
AFX

Client:

LumCAT: ELZV3602LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.960

LampCAT:

Current(A): 0.166

Lamp flux(lm): 1890.7

Power (W): 19.530

Number of Lamps: 1

PF: 0.982

Length(mm): 900

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1890.69, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 96.81

Central intensity(cd): 404.629, Maximum intensity(cd): 530.392

Angle of maximum intensity: C=90.0 γ =40.0

Beam Angle(50%Imax): [C0/180]Total=108.4

[C90/270]Total=128.1

Field angle(10%Imax): [C0/180]Total=158.4

[C90/270]Total=236.4

Maximum s/h(1/2): C0_180=1.23 C90_270=1.90

Maximum s/h(1/4): C0_180=1.35 C90_270=1.98

Up flux rate of lamp(%): 19.65%

Down flux rate of lamp(%): 80.35%

Up flux rate of LUM(%): 19.65%

Down flux rate of LUM(%): 80.35%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 52.063%

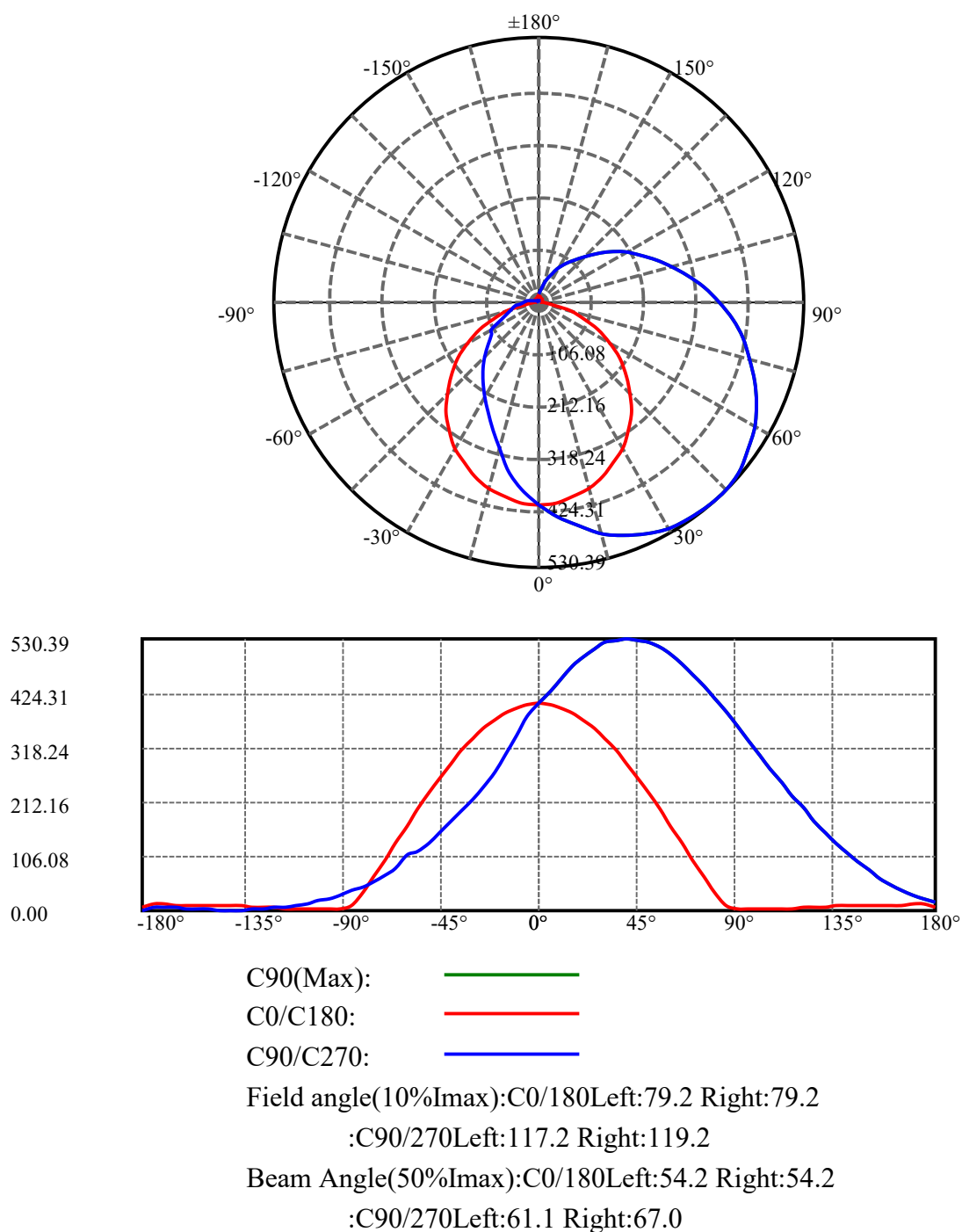
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	404.629	0.000	0	0.00%	0.00%
5.0	401.607	9.638	9.638	0.51%	0.51%
10.0	396.337	28.545	38.183	1.51%	2.02%
15.0	387.335	46.487	84.67	2.46%	4.48%
20.0	377.302	63.017	147.687	3.33%	7.81%
25.0	363.268	77.672	225.359	4.11%	11.92%
30.0	349.208	90.165	315.524	4.77%	16.69%
35.0	333.504	100.534	416.058	5.32%	22.01%
40.0	316.876	108.511	524.569	5.74%	27.74%
45.0	297.397	113.738	638.306	6.02%	33.76%
50.0	277.663	116.199	754.506	6.15%	39.91%
55.0	256.469	116.138	870.643	6.14%	46.05%
60.0	235.432	113.701	984.345	6.01%	52.06%
65.0	212.881	108.986	1093.33	5.76%	57.83%
70.0	190.935	102.249	1195.579	5.41%	63.23%
75.0	169.652	94.252	1289.831	4.99%	68.22%
80.0	149.943	85.515	1375.346	4.52%	72.74%
85.0	131.069	76.358	1451.703	4.04%	76.78%
90.0	115.161	67.420	1519.123	3.57%	80.35%
95.0	101.968	59.452	1578.575	3.14%	83.49%
100.0	90.902	52.408	1630.982	2.77%	86.26%
105.0	80.805	45.944	1676.926	2.43%	88.69%
110.0	71.986	39.937	1716.863	2.11%	90.81%
115.0	63.686	34.353	1751.216	1.82%	92.62%
120.0	56.585	29.238	1780.454	1.55%	94.17%
125.0	49.712	24.570	1805.024	1.30%	95.47%
130.0	43.547	20.278	1825.302	1.07%	96.54%
135.0	38.094	16.497	1841.799	0.87%	97.41%
140.0	33.395	13.237	1855.036	0.70%	98.11%
145.0	29.481	10.490	1865.526	0.55%	98.67%
150.0	25.984	8.168	1873.693	0.43%	99.10%
155.0	22.791	6.173	1879.866	0.33%	99.43%
160.0	19.824	4.470	1884.335	0.24%	99.66%
165.0	17.305	3.060	1887.395	0.16%	99.83%
170.0	15.606	1.952	1889.348	0.10%	99.93%
175.0	14.659	1.083	1890.43	0.06%	99.99%
180.0	7.441	0.264	1890.695	0.01%	100.00%

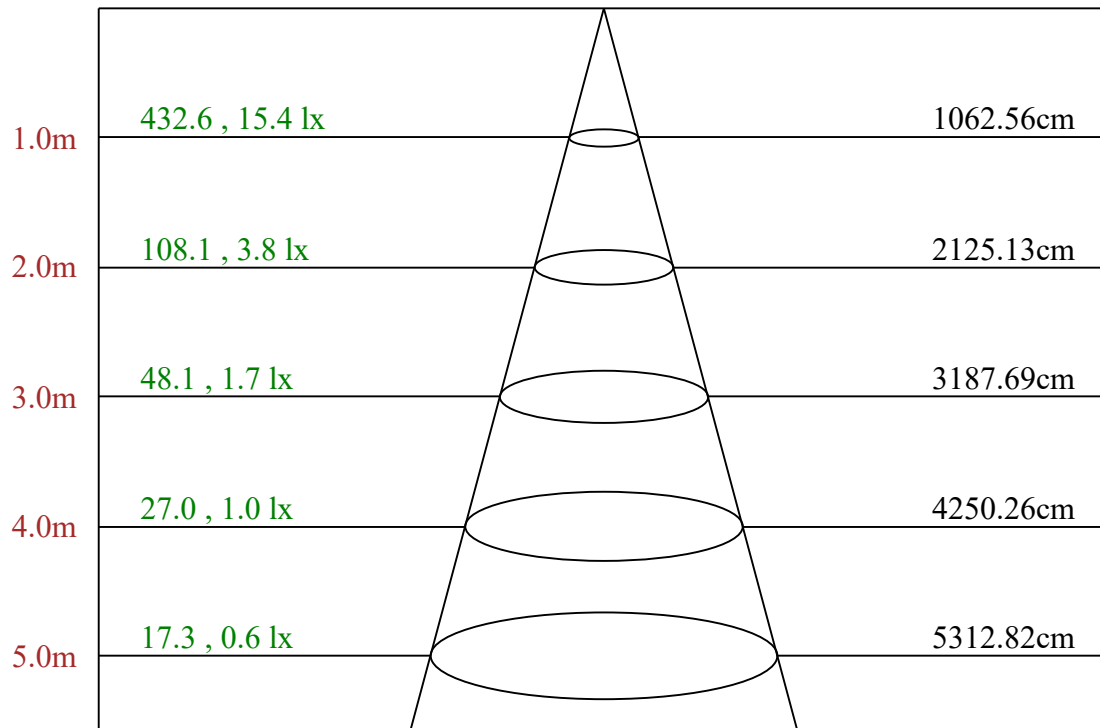
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	315.52	16.69%	16.69%
0-40	524.57	27.74%	27.74%
0-60	984.34	52.06%	52.06%
0-90	1519.12	80.35%	80.35%
0-120	1780.45	94.17%	94.17%
0-180	1890.69	100.00%	100.00%
60-90	534.78	28.28%	28.28%
90-120	261.33	13.82%	13.82%
90-130	306.18	16.19%	16.19%
90-150	354.57	18.75%	18.75%
90-180	371.31	19.64%	19.64%
0-89.51	1512.56	80.00%	80.00%

ZONAL LUMEN SUMMARY

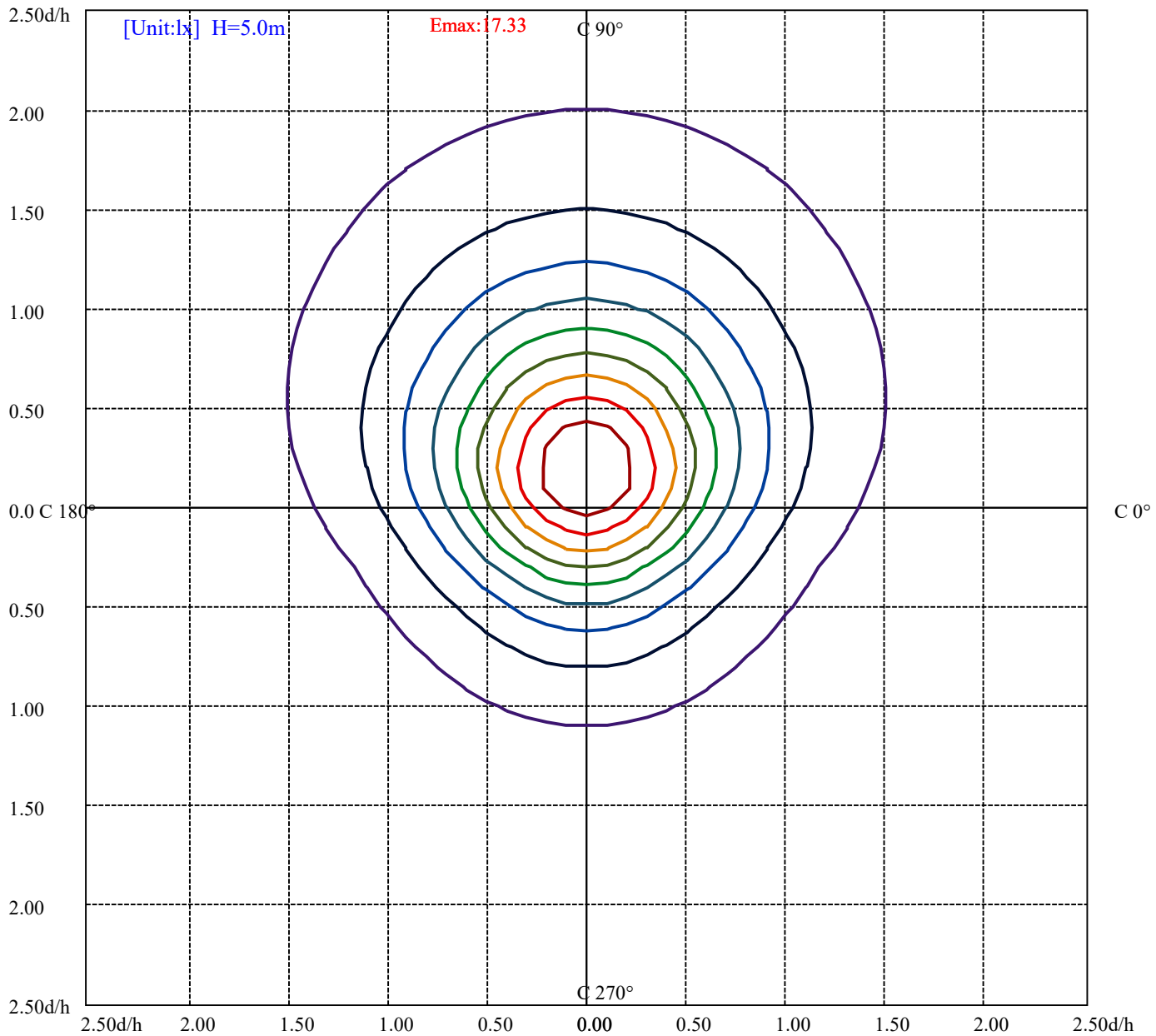
0-10	38.18
10-20	109.50
20-30	167.84
30-40	209.05
40-50	229.94
50-60	229.84
60-70	211.23
70-80	179.77
80-90	143.78
90-100	111.86
100-110	85.88
110-120	63.59
120-130	44.85
130-140	29.73
140-150	18.66
150-160	10.64
160-170	5.01
170-180	1.08



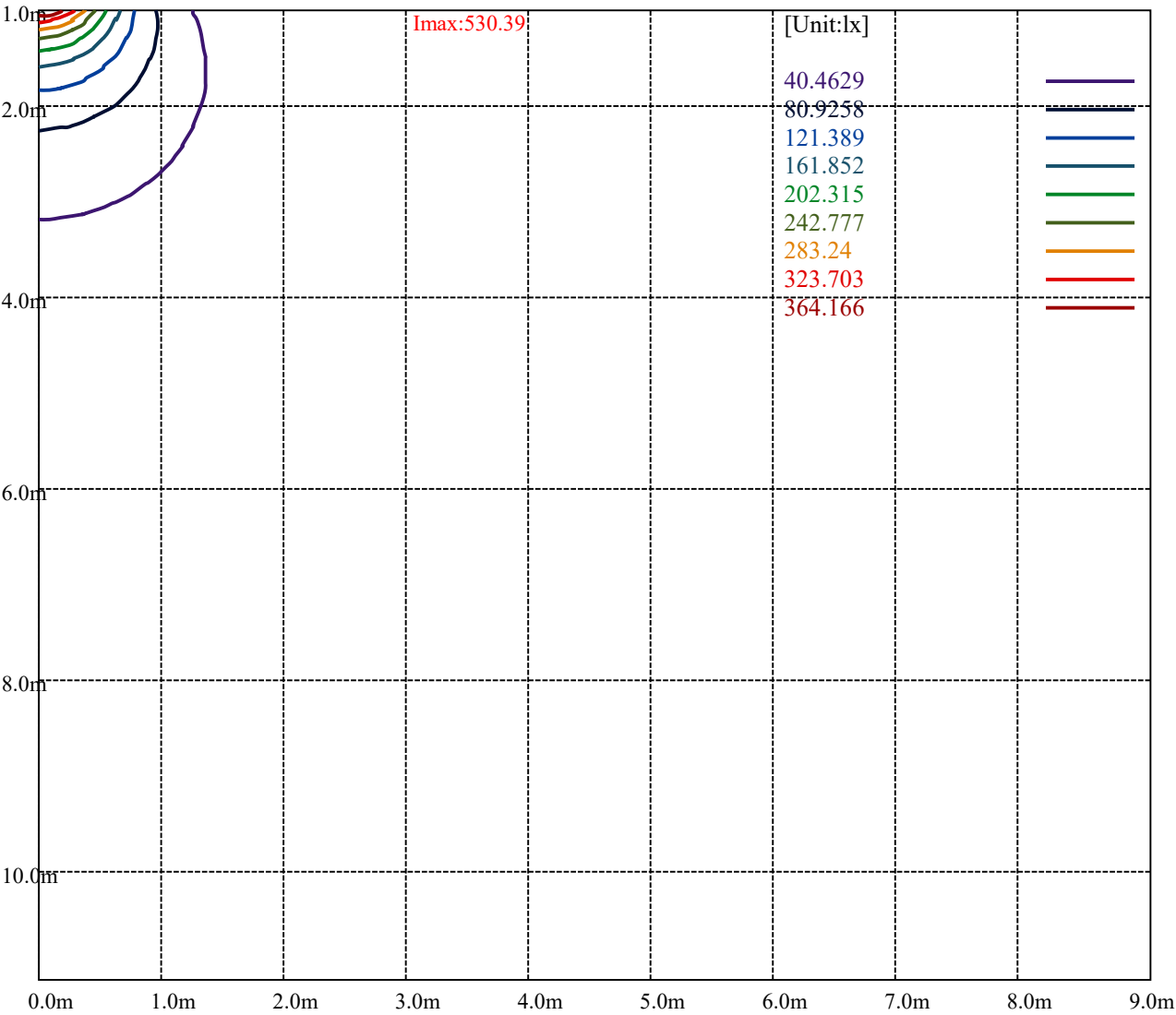


Max , Ave

Beam angle of C90 plane 158.68



(10%Emax) 1.732516	—
(20%Emax) 3.465032	—
(30%Emax) 5.19756	—
(40%Emax) 6.93008	—
(50%Emax) 8.662601	—
(60%Emax) 10.39512	—
(70%Emax) 12.1276	—
(80%Emax) 13.86012	—
(90%Emax) 15.59264	—



Luminance Table

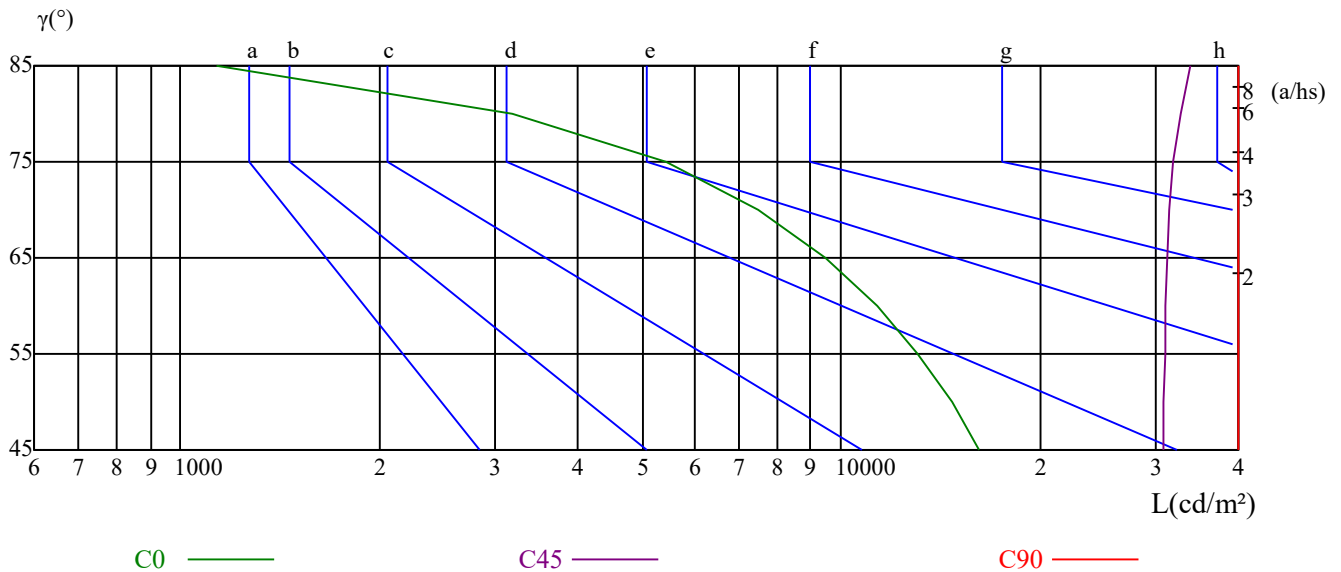
γ	45	50	55	60	65	70	75	80	85
C0	16235	14747	13035	11365	9507	7518	5425	3186	1130
C45	30745	30902	30945	31027	31143	31451	31897	32615	33877
C90	54763	59494	65226	72589	82532	96912	120210	166762	294147

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
23100	49517	37775	18922	70813	50609	9740	182017	119868

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	1.14	1.14	1.14	1.09	1.09	1.09	1.00	1.00	1.00	0.92	0.92	0.92	0.84	0.84	0.84	0.80
1	0.95	0.90	0.85	0.91	0.86	0.82	0.83	0.79	0.75	0.76	0.73	0.70	0.69	0.66	0.64	0.61
2	0.81	0.73	0.67	0.78	0.71	0.64	0.71	0.65	0.60	0.65	0.60	0.56	0.59	0.55	0.52	0.48
3	0.70	0.61	0.54	0.67	0.59	0.53	0.62	0.55	0.49	0.56	0.50	0.46	0.51	0.46	0.43	0.39
4	0.62	0.52	0.45	0.59	0.51	0.44	0.54	0.47	0.41	0.49	0.43	0.38	0.45	0.40	0.36	0.33
5	0.55	0.45	0.38	0.53	0.44	0.37	0.48	0.41	0.35	0.44	0.38	0.33	0.40	0.35	0.31	0.28
6	0.49	0.40	0.33	0.47	0.38	0.32	0.43	0.36	0.30	0.40	0.33	0.29	0.36	0.31	0.27	0.24
7	0.44	0.35	0.29	0.43	0.34	0.28	0.39	0.32	0.27	0.36	0.30	0.25	0.33	0.28	0.24	0.21
8	0.40	0.32	0.26	0.39	0.31	0.25	0.36	0.29	0.24	0.33	0.27	0.22	0.30	0.25	0.21	0.19
9	0.37	0.28	0.23	0.35	0.28	0.22	0.33	0.26	0.21	0.30	0.24	0.20	0.28	0.23	0.19	0.17
10	0.34	0.26	0.20	0.33	0.25	0.20	0.30	0.24	0.19	0.28	0.22	0.18	0.26	0.21	0.17	0.15

Intensity data(cd)

Appendix Page: 10 Total:12

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	404.63	401.98	396.70	387.00	372.89	357.03	336.75	314.71	289.15
15.0	404.63	408.19	409.08	404.63	397.51	386.84	372.61	354.83	335.26
30.0	404.63	415.35	421.60	425.17	425.17	421.60	416.24	406.42	391.23
45.0	404.63	419.95	434.37	446.08	453.29	456.90	456.00	451.49	441.58
60.0	404.63	425.50	444.55	461.79	475.39	484.47	489.00	489.91	486.28
75.0	404.63	427.36	451.00	471.92	489.19	501.01	510.11	515.56	515.56
90.0	404.63	429.23	452.93	477.54	494.85	510.34	522.19	526.75	530.39
105.0	404.63	428.16	452.61	475.24	494.24	507.82	517.78	522.31	525.93
120.0	404.63	427.16	448.79	466.81	483.03	492.94	500.15	502.86	501.96
135.0	404.63	408.96	425.42	439.29	449.68	454.88	456.62	454.88	449.68
150.0	404.63	418.18	429.92	437.14	442.56	441.66	438.95	430.82	419.98
165.0	404.63	411.82	416.32	416.32	413.62	406.43	396.54	383.05	363.27
180.0	404.63	401.98	394.93	384.35	370.25	354.38	333.22	310.30	284.74
195.0	404.63	394.85	384.18	366.39	348.60	325.48	297.91	270.35	239.22
210.0	404.63	390.34	372.47	349.25	323.35	292.98	262.61	227.77	199.19
225.0	404.63	383.90	359.57	331.63	299.19	264.95	235.21	209.07	182.94
240.0	404.63	381.95	352.01	316.63	280.34	250.40	225.00	199.59	176.00
255.0	404.63	378.26	345.53	308.25	271.87	244.60	218.23	195.49	171.85
270.0	404.63	377.29	341.75	303.47	271.58	241.50	217.81	195.02	173.15
285.0	404.63	378.38	342.17	305.96	270.66	243.50	217.25	192.81	187.38
300.0	404.63	380.30	348.76	311.81	302.80	245.12	218.99	193.75	171.22
315.0	404.63	369.97	343.11	311.92	277.26	245.20	218.34	193.22	168.09
330.0	404.63	387.47	366.70	340.50	311.60	279.09	242.96	213.15	185.15
345.0	404.63	392.04	377.65	356.97	336.29	309.32	280.54	249.97	215.80
360.0	404.63	401.98	396.70	387.00	372.89	357.03	336.75	314.71	289.15
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	260.06	232.73	199.23	168.38	134.88	102.26	68.76	37.91	12.34
15.0	313.92	288.13	261.45	232.11	200.98	168.08	136.95	104.05	73.81
30.0	374.26	353.72	332.28	306.37	277.79	249.21	219.73	192.04	163.46
45.0	429.86	416.34	397.42	375.79	352.36	328.03	300.99	273.96	247.82
60.0	479.93	469.04	455.43	436.38	416.42	393.74	371.06	342.94	317.53
75.0	511.92	504.65	492.83	478.28	460.10	439.18	416.45	390.99	365.53
90.0	528.57	523.10	513.08	499.41	482.09	461.13	437.44	415.57	390.05
105.0	522.31	515.97	505.11	489.72	472.52	454.42	428.16	403.72	376.57
120.0	496.55	487.54	474.02	458.70	437.97	416.34	392.91	366.78	338.84
135.0	438.42	426.29	409.83	390.77	368.24	344.84	320.58	294.59	268.60
150.0	404.63	385.66	364.89	342.31	315.21	287.21	258.31	231.22	200.51
165.0	345.28	322.80	295.83	267.95	239.18	205.91	175.34	142.97	111.50
180.0	256.53	226.56	194.82	162.20	128.71	94.33	63.47	33.50	10.58
195.0	208.98	173.41	140.51	109.38	80.04	53.36	31.13	16.01	7.11
210.0	170.61	143.81	117.01	92.00	71.46	50.91	35.73	24.12	16.08
225.0	157.71	135.18	110.84	91.92	73.90	57.68	44.16	33.34	24.33
240.0	153.32	131.55	112.50	94.35	78.02	64.41	50.81	40.83	31.75
255.0	150.94	132.75	112.75	97.29	81.84	68.20	55.47	53.65	36.37
270.0	152.19	132.14	113.92	110.27	82.93	69.26	57.41	47.39	38.28
285.0	149.36	130.35	112.25	95.95	81.47	66.99	55.22	44.36	36.21
300.0	149.60	128.87	109.94	91.92	75.70	62.18	49.56	39.65	31.54
315.0	144.70	122.17	102.24	83.18	67.58	52.85	41.59	31.19	23.39
330.0	157.16	132.77	108.38	84.90	63.22	47.87	34.32	23.48	16.26
345.0	180.73	148.36	118.69	90.82	66.54	44.06	26.08	14.39	7.19
360.0	260.06	232.73	199.23	168.38	134.88	102.26	68.76	37.91	12.34

Intensity data(cd)

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1.76	0.88	0.88	0.88	1.76	2.64	3.53	4.41	6.17
15.0	50.69	35.57	28.46	24.01	22.23	20.45	20.45	19.56	18.68
30.0	139.34	117.91	100.93	86.64	75.92	66.10	58.95	52.70	47.34
45.0	222.59	199.16	175.73	156.81	138.78	121.66	107.24	94.62	82.01
60.0	291.22	264.91	240.42	215.92	195.06	173.28	153.32	134.27	117.03
75.0	337.34	310.97	282.79	258.24	231.87	207.32	183.67	162.76	141.85
90.0	359.97	331.72	303.47	275.22	250.61	223.28	199.58	174.97	152.19
105.0	349.41	319.54	295.10	267.94	241.69	215.44	191.90	169.27	146.64
120.0	313.61	284.77	258.64	233.41	209.07	186.54	164.92	145.09	126.16
135.0	242.60	217.48	194.95	175.02	154.23	136.03	120.44	104.84	91.84
150.0	175.22	150.83	130.96	113.80	99.35	86.71	75.87	66.84	58.71
165.0	85.42	65.64	52.15	44.06	37.77	33.27	31.47	28.77	26.98
180.0	2.64	2.64	3.53	4.41	5.29	6.17	7.05	7.93	8.82
195.0	2.67	2.67	1.78	1.78	1.78	1.78	2.67	2.67	2.67
210.0	8.93	5.36	4.47	3.57	2.68	1.79	0.89	0.89	1.79
225.0	16.22	11.72	8.11	6.31	4.51	3.60	3.60	0.90	0.90
240.0	23.59	18.14	16.33	9.98	7.26	5.44	4.54	2.72	0.91
255.0	28.19	21.82	16.37	12.73	9.09	7.27	5.46	3.64	1.82
270.0	30.07	23.69	18.23	13.67	10.02	8.20	5.47	4.56	2.73
285.0	28.06	21.73	17.20	12.67	9.96	7.24	5.43	3.62	2.72
300.0	23.43	18.02	13.52	9.91	8.11	6.31	4.51	2.70	1.80
315.0	17.33	12.13	9.53	6.93	5.20	4.33	3.47	1.73	0.87
330.0	9.94	7.23	5.42	3.61	3.61	1.81	1.81	0.90	1.81
345.0	3.60	2.70	2.70	1.80	1.80	1.80	1.80	2.70	2.70
360.0	1.76	0.88	0.88	0.88	1.76	2.64	3.53	4.41	6.17
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	7.05	7.93	9.70	10.58	10.58	10.58	10.58	11.46	11.46
15.0	18.68	18.68	18.68	18.68	17.79	16.01	14.23	14.23	13.34
30.0	42.87	38.41	35.73	32.16	28.58	23.22	18.76	16.97	15.18
45.0	72.09	63.08	54.97	47.76	41.45	34.24	26.13	18.92	16.22
60.0	100.70	87.10	74.39	62.60	51.71	43.55	34.48	25.40	17.24
75.0	121.84	103.66	88.20	73.65	60.92	49.10	39.10	30.01	22.73
90.0	131.23	112.09	94.78	77.46	63.79	51.03	40.10	30.99	22.78
105.0	126.73	107.72	90.52	75.13	61.55	49.79	38.92	29.87	22.63
120.0	109.04	92.82	78.40	65.79	54.97	44.16	36.05	27.94	21.63
135.0	79.71	68.45	58.92	50.25	42.46	35.52	29.46	24.26	19.06
150.0	52.39	46.06	41.55	37.03	32.51	28.90	25.29	21.68	18.97
165.0	26.08	24.28	23.38	22.48	20.68	19.78	18.88	17.98	17.08
180.0	9.70	10.58	11.46	11.46	10.58	10.58	11.46	12.34	13.22
195.0	3.56	3.56	4.45	5.34	7.11	7.11	8.89	10.67	12.45
210.0	1.79	2.68	3.57	4.47	5.36	6.25	7.15	9.83	11.61
225.0	0.90	1.80	2.70	3.60	4.51	6.31	7.21	9.01	10.81
240.0	0.91	0.91	1.81	2.72	4.54	5.44	6.35	9.07	9.98
255.0	0.91	0.91	0.91	2.73	3.64	5.46	6.36	8.18	8.18
270.0	0.91	0.91	0.91	2.73	3.65	4.56	6.38	5.47	6.38
285.0	0.91	0.91	0.91	2.72	3.62	4.53	5.43	5.43	10.86
300.0	0.90	0.90	1.80	2.70	3.60	4.51	4.51	7.21	11.72
315.0	0.87	1.73	2.60	3.47	3.47	4.33	5.20	7.80	12.13
330.0	1.81	2.71	3.61	3.61	4.52	4.52	6.32	9.03	12.64
345.0	2.70	3.60	3.60	4.50	5.40	6.29	8.09	10.79	13.49
360.0	7.05	7.93	9.70	10.58	10.58	10.58	10.58	11.46	11.46

Intensity data(cd)

C/ γ (°)	180.0
0.0	13.22
15.0	13.34
30.0	13.40
45.0	13.52
60.0	12.70
75.0	13.64
90.0	17.32
105.0	17.20
120.0	17.12
135.0	15.60
150.0	16.26
165.0	15.29
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	13.22