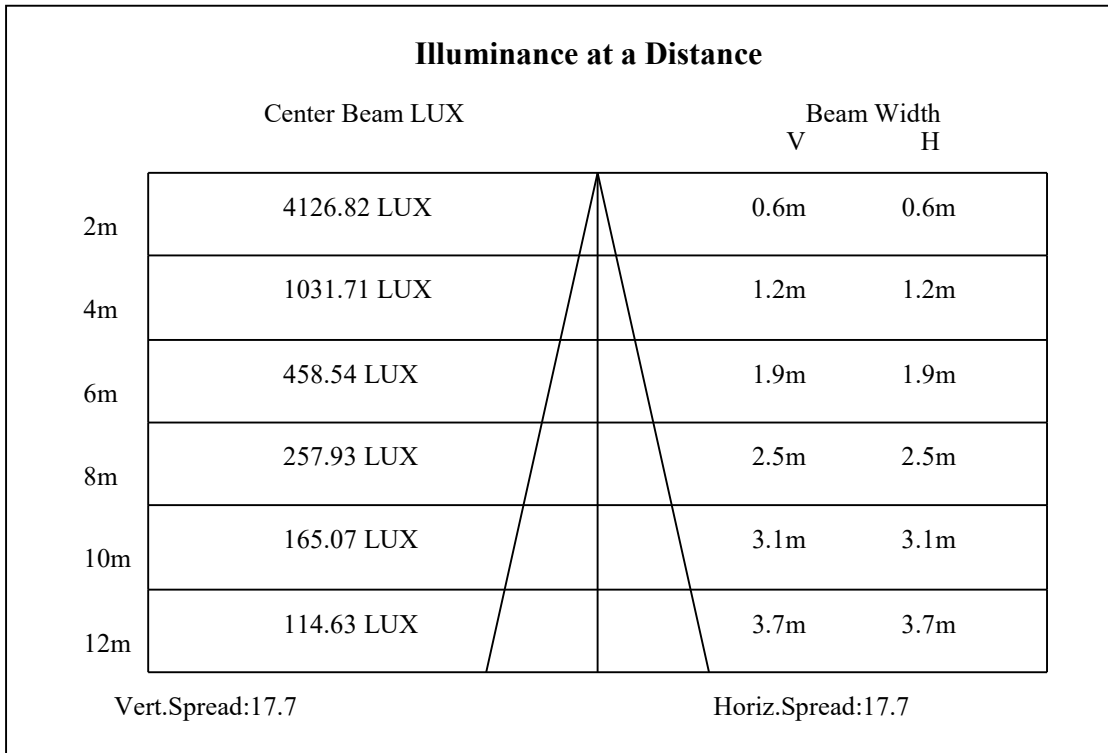
0-10	1093.98
10-20	907.44
20-30	526.45
30-40	106.99
40-50	13.30
50-60	13.20
60-70	14.11
70-80	14.49
80-90	13.01
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

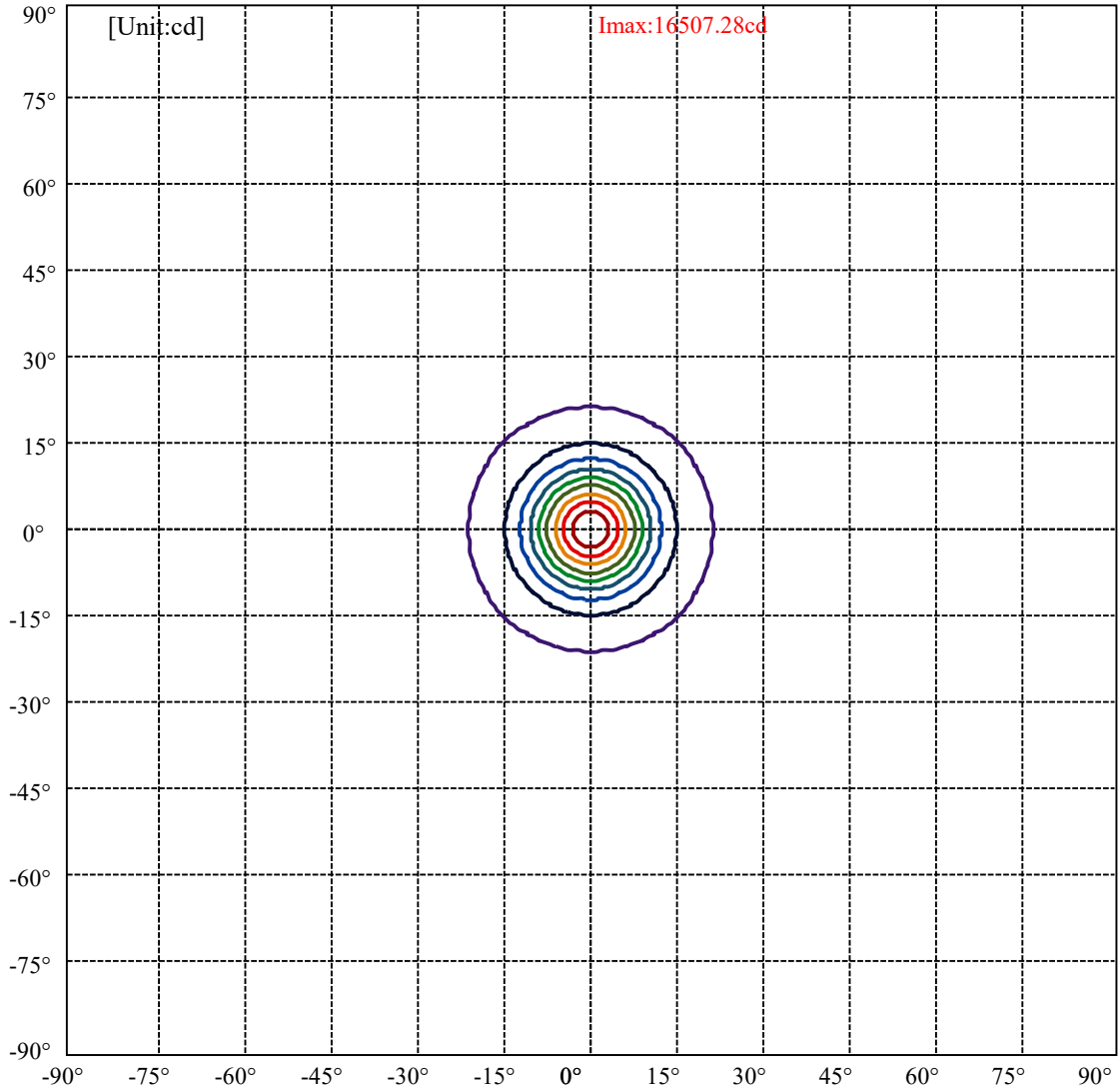


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

Field angle(10%Imax):C0/180Left:20.9 Right:20.9  
:C90/270Left:20.9 Right:20.9

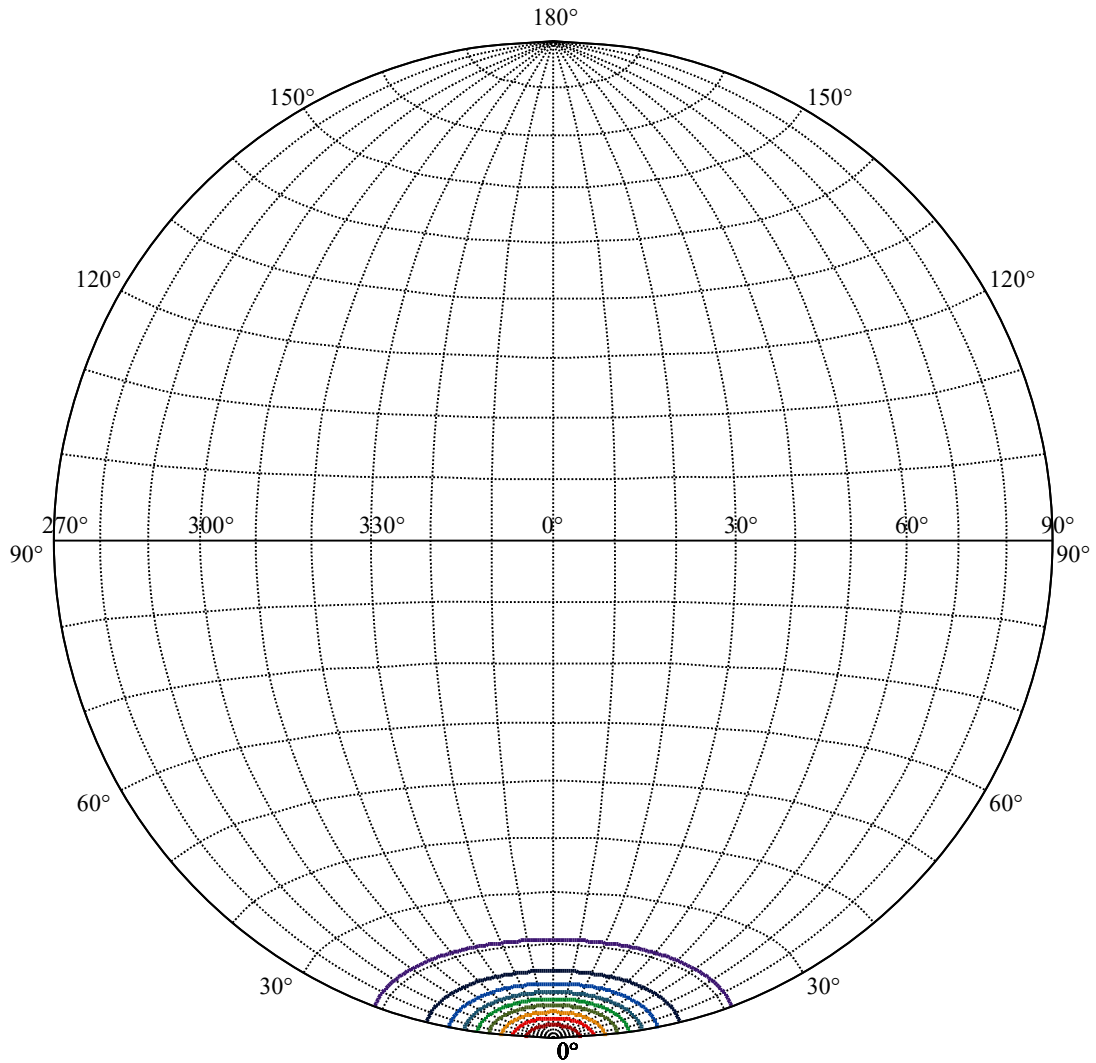
Beam Angle(50%Imax):C0/180Left:8.8 Right:8.8  
:C90/270Left:8.8 Right:8.8





(10%Imax) 1650.73	—
(20%Imax) 3301.46	—
(30%Imax) 4952.19	—
(40%Imax) 6602.91	—
(50%Imax) 8253.64	—
(60%Imax) 9904.37	—
(70%Imax) 11555.1	—
(80%Imax) 13205.8	—
(90%Imax) 14856.6	—





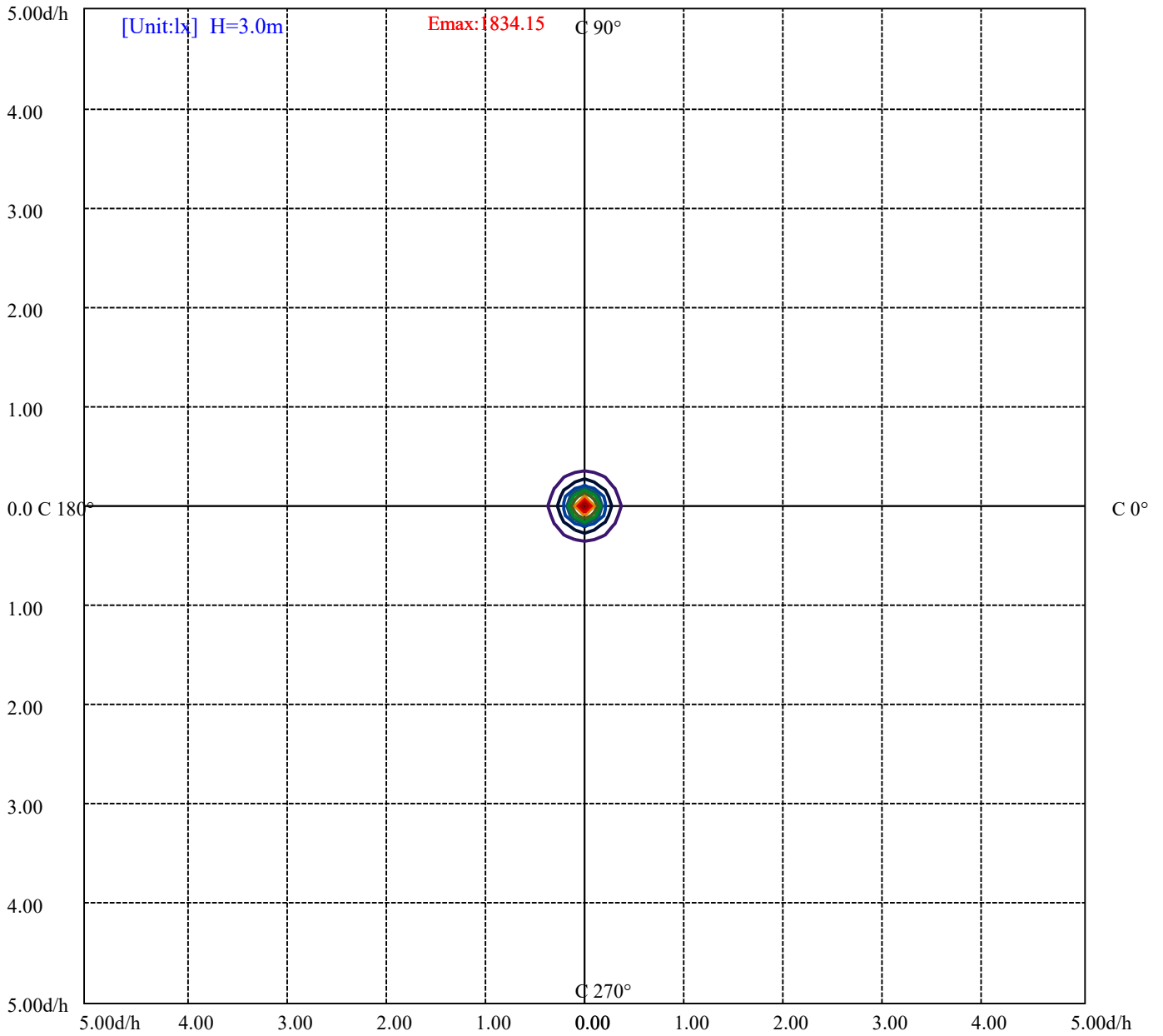
House

[Unit:cd]

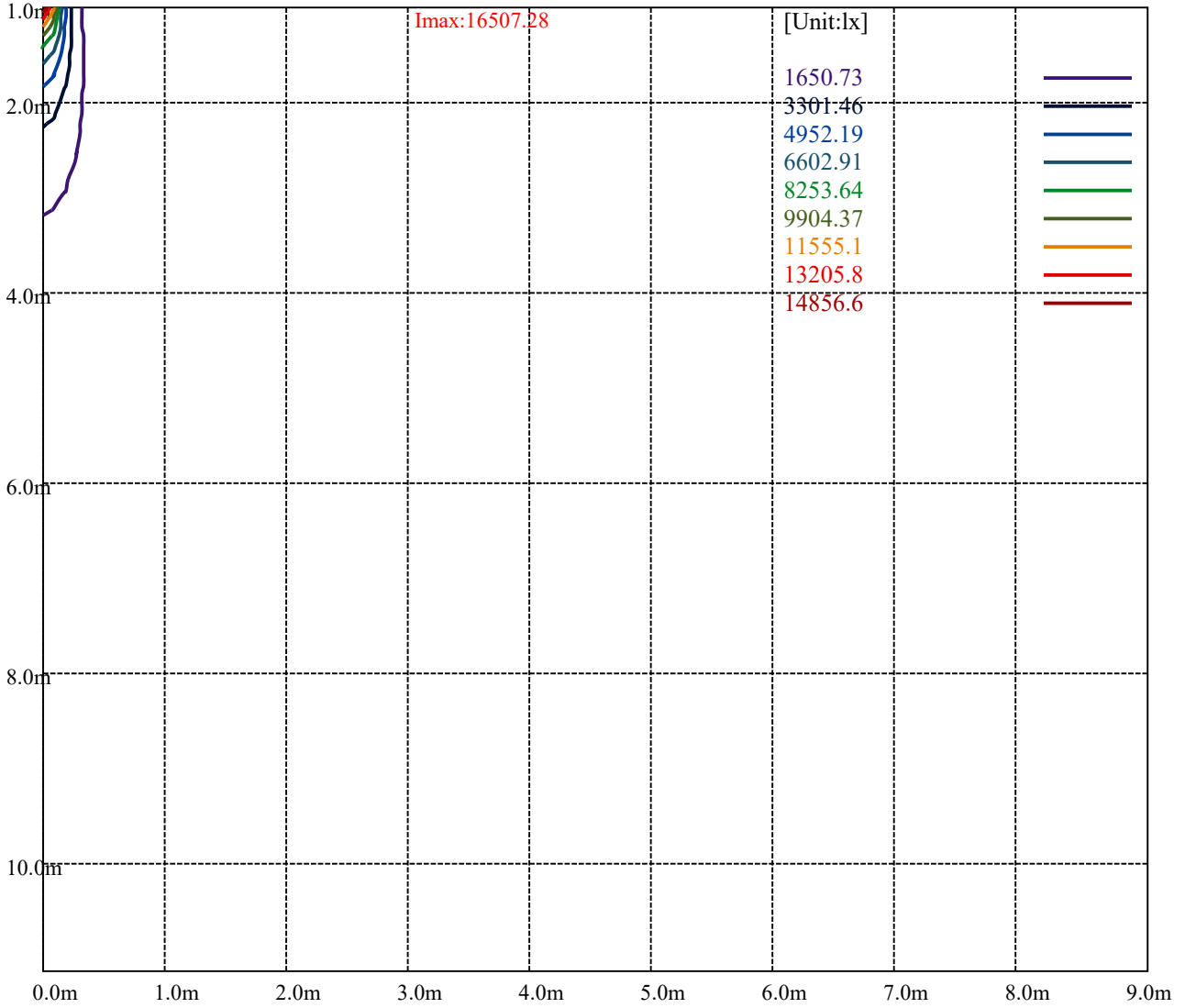
Road

**Imax:16507.28**

(10%Imax)	1650.73	—
(20%Imax)	3301.46	—
(30%Imax)	4952.19	—
(40%Imax)	6602.91	—
(50%Imax)	8253.64	—
(60%Imax)	9904.37	—
(70%Imax)	11555.1	—
(80%Imax)	13205.8	—
(90%Imax)	14856.6	—



(10%Emax) 183.4144	—
(20%Emax) 366.8278	—
(30%Emax) 550.2422	—
(40%Emax) 733.6555	—
(50%Emax) 917.07	—
(60%Emax) 1100.483	—
(70%Emax) 1283.9	—
(80%Emax) 1467.311	—
(90%Emax) 1650.722	—



Luminance Table

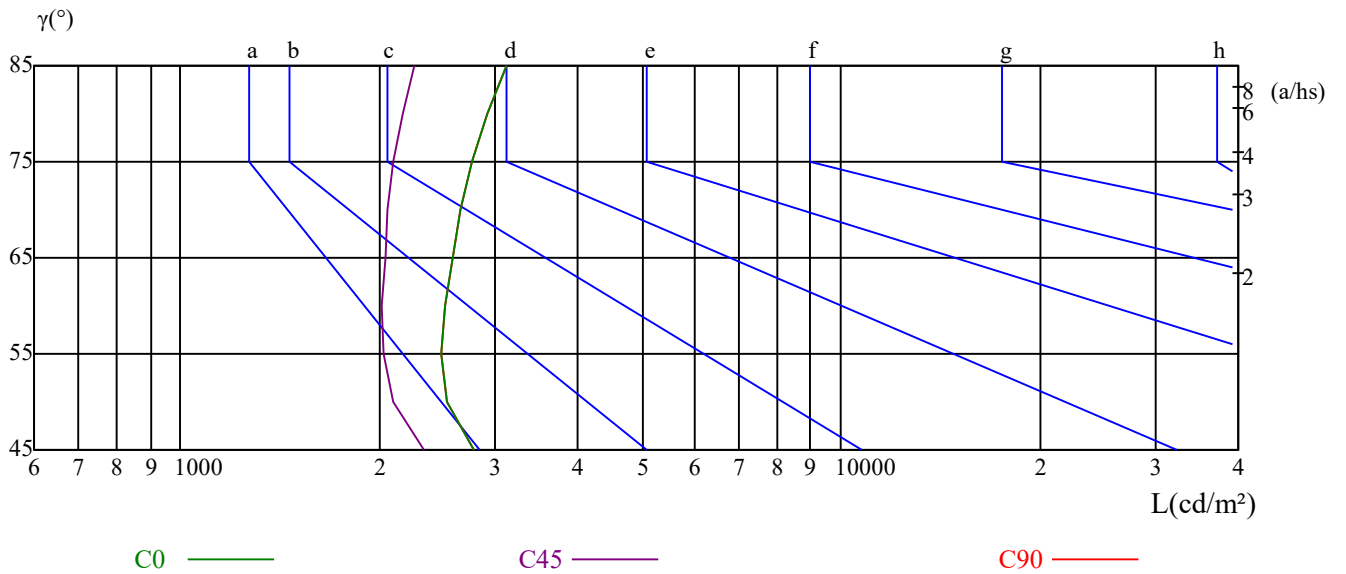
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2778	2532	2476	2510	2576	2650	2755	2908	3110
C45	2343	2104	2025	2021	2040	2061	2100	2169	2264
C90	2778	2532	2476	2510	2576	2650	2755	2908	3110

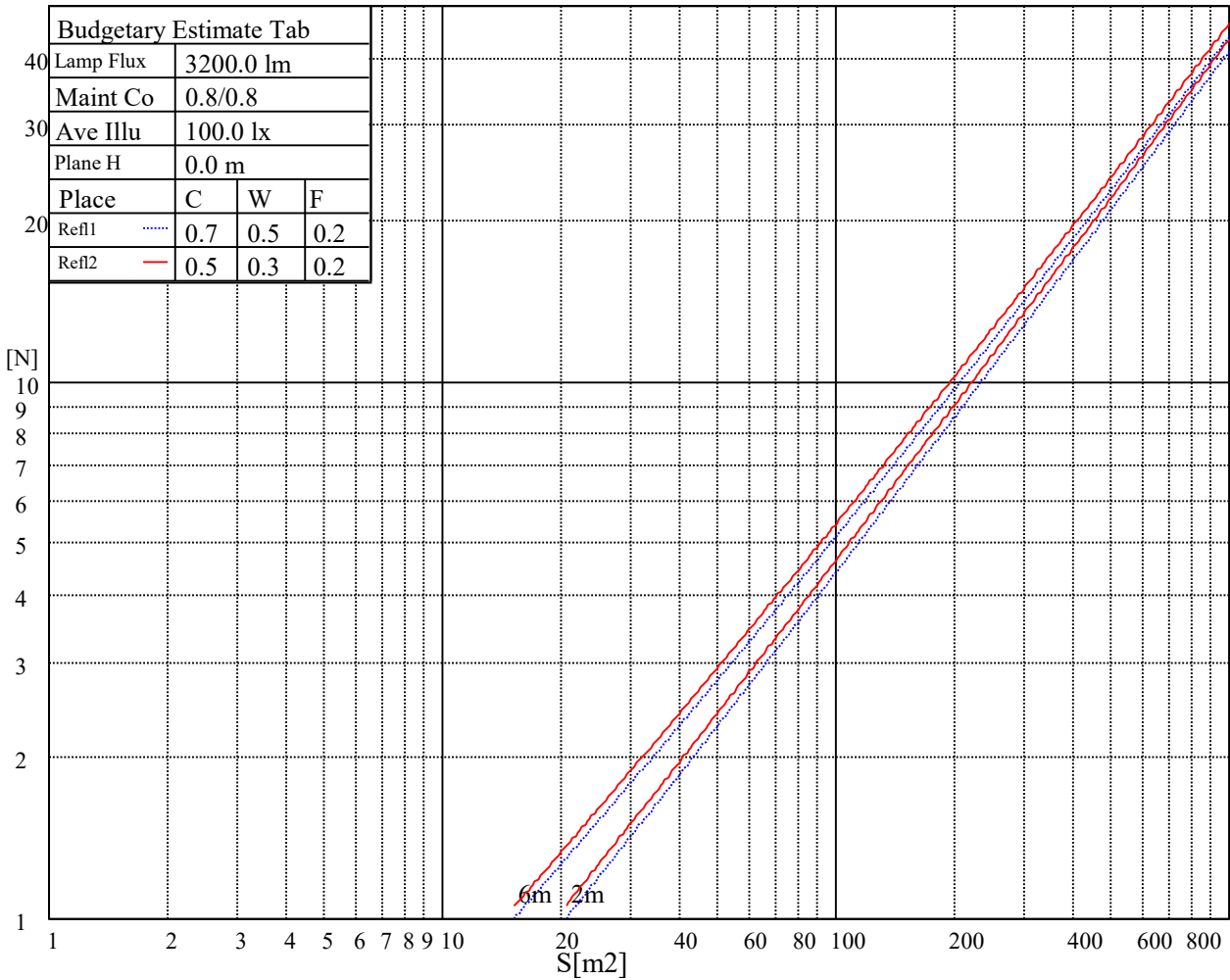
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7060	7060	7060	11098	11098	11098	31961	31961	31961

Glare Table

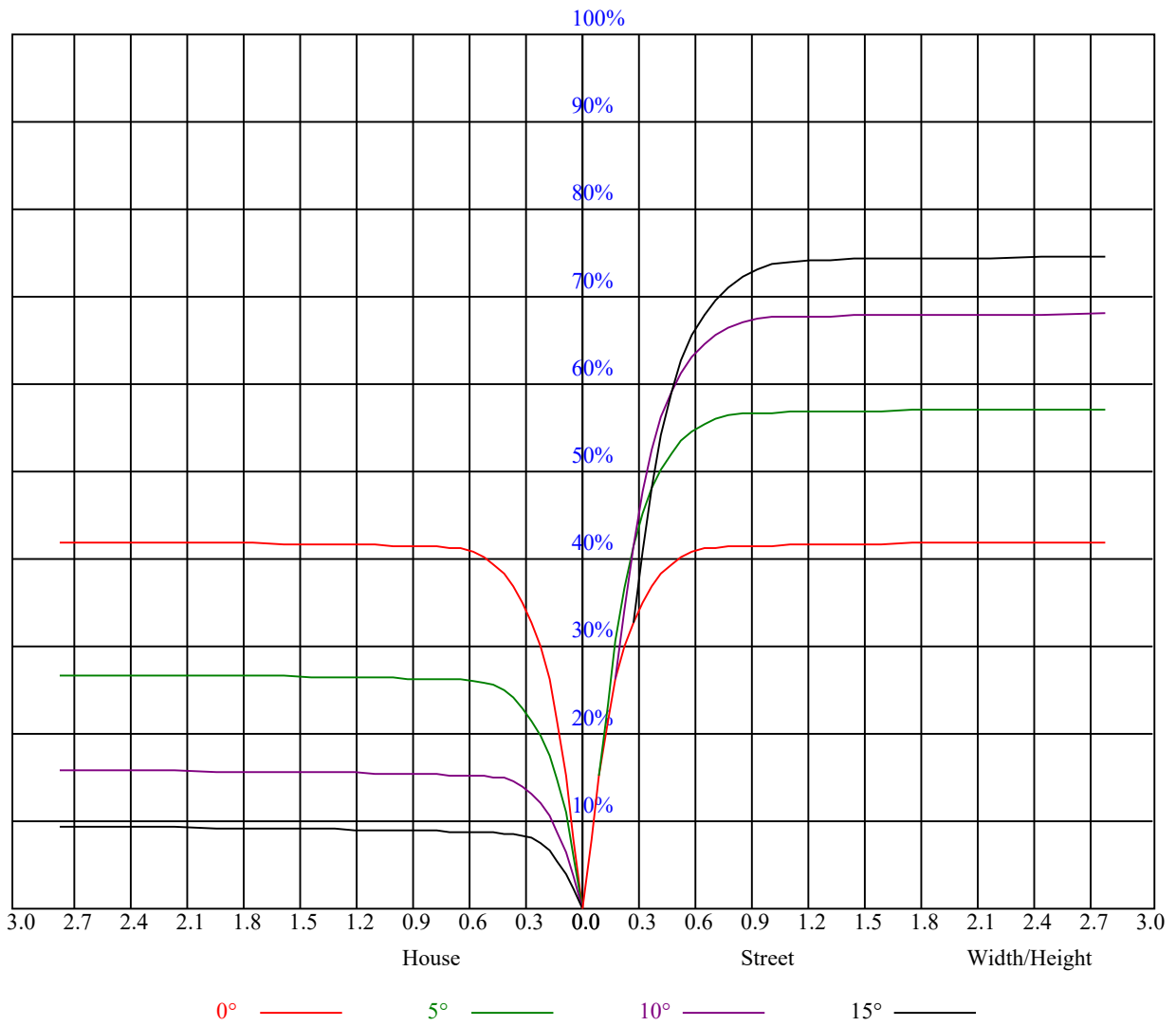
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.01	1.01	1.01	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.85
1	0.95	0.93	0.92	0.93	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81
2	0.90	0.88	0.85	0.89	0.87	0.85	0.86	0.84	0.83	0.84	0.82	0.81	0.82	0.80	0.79	0.78
3	0.86	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.78	0.80	0.78	0.77	0.75
4	0.83	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.79	0.77	0.75	0.77	0.76	0.74	0.73
5	0.80	0.76	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.72	0.71
6	0.77	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.70	0.69
7	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.68	0.67
8	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65
9	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63
10	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.67	0.64	0.62	0.62



Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
45.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
90.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
135.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
180.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
225.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
270.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
315.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25
360.0	16507.29	16338.68	15723.42	14960.20	14077.92	12765.79	11528.67	10518.59	9223.25

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
45.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
90.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
135.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
180.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
225.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
270.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
315.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55
360.0	8030.05	6920.59	5861.44	5011.51	4255.65	3626.84	3163.33	2821.50	2503.55

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
45.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
90.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
135.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
180.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
225.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
270.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
315.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86
360.0	2205.77	2002.20	1806.95	1638.41	1503.66	1372.83	1267.33	1177.09	1100.86

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
45.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
90.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
135.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
180.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
225.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
270.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
315.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00
360.0	1027.96	916.62	796.73	670.18	547.78	422.26	310.86	218.37	127.00

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
45.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
90.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
135.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
180.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
225.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
270.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
315.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65
360.0	61.63	37.40	29.31	23.89	21.33	20.19	19.08	18.24	17.65



Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
45.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
90.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
135.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
180.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
225.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
270.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
315.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
360.0	16.94	16.43	16.07	15.72	15.44	15.24	15.05	14.92	14.78
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
45.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
90.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
135.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
180.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
225.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
270.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
315.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
360.0	14.69	14.60	14.56	14.49	14.45	14.41	14.38	14.34	14.33
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
45.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
90.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
135.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
180.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
225.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
270.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
315.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
360.0	14.31	14.27	14.21	14.15	14.10	14.04	13.98	13.94	13.88
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
45.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
90.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
135.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
180.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
225.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
270.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
315.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
360.0	13.83	13.78	13.74	13.68	13.63	13.60	13.57	13.52	13.47
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
45.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
90.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
135.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
180.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
225.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
270.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
315.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06
360.0	13.43	13.38	13.34	13.30	13.26	13.21	13.14	13.10	13.06

Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	12.95
45.0	12.95
90.0	12.95
135.0	12.95
180.0	12.95
225.0	12.95
270.0	12.95
315.0	12.95
360.0	12.95