
PL-R-Multi-W-24V (3000K)

Client:

LumCAT: PL-R-Multi-W-24V(3000K)

Luminaire: LED Lamp

Report No:

Ballast type:

Test No: LCZP25060168

Voltage(V): 24.030

LampCAT:

Current(A): 0.124

Lamp flux(lm): 218.7

Power (W): 2.980

Number of Lamps: 1

PF: 1.000

Length(mm): -40

Width(mm): -40

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 218.74, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 73.40

Central intensity(cd): 78.055, Maximum intensity(cd): 78.099

Angle of maximum intensity: C=15.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=110.2

[C90/270]Total=109.8

Field angle(10%Imax): [C0/180]Total=161.8

[C90/270]Total=161.6

Maximum s/h(1/2): C0_180=1.24 C90_270=1.24

Maximum s/h(1/4): C0_180=1.36 C90_270=1.36

Up flux rate of lamp(%): 0.08%

Down flux rate of lamp(%): 99.92%

Up flux rate of LUM(%): 0.08%

Down flux rate of LUM(%): 99.92%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 78.628%

Zonal flux distribution table

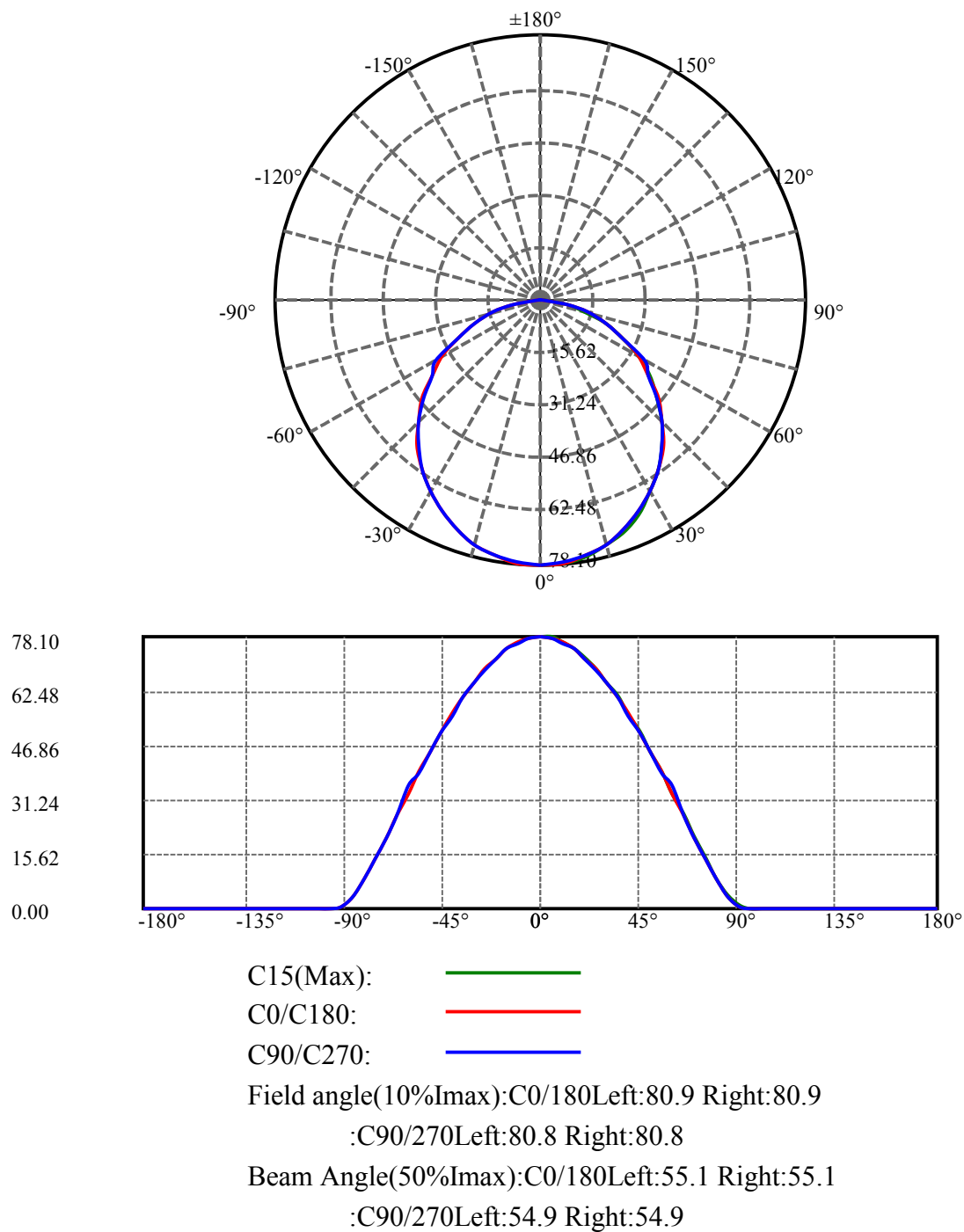
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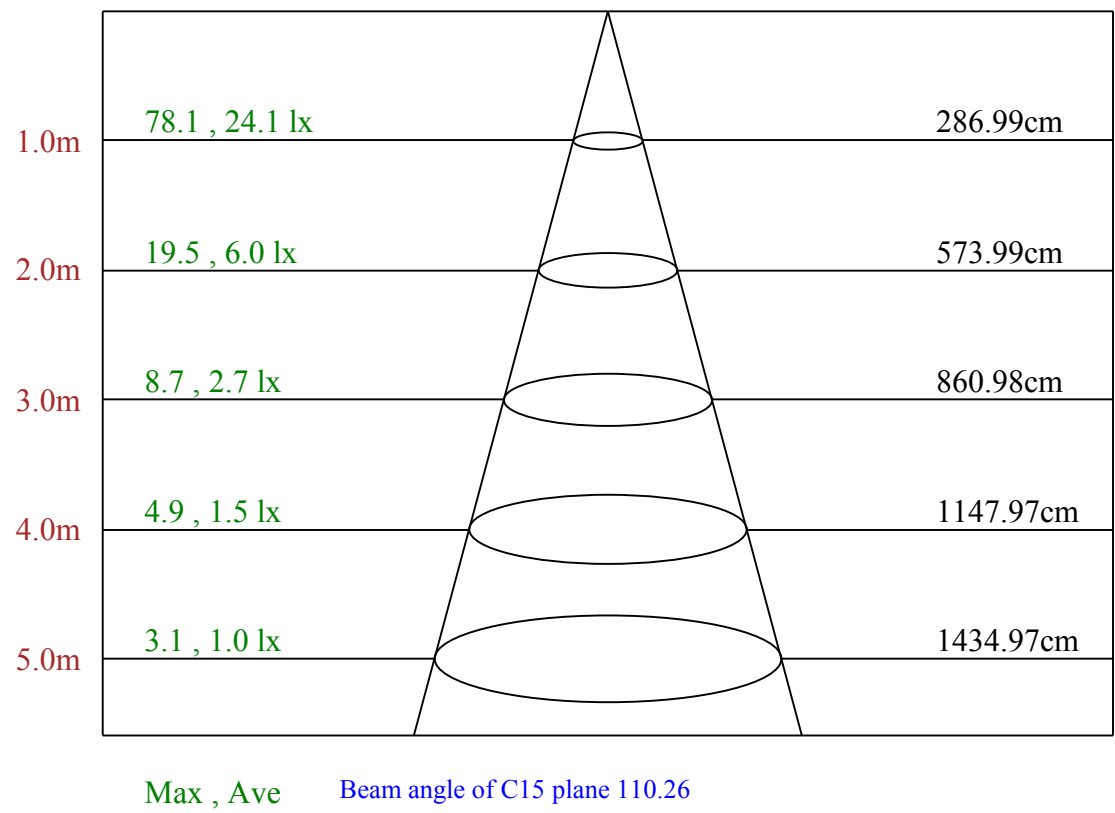
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	78.055	0.000	0	0.00%	0.00%
5.0	77.700	1.862	1.862	0.85%	0.85%
10.0	76.496	5.516	7.378	2.52%	3.37%
15.0	74.646	8.966	16.344	4.10%	7.47%
20.0	72.006	12.086	28.43	5.53%	13.00%
25.0	68.769	14.765	43.195	6.75%	19.75%
30.0	64.878	16.913	60.108	7.73%	27.48%
35.0	60.560	18.472	78.579	8.44%	35.92%
40.0	55.906	19.431	98.011	8.88%	44.81%
45.0	50.504	19.703	117.713	9.01%	53.81%
50.0	44.930	19.284	136.997	8.82%	62.63%
55.0	39.113	18.274	155.271	8.35%	70.98%
60.0	33.222	16.720	171.991	7.64%	78.63%
65.0	26.822	14.597	186.588	6.67%	85.30%
70.0	20.553	11.996	198.584	5.48%	90.79%
75.0	14.449	9.149	207.732	4.18%	94.97%
80.0	8.935	6.257	213.989	2.86%	97.83%
85.0	3.604	3.407	217.396	1.56%	99.39%
90.0	0.644	1.163	218.559	0.53%	99.92%
95.0	0.000	0.176	218.736	0.08%	100.00%
100.0	0.000	0.000	218.736	0.00%	100.00%
105.0	0.000	0.000	218.736	0.00%	100.00%
110.0	0.000	0.000	218.736	0.00%	100.00%
115.0	0.000	0.000	218.736	0.00%	100.00%
120.0	0.000	0.000	218.736	0.00%	100.00%
125.0	0.000	0.000	218.736	0.00%	100.00%
130.0	0.000	0.000	218.736	0.00%	100.00%
135.0	0.000	0.000	218.736	0.00%	100.00%
140.0	0.000	0.000	218.736	0.00%	100.00%
145.0	0.000	0.000	218.736	0.00%	100.00%
150.0	0.000	0.000	218.736	0.00%	100.00%
155.0	0.000	0.000	218.736	0.00%	100.00%
160.0	0.000	0.000	218.736	0.00%	100.00%
165.0	0.000	0.000	218.736	0.00%	100.00%
170.0	0.022	0.001	218.737	0.00%	100.00%
175.0	0.037	0.002	218.739	0.00%	100.00%
180.0	0.019	0.001	218.74	0.00%	100.00%

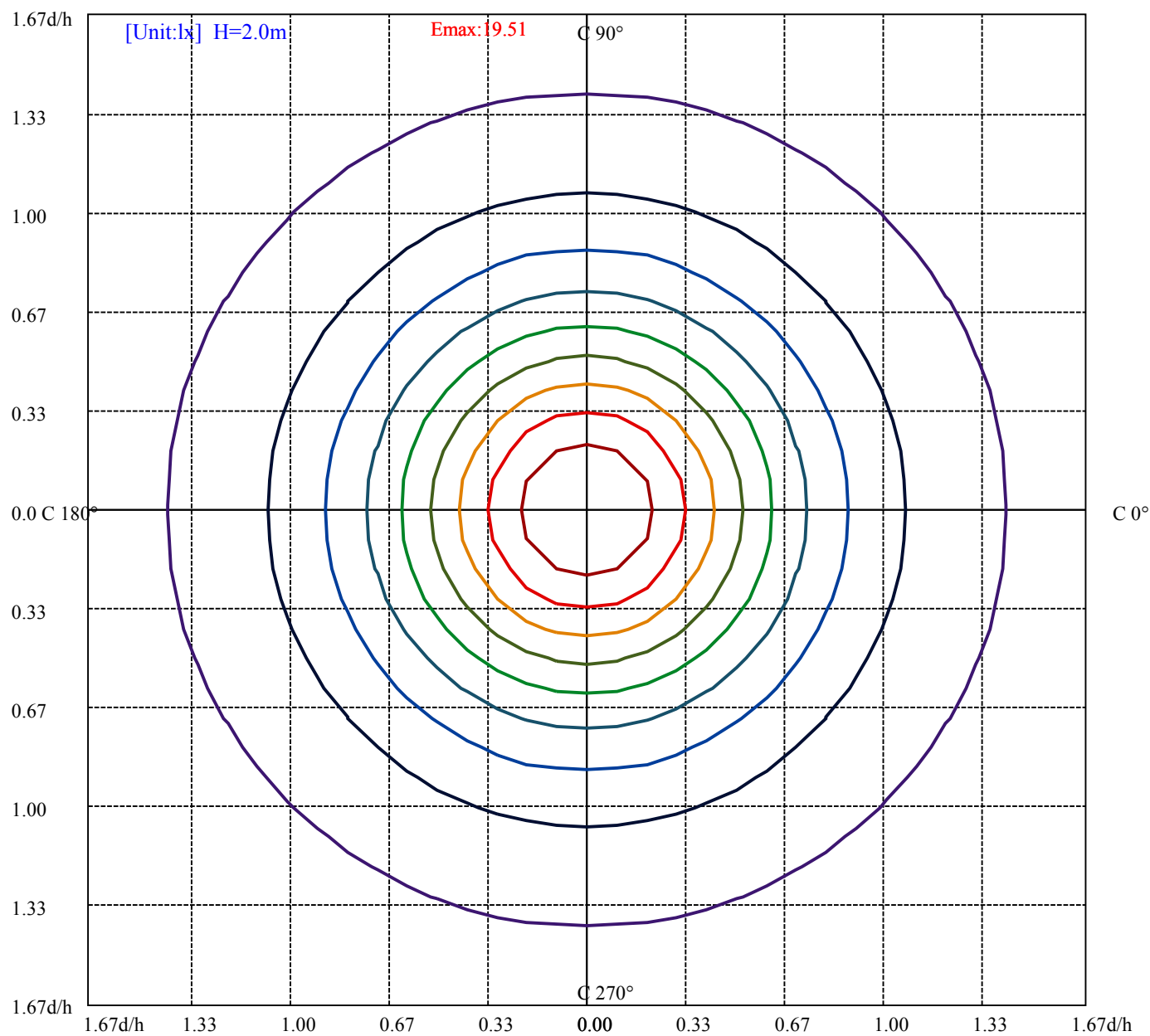
ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	60.11	27.48%	27.48%
0-40	98.01	44.81%	44.81%
0-60	171.99	78.63%	78.63%
0-90	218.56	99.92%	99.92%
0-120	218.74	100.00%	100.00%
0-180	218.74	100.00%	100.00%
60-90	46.57	21.29%	21.29%
90-120	0.18	0.08%	0.08%
90-130	0.18	0.08%	0.08%
90-150	0.18	0.08%	0.08%
90-180	0.18	0.08%	0.08%
0-61.03	174.99	80.00%	80.00%

ZONAL LUMEN SUMMARY

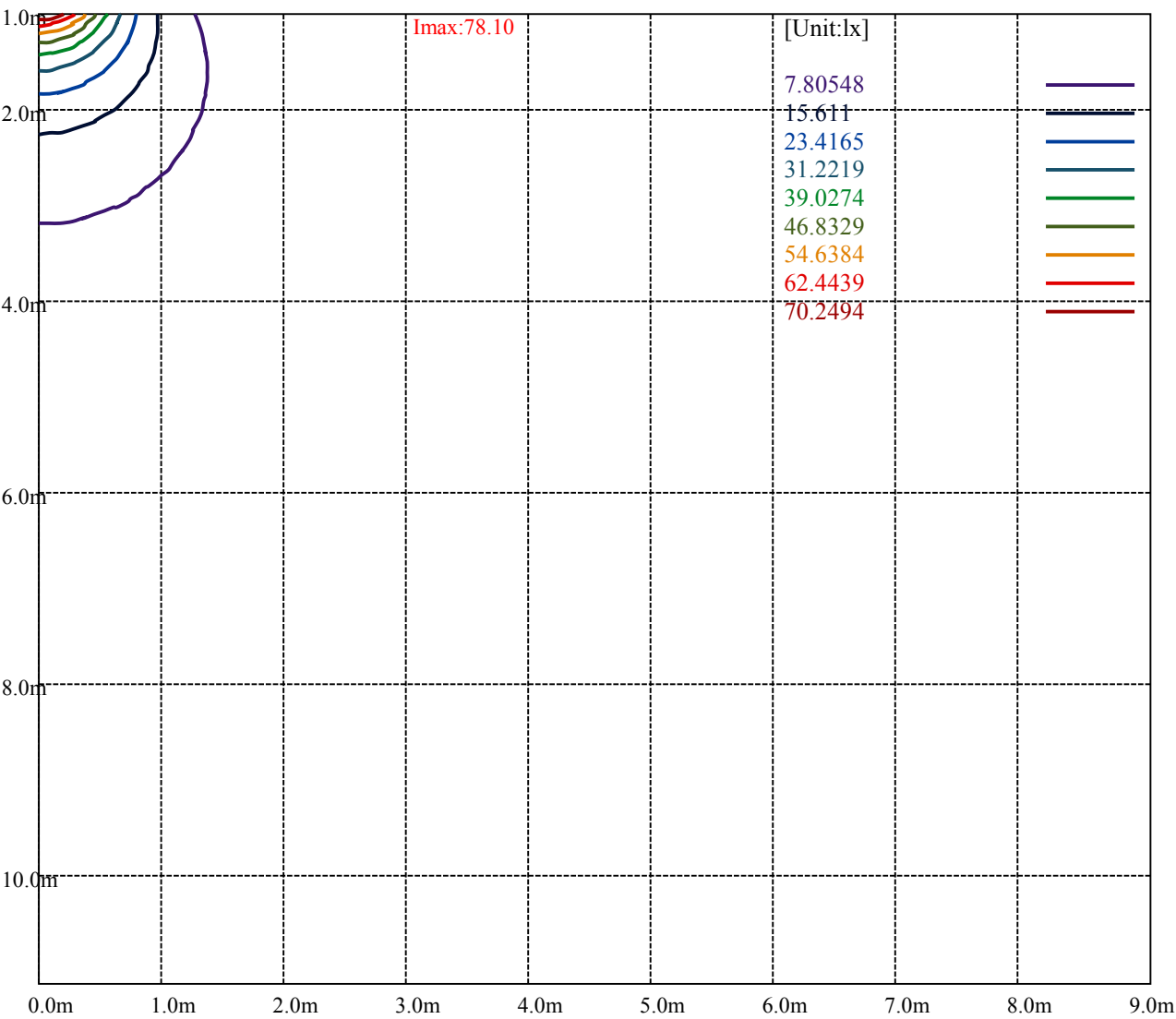
0-10	7.38
10-20	21.05
20-30	31.68
30-40	37.90
40-50	38.99
50-60	34.99
60-70	26.59
70-80	15.41
80-90	4.57
90-100	0.18
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00







(10%Emax)	1.95137	
(20%Emax)	3.90275	
(30%Emax)	5.854125	
(40%Emax)	7.805475	
(50%Emax)	9.75685	
(60%Emax)	11.70823	
(70%Emax)	13.6596	
(80%Emax)	15.61098	
(90%Emax)	17.56235	



Luminance Limiting Curve(no luminous side)

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Luminance Table

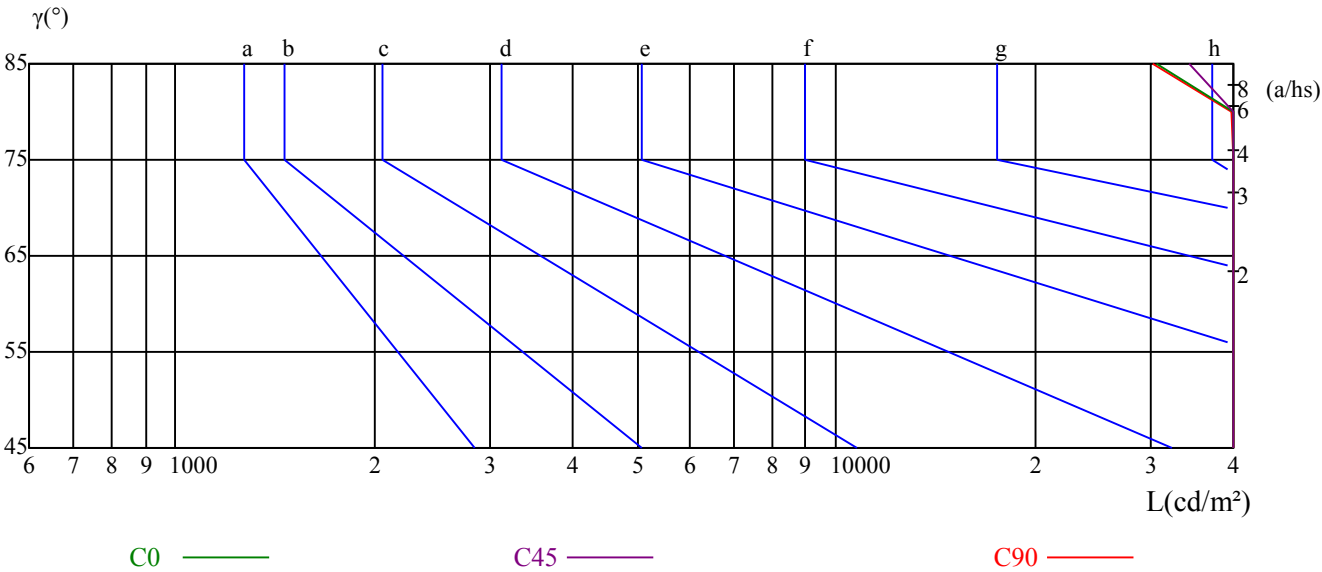
γ	45	50	55	60	65	70	75	80	85
C0	56872	55881	54332	52602	50391	47841	43884	40062	30543
C45	56654	55528	54084	52629	50116	47852	44637	40144	34366
C90	56679	55694	54022	56409	50370	47748	43948	39836	30275

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
50391	50370	50116	43884	43948	44637	30543	30275	34366

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	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.04	0.99	0.96	1.01	0.98	0.94	0.97	0.94	0.91	0.93	0.91	0.88	0.90	0.88	0.86	0.83
2	0.90	0.84	0.78	0.88	0.82	0.77	0.85	0.80	0.75	0.82	0.77	0.73	0.79	0.75	0.72	0.69
3	0.79	0.71	0.65	0.78	0.70	0.64	0.75	0.68	0.63	0.72	0.66	0.62	0.69	0.65	0.61	0.58
4	0.70	0.61	0.55	0.69	0.61	0.54	0.66	0.59	0.54	0.64	0.58	0.53	0.62	0.56	0.52	0.50
5	0.63	0.54	0.47	0.62	0.53	0.47	0.60	0.52	0.46	0.58	0.51	0.46	0.56	0.50	0.45	0.43
6	0.57	0.48	0.41	0.56	0.47	0.41	0.54	0.46	0.41	0.52	0.45	0.40	0.50	0.44	0.40	0.38
7	0.51	0.42	0.36	0.50	0.42	0.36	0.49	0.41	0.36	0.47	0.41	0.36	0.46	0.40	0.35	0.33
8	0.47	0.38	0.32	0.46	0.38	0.32	0.45	0.37	0.32	0.43	0.37	0.32	0.42	0.36	0.32	0.30
9	0.43	0.35	0.29	0.42	0.34	0.29	0.41	0.34	0.29	0.40	0.33	0.29	0.39	0.33	0.29	0.27
10	0.40	0.32	0.26	0.39	0.31	0.26	0.38	0.31	0.26	0.37	0.31	0.26	0.36	0.30	0.26	0.24

Intensity data(cd)

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C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	78.05	77.34	75.74	73.51	70.38	66.73	62.71	58.07	53.34
15.0	78.05	78.14	76.44	73.74	71.14	67.55	63.68	59.28	53.89
30.0	78.05	77.34	75.73	73.94	71.08	67.77	63.75	59.28	54.09
45.0	78.05	77.52	76.26	74.20	71.78	68.29	64.52	59.86	55.47
60.0	78.05	77.97	76.80	75.00	72.40	69.07	65.30	61.08	56.32
75.0	78.05	77.96	77.07	75.45	72.75	69.87	66.18	61.87	57.46
90.0	78.05	77.79	76.98	75.37	73.22	70.17	66.76	62.82	57.98
105.0	78.05	78.14	77.43	76.08	73.66	71.06	67.29	63.43	58.86
120.0	78.05	78.23	77.79	76.17	74.11	71.51	67.92	64.24	59.84
135.0	78.05	77.88	77.52	75.99	74.20	71.78	68.11	64.34	60.04
150.0	78.05	78.32	77.88	76.71	72.84	71.85	68.88	64.75	60.34
165.0	78.05	78.87	78.15	77.15	75.17	72.55	68.85	65.06	60.19
180.0	78.05	78.14	77.16	75.91	73.51	70.92	67.17	63.16	58.88
195.0	78.05	78.41	77.34	75.63	73.47	70.33	66.92	62.96	58.11
210.0	78.05	77.79	76.71	75.37	72.51	69.65	66.07	61.60	57.31
225.0	78.05	77.79	76.71	75.01	72.32	69.27	65.33	60.85	56.37
240.0	78.05	77.61	76.71	74.46	71.86	68.62	64.67	60.27	55.42
255.0	78.05	77.70	76.17	74.01	71.40	67.98	63.76	59.17	54.67
270.0	78.05	77.25	75.64	73.57	70.44	66.85	62.82	58.16	52.87
285.0	78.05	76.98	75.36	73.21	70.25	66.48	62.17	57.78	56.43
300.0	78.05	76.98	75.00	73.03	71.68	65.94	61.46	56.97	51.23
315.0	78.05	76.89	74.74	72.77	69.36	65.60	60.85	56.10	50.90
330.0	78.05	76.80	75.27	72.48	69.33	65.29	60.88	56.11	50.90
345.0	78.05	76.97	75.35	72.73	69.30	65.33	61.00	56.22	50.80
360.0	78.05	77.34	75.74	73.51	70.38	66.73	62.71	58.07	53.34
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	47.64	42.02	35.95	29.71	23.28	16.95	10.88	5.44	0.36
15.0	48.59	42.49	36.65	30.36	24.25	17.78	11.77	6.20	0.90
30.0	48.82	43.18	37.46	31.29	25.03	18.69	12.52	7.24	1.70
45.0	50.18	44.45	38.44	32.44	26.08	20.07	13.89	8.07	2.78
60.0	51.20	45.18	39.97	33.32	27.49	21.20	15.18	8.98	3.86
75.0	52.25	46.76	41.01	34.98	28.78	22.75	16.10	10.34	4.86
90.0	53.05	47.85	42.03	36.29	29.93	23.66	17.30	11.20	6.09
105.0	54.19	48.54	43.15	37.05	30.86	24.58	18.57	12.47	6.82
120.0	54.82	49.26	43.69	38.13	32.03	25.75	19.38	13.19	7.45
135.0	55.02	49.92	44.54	38.44	32.17	25.99	20.16	13.98	8.07
150.0	55.57	50.36	44.69	38.58	32.91	26.62	20.32	14.12	8.54
165.0	55.68	50.26	44.85	38.89	32.76	26.44	20.57	14.26	8.39
180.0	53.43	48.26	42.37	36.40	30.24	24.17	17.66	12.04	6.33
195.0	53.26	47.79	42.04	35.93	29.82	23.44	17.16	11.14	5.66
210.0	51.95	46.40	40.95	34.78	28.88	21.91	16.18	10.19	5.10
225.0	50.90	45.52	39.52	33.78	27.33	21.24	14.88	9.05	4.21
240.0	50.12	44.55	38.62	32.52	26.23	20.12	13.56	8.17	2.87
255.0	48.83	43.61	37.50	31.38	25.00	18.70	12.77	11.15	1.89
270.0	47.68	42.12	35.85	34.59	23.57	17.39	11.29	6.18	0.54
285.0	46.74	41.09	35.08	28.62	22.79	16.06	10.41	5.20	0.09
300.0	46.38	40.28	34.18	28.08	21.62	15.52	9.51	4.22	0.00
315.0	45.26	39.52	33.43	27.60	20.88	14.97	9.14	3.94	0.00
330.0	45.23	39.48	33.45	27.07	20.77	14.48	8.72	3.96	0.00
345.0	45.30	39.43	33.30	27.07	21.03	14.80	8.84	3.70	0.00
360.0	47.64	42.02	35.95	29.71	23.28	16.95	10.88	5.44	0.36

C/ $\gamma(^{\circ})$	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	2.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0	3.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0	3.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195.0	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
240.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
255.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
285.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C/ $\gamma(^{\circ})$	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09
15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09
30.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
105.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09
120.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
150.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00
165.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
240.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
255.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
270.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
285.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
330.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09

Intensity data(cd)

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C/γ(°)	180.0
0.0	0.00
15.0	0.09
30.0	0.09
45.0	0.00
60.0	0.00
75.0	0.09
90.0	0.09
105.0	0.09
120.0	0.00
135.0	0.00
150.0	0.00
165.0	0.00
180.0	0.00
195.0	0.00
210.0	0.00
225.0	0.00
240.0	0.00
255.0	0.00
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.00
330.0	0.00
345.0	0.00
360.0	0.00