
Nata

Client:

LumCAT: 1405-N

Luminaire: 92.70.044.00

Report No: nata-0100

Test No: GC2018060201

LampCAT: NICHIA NFCWS024B-V3

Lamp flux(lm): 1023.0

Number of Lamps: 1

Length(mm): 39

Phm Type: C

Voltage(V): 36.2000

Current(A): 0.3000

Power (W): 10.8600

PF: 0.0000

Ballast type: DC

Width(mm): 39

Height(mm): 0

Photometric Results

Lumens(lm): 875.05, Efficiency(%): 85.54% , Luminous Efficacy(lm/W): 80.58

Central intensity(cd): 2300.945, Maximum intensity(cd): 2300.945

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=21.0

[C90/270]Total=21.0

Field angle(10%Imax): [C0/180]Total=72.8

[C90/270]Total=72.8

Maximum s/h(1/2): C0_180=0.35 C90_270=0.35

Maximum s/h(1/4): C0_180=0.41 C90_270=0.41

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 85.74%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.159%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2300.945	2.202	2.202	.215%	.252%
2.0	2236.529	17.118	19.32	1.673%	2.208%
4.0	2054.842	31.436	50.756	3.073%	5.800%
6.0	1793.049	41.105	91.861	4.018%	10.498%
8.0	1520.658	46.414	138.275	4.537%	15.802%
10.0	1200.987	45.738	184.013	4.471%	21.029%
12.0	1006.803	45.908	229.921	4.488%	26.275%
14.0	805.386	42.731	272.652	4.177%	31.158%
16.0	661.613	39.995	312.647	3.910%	35.729%
18.0	556.489	37.714	350.361	3.687%	40.039%
20.0	480.808	36.065	386.426	3.525%	44.160%
22.0	425.799	34.982	421.409	3.420%	48.158%
24.0	386.606	34.486	455.895	3.371%	52.099%
26.0	355.189	34.148	490.043	3.338%	56.002%
28.0	327.641	33.734	523.777	3.298%	59.857%
30.0	305.666	33.518	557.296	3.276%	63.687%
32.0	283.465	32.944	590.24	3.220%	67.452%
34.0	259.398	31.812	622.052	3.110%	71.087%
36.0	235.297	30.332	652.384	2.965%	74.554%
38.0	209.607	28.302	680.685	2.767%	77.788%
40.0	182.257	25.693	706.379	2.512%	80.724%
42.0	156.973	23.036	729.414	2.252%	83.357%
44.0	131.406	20.019	749.434	1.957%	85.644%
46.0	108.055	17.047	766.481	1.666%	87.592%
48.0	90.072	14.680	781.161	1.435%	89.270%
50.0	73.562	12.359	793.519	1.208%	90.682%
52.0	61.484	10.626	804.145	1.039%	91.897%
54.0	51.739	9.180	813.325	.897%	92.946%
56.0	44.128	8.023	821.348	.784%	93.863%
58.0	37.782	7.027	828.376	.687%	94.666%
60.0	33.082	6.283	834.659	.614%	95.384%
62.0	28.822	5.581	840.24	.546%	96.022%
64.0	25.278	4.983	845.223	.487%	96.591%
66.0	22.429	4.494	849.716	.439%	97.105%
68.0	19.731	4.012	853.728	.392%	97.563%
70.0	17.453	3.597	857.325	.352%	97.974%
72.0	15.326	3.197	860.522	.312%	98.339%
74.0	13.406	2.826	863.348	.276%	98.662%

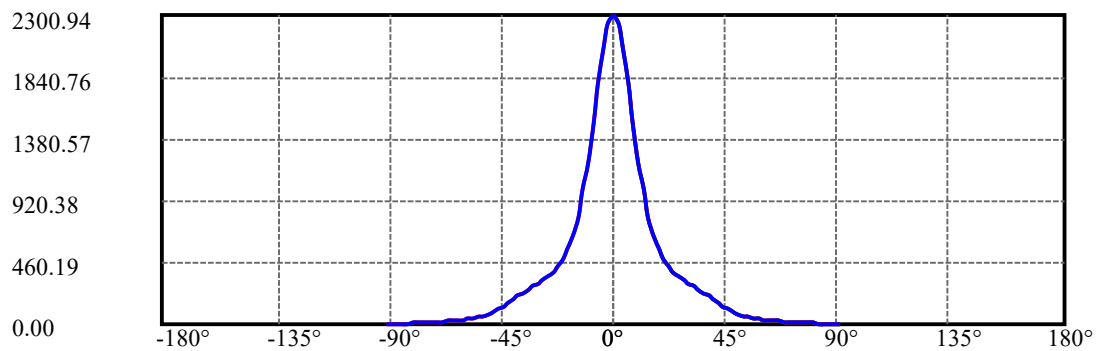
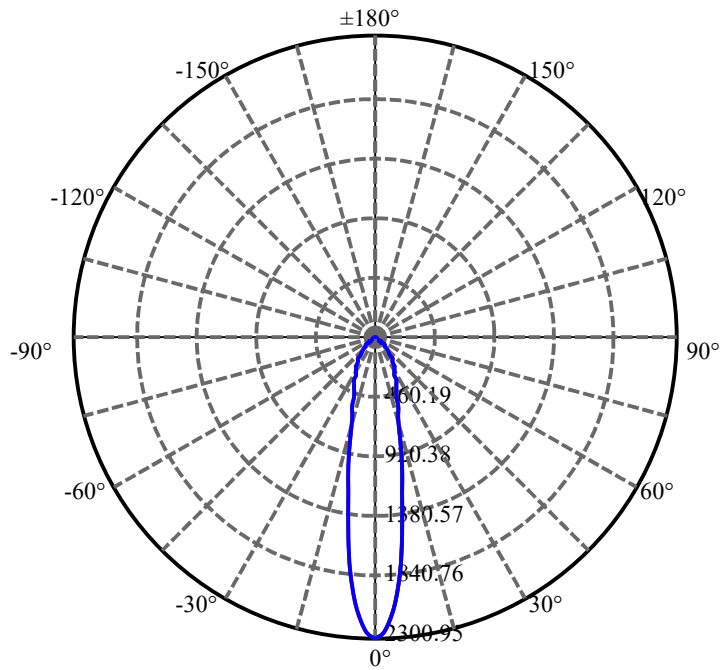
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.562	2.460	865.809	.241%	98.944%
78.0	9.986	2.142	867.951	.209%	99.188%
80.0	8.437	1.822	869.773	.178%	99.397%
82.0	7.130	1.548	871.322	.151%	99.574%
84.0	6.015	1.312	872.634	.128%	99.724%
86.0	5.106	1.117	873.751	.109%	99.851%
88.0	4.095	0.898	874.648	.088%	99.954%
90.0	3.689	0.404	875.053	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	557.30	54.48%	63.69%
0-40	706.38	69.05%	80.72%
0-60	834.66	81.59%	95.38%
0-90	874.65	85.50%	99.95%
0-120	874.65	85.50%	99.95%
0-180	875.05	85.54%	100.00%
60-90	46.27	4.52%	5.29%
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%
0-39.51	700.04	68.43%	80.00%

ZONAL LUMEN SUMMARY

0-10	184.01
10-20	202.41
20-30	170.87
30-40	149.08
40-50	87.14
50-60	41.14
60-70	22.67
70-80	12.45
80-90	4.88
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:

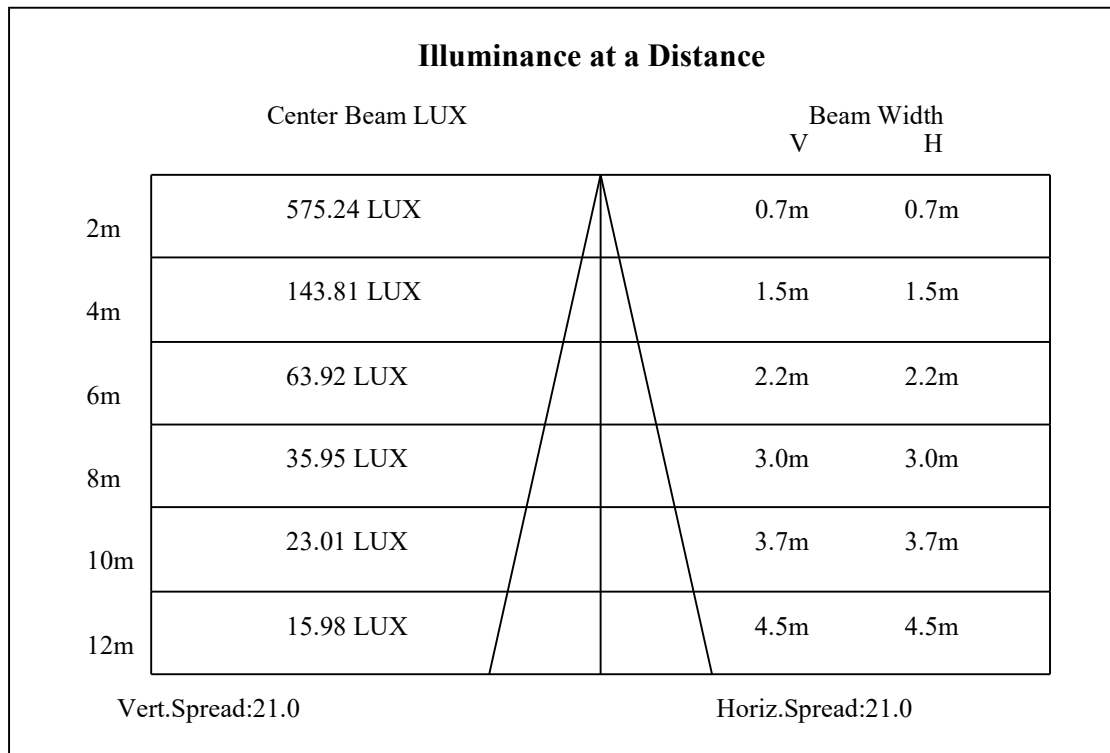
C90/C270:

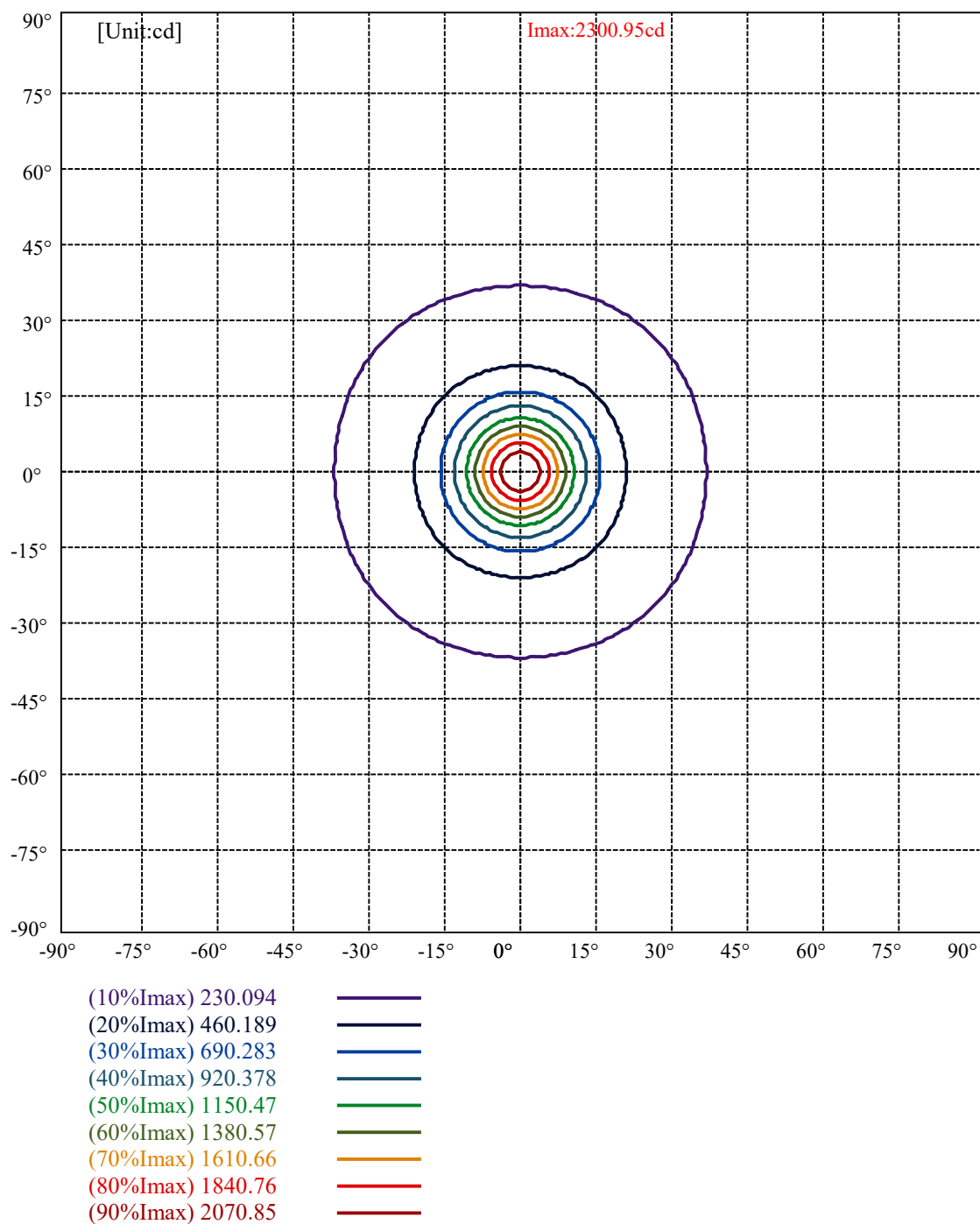
Field angle(10%Imax):C0/180Left:36.4 Right:36.4

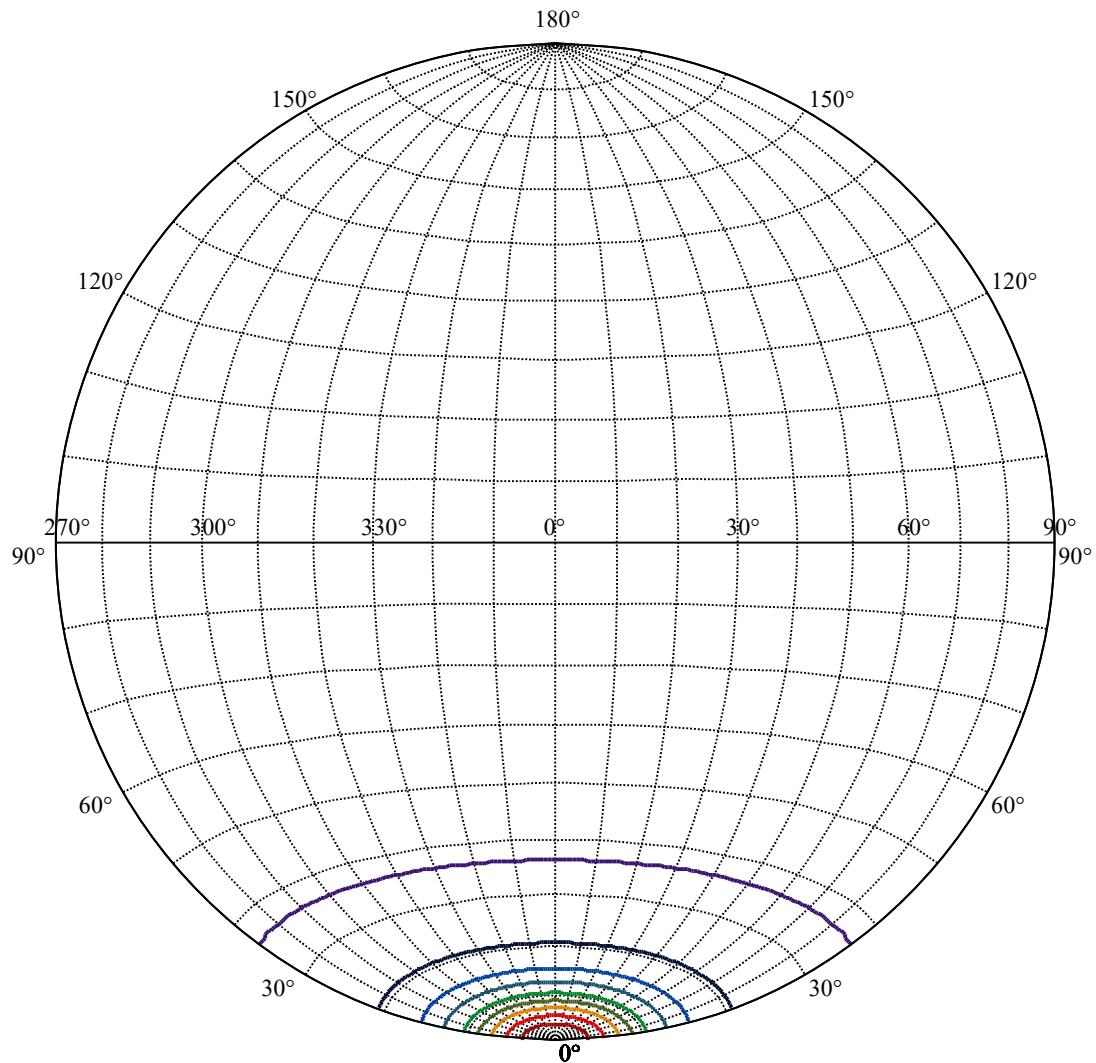
:C90/270Left:36.4 Right:36.4

Beam Angle(50%Imax):C0/180Left:10.5 Right:10.5

:C90/270Left:10.5 Right:10.5







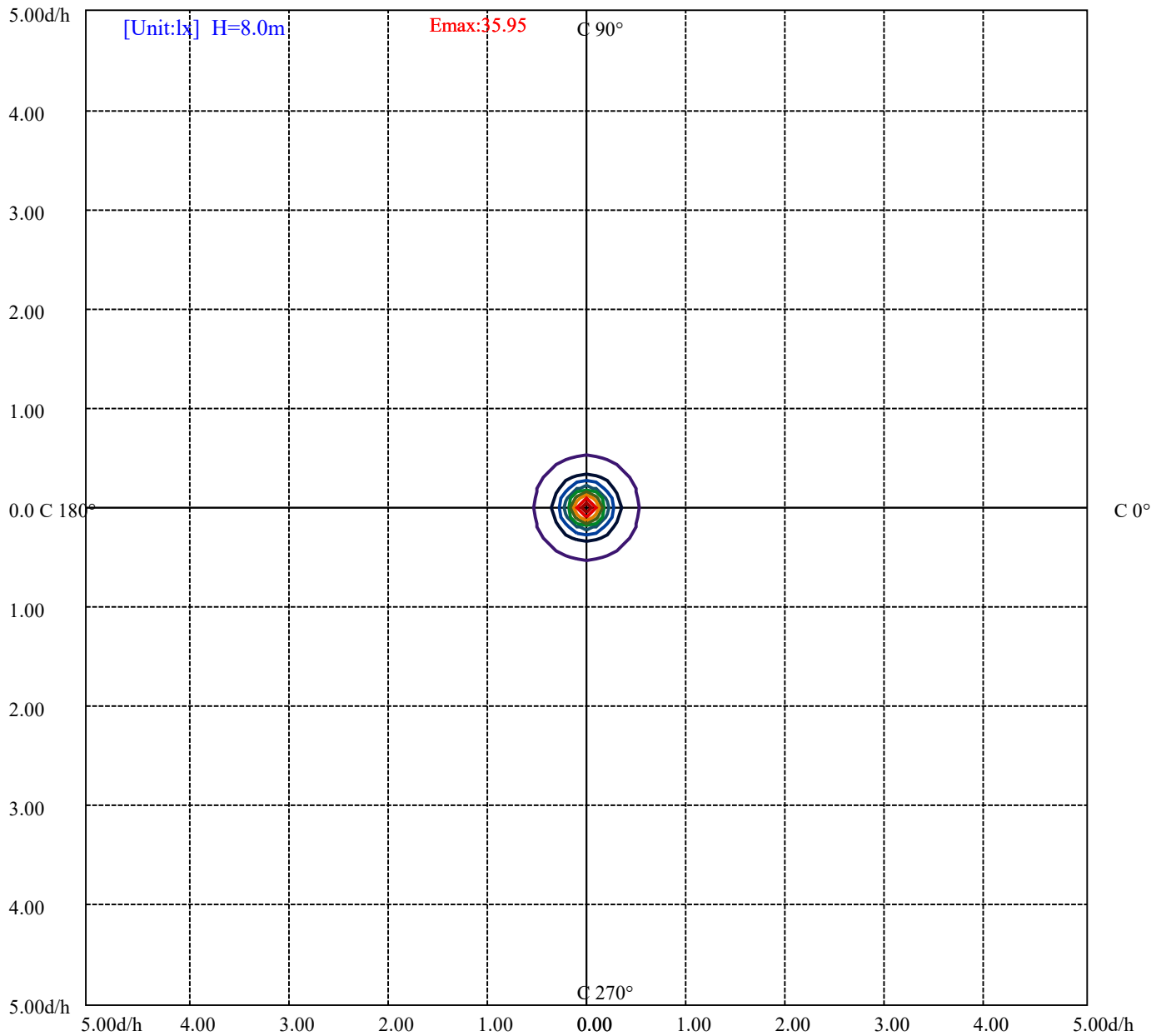
House

[Unit:cd]

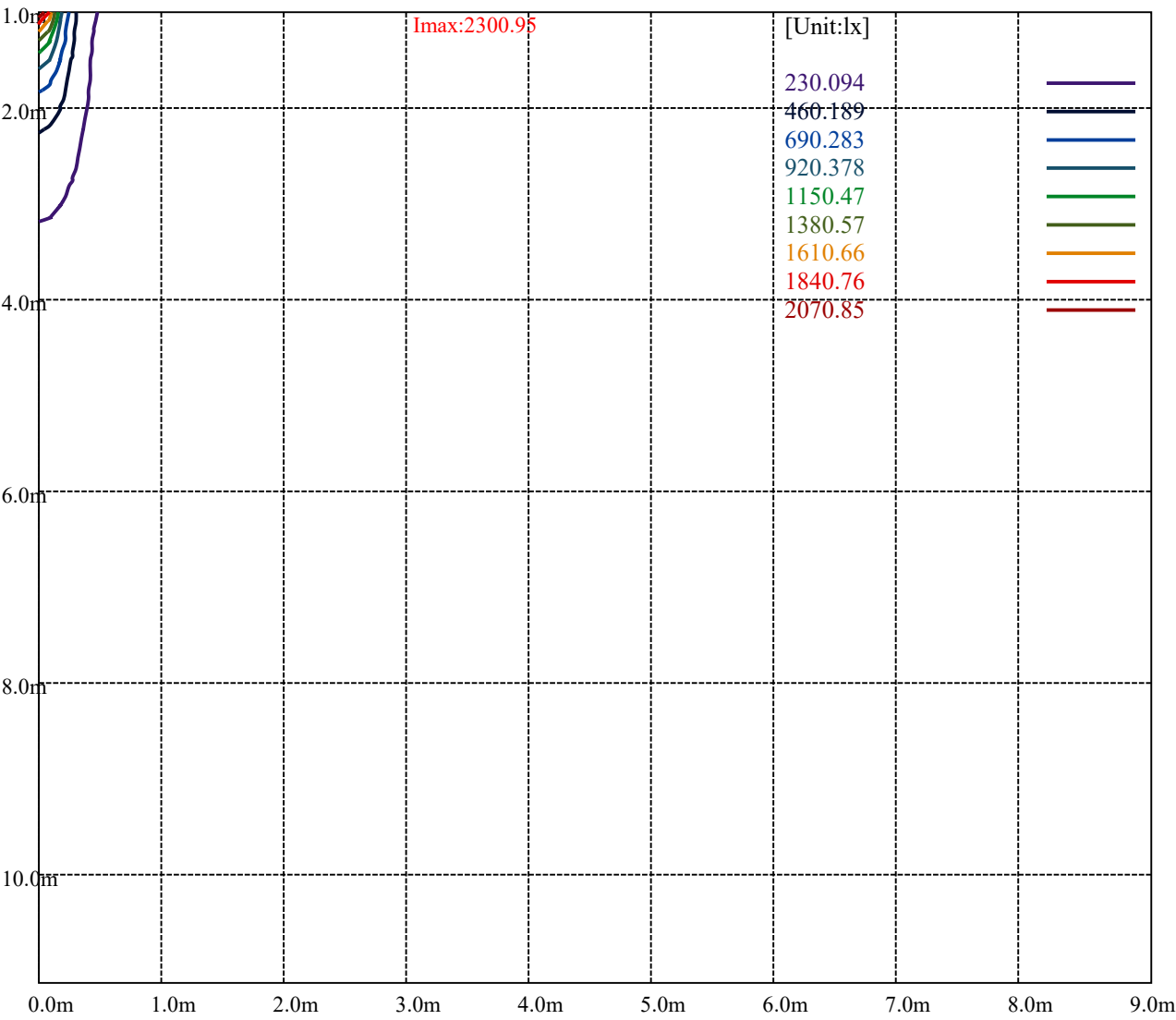
Road

Imax:2300.95

(10%Imax)	230.094	—
(20%Imax)	460.189	—
(30%Imax)	690.283	—
(40%Imax)	920.378	—
(50%Imax)	1150.47	—
(60%Imax)	1380.57	—
(70%Imax)	1610.66	—
(80%Imax)	1840.76	—
(90%Imax)	2070.85	—



(10%Emax)	3.595219	—
(20%Emax)	7.190437	—
(30%Emax)	10.78566	—
(40%Emax)	14.38087	—
(50%Emax)	17.97609	—
(60%Emax)	21.57125	—
(70%Emax)	25.16656	—
(80%Emax)	28.76172	—
(90%Emax)	32.35703	—



Luminance Table

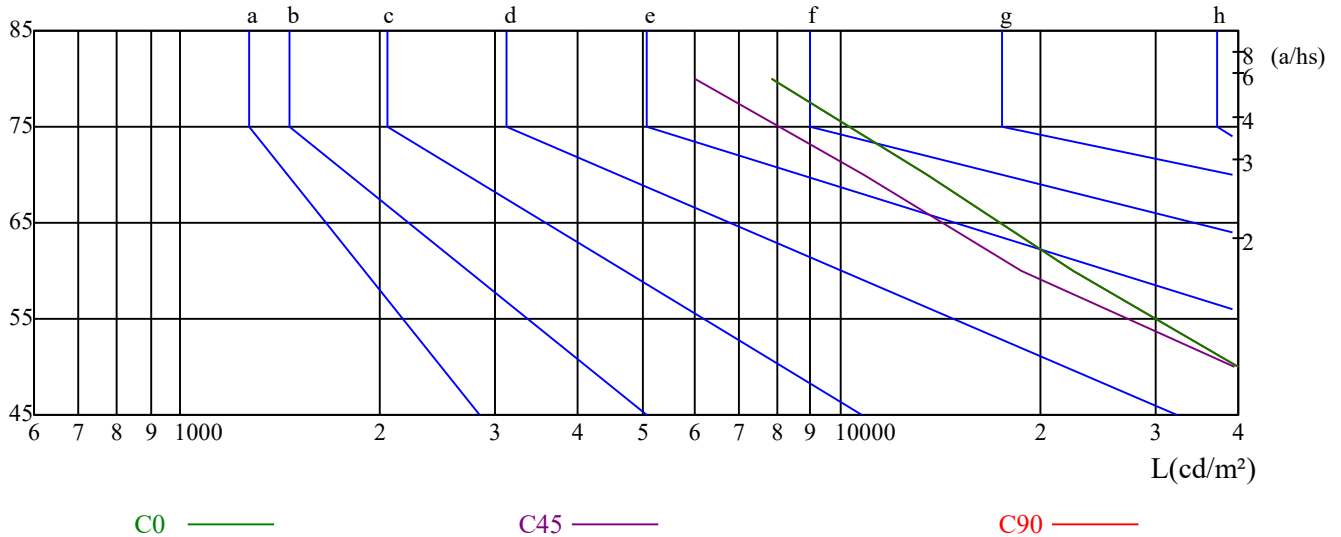
γ	45	50	55	60	65	70	75	80	85
C0	0	45831	0	22508	0	13531	0	7880	0
C45	0	39445	0	18759	0	10850	0	6006	0
C90	0	45831	0	22508	0	13531	0	7880	0

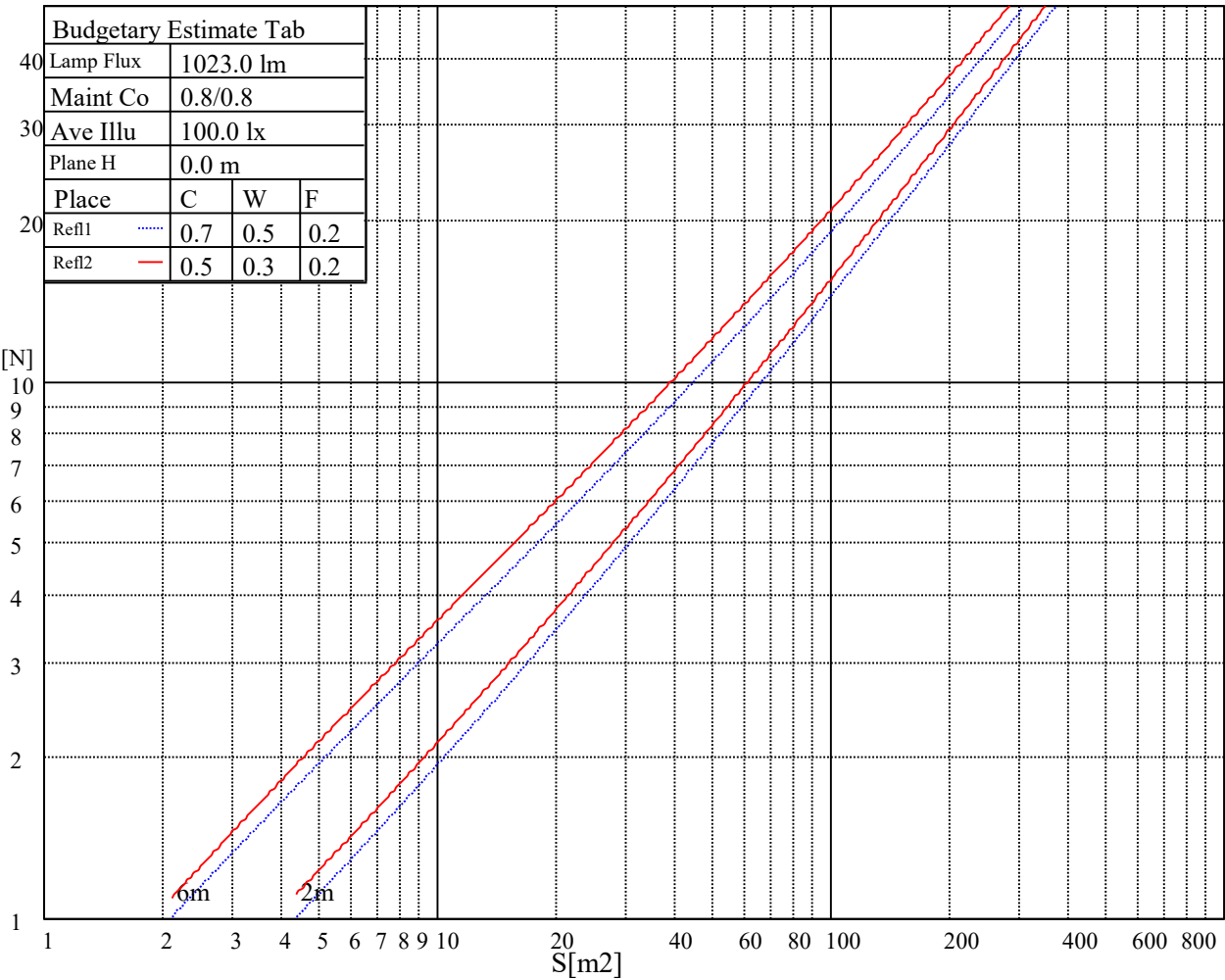
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
37001	37087	37237	31887	30838	31363	39455	38625	38832

Glare Table

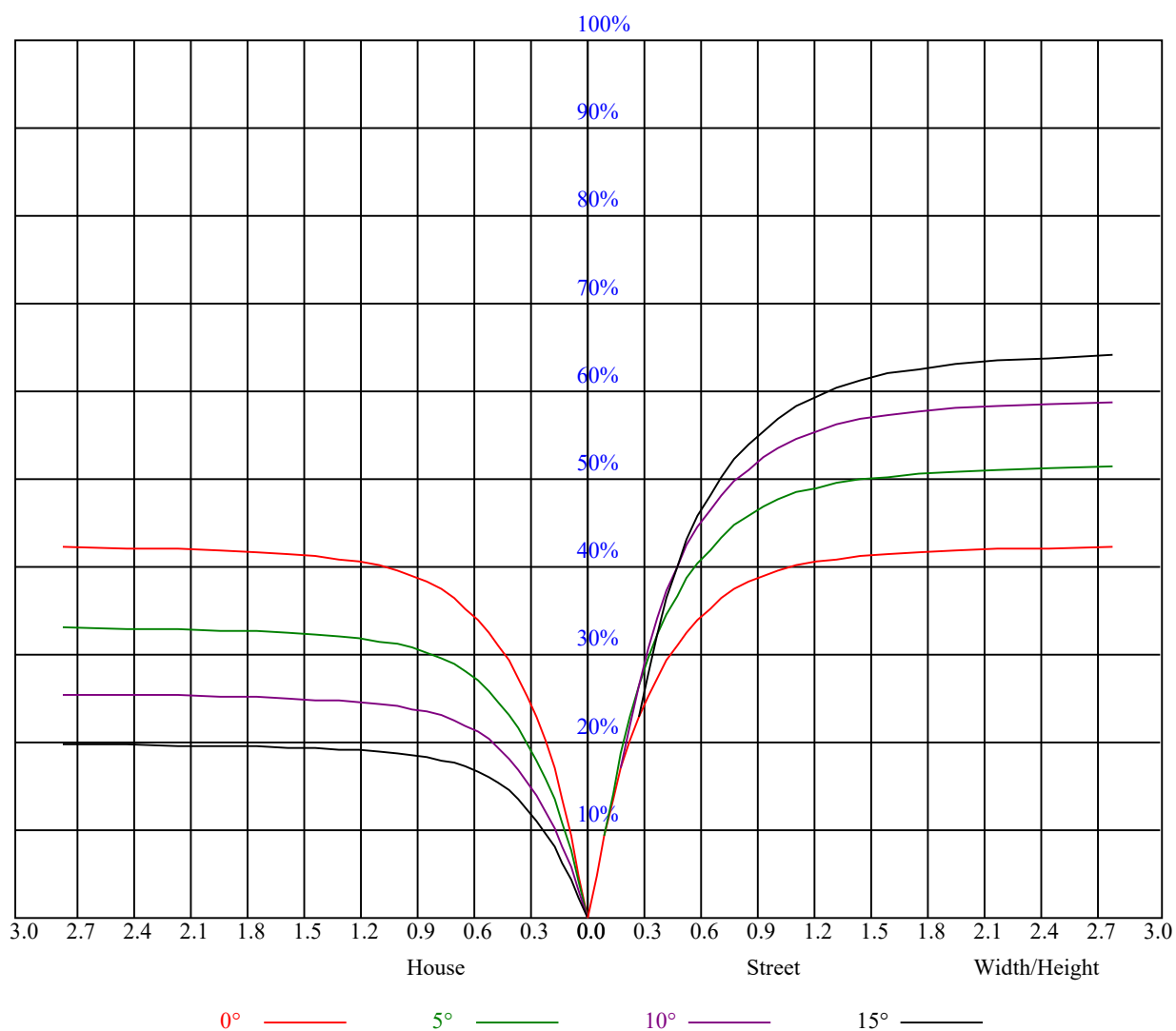
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

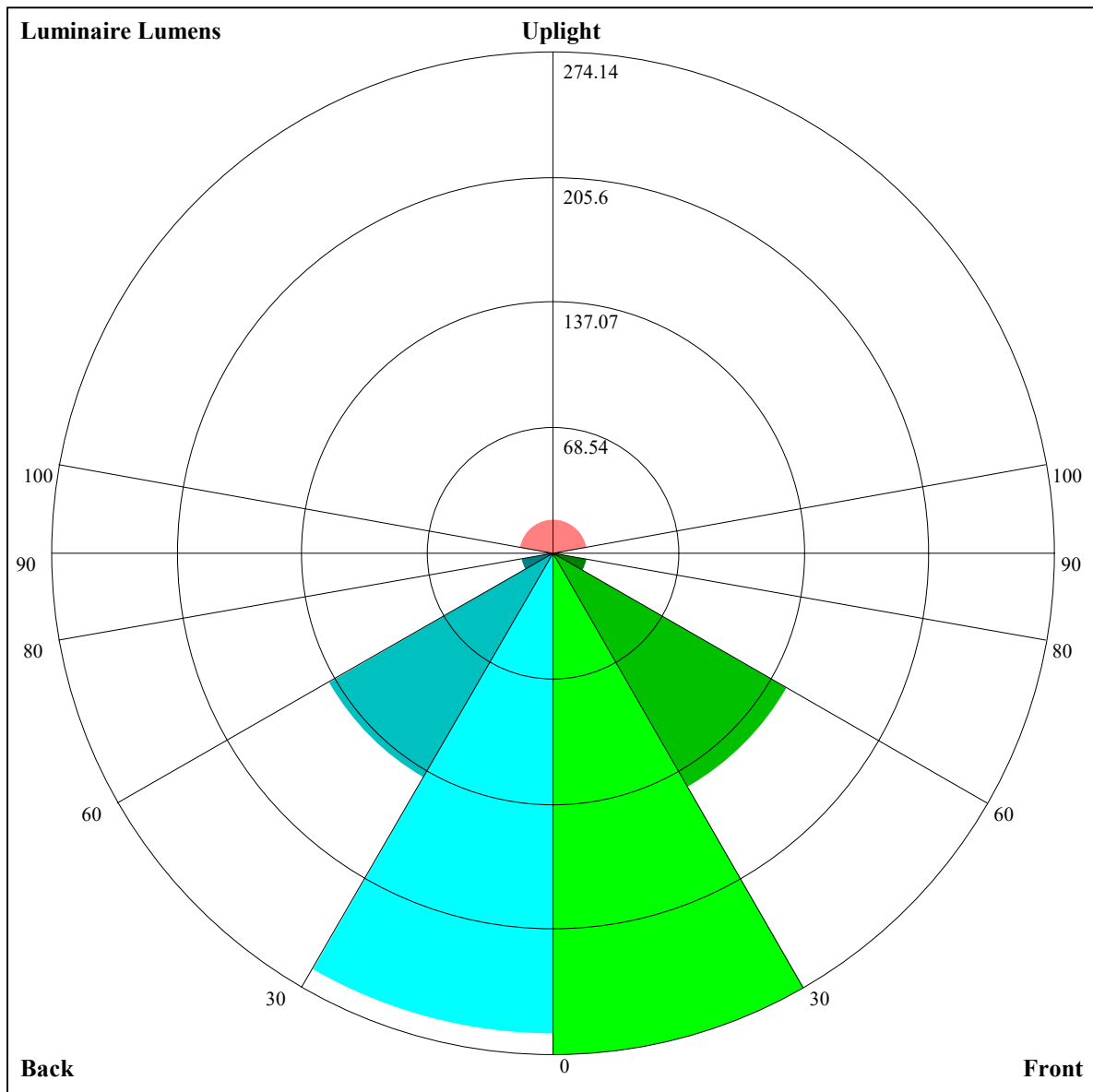
Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	1.02	1.02	1.02	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.86
1	0.94	0.91	0.89	0.92	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.83	0.82	0.81	0.80	0.79
2	0.87	0.83	0.80	0.85	0.82	0.79	0.82	0.80	0.77	0.80	0.78	0.75	0.77	0.76	0.74	0.72
3	0.81	0.76	0.72	0.79	0.75	0.72	0.77	0.73	0.71	0.75	0.72	0.69	0.73	0.70	0.68	0.67
4	0.75	0.70	0.66	0.74	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.64	0.62
5	0.70	0.65	0.61	0.70	0.65	0.61	0.68	0.64	0.60	0.67	0.63	0.60	0.65	0.62	0.59	0.58
6	0.66	0.61	0.57	0.66	0.61	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.62	0.58	0.56	0.55
7	0.63	0.57	0.54	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.51
8	0.59	0.54	0.51	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.49
9	0.56	0.51	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.47	0.54	0.50	0.47	0.46
10	0.54	0.49	0.46	0.53	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.51	0.48	0.45	0.44





Luminaire Lumens:

FL=274.14,FM=147.35,FH=19.14,FVH=3.2

BL=262.86,BM=141.61,BH=18.19,BVH=2.99

UL=4.02,UH=19.15

BUG Rating:B1-U2-G0

Nata 1405-N

Intensity data(cd)										Appendix Page: 16 Total:17	
C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0		
0.0	2296.95	2253.46	2104.26	1863.11	1623.61	1352.74	1114.89	913.39	759.78		
45.0	2301.36	2260.62	2100.40	1862.56	1586.17	1299.33	1069.20	857.78	698.12		
90.0	2304.66	2231.99	2023.87	1733.73	1448.53	1087.47	929.68	737.65	605.29		
135.0	2300.81	2255.66	2092.14	1820.16	1544.88	1239.32	999.82	787.86	643.06		
180.0	2296.95	2214.92	2035.44	1783.83	1497.53	1096.45	976.81	777.73	635.24		
225.0	2301.36	2216.57	2009.56	1725.47	1459.55	1085.33	941.46	760.33	629.57		
270.0	2304.66	2236.94	2049.75	1785.48	1505.79	1227.21	1021.30	802.72	657.37		
315.0	2300.81	2222.08	2023.32	1770.06	1499.19	1220.05	1001.26	805.64	664.48		
360.0	2296.95	2253.46	2104.26	1863.11	1623.61	1352.74	1114.89	913.39	759.78		
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0		
0.0	622.14	536.25	473.49	423.38	388.70	356.77	331.44	307.21	282.99		
45.0	591.86	506.52	447.61	403.01	368.88	339.15	314.92	291.80	270.16		
90.0	509.93	443.70	393.60	358.91	331.88	308.10	288.72	266.80	246.76		
135.0	539.55	463.57	414.02	377.14	347.41	321.53	301.71	278.59	255.41		
180.0	542.64	471.94	417.38	382.42	353.02	324.23	303.09	278.09	254.09		
225.0	531.62	471.01	420.63	388.15	358.25	333.86	311.12	286.95	261.90		
270.0	554.97	470.18	415.68	377.14	342.45	314.37	292.35	278.59	246.76		
315.0	559.21	483.29	423.99	382.70	350.93	323.13	301.98	279.69	257.11		
360.0	622.14	536.25	473.49	423.38	388.70	356.77	331.44	307.21	282.99		
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0		
0.0	258.16	229.36	200.24	174.09	146.01	120.30	100.26	81.21	67.17		
45.0	244.40	217.69	192.48	165.94	140.23	116.39	97.28	79.39	66.62		
90.0	224.35	199.74	172.05	147.00	120.52	97.73	80.99	66.18	55.55		
135.0	232.67	208.33	181.80	156.08	132.30	108.30	90.84	74.38	62.32		
180.0	228.87	202.83	175.02	150.25	125.09	102.96	85.89	70.47	59.30		
225.0	235.42	208.28	178.93	153.28	126.52	104.11	85.17	69.10	57.86		
270.0	224.58	200.85	175.46	151.57	128.94	107.30	90.57	74.55	62.65		
315.0	233.93	209.76	182.07	157.57	131.64	107.36	89.58	73.23	60.40		
360.0	258.16	229.36	200.24	174.09	146.01	120.30	100.26	81.21	67.17		
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0		
0.0	56.76	47.79	40.52	35.18	30.78	27.09	24.17	21.36	18.94		
45.0	54.67	46.25	39.81	34.19	29.90	26.15	23.07	20.32	18.28		
90.0	47.13	40.69	35.24	31.22	27.25	23.89	21.36	18.83	16.46		
135.0	52.30	44.76	38.10	33.31	29.01	25.16	22.30	19.49	17.07		
180.0	49.39	42.12	36.28	31.55	27.36	23.89	21.03	18.39	16.35		
225.0	49.00	41.95	35.95	31.71	27.69	24.45	21.69	19.16	16.85		
270.0	53.02	45.37	38.87	34.19	29.51	25.82	23.01	20.21	17.89		
315.0	51.64	44.10	37.49	33.31	29.07	25.77	22.79	20.10	17.78		
360.0	56.76	47.79	40.52	35.18	30.78	27.09	24.17	21.36	18.94		
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0		
0.0	16.74	14.76	12.77	11.18	9.52	8.09	6.83	5.95	4.46		
45.0	15.86	13.98	12.28	10.41	8.92	7.60	6.44	5.23	4.35		
90.0	14.59	12.66	10.63	9.25	7.71	6.33	5.34	4.46	3.80		
135.0	14.92	12.88	10.96	9.36	7.82	6.55	5.51	4.62	3.96		
180.0	14.26	12.39	10.68	9.19	7.71	6.61	5.56	4.84	3.85		
225.0	14.87	13.05	11.29	9.80	8.31	7.05	5.95	5.23	4.13		
270.0	15.69	13.76	12.00	10.41	8.86	7.54	6.39	5.29	4.18		
315.0	15.69	13.76	11.89	10.30	8.64	7.27	6.11	5.23	4.02		
360.0	16.74	14.76	12.77	11.18	9.52	8.09	6.83	5.95	4.46		

Intensity data(cd)

Appendix Page: 17 Total:17

C/γ(°)	90.0
0.0	3.85
45.0	3.80
90.0	3.52
135.0	3.69
180.0	3.58
225.0	3.63
270.0	3.80
315.0	3.63
360.0	3.85