



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 2-1120-A3
Luminaire: TE 2133130-1+92.76.365.00
Report No: 20170515001
Test No: 20170515001-1
LampCAT: LUMILEDS 1208
Lamp flux(lm): 3194.0
Number of Lamps: 1
Length(mm): 71
Phm Type: C

Voltage(V): 219.9000
Current(A): 0.1360
Power (W): 28.1000
PF: 0.9420
Ballast type: DC
Width(mm): 71
Height(mm): 0

Photometric Results

Lumens(lm): 2928.05
Efficiency(%): 91.67%
Lumens(lm)/Power(W): 104.20
Central intensity(cd): 16464.620
Maximum intensity(cd): 16464.620
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=17.5
 [C90/270]Total=17.5
Field angle(10%Imax): [C0/180]Total=36.8
 [C90/270]Total=36.8
Maximum s/h(1/2): C0_180=0.30 C90_270=0.30
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(%): 91.79%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.596%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16464.615	3.939	3.939	.123%	.135%
1.0	16413.689	31.413	35.352	.984%	1.207%
2.0	16203.099	62.011	97.363	1.941%	3.325%
3.0	15772.282	90.520	187.884	2.834%	6.417%
4.0	15078.572	115.344	303.228	3.611%	10.356%
5.0	14015.983	133.959	437.187	4.194%	14.931%
6.0	12664.348	145.167	582.354	4.545%	19.889%
7.0	11079.137	148.065	730.419	4.636%	24.946%
8.0	9478.510	144.660	875.079	4.529%	29.886%
9.0	7838.930	134.475	1009.554	4.210%	34.479%
10.0	6242.432	118.871	1128.425	3.722%	38.538%
11.0	5026.236	105.170	1233.595	3.293%	42.130%
12.0	4073.761	92.881	1326.476	2.908%	45.302%
13.0	3310.541	81.666	1408.141	2.557%	48.091%
14.0	2765.896	73.377	1481.519	2.297%	50.597%
15.0	2528.603	71.768	1553.286	2.247%	53.049%
16.0	2106.733	63.679	1616.966	1.994%	55.223%
17.0	1880.314	60.286	1677.252	1.887%	57.282%
18.0	1701.518	57.659	1734.912	1.805%	59.251%
19.0	1560.436	55.711	1790.622	1.744%	61.154%
20.0	1457.343	54.659	1845.282	1.711%	63.021%
21.0	1380.402	54.248	1899.53	1.698%	64.874%
22.0	1321.354	54.281	1953.811	1.699%	66.727%
23.0	1277.584	54.742	2008.553	1.714%	68.597%
24.0	1242.072	55.400	2063.953	1.735%	70.489%
25.0	1207.937	55.981	2119.934	1.753%	72.401%
26.0	1180.134	56.732	2176.666	1.776%	74.338%
27.0	1152.468	57.376	2234.042	1.796%	76.298%
28.0	1113.268	57.314	2291.356	1.794%	78.255%
29.0	1092.319	58.073	2349.428	1.818%	80.239%
30.0	1066.511	58.477	2407.906	1.831%	82.236%
31.0	1038.240	58.639	2466.545	1.836%	84.239%
32.0	1005.853	58.452	2524.997	1.830%	86.235%
33.0	955.118	57.045	2582.042	1.786%	88.183%
34.0	875.080	53.661	2635.703	1.680%	90.016%
35.0	781.181	49.135	2684.838	1.538%	91.694%
36.0	683.443	44.053	2728.891	1.379%	93.198%
37.0	578.257	38.162	2767.053	1.195%	94.502%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	474.228	32.017	2799.07	1.002%	95.595%
39.0	364.294	25.141	2824.211	.787%	96.454%
40.0	271.483	19.136	2843.348	.599%	97.107%
41.0	192.601	13.856	2857.204	.434%	97.580%
42.0	100.973	7.409	2864.613	.232%	97.833%
43.0	47.335	3.540	2868.153	.111%	97.954%
44.0	29.345	2.235	2870.389	.070%	98.031%
45.0	25.133	1.949	2872.338	.061%	98.097%
46.0	21.651	1.708	2874.046	.053%	98.156%
47.0	18.719	1.501	2875.547	.047%	98.207%
48.0	16.090	1.311	2876.858	.041%	98.252%
49.0	14.425	1.194	2878.052	.037%	98.292%
50.0	13.984	1.175	2879.227	.037%	98.333%
51.0	13.640	1.162	2880.389	.036%	98.372%
52.0	13.406	1.158	2881.548	.036%	98.412%
53.0	13.103	1.148	2882.695	.036%	98.451%
54.0	12.911	1.145	2883.841	.036%	98.490%
55.0	12.732	1.144	2884.984	.036%	98.529%
56.0	12.553	1.141	2886.125	.036%	98.568%
57.0	12.401	1.141	2887.266	.036%	98.607%
58.0	12.291	1.143	2888.409	.036%	98.646%
59.0	12.223	1.149	2889.558	.036%	98.685%
60.0	12.140	1.153	2890.711	.036%	98.725%
61.0	12.126	1.163	2891.874	.036%	98.765%
62.0	12.154	1.177	2893.051	.037%	98.805%
63.0	12.154	1.188	2894.238	.037%	98.845%
64.0	12.154	1.198	2895.436	.038%	98.886%
65.0	12.140	1.207	2896.643	.038%	98.927%
66.0	12.126	1.215	2897.858	.038%	98.969%
67.0	12.099	1.221	2899.079	.038%	99.011%
68.0	12.057	1.226	2900.305	.038%	99.052%
69.0	12.016	1.230	2901.535	.039%	99.094%
70.0	12.002	1.237	2902.772	.039%	99.137%
71.0	12.044	1.249	2904.02	.039%	99.179%
72.0	12.099	1.262	2905.282	.040%	99.222%
73.0	12.167	1.276	2906.558	.040%	99.266%
74.0	12.250	1.291	2907.85	.040%	99.310%
75.0	12.388	1.312	2909.162	.041%	99.355%

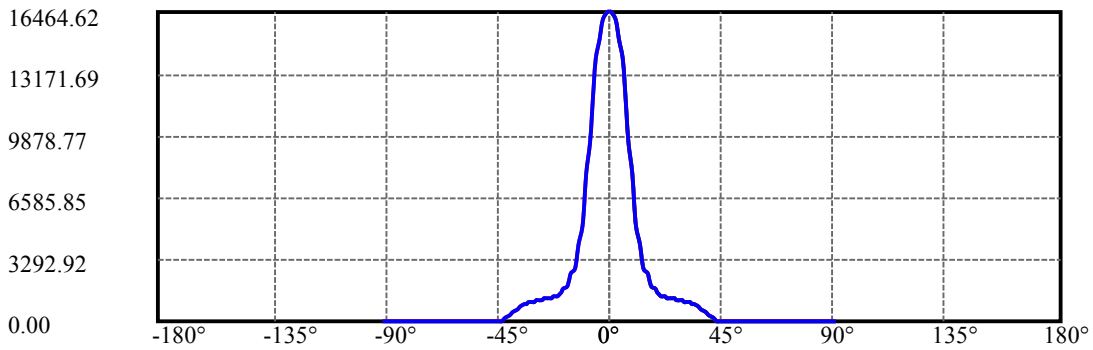
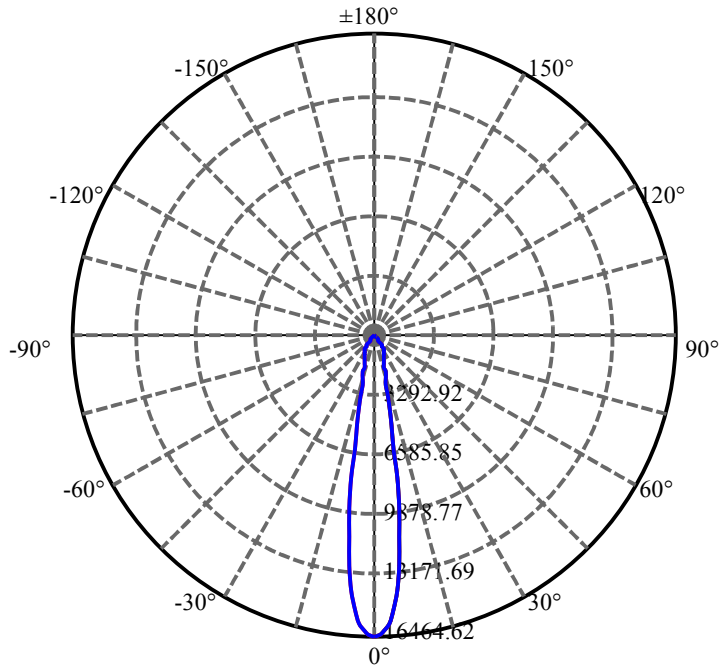
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	12.498	1.330	2910.492	.042%	99.400%
77.0	12.704	1.357	2911.849	.043%	99.447%
78.0	12.924	1.386	2913.235	.043%	99.494%
79.0	13.158	1.416	2914.652	.044%	99.542%
80.0	13.351	1.442	2916.094	.045%	99.592%
81.0	13.282	1.439	2917.532	.045%	99.641%
82.0	12.567	1.365	2918.897	.043%	99.687%
83.0	11.865	1.291	2920.188	.040%	99.732%
84.0	11.438	1.247	2921.436	.039%	99.774%
85.0	11.204	1.224	2922.66	.038%	99.816%
86.0	11.108	1.215	2923.875	.038%	99.857%
87.0	10.984	1.203	2925.078	.038%	99.899%
88.0	10.860	1.190	2926.268	.037%	99.939%
89.0	10.832	1.188	2927.456	.037%	99.980%
90.0	10.832	0.594	2928.049	.019%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2407.91	75.39%	82.24%
0-40	2843.35	89.02%	97.11%
0-60	2890.71	90.50%	98.72%
0-90	2927.46	91.65%	99.98%
0-120	2927.46	91.65%	99.98%
0-180	2928.05	91.67%	100.00%
60-90	37.90	1.19%	1.29%
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%
0-28.88	2342.44	73.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	1128.42
10-20	716.86
20-30	562.62
30-40	435.44
40-50	35.88
50-60	11.48
60-70	12.06
70-80	13.32
80-90	11.36
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



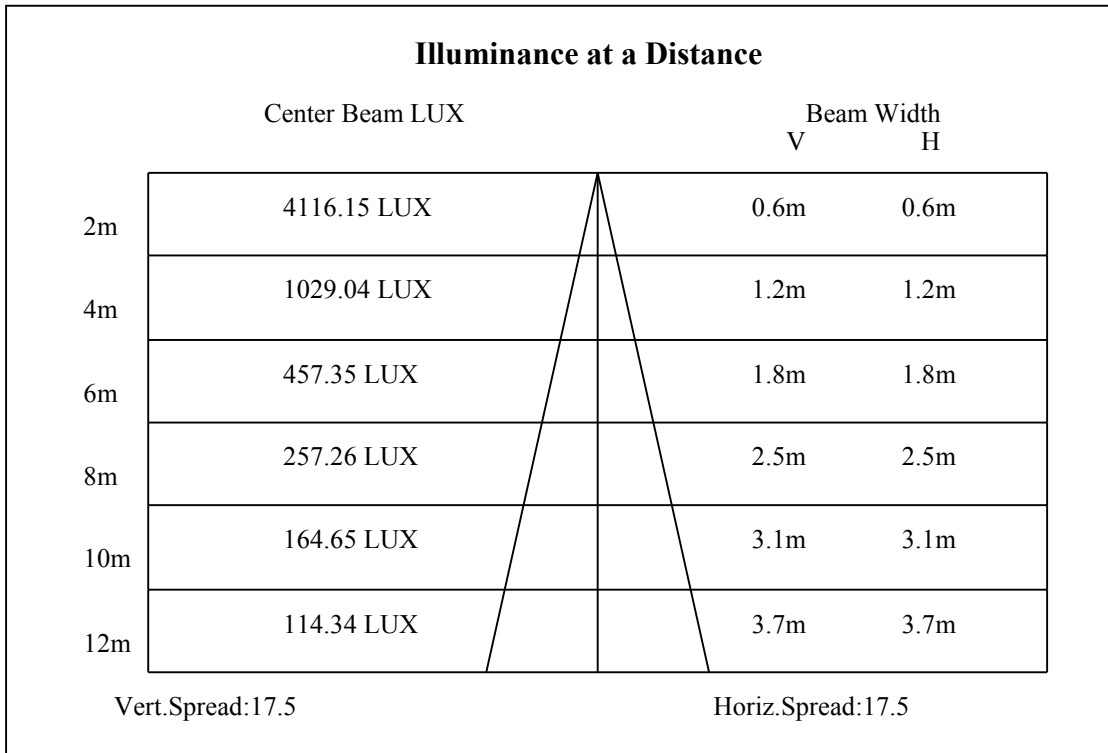
C0(Max): —————

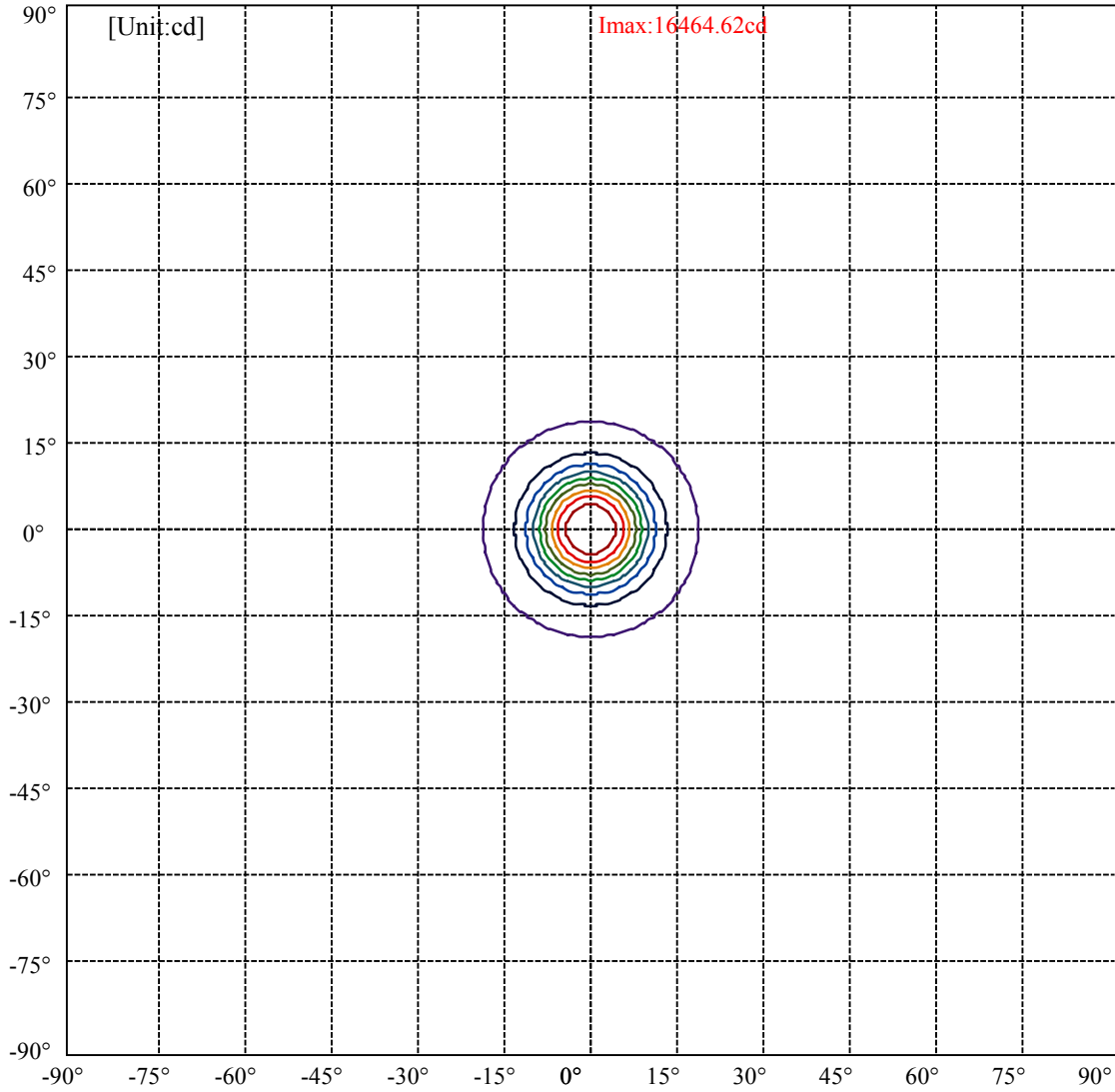
C0/C180: —————

C90/C270: —————

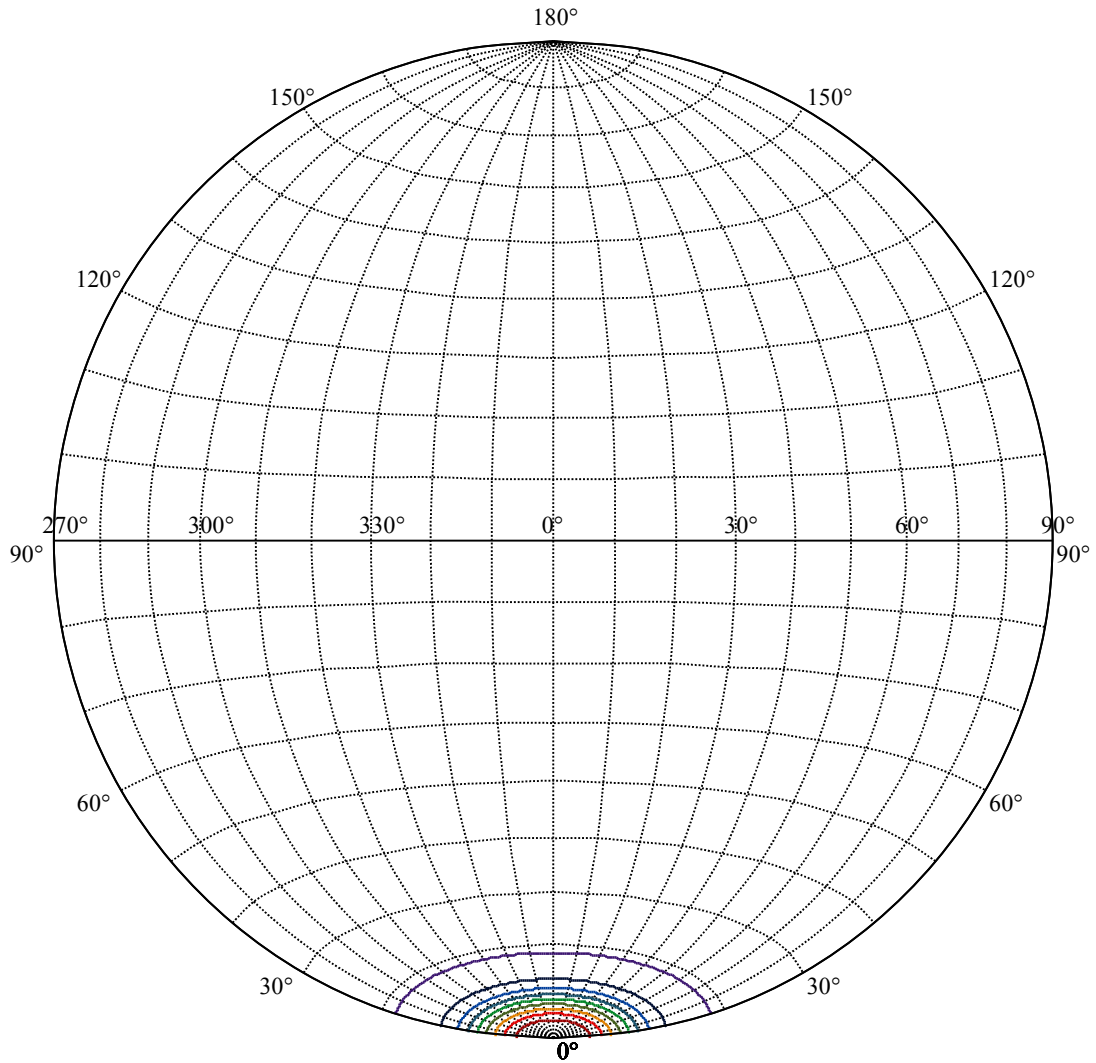
Field angle(10%Imax):C0/180Left:18.4 Right:18.4
:C90/270Left:18.4 Right:18.4

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





(10%Imax) 1646.46	—
(20%Imax) 3292.92	—
(30%Imax) 4939.38	—
(40%Imax) 6585.85	—
(50%Imax) 8232.31	—
(60%Imax) 9878.77	—
(70%Imax) 11525.2	—
(80%Imax) 13171.7	—
(90%Imax) 14818.2	—



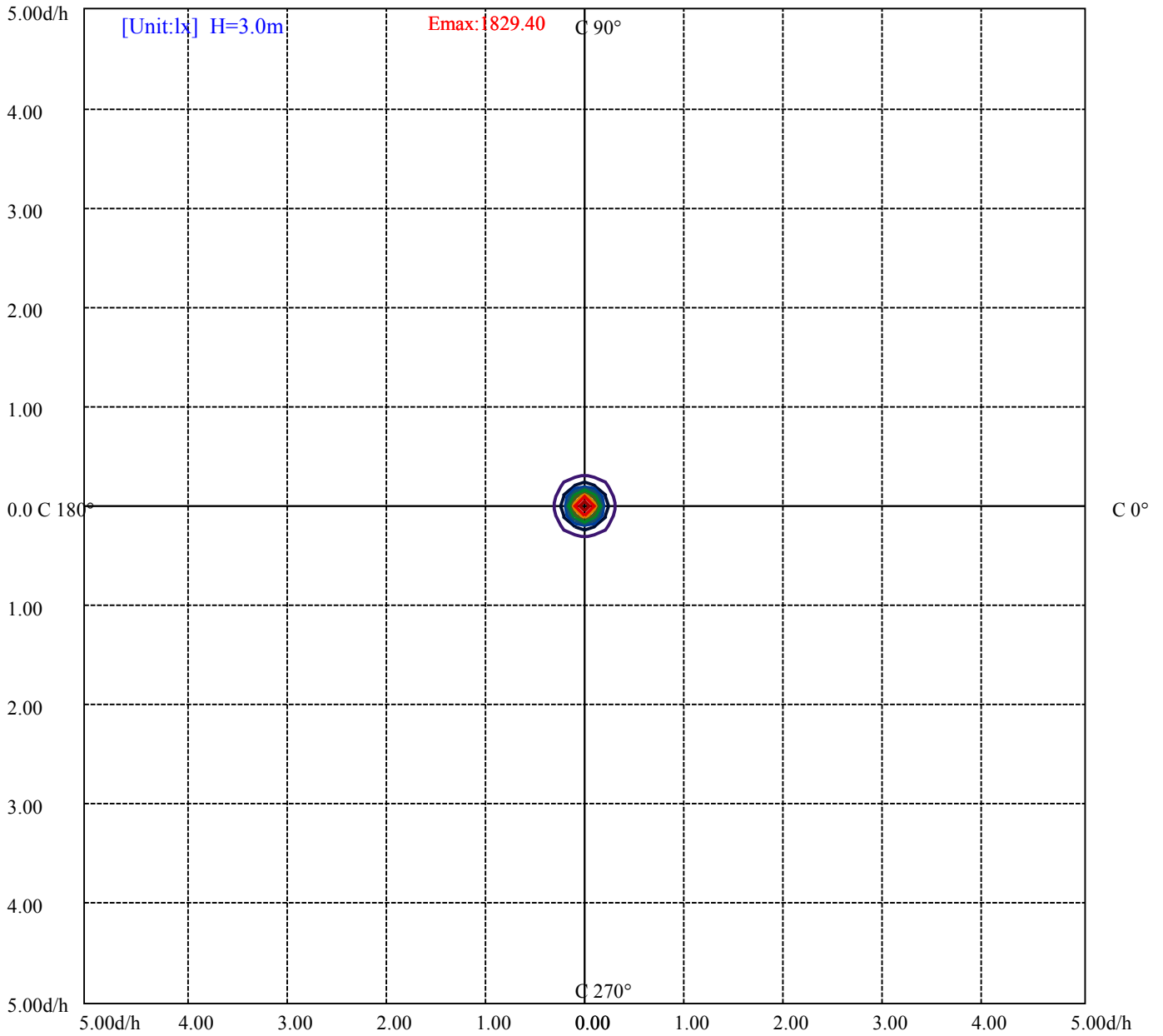
House

[Unit:cd]

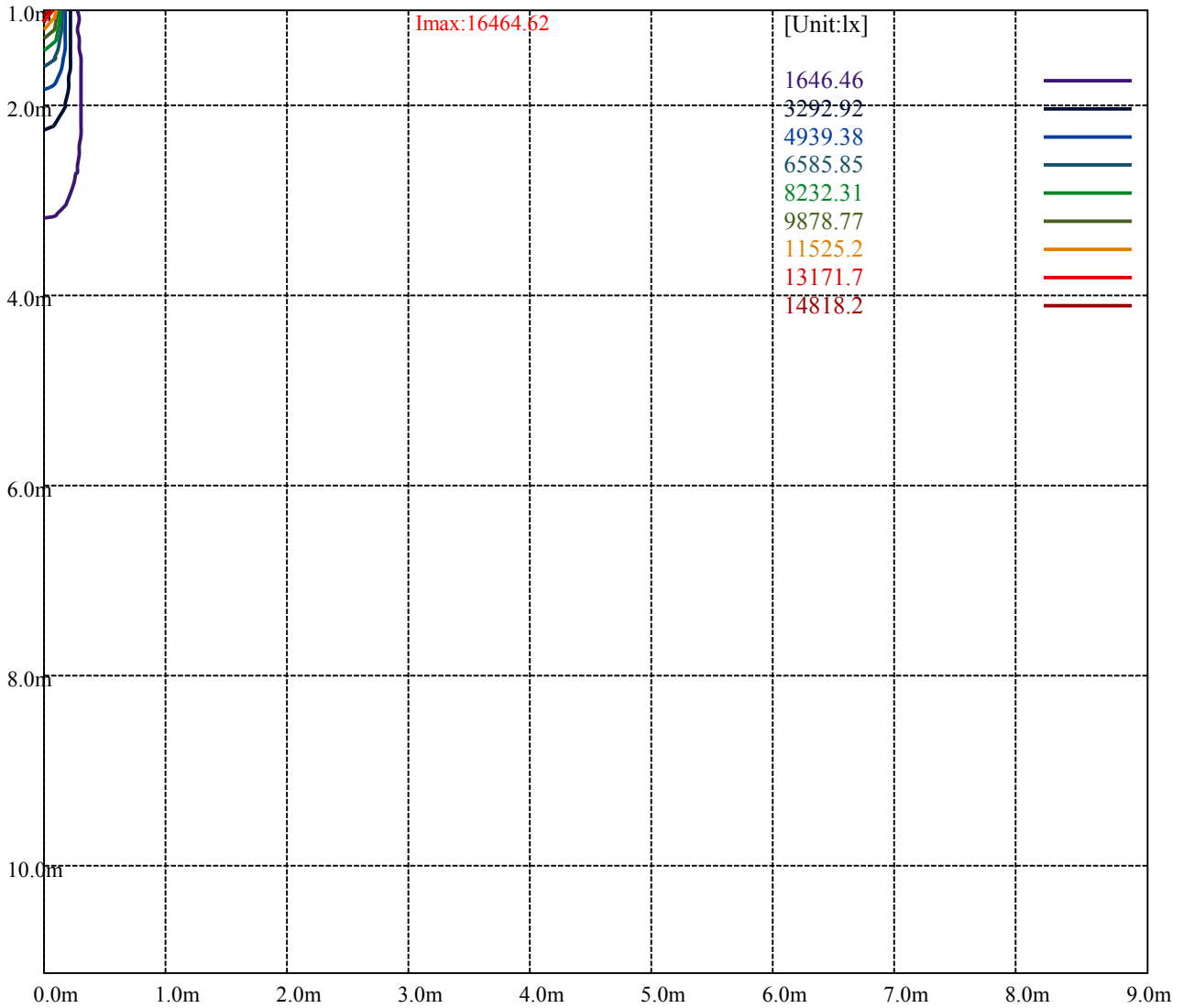
Road

Imax:16464.62

(10%Imax)	1646.46	—
(20%Imax)	3292.92	—
(30%Imax)	4939.38	—
(40%Imax)	6585.85	—
(50%Imax)	8232.31	—
(60%Imax)	9878.77	—
(70%Imax)	11525.2	—
(80%Imax)	13171.7	—
(90%Imax)	14818.2	—



(10%Emax) 182.94	—
(20%Emax) 365.88	—
(30%Emax) 548.82	—
(40%Emax) 731.76	—
(50%Emax) 914.7	—
(60%Emax) 1097.64	—
(70%Emax) 1280.578	—
(80%Emax) 1463.522	—
(90%Emax) 1646.456	—



Luminance Table

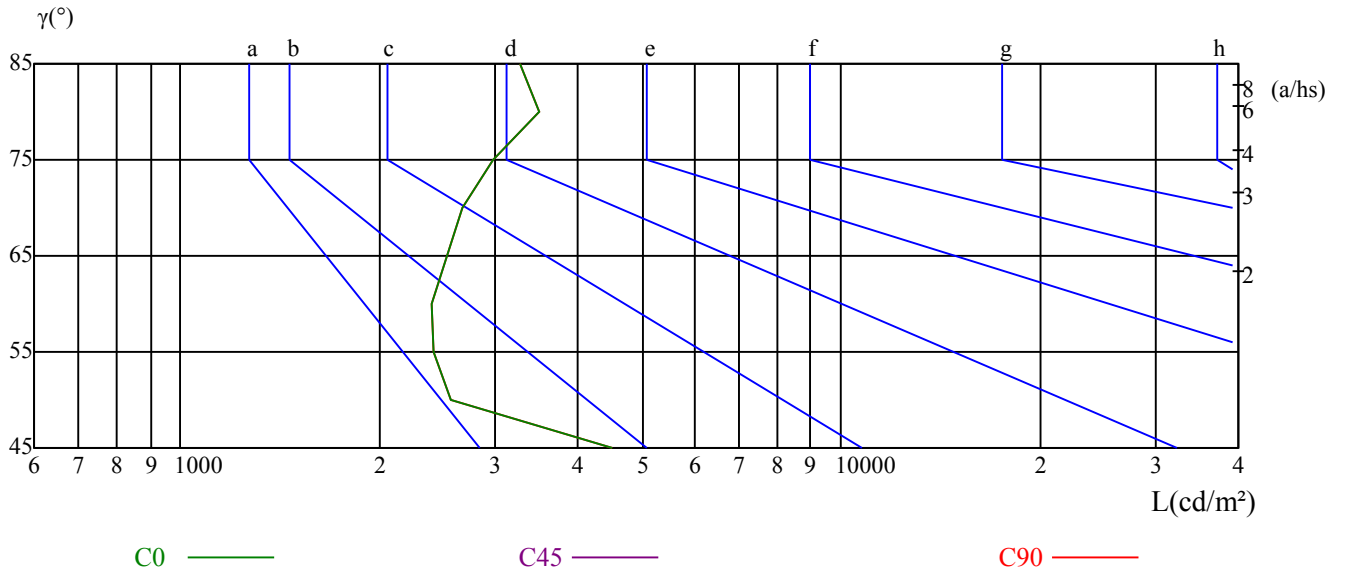
γ	45	50	55	60	65	70	75	80	85
C0	4494	2563	2413	2401	2530	2665	2967	3500	3271
C45	0	0	0	0	0	0	0	0	0
C90	4494	2563	2413	2401	2530	2665	2967	3500	3271

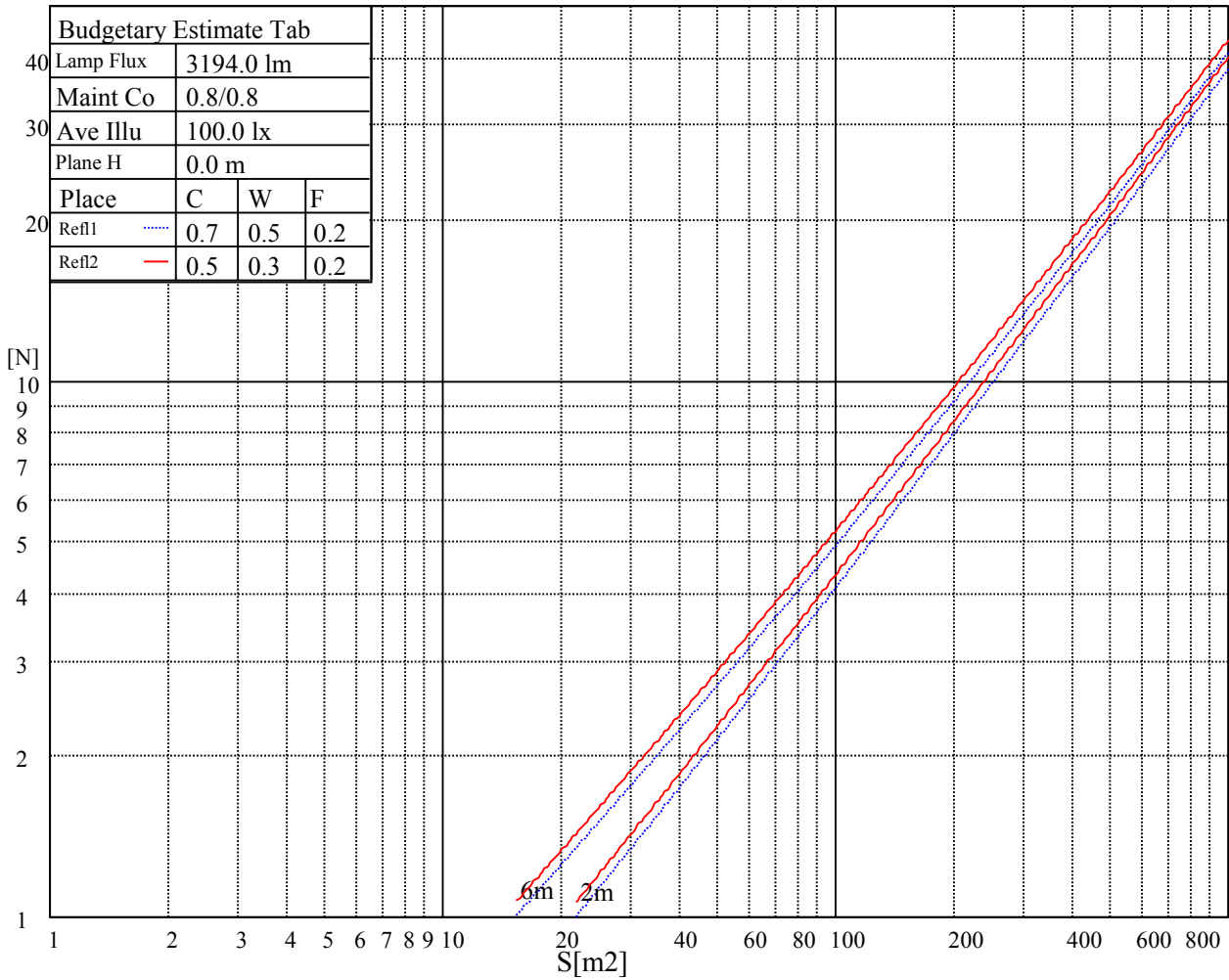
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5862	5862	0	9768	9768	0	26235	26235	0

Glare Table

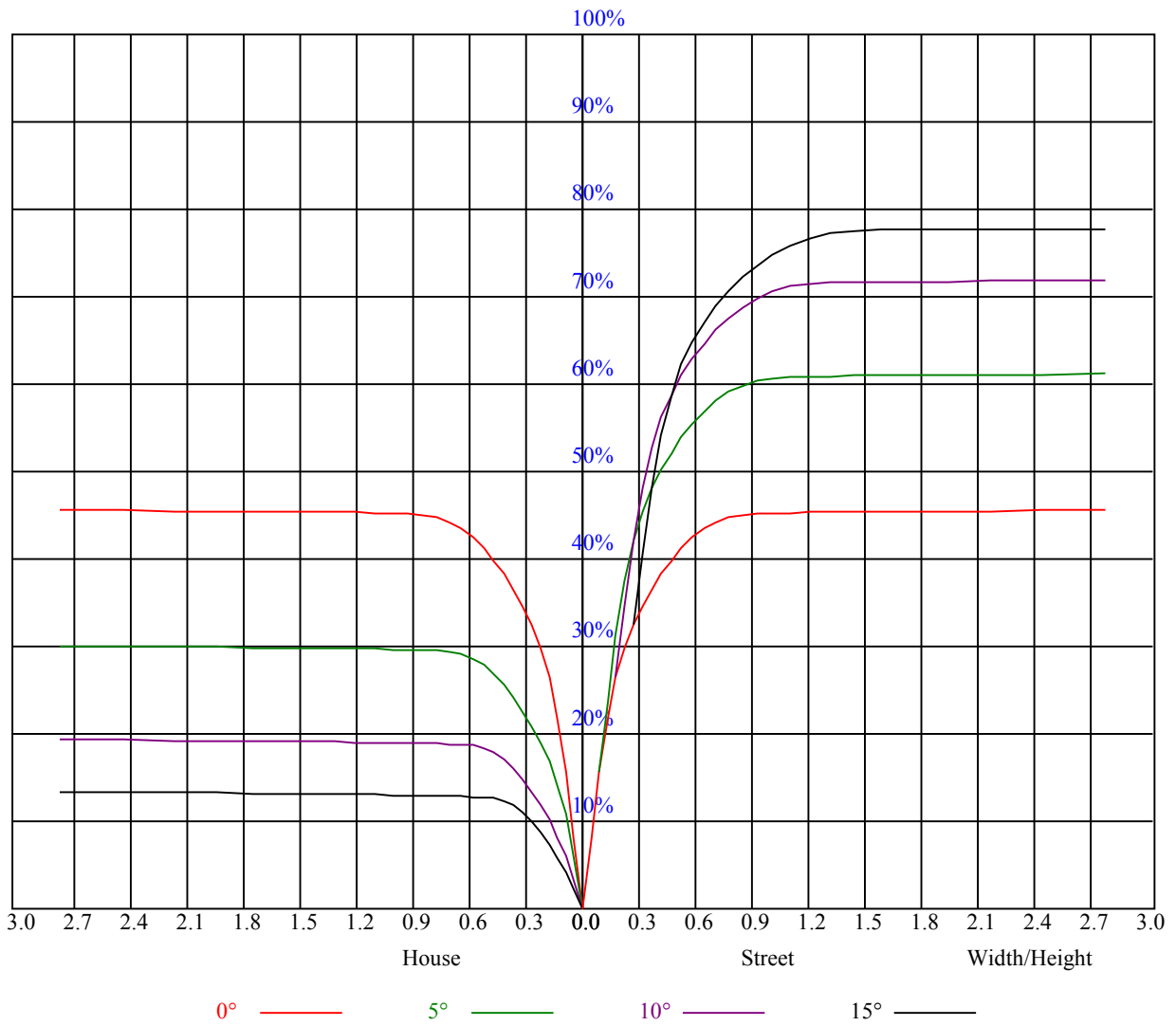
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.01	0.99	1.01	0.99	0.97	0.97	0.96	0.94	0.94	0.93	0.92	0.91	0.90	0.89	0.87
2	0.97	0.94	0.91	0.96	0.93	0.90	0.93	0.90	0.89	0.90	0.88	0.87	0.88	0.86	0.85	0.83
3	0.92	0.89	0.86	0.91	0.88	0.85	0.89	0.86	0.84	0.87	0.84	0.82	0.85	0.83	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
5	0.84	0.80	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
10	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	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	16428.83	16368.27	16137.03	15729.61	14958.82	13989.83	12613.42	11033.30	9519.25
90.0	16500.40	16472.87	16274.67	15922.31	15322.20	14177.02	12987.80	11578.36	9849.59
180.0	16428.83	16379.28	16208.60	15729.61	15057.93	14110.96	12563.87	10878.04	9482.36
270.0	16500.40	16434.34	16192.09	15707.59	14975.34	13786.12	12492.30	10826.84	9062.83
360.0	16428.83	16368.27	16137.03	15729.61	14958.82	13989.83	12613.42	11033.30	9519.25
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	7823.51	6270.92	5109.23	4178.78	3319.90	2824.39	2615.73	2145.55	1901.65
90.0	8109.81	6645.31	5379.01	4261.37	3446.53	2862.93	2807.88	2155.46	1951.75
180.0	7898.94	6094.19	4924.79	4013.06	3260.99	2720.34	2365.77	2059.66	1825.12
270.0	7523.46	5959.30	4691.91	3841.84	3214.74	2655.92	2325.03	2066.27	1842.74
360.0	7823.51	6270.92	5109.23	4178.78	3319.90	2824.39	2615.73	2145.55	1901.65
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1749.14	1581.22	1468.35	1400.08	1326.31	1280.61	1243.17	1202.98	1174.35
90.0	1730.42	1599.39	1494.78	1403.39	1345.03	1296.03	1254.74	1225.00	1198.03
180.0	1662.70	1522.86	1433.12	1359.89	1305.94	1269.05	1237.67	1203.53	1178.21
270.0	1663.80	1538.28	1433.12	1358.24	1308.14	1264.65	1232.71	1200.23	1169.95
360.0	1749.14	1581.22	1468.35	1400.08	1326.31	1280.61	1243.17	1202.98	1174.35
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1147.38	1115.44	1087.91	1060.94	1028.45	1003.68	956.33	877.60	782.35
90.0	1166.65	1142.42	1116.54	1088.47	1058.73	1035.06	992.12	912.84	828.05
180.0	1152.88	1097.49	1091.05	1066.50	1039.13	1007.09	950.88	867.47	771.12
270.0	1142.97	1097.71	1073.76	1050.15	1026.64	977.58	921.15	842.42	743.21
360.0	1147.38	1115.44	1087.91	1060.94	1028.45	1003.68	956.33	877.60	782.35
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	688.21	576.99	464.68	366.68	285.74	178.44	100.31	44.82	26.87
90.0	731.70	627.09	521.38	409.62	313.27	278.03	124.10	66.29	32.54
180.0	677.30	568.29	469.52	360.18	255.19	170.62	100.70	43.16	30.67
270.0	636.56	540.65	441.33	320.70	231.73	143.31	78.79	35.07	27.31
360.0	688.21	576.99	464.68	366.68	285.74	178.44	100.31	44.82	26.87
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	24.06	20.70	18.39	16.08	14.20	13.82	13.49	13.21	12.94
90.0	24.72	21.47	18.88	16.35	14.42	14.09	13.71	13.43	12.99
180.0	27.36	23.07	19.71	16.68	14.76	14.15	13.76	13.60	13.32
270.0	24.39	21.36	17.89	15.25	14.31	13.87	13.60	13.38	13.16
360.0	24.06	20.70	18.39	16.08	14.20	13.82	13.49	13.21	12.94
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.77	12.61	12.39	12.28	12.17	12.06	11.89	11.84	11.89
90.0	12.77	12.61	12.44	12.28	12.11	12.06	12.00	12.00	12.00
180.0	13.16	12.94	12.77	12.66	12.61	12.61	12.61	12.61	12.61
270.0	12.94	12.77	12.61	12.39	12.28	12.17	12.06	12.06	12.11
360.0	12.77	12.61	12.39	12.28	12.17	12.06	11.89	11.84	11.89
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.84	11.84	11.78	11.78	11.78	11.78	11.78	11.73	11.67
90.0	11.95	11.89	11.89	11.89	11.84	11.78	11.67	11.67	11.67
180.0	12.66	12.66	12.66	12.61	12.55	12.50	12.50	12.55	12.77
270.0	12.17	12.22	12.22	12.22	12.22	12.17	12.11	12.06	12.06
360.0	11.84	11.84	11.78	11.78	11.78	11.78	11.78	11.73	11.67

Nata 2-1120-E3

Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.62	11.62	11.56	11.51	11.51	11.51	11.45	11.40	11.34
90.0	11.67	11.62	11.56	11.56	11.51	11.51	11.62	11.73	11.89
180.0	13.16	13.54	14.04	14.59	14.98	15.53	15.97	16.41	16.68
270.0	11.95	11.89	11.84	11.89	12.00	12.28	12.66	13.10	13.49
360.0	11.62	11.62	11.56	11.51	11.51	11.51	11.45	11.40	11.34

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	11.34	11.40	11.29	11.18	11.07	11.01	10.90	10.90	10.85
90.0	12.06	12.00	11.89	11.62	11.23	11.07	11.01	10.85	10.79
180.0	16.19	14.53	12.55	11.73	11.34	11.29	11.18	10.90	10.90
270.0	13.54	12.33	11.73	11.23	11.18	11.07	10.85	10.79	10.79
360.0	11.34	11.40	11.29	11.18	11.07	11.01	10.90	10.90	10.85

C/γ(°)	90.0
0.0	10.90
90.0	10.79
180.0	10.85
270.0	10.79
360.0	10.90