
AFX

Client:

LumCAT: ELZP42LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.000

LampCAT:

Current(A): 0.201

Lamp flux(lm): 2235.9

Power (W): 23.820

Number of Lamps: 1

PF: 0.986

Length(mm): 1040

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 2235.91, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 93.87

Central intensity(cd): 607.841, Maximum intensity(cd): 608.287

Angle of maximum intensity: C=90.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=109.2

[C90/270]Total=133.2

Field angle(10%Imax): [C0/180]Total=159.0

[C90/270]Total=237.8

Maximum s/h(1/2): C0_180=1.24 C90_270=1.30

Maximum s/h(1/4): C0_180=1.36 C90_270=1.44

Up flux rate of lamp(%): 10.27%

Down flux rate of lamp(%): 89.73%

Up flux rate of LUM(%): 10.27%

Down flux rate of LUM(%): 89.73%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 62.741%

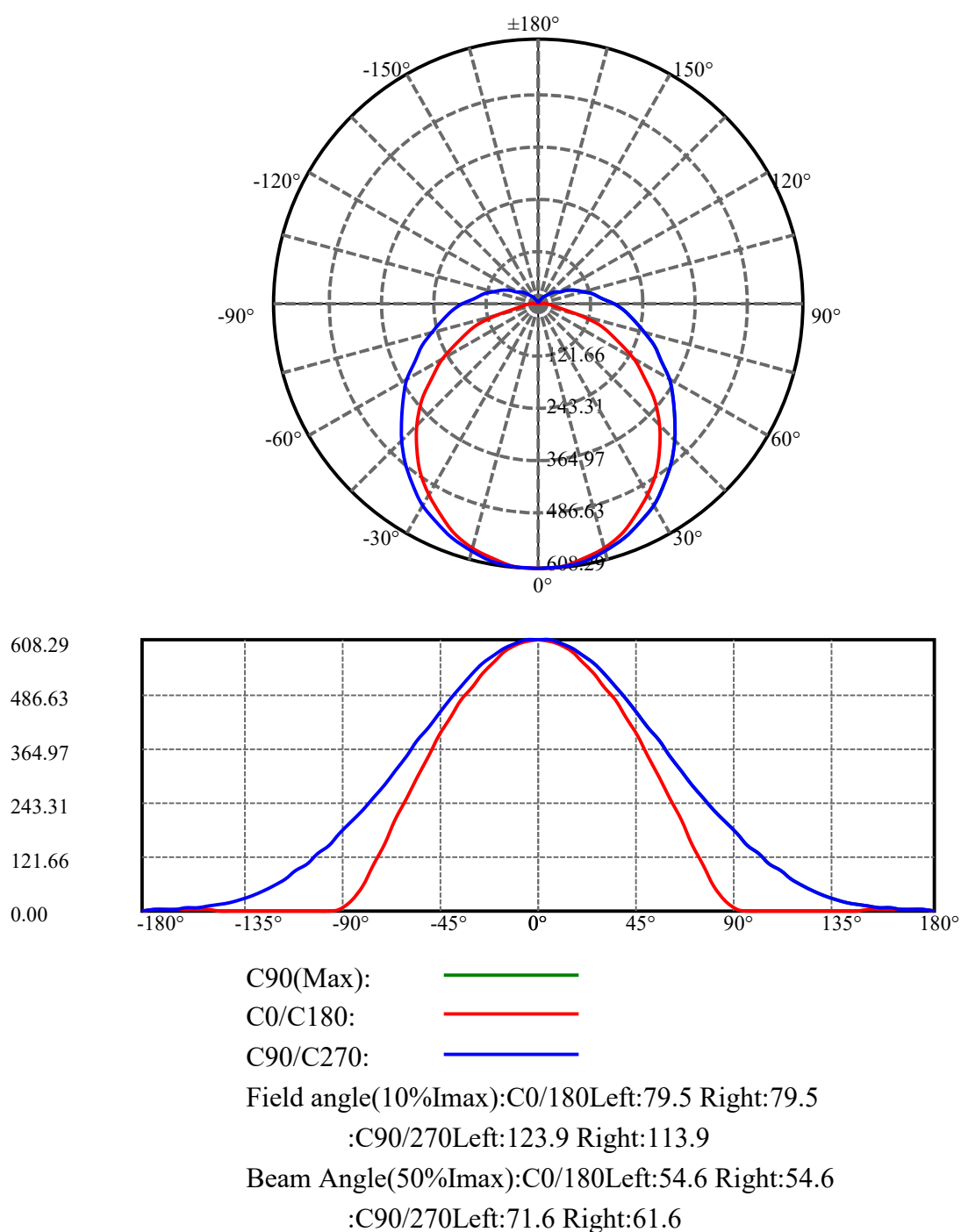
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	607.841	0.000	0	0.00%	0.00%
5.0	605.483	14.505	14.505	0.65%	0.65%
10.0	597.294	43.027	57.532	1.92%	2.57%
15.0	583.983	70.073	127.605	3.13%	5.71%
20.0	565.627	94.744	222.349	4.24%	9.94%
25.0	542.854	116.259	338.608	5.20%	15.14%
30.0	516.157	134.019	472.627	5.99%	21.14%
35.0	485.609	147.517	620.144	6.60%	27.74%
40.0	451.814	156.402	776.546	7.00%	34.73%
45.0	416.809	160.833	937.378	7.19%	41.92%
50.0	378.891	160.783	1098.161	7.19%	49.11%
55.0	340.712	156.466	1254.627	7.00%	56.11%
60.0	300.473	148.208	1402.835	6.63%	62.74%
65.0	262.891	136.955	1539.79	6.13%	68.87%
70.0	226.579	123.937	1663.727	5.54%	74.41%
75.0	189.744	108.820	1772.547	4.87%	79.28%
80.0	156.016	92.516	1865.062	4.14%	83.41%
85.0	128.162	77.218	1942.28	3.45%	86.87%
90.0	105.362	63.941	2006.221	2.86%	89.73%
95.0	85.521	52.265	2058.487	2.34%	92.06%
100.0	69.983	42.254	2100.741	1.89%	93.95%
105.0	56.616	33.874	2134.615	1.52%	95.47%
110.0	45.678	26.738	2161.353	1.20%	96.67%
115.0	35.974	20.675	2182.028	0.92%	97.59%
120.0	27.987	15.549	2197.577	0.70%	98.29%
125.0	21.457	11.429	2209.006	0.51%	98.80%
130.0	16.159	8.179	2217.185	0.37%	99.16%
135.0	12.242	5.739	2222.924	0.26%	99.42%
140.0	9.369	4.001	2226.925	0.18%	99.60%
145.0	7.504	2.815	2229.74	0.13%	99.72%
150.0	6.274	2.029	2231.769	0.09%	99.81%
155.0	5.565	1.498	2233.268	0.07%	99.88%
160.0	4.894	1.097	2234.365	0.05%	99.93%
165.0	4.297	0.757	2235.122	0.03%	99.96%
170.0	3.737	0.477	2235.599	0.02%	99.99%
175.0	3.290	0.251	2235.85	0.01%	100.00%
180.0	1.794	0.061	2235.911	0.00%	100.00%

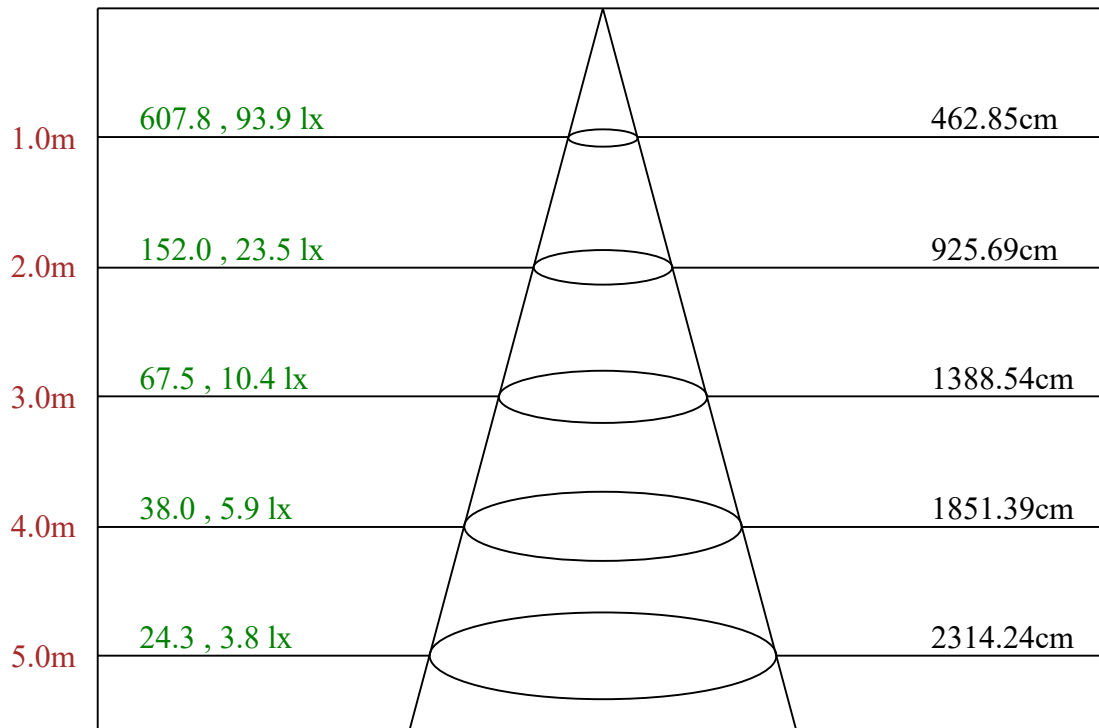
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	472.63	21.14%	21.14%
0-40	776.55	34.73%	34.73%
0-60	1402.83	62.74%	62.74%
0-90	2006.22	89.73%	89.73%
0-120	2197.58	98.29%	98.29%
0-180	2235.91	100.00%	100.00%
60-90	603.39	26.99%	26.99%
90-120	191.36	8.56%	8.56%
90-130	210.96	9.44%	9.44%
90-150	225.55	10.09%	10.09%
90-180	229.63	10.27%	10.27%
0-75.87	1788.73	80.00%	80.00%

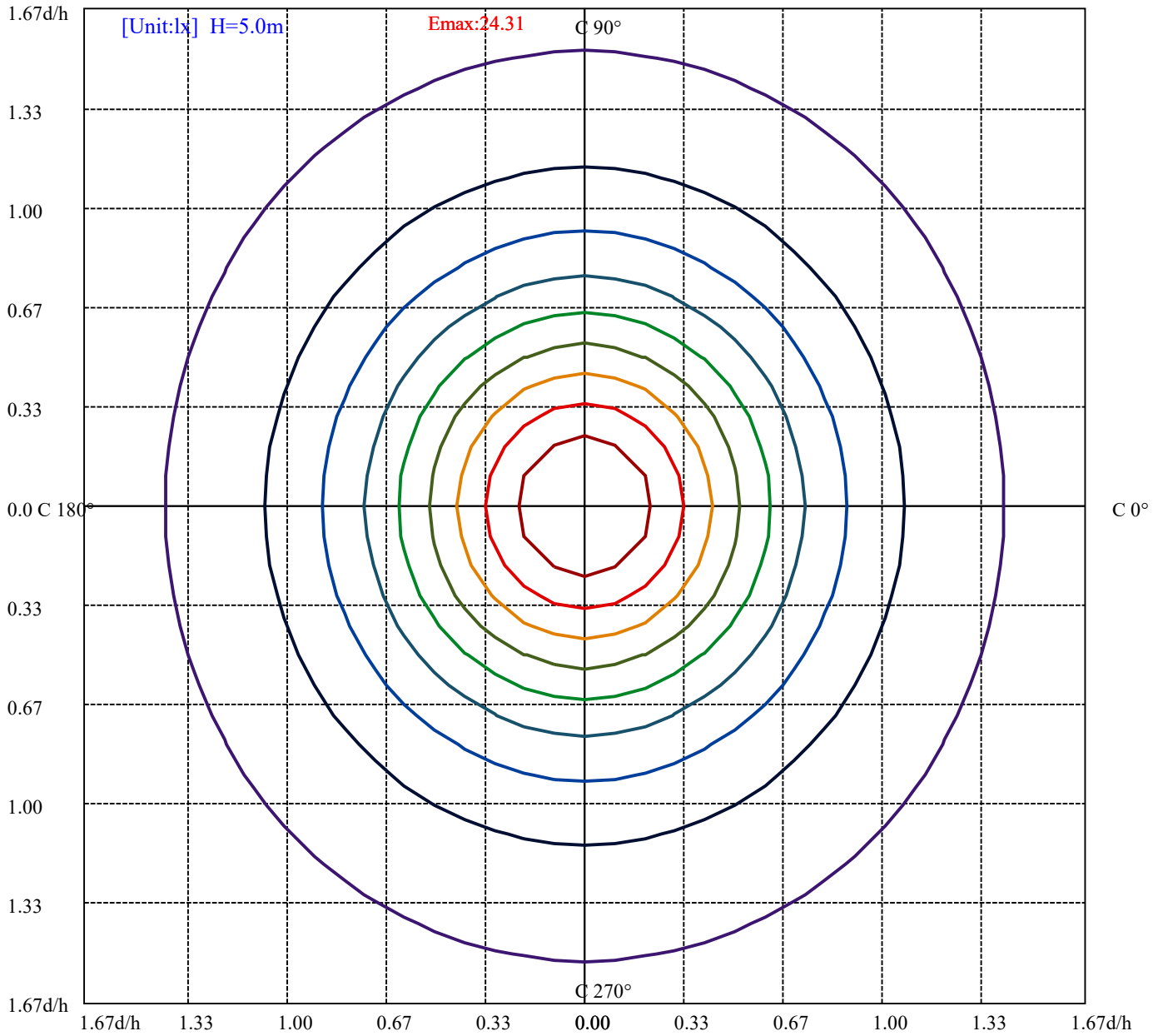
ZONAL LUMEN SUMMARY

0-10	57.53
10-20	164.82
20-30	250.28
30-40	303.92
40-50	321.62
50-60	304.67
60-70	260.89
70-80	201.34
80-90	141.16
90-100	94.52
100-110	60.61
110-120	36.22
120-130	19.61
130-140	9.74
140-150	4.84
150-160	2.60
160-170	1.23
170-180	0.25

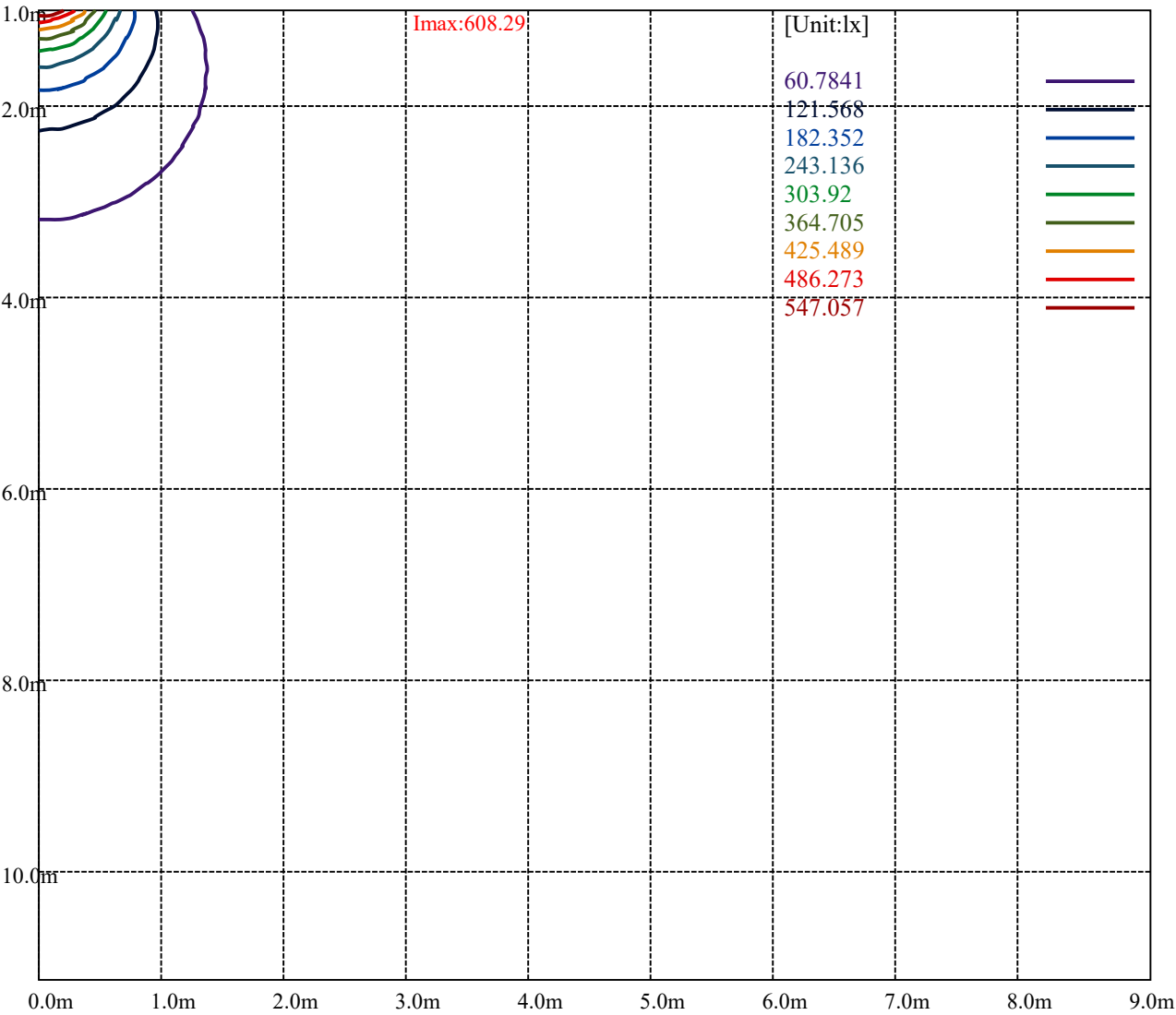




Max , Ave Beam angle of C90 plane 133.26



(10%Emax) 2.431364	—
(20%Emax) 4.86272	—
(30%Emax) 7.29408	—
(40%Emax) 9.72544	—
(50%Emax) 12.1568	—
(60%Emax) 14.58816	—
(70%Emax) 17.01956	—
(80%Emax) 19.45092	—
(90%Emax) 21.88228	—



Luminance Table

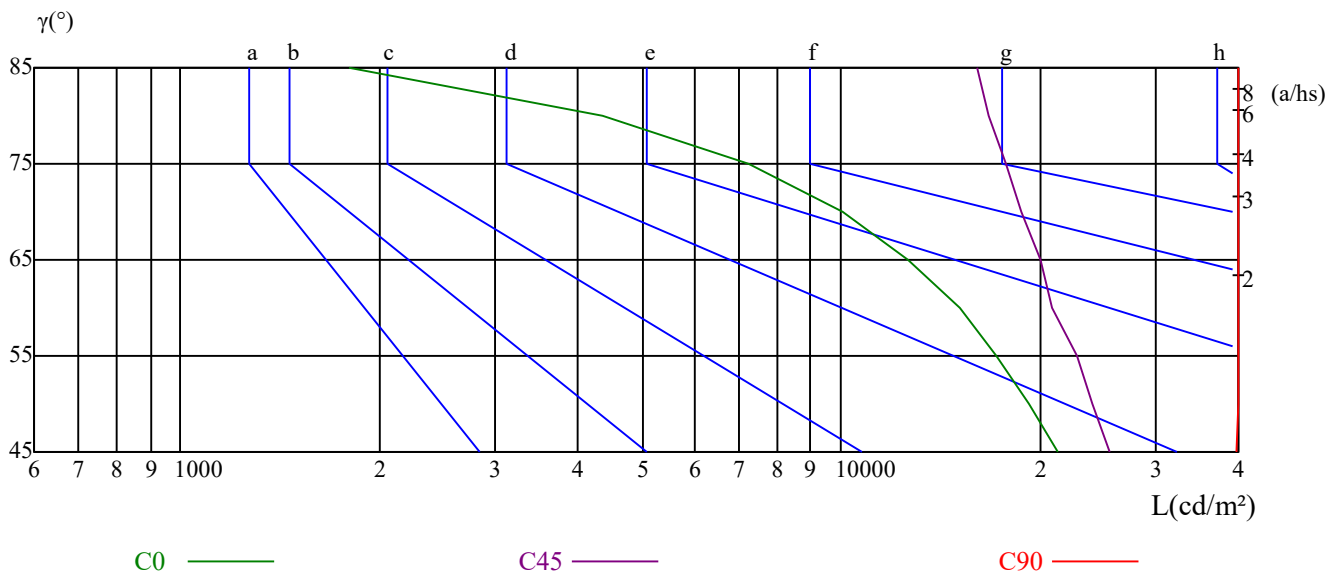
γ	45	50	55	60	65	70	75	80	85
C0	21334	19256	17194	15096	12649	10058	7257	4361	1798
C45	25544	24079	22744	20840	20021	18804	17735	16774	16073
C90	39792	40482	41870	43897	46693	51747	60501	78895	131899

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
30732	47655	40553	25313	62672	49385	15496	146395	103929

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



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	1.17	1.17	1.17	1.13	1.13	1.13	1.05	1.05	1.05	0.99	0.99	0.99	0.93	0.93	0.93	0.90
1	0.98	0.93	0.89	0.95	0.90	0.86	0.89	0.85	0.82	0.83	0.80	0.77	0.78	0.75	0.73	0.70
2	0.85	0.77	0.71	0.82	0.75	0.69	0.77	0.71	0.66	0.72	0.67	0.63	0.67	0.63	0.60	0.57
3	0.74	0.65	0.58	0.71	0.63	0.57	0.67	0.60	0.54	0.63	0.57	0.52	0.59	0.54	0.50	0.47
4	0.65	0.56	0.49	0.63	0.54	0.48	0.59	0.52	0.46	0.55	0.49	0.44	0.52	0.47	0.42	0.40
5	0.58	0.48	0.41	0.56	0.47	0.41	0.53	0.45	0.39	0.50	0.43	0.38	0.47	0.41	0.37	0.34
6	0.52	0.43	0.36	0.50	0.42	0.35	0.47	0.40	0.34	0.45	0.38	0.33	0.42	0.37	0.32	0.30
7	0.47	0.38	0.32	0.46	0.37	0.31	0.43	0.36	0.30	0.41	0.34	0.29	0.39	0.33	0.28	0.26
8	0.43	0.34	0.28	0.42	0.33	0.28	0.39	0.32	0.27	0.37	0.31	0.26	0.35	0.30	0.25	0.23
9	0.39	0.31	0.25	0.38	0.30	0.25	0.36	0.29	0.24	0.34	0.28	0.23	0.33	0.27	0.23	0.21
10	0.36	0.28	0.23	0.35	0.28	0.22	0.33	0.27	0.22	0.32	0.26	0.21	0.30	0.25	0.21	0.19

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	607.84	607.84	600.67	588.12	571.08	545.08	518.19	485.02	449.16
15.0	607.84	606.94	600.64	587.13	569.12	543.91	515.09	482.67	448.45
30.0	607.84	606.04	597.95	585.36	568.28	542.20	513.43	483.76	448.69
45.0	607.84	606.05	597.96	584.50	566.54	544.09	517.16	484.84	450.72
60.0	607.84	605.15	595.27	584.50	565.64	545.89	518.95	489.33	458.80
75.0	607.84	605.15	597.07	585.39	568.34	546.79	523.44	494.71	464.19
90.0	607.84	606.06	598.02	586.42	570.35	550.72	527.51	498.95	469.49
105.0	607.84	604.27	597.11	583.71	552.42	546.16	521.13	495.21	463.93
120.0	607.84	604.27	595.34	581.96	565.89	541.79	517.69	487.34	430.22
135.0	607.84	605.15	596.19	581.84	563.01	541.50	513.71	482.33	447.36
150.0	607.84	605.15	596.19	582.74	563.01	537.02	507.43	473.36	439.30
165.0	607.84	603.32	595.18	579.80	560.81	535.48	508.34	473.97	436.89
180.0	607.84	603.36	590.81	572.88	550.46	522.67	490.40	457.23	417.78
195.0	607.84	604.24	593.43	577.22	555.61	528.60	497.98	463.76	426.84
210.0	607.84	603.35	594.35	579.97	558.39	535.01	506.23	472.97	438.80
225.0	607.84	606.05	597.96	583.60	566.54	543.20	514.47	483.04	449.82
240.0	607.84	605.15	598.86	585.39	567.44	548.58	522.55	495.61	465.98
255.0	607.84	607.84	599.76	588.09	585.39	551.28	530.63	502.79	475.86
270.0	607.84	610.52	605.16	593.56	576.60	556.96	534.65	507.87	481.10
285.0	607.84	606.05	601.58	590.86	573.87	556.00	532.75	505.94	479.12
300.0	607.84	606.06	599.81	588.20	571.25	551.61	526.62	499.84	468.60
315.0	607.84	605.15	597.98	585.43	568.39	545.08	519.98	490.40	458.12
330.0	607.84	606.05	595.29	580.95	560.33	536.12	508.33	476.05	441.98
345.0	607.84	602.41	592.46	577.99	556.28	532.77	501.11	467.64	432.36
360.0	607.84	607.84	600.67	588.12	571.08	545.08	518.19	485.02	449.16
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	410.61	364.88	319.16	273.44	224.13	171.24	120.13	72.62	32.27
15.0	406.13	363.80	316.98	269.25	222.42	173.80	128.77	86.45	52.23
30.0	410.02	367.76	322.80	276.95	236.48	195.12	157.36	122.29	94.41
45.0	414.80	377.09	338.49	299.88	260.38	225.36	190.34	160.71	133.78
60.0	424.68	388.77	353.75	318.73	286.41	253.19	221.77	193.93	165.20
75.0	433.66	399.54	368.12	335.79	303.47	272.94	242.42	213.69	185.85
90.0	437.36	404.33	373.09	342.75	307.94	276.70	246.35	218.68	192.80
105.0	434.43	401.35	368.28	335.21	303.03	273.53	242.24	213.64	185.93
120.0	422.19	390.95	354.35	320.43	285.62	252.60	222.25	193.69	165.13
135.0	410.61	372.95	336.20	269.85	260.89	225.03	193.65	163.17	136.27
150.0	397.16	357.71	314.68	272.54	230.41	193.65	157.79	103.10	95.93
165.0	394.37	350.96	309.35	260.50	214.37	167.34	125.73	85.03	56.08
180.0	373.85	328.13	281.51	233.99	181.10	132.69	84.27	40.34	9.86
195.0	386.32	338.59	295.37	250.34	201.71	155.79	112.56	74.74	45.93
210.0	400.13	359.67	317.41	274.25	234.68	196.02	158.25	126.78	98.01
225.0	416.60	378.89	342.98	305.27	269.35	235.24	202.02	170.59	143.66
240.0	432.76	398.64	364.53	330.41	298.08	290.00	233.44	204.71	177.77
255.0	445.33	413.91	381.58	347.47	316.04	285.51	254.99	227.15	199.32
270.0	448.96	416.83	386.48	353.46	320.43	290.09	259.74	232.07	205.29
285.0	446.94	415.66	381.69	351.30	317.33	286.04	257.44	227.94	201.12
300.0	438.25	403.44	371.31	337.39	303.47	271.34	239.21	209.75	182.98
315.0	424.05	387.30	352.33	313.78	278.82	242.96	211.58	180.20	151.51
330.0	401.64	363.99	324.54	283.30	242.96	204.41	168.55	136.27	108.48
345.0	392.56	348.24	302.11	255.08	209.85	167.34	123.02	86.83	56.08
360.0	410.61	364.88	319.16	273.44	224.13	171.24	120.13	72.62	32.27

Intensity data(cd)

Appendix Page: 11 Total:12

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	6.28	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
15.0	29.72	16.21	8.10	5.40	3.60	2.70	2.70	2.70	2.70
30.0	70.14	50.35	36.87	25.18	17.98	11.69	8.99	7.19	5.40
45.0	108.64	87.09	69.13	54.77	41.30	31.42	22.45	16.16	12.57
60.0	140.06	116.72	97.87	79.01	63.75	50.28	38.61	28.73	20.65
75.0	159.82	136.47	115.82	96.07	79.01	62.85	48.48	38.61	27.83
90.0	166.02	142.81	120.50	100.86	83.01	67.84	53.55	41.95	30.35
105.0	160.01	136.76	117.10	96.54	79.56	63.47	50.06	38.44	28.60
120.0	141.03	119.60	99.08	81.22	65.16	51.77	40.17	29.45	21.42
135.0	111.17	90.55	72.62	57.38	43.93	34.07	24.21	17.03	13.45
150.0	73.51	54.69	40.34	28.69	21.52	13.45	9.86	7.17	5.38
165.0	32.56	19.90	10.85	6.33	3.62	2.71	2.71	2.71	2.71
180.0	2.69	1.79	1.79	1.79	1.79	1.79	0.90	0.90	0.90
195.0	27.02	16.21	9.91	7.20	5.40	5.40	4.50	3.60	3.60
210.0	73.73	54.85	40.46	29.67	27.87	16.19	12.59	9.89	8.09
225.0	137.37	96.97	79.01	61.95	48.48	37.71	28.73	21.55	16.16
240.0	152.63	129.29	108.64	89.78	72.73	58.36	44.89	34.12	26.04
255.0	174.18	149.94	127.49	107.74	87.99	72.73	57.46	43.99	33.22
270.0	181.19	155.31	134.78	113.36	94.61	76.76	61.59	48.20	36.60
285.0	176.10	151.96	128.72	109.05	91.18	73.30	59.00	45.59	33.97
300.0	158.88	134.78	113.36	92.83	75.87	60.69	47.31	36.60	26.78
315.0	127.31	104.00	84.27	67.24	53.79	41.24	31.38	23.31	17.93
330.0	83.38	63.65	48.41	35.86	26.00	19.72	15.24	11.65	8.97
345.0	35.28	21.71	13.57	9.95	7.24	6.33	5.43	4.52	3.62
360.0	6.28	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.90	0.90	1.79	2.69	2.69	3.59	3.59	3.59	3.59
15.0	1.80	2.70	2.70	2.70	2.70	3.60	3.60	3.60	3.60
30.0	4.50	3.60	4.50	4.50	4.50	3.60	3.60	3.60	3.60
45.0	8.98	7.18	6.28	5.39	5.39	4.49	4.49	3.59	3.59
60.0	15.26	10.77	8.08	7.18	6.28	5.39	5.39	3.59	3.59
75.0	19.75	14.37	10.77	8.08	7.18	6.28	5.39	4.49	3.59
90.0	22.31	16.07	11.60	8.93	7.14	6.25	5.36	4.46	2.68
105.0	20.56	15.20	10.73	8.04	7.15	6.26	5.36	4.47	2.68
120.0	16.07	11.60	8.93	7.14	7.14	6.25	5.36	3.57	3.57
135.0	9.86	7.17	6.28	6.28	6.28	5.38	4.48	3.59	3.59
150.0	4.48	4.48	4.48	4.48	4.48	4.48	3.59	3.59	3.59
165.0	2.71	2.71	2.71	2.71	3.62	3.62	3.62	3.62	3.62
180.0	0.90	0.90	0.90	1.79	1.79	1.79	2.69	2.69	2.69
195.0	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	3.60
210.0	7.19	6.29	5.40	4.50	4.50	3.60	3.60	3.60	2.70
225.0	12.57	9.88	8.08	7.18	6.28	5.39	4.49	3.59	3.59
240.0	19.75	14.37	11.67	8.98	7.18	6.28	5.39	4.49	3.59
255.0	25.14	18.85	14.37	10.77	8.08	7.18	5.39	4.49	3.59
270.0	27.67	20.53	15.17	11.60	8.93	7.14	5.36	4.46	3.57
285.0	25.03	18.77	14.30	10.73	8.04	7.15	5.36	4.47	2.68
300.0	20.53	15.17	11.60	8.93	8.03	6.25	4.46	3.57	3.57
315.0	13.45	10.76	8.97	7.17	6.28	4.48	3.59	3.59	2.69
330.0	8.07	6.28	5.38	5.38	4.48	3.59	3.59	3.59	2.69
345.0	3.62	3.62	2.71	2.71	2.71	2.71	2.71	2.71	2.71
360.0	0.90	0.90	1.79	2.69	2.69	3.59	3.59	3.59	3.59

Intensity data(cd)

C/ γ (°)	180.0
0.0	3.59
15.0	3.60
30.0	3.60
45.0	3.59
60.0	3.59
75.0	3.59
90.0	3.57
105.0	3.58
120.0	3.57
135.0	3.59
150.0	3.59
165.0	3.62
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	3.59