
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): 1896.5

Power (W): 19.590

Number of Lamps: 1

PF: 0.982

Length(mm): 900

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1896.51, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 96.81

Central intensity(cd): 405.975, Maximum intensity(cd): 531.591

Angle of maximum intensity: C=90.0 γ =40.0

Beam Angle(50%Imax): [C0/180]Total=108.6

[C90/270]Total=128.1

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

[C90/270]Total=236.2

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(%): 19.64%

Down flux rate of lamp(%): 80.36%

Up flux rate of LUM(%): 19.64%

Down flux rate of LUM(%): 80.36%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 52.072%

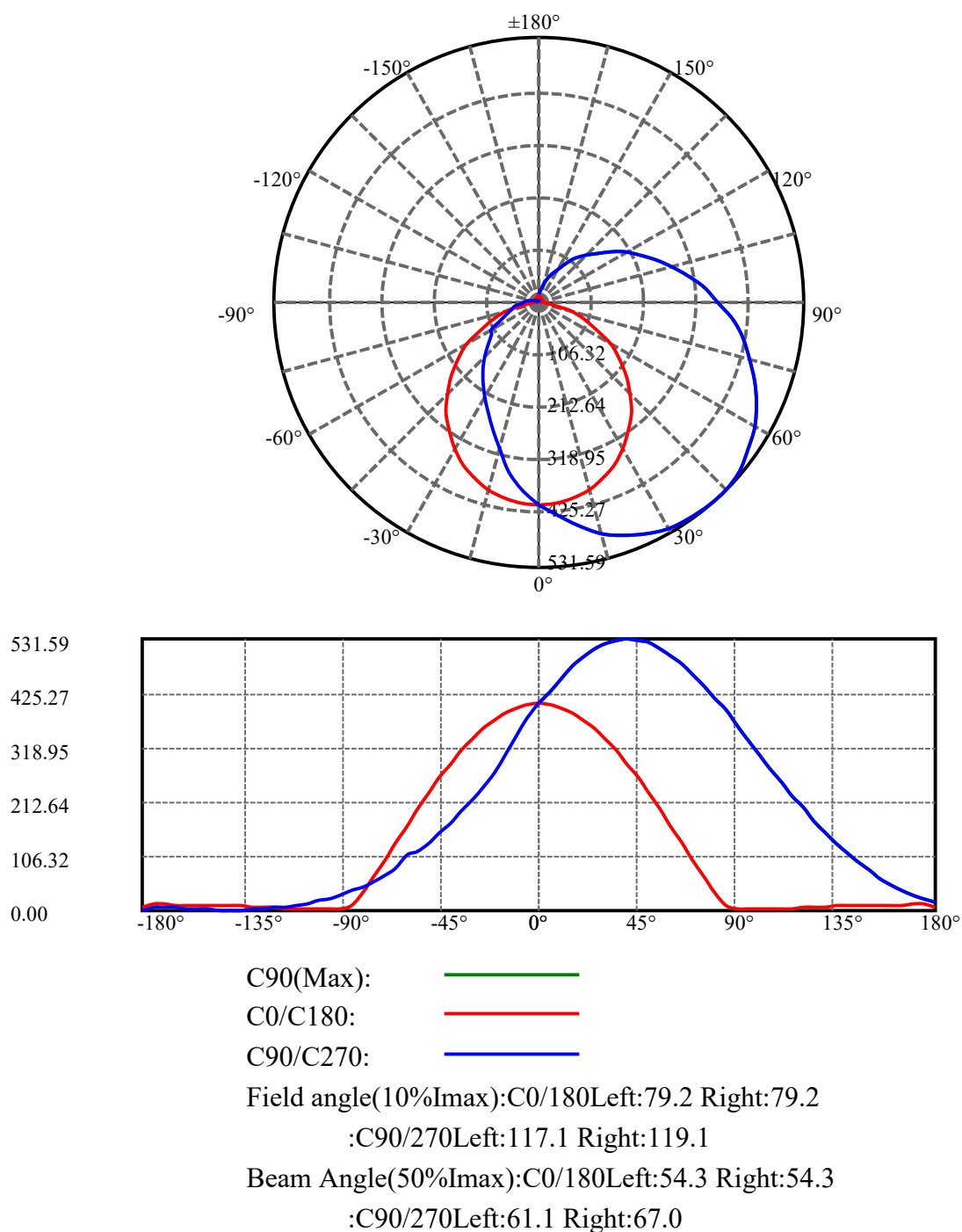
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	405.975	0.000	0	0.00%	0.00%
5.0	402.805	9.669	9.669	0.51%	0.51%
10.0	397.536	28.631	38.299	1.51%	2.02%
15.0	388.719	46.640	84.94	2.46%	4.48%
20.0	378.459	63.226	148.166	3.33%	7.81%
25.0	364.462	77.919	226.085	4.11%	11.92%
30.0	350.250	90.447	316.532	4.77%	16.69%
35.0	334.545	100.841	417.373	5.32%	22.01%
40.0	317.913	108.858	526.23	5.74%	27.75%
45.0	298.396	114.115	640.345	6.02%	33.76%
50.0	278.582	116.587	756.932	6.15%	39.91%
55.0	257.387	116.538	873.47	6.14%	46.06%
60.0	236.121	114.073	987.543	6.01%	52.07%
65.0	213.458	109.293	1096.836	5.76%	57.83%
70.0	191.547	102.550	1199.386	5.41%	63.24%
75.0	170.263	94.571	1293.957	4.99%	68.23%
80.0	150.399	85.800	1379.757	4.52%	72.75%
85.0	131.490	76.596	1456.353	4.04%	76.79%
90.0	115.432	67.609	1523.963	3.56%	80.36%
95.0	102.243	59.601	1583.564	3.14%	83.50%
100.0	91.141	52.547	1636.11	2.77%	86.27%
105.0	81.010	46.063	1682.173	2.43%	88.70%
110.0	72.116	40.025	1722.198	2.11%	90.81%
115.0	64.006	34.467	1756.665	1.82%	92.63%
120.0	56.796	29.367	1786.032	1.55%	94.17%
125.0	49.737	24.625	1810.657	1.30%	95.47%
130.0	43.649	20.305	1830.962	1.07%	96.54%
135.0	38.161	16.531	1847.493	0.87%	97.42%
140.0	33.501	13.269	1860.761	0.70%	98.12%
145.0	29.551	10.520	1871.281	0.55%	98.67%
150.0	26.017	8.183	1879.464	0.43%	99.10%
155.0	22.863	6.186	1885.65	0.33%	99.43%
160.0	19.896	4.485	1890.134	0.24%	99.66%
165.0	17.341	3.069	1893.203	0.16%	99.83%
170.0	15.605	1.954	1895.158	0.10%	99.93%
175.0	14.694	1.084	1896.241	0.06%	99.99%
180.0	7.441	0.265	1896.506	0.01%	100.00%

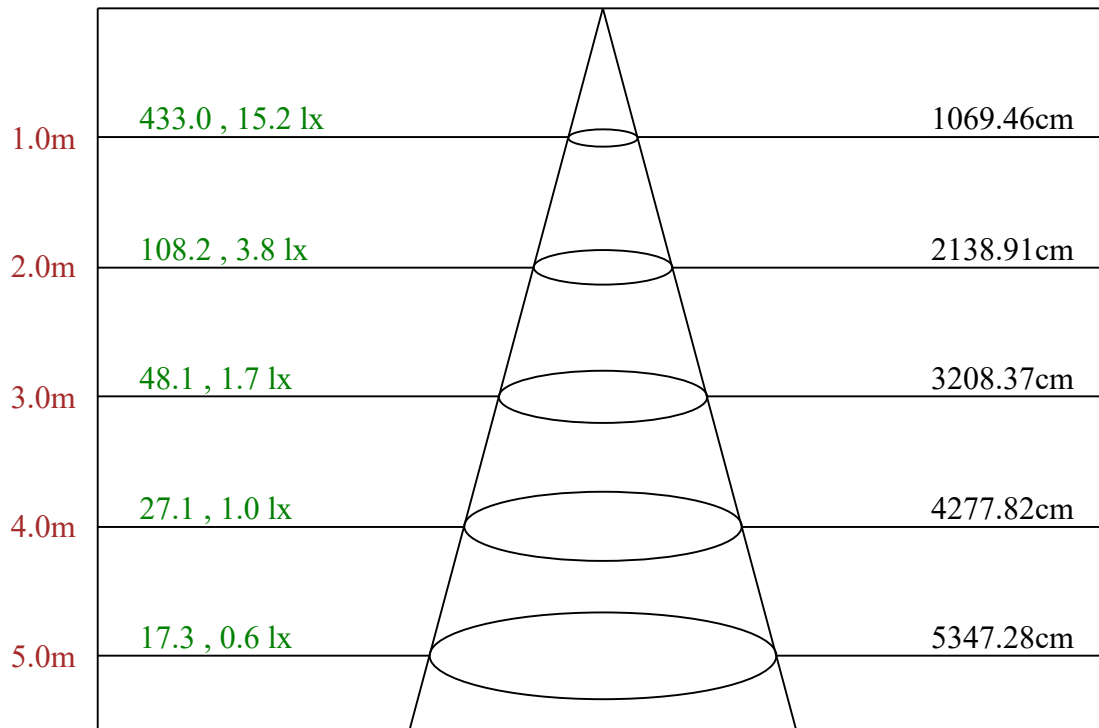
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	316.53	16.69%	16.69%
0-40	526.23	27.75%	27.75%
0-60	987.54	52.07%	52.07%
0-90	1523.96	80.36%	80.36%
0-120	1786.03	94.17%	94.17%
0-180	1896.51	100.00%	100.00%
60-90	536.42	28.28%	28.28%
90-120	262.07	13.82%	13.82%
90-130	307.00	16.19%	16.19%
90-150	355.50	18.75%	18.75%
90-180	372.28	19.63%	19.63%
0-89.50	1517.21	80.00%	80.00%

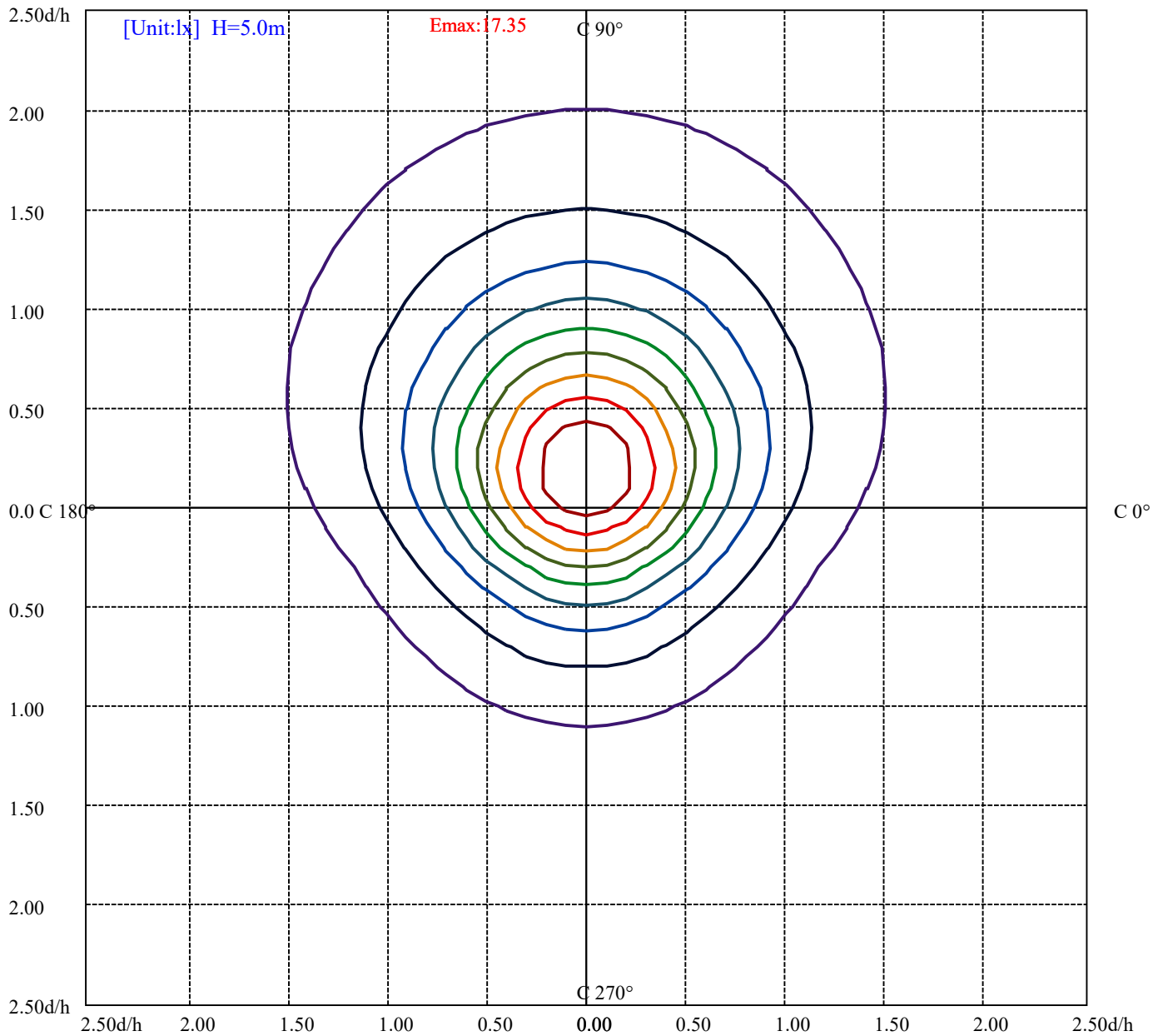
ZONAL LUMEN SUMMARY

0-10	38.30
10-20	109.87
20-30	168.37
30-40	209.70
40-50	230.70
50-60	230.61
60-70	211.84
70-80	180.37
80-90	144.21
90-100	112.15
100-110	86.09
110-120	63.83
120-130	44.93
130-140	29.80
140-150	18.70
150-160	10.67
160-170	5.02
170-180	1.08

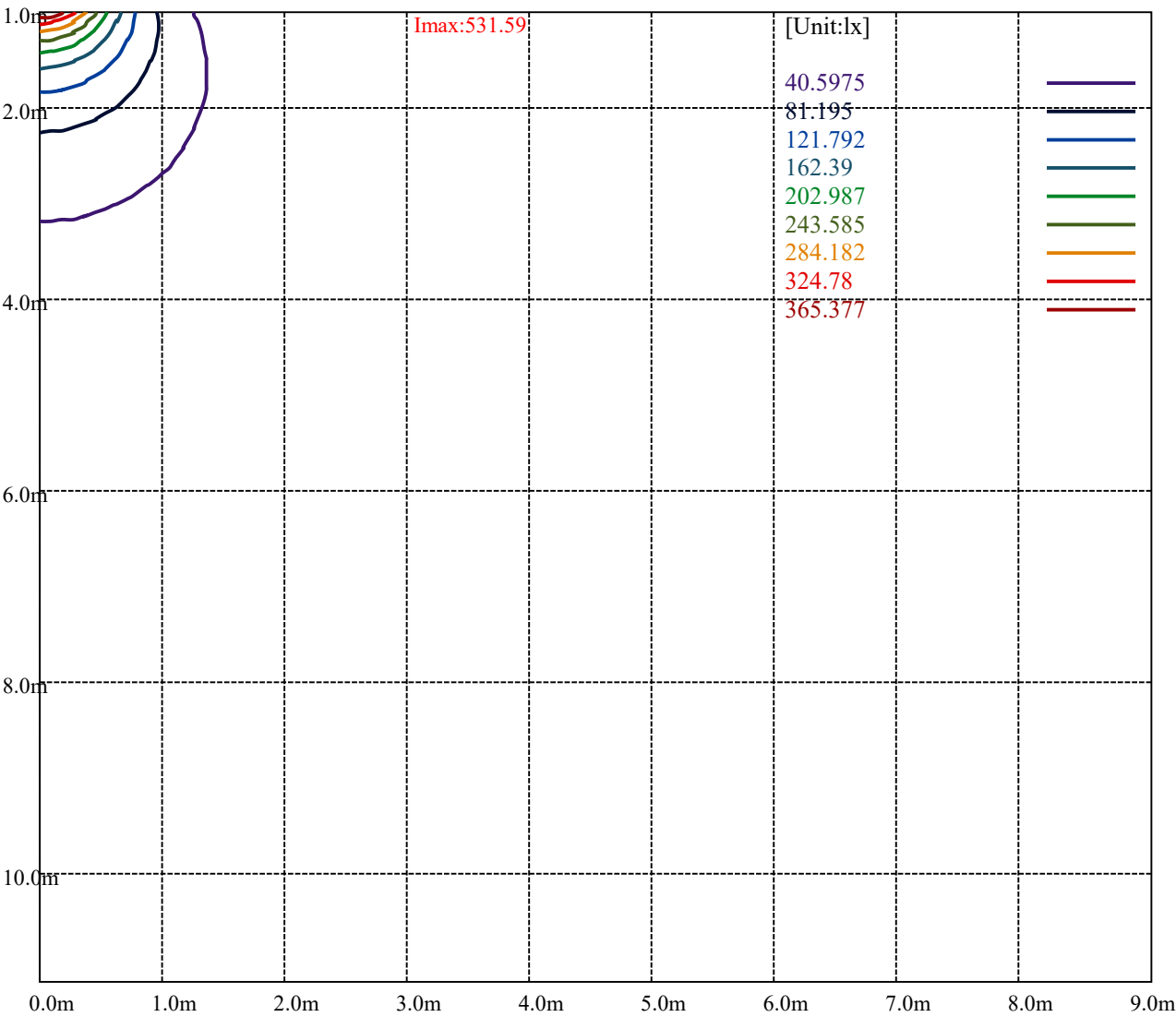




Max , Ave Beam angle of C90 plane 158.81



(10%Emax) 1.73482	—
(20%Emax) 3.469636	—
(30%Emax) 5.20444	—
(40%Emax) 6.93928	—
(50%Emax) 8.67408	—
(60%Emax) 10.40892	—
(70%Emax) 12.14372	—
(80%Emax) 13.87856	—
(90%Emax) 15.61336	—



Luminance Table

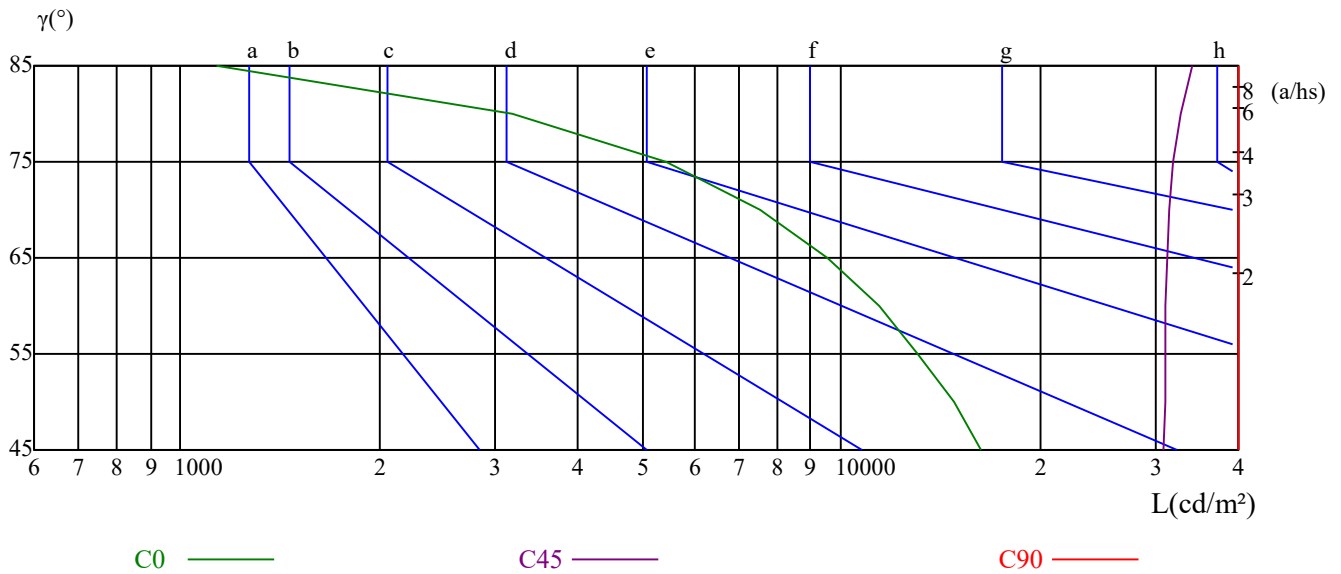
γ	45	50	55	60	65	70	75	80	85
C0	16309	14821	13108	11438	9550	7560	5431	3189	1131
C45	30838	30967	31014	31066	31187	31501	31954	32733	33958
C90	54887	59631	65265	72636	82591	96990	120569	166931	295175

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
23203	49539	37813	18944	70991	50683	9751	182577	120119

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)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	405.97	404.21	398.03	389.21	375.09	358.32	338.02	315.95	290.36
15.0	405.97	409.54	410.43	406.87	398.85	388.17	373.92	357.01	337.42
30.0	405.97	416.71	422.97	427.44	426.54	423.86	417.60	407.76	393.46
45.0	405.97	421.28	435.68	446.48	454.58	458.18	457.28	452.78	442.88
60.0	405.97	427.77	446.84	464.10	476.82	485.90	490.44	492.26	488.62
75.0	405.97	428.68	451.39	473.18	490.44	502.25	511.33	515.87	516.78
90.0	405.97	429.64	453.31	478.80	496.09	511.56	522.49	527.95	531.59
105.0	405.97	430.44	454.91	477.56	495.69	510.19	520.16	524.69	527.40
120.0	405.97	427.58	449.18	468.09	484.29	494.19	501.39	504.09	503.19
135.0	405.97	409.44	425.88	439.73	450.12	456.18	457.91	455.32	450.99
150.0	405.97	419.54	431.29	438.53	443.95	443.95	440.33	432.20	421.35
165.0	405.97	413.16	417.65	417.65	414.96	406.87	396.99	383.52	363.76
180.0	405.97	403.33	397.15	386.56	372.44	356.55	334.49	311.54	285.95
195.0	405.97	397.07	385.50	368.58	349.89	326.74	299.14	271.54	240.38
210.0	405.97	391.67	373.78	350.53	324.60	294.20	263.79	228.03	200.30
225.0	405.97	384.37	360.07	332.16	299.76	265.55	235.84	209.74	183.63
240.0	405.97	383.27	353.30	317.88	281.55	251.58	225.24	200.72	176.19
255.0	405.97	378.73	346.94	308.80	272.47	244.31	218.88	195.27	172.56
270.0	405.97	377.76	342.26	304.03	272.17	242.13	218.46	195.71	172.95
285.0	405.97	380.60	344.35	307.20	271.86	244.67	218.39	193.93	188.49
300.0	405.97	380.77	349.26	313.26	303.36	245.75	219.64	194.44	171.03
315.0	405.97	370.48	343.65	312.49	277.86	245.84	219.00	193.90	168.80
330.0	405.97	388.80	368.00	341.78	312.84	280.29	244.13	214.29	185.36
345.0	405.97	392.50	379.03	358.37	336.82	309.87	281.13	250.59	216.46
360.0	405.97	404.21	398.03	389.21	375.09	358.32	338.02	315.95	290.36
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	261.24	233.88	200.34	169.45	135.91	102.38	68.84	37.95	12.36
15.0	315.16	289.35	262.64	233.26	202.10	169.16	137.11	104.16	73.89
30.0	375.57	355.00	333.54	307.61	279.00	250.38	220.87	193.15	163.64
45.0	431.18	416.78	397.87	376.27	352.87	328.56	301.56	274.55	248.45
60.0	482.27	471.37	457.74	437.76	417.78	395.08	372.37	344.22	318.79
75.0	513.15	505.88	494.07	479.54	461.38	440.49	417.78	392.35	366.92
90.0	529.77	524.31	513.39	499.73	482.44	461.50	438.74	415.99	391.41
105.0	524.69	518.34	507.47	492.06	474.85	456.72	430.44	405.97	378.79
120.0	496.89	488.79	475.29	459.98	439.28	417.68	393.37	367.27	339.36
135.0	439.73	427.62	411.17	391.26	368.75	345.38	321.14	296.04	269.21
150.0	405.97	387.89	367.10	343.59	317.37	288.43	259.50	231.47	201.63
165.0	345.80	323.34	296.40	268.55	239.81	206.58	176.04	143.71	112.27
180.0	257.71	227.70	195.93	163.27	128.85	95.32	63.54	33.54	10.59
195.0	210.11	174.50	141.56	109.51	80.13	53.42	31.16	16.03	7.12
210.0	171.69	143.97	118.04	93.00	71.54	51.86	36.66	25.04	16.10
225.0	157.53	135.02	111.62	91.82	73.81	57.61	44.11	33.31	24.30
240.0	153.49	132.60	112.62	94.46	78.11	64.48	50.86	40.87	31.79
255.0	151.67	132.60	113.53	97.18	81.74	68.12	56.31	53.59	36.33
270.0	152.92	132.90	114.69	110.14	82.83	70.09	57.35	47.33	38.23
285.0	150.43	130.49	113.27	96.06	81.56	67.06	56.18	44.40	36.25
300.0	150.33	128.72	109.82	91.82	75.61	62.11	50.41	39.61	31.51
315.0	144.56	122.92	102.14	83.96	67.52	52.80	41.55	31.16	23.37
330.0	158.23	132.91	108.50	85.90	63.29	47.92	34.36	23.51	16.28
345.0	181.43	149.10	118.56	90.72	66.46	44.01	26.05	14.37	7.19
360.0	261.24	233.88	200.34	169.45	135.91	102.38	68.84	37.95	12.36

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	1.77	0.88	0.88	0.88	1.77	2.65	3.53	4.41	6.18
15.0	50.75	36.50	28.49	24.04	22.26	20.48	20.48	19.59	19.59
30.0	140.39	118.93	101.05	86.74	76.01	67.07	59.02	52.76	47.39
45.0	222.34	198.94	176.43	157.53	138.63	122.42	108.02	94.52	82.82
60.0	292.45	266.11	241.59	217.06	195.27	174.38	153.49	134.42	117.16
75.0	337.86	311.52	283.37	258.84	232.50	207.98	184.37	162.57	141.68
90.0	360.46	332.24	304.03	275.81	251.23	223.01	200.26	175.68	152.92
105.0	350.70	320.79	296.33	269.14	241.95	216.58	193.02	169.46	146.80
120.0	314.16	285.35	259.25	234.04	209.74	187.23	165.63	144.93	126.02
135.0	243.24	217.27	195.63	174.85	154.95	136.77	120.32	104.74	91.76
150.0	176.31	151.90	131.11	113.93	99.46	87.71	76.85	66.91	58.77
165.0	85.33	65.57	52.09	44.01	37.72	34.13	31.44	28.74	26.95
180.0	2.65	2.65	3.53	4.41	5.30	6.18	7.06	7.94	8.83
195.0	2.67	2.67	1.78	1.78	1.78	1.78	2.67	2.67	2.67
210.0	8.94	5.37	4.47	3.58	2.68	1.79	0.89	0.89	1.79
225.0	16.20	11.70	8.10	6.30	4.50	3.60	3.60	0.90	0.90
240.0	23.61	18.16	16.35	9.99	7.27	5.45	4.54	2.72	0.91
255.0	28.15	21.80	16.35	12.72	9.08	7.27	5.45	3.63	1.82
270.0	30.04	23.67	18.21	13.65	10.01	8.19	5.46	4.55	2.73
285.0	28.09	21.75	17.22	12.69	9.97	7.25	5.44	3.62	2.72
300.0	23.40	18.00	13.50	9.90	8.10	6.30	4.50	2.70	1.80
315.0	17.31	12.12	9.52	6.92	5.19	4.33	3.46	1.73	0.87
330.0	9.95	7.23	5.43	3.62	3.62	1.81	1.81	0.90	1.81
345.0	3.59	2.69	2.69	1.80	1.80	1.80	1.80	2.69	2.69
360.0	1.77	0.88	0.88	0.88	1.77	2.65	3.53	4.41	6.18
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	7.06	7.94	9.71	10.59	10.59	10.59	10.59	11.47	11.47
15.0	18.70	18.70	18.70	18.70	17.81	16.03	14.24	14.24	13.35
30.0	42.92	38.45	35.77	32.19	28.61	23.25	18.78	16.99	15.20
45.0	72.91	63.01	54.91	47.71	41.41	35.11	26.10	18.90	16.20
60.0	100.81	87.19	74.47	62.67	51.77	43.59	34.51	25.43	17.26
75.0	121.70	104.45	88.10	73.57	60.85	49.04	39.05	29.97	22.71
90.0	131.99	112.87	95.58	78.28	63.72	50.97	40.05	30.95	22.76
105.0	126.87	107.84	90.62	75.21	62.53	49.84	38.97	29.90	22.65
120.0	108.92	92.72	79.21	65.71	54.91	45.01	36.01	27.91	21.60
135.0	79.64	68.38	58.86	50.21	42.42	35.49	29.43	24.24	19.91
150.0	52.44	47.02	41.59	37.07	32.55	28.93	25.32	21.70	18.99
165.0	26.05	24.25	23.35	22.45	21.56	19.76	18.86	17.96	17.07
180.0	9.71	10.59	11.47	11.47	10.59	10.59	11.47	12.36	13.24
195.0	3.56	3.56	4.45	5.34	7.12	7.12	8.90	10.68	12.46
210.0	1.79	2.68	3.58	4.47	5.37	6.26	7.15	9.84	11.62
225.0	0.90	1.80	2.70	3.60	4.50	6.30	7.20	9.00	10.80
240.0	0.91	0.91	1.82	2.72	4.54	5.45	6.36	9.08	9.99
255.0	0.91	0.91	0.91	2.72	3.63	5.45	6.36	8.17	8.17
270.0	0.91	0.91	0.91	2.73	3.64	4.55	6.37	5.46	6.37
285.0	0.91	0.91	0.91	2.72	3.62	4.53	5.44	5.44	10.87
300.0	0.90	0.90	1.80	2.70	3.60	4.50	4.50	7.20	11.70
315.0	0.87	1.73	2.60	3.46	3.46	4.33	5.19	7.79	12.12
330.0	1.81	2.71	3.62	3.62	4.52	4.52	6.33	9.04	12.66
345.0	2.69	3.59	3.59	4.49	5.39	6.29	8.98	10.78	13.47
360.0	7.06	7.94	9.71	10.59	10.59	10.59	10.59	11.47	11.47

Intensity data(cd)

C/ γ (°)	180.0
0.0	13.24
15.0	13.35
30.0	13.41
45.0	13.50
60.0	12.72
75.0	13.62
90.0	17.29
105.0	17.22
120.0	17.10
135.0	15.58
150.0	16.28
165.0	15.27
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	13.24