
AFX

Client:

LumCAT: ELZV3602LAJD4BK

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.990

LampCAT:

Current(A): 0.166

Lamp flux(lm): 1713.3

Power (W): 19.580

Number of Lamps: 1

PF: 0.984

Length(mm): 900

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1713.32, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 87.50

Central intensity(cd): 446.049, Maximum intensity(cd): 483.144

Angle of maximum intensity: C=90.0 γ =20.0

Beam Angle(50%Imax): [C0/180]Total=109.6

[C90/270]Total=128.7

Field angle(10%Imax): [C0/180]Total=158.8

[C90/270]Total=236.9

Maximum s/h(1/2): C0_180=1.24 C90_270=1.59

Maximum s/h(1/4): C0_180=1.36 C90_270=1.71

Up flux rate of lamp(%): 13.14%

Down flux rate of lamp(%): 86.86%

Up flux rate of LUM(%): 13.14%

Down flux rate of LUM(%): 86.86%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 59.479%

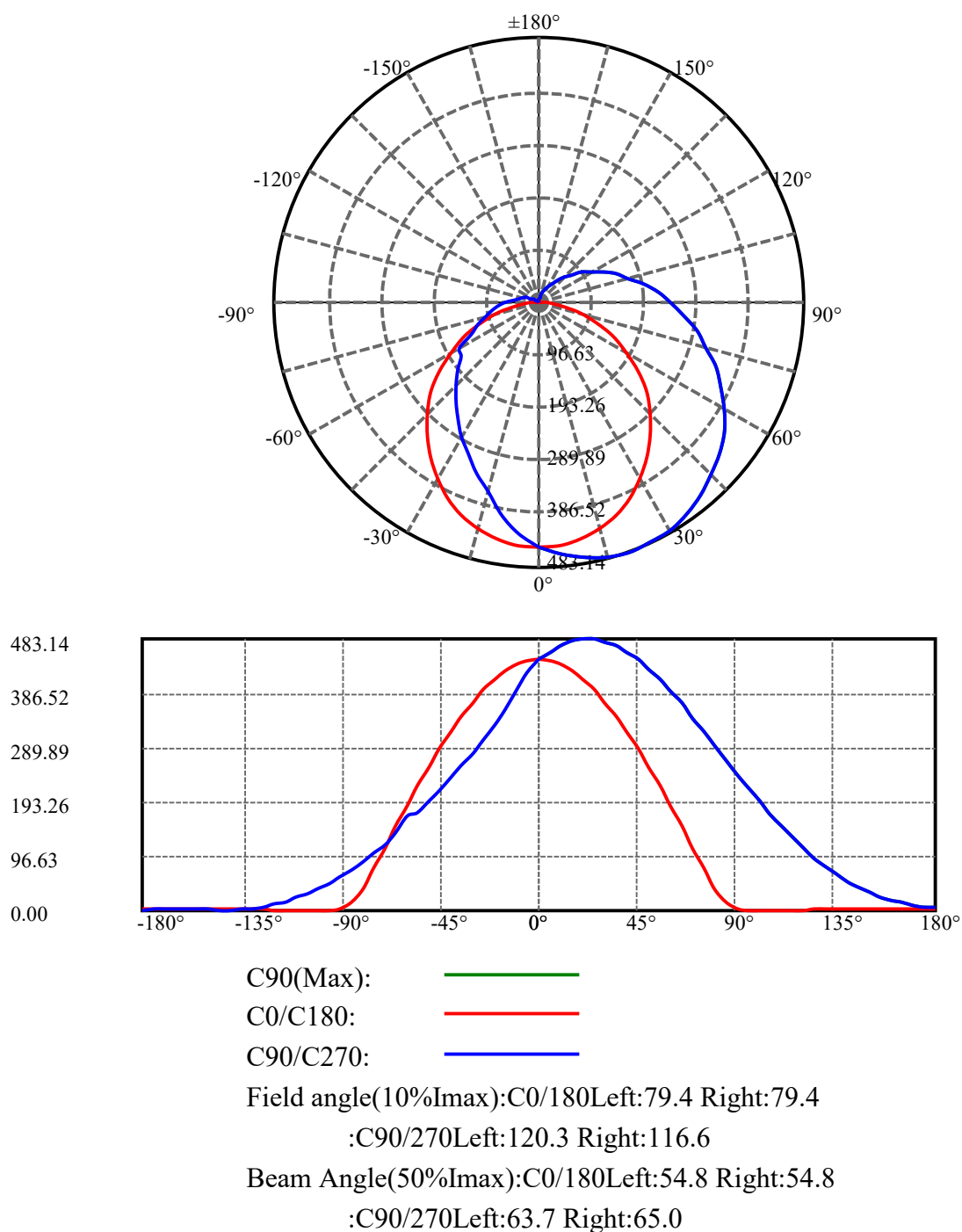
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	446.049	0.000	0	0.00%	0.00%
5.0	442.619	10.624	10.624	0.62%	0.62%
10.0	433.722	31.349	41.973	1.83%	2.45%
15.0	420.865	50.693	92.667	2.96%	5.41%
20.0	406.696	68.203	160.869	3.98%	9.39%
25.0	388.574	83.409	244.279	4.87%	14.26%
30.0	369.994	95.997	340.276	5.60%	19.86%
35.0	349.546	105.957	446.233	6.18%	26.04%
40.0	327.865	113.021	559.254	6.60%	32.64%
45.0	303.005	116.811	676.065	6.82%	39.46%
50.0	277.887	117.378	793.443	6.85%	46.31%
55.0	251.945	115.203	908.646	6.72%	53.03%
60.0	225.782	110.425	1019.071	6.45%	59.48%
65.0	198.861	103.231	1122.302	6.03%	65.50%
70.0	172.578	94.051	1216.353	5.49%	70.99%
75.0	147.828	83.749	1300.102	4.89%	75.88%
80.0	125.402	73.109	1373.211	4.27%	80.15%
85.0	104.539	62.480	1435.691	3.65%	83.80%
90.0	87.379	52.548	1488.24	3.07%	86.86%
95.0	73.623	44.084	1532.323	2.57%	89.44%
100.0	62.632	37.024	1569.347	2.16%	91.60%
105.0	52.575	30.826	1600.173	1.80%	93.40%
110.0	44.387	25.344	1625.518	1.48%	94.88%
115.0	36.985	20.604	1646.122	1.20%	96.08%
120.0	31.077	16.546	1662.668	0.97%	97.04%
125.0	25.617	13.105	1675.772	0.76%	97.81%
130.0	21.092	10.156	1685.929	0.59%	98.40%
135.0	17.203	7.738	1693.667	0.45%	98.85%
140.0	14.285	5.830	1699.497	0.34%	99.19%
145.0	11.966	4.380	1703.877	0.26%	99.45%
150.0	10.134	3.254	1707.131	0.19%	99.64%
155.0	8.488	2.357	1709.488	0.14%	99.78%
160.0	7.067	1.631	1711.119	0.10%	99.87%
165.0	6.019	1.078	1712.197	0.06%	99.93%
170.0	5.309	0.672	1712.869	0.04%	99.97%
175.0	4.860	0.364	1713.233	0.02%	99.99%
180.0	2.392	0.087	1713.32	0.01%	100.00%

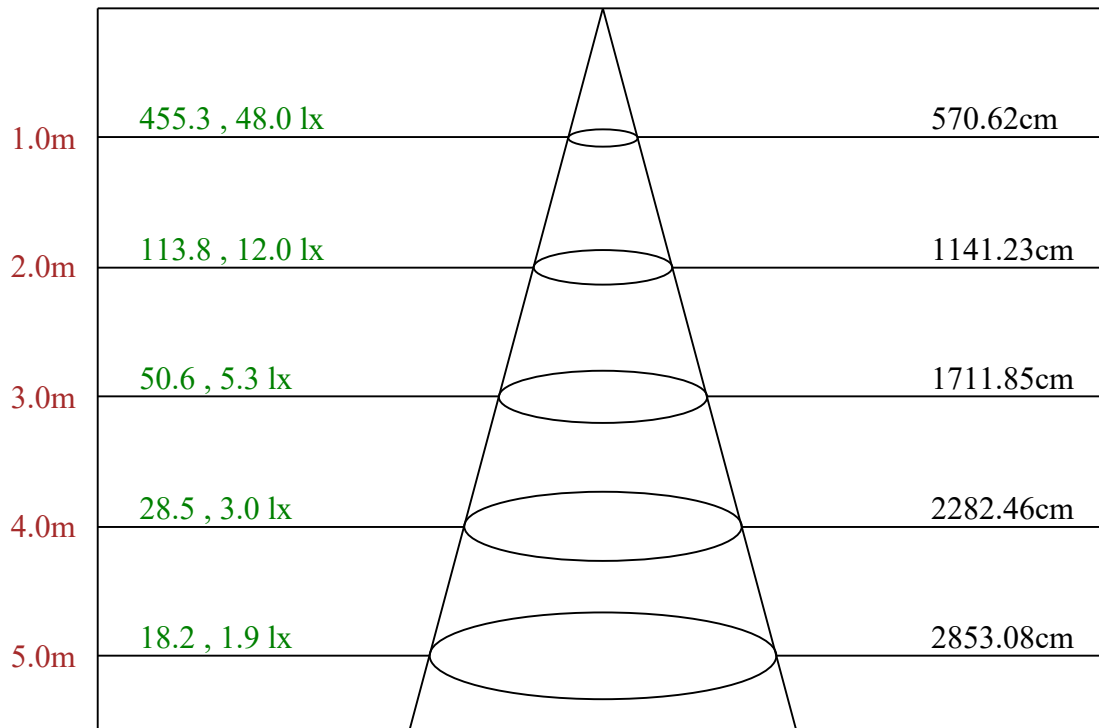
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	340.28	19.86%	19.86%
0-40	559.25	32.64%	32.64%
0-60	1019.07	59.48%	59.48%
0-90	1488.24	86.86%	86.86%
0-120	1662.67	97.04%	97.04%
0-180	1713.32	100.00%	100.00%
60-90	469.17	27.38%	27.38%
90-120	174.43	10.18%	10.18%
90-130	197.69	11.54%	11.54%
90-150	218.89	12.78%	12.78%
90-180	224.99	13.13%	13.13%
0-79.83	1370.66	80.00%	80.00%

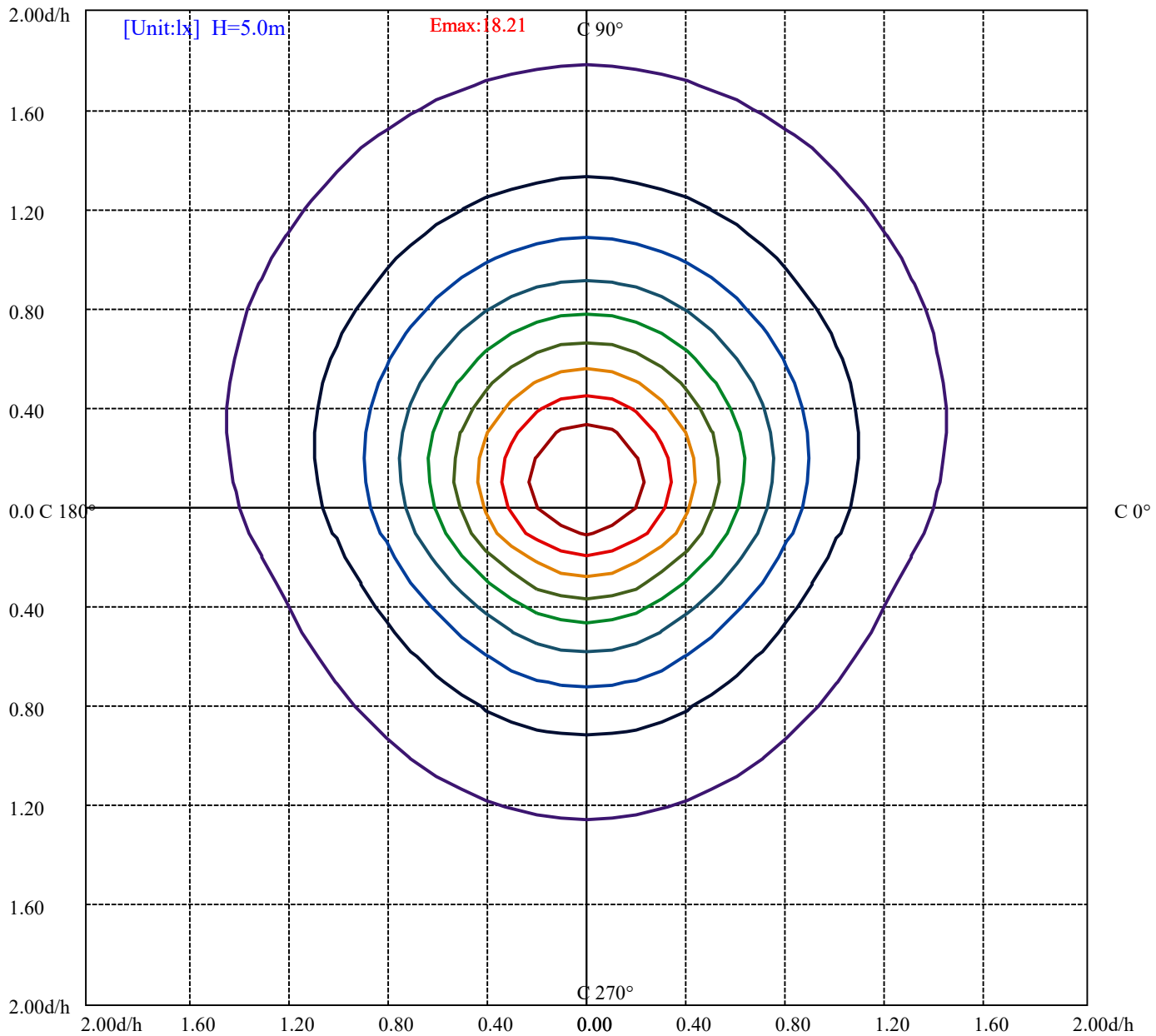
ZONAL LUMEN SUMMARY

0-10	41.97
10-20	118.90
20-30	179.41
30-40	218.98
40-50	234.19
50-60	225.63
60-70	197.28
70-80	156.86
80-90	115.03
90-100	81.11
100-110	56.17
110-120	37.15
120-130	23.26
130-140	13.57
140-150	7.63
150-160	3.99
160-170	1.75
170-180	0.36

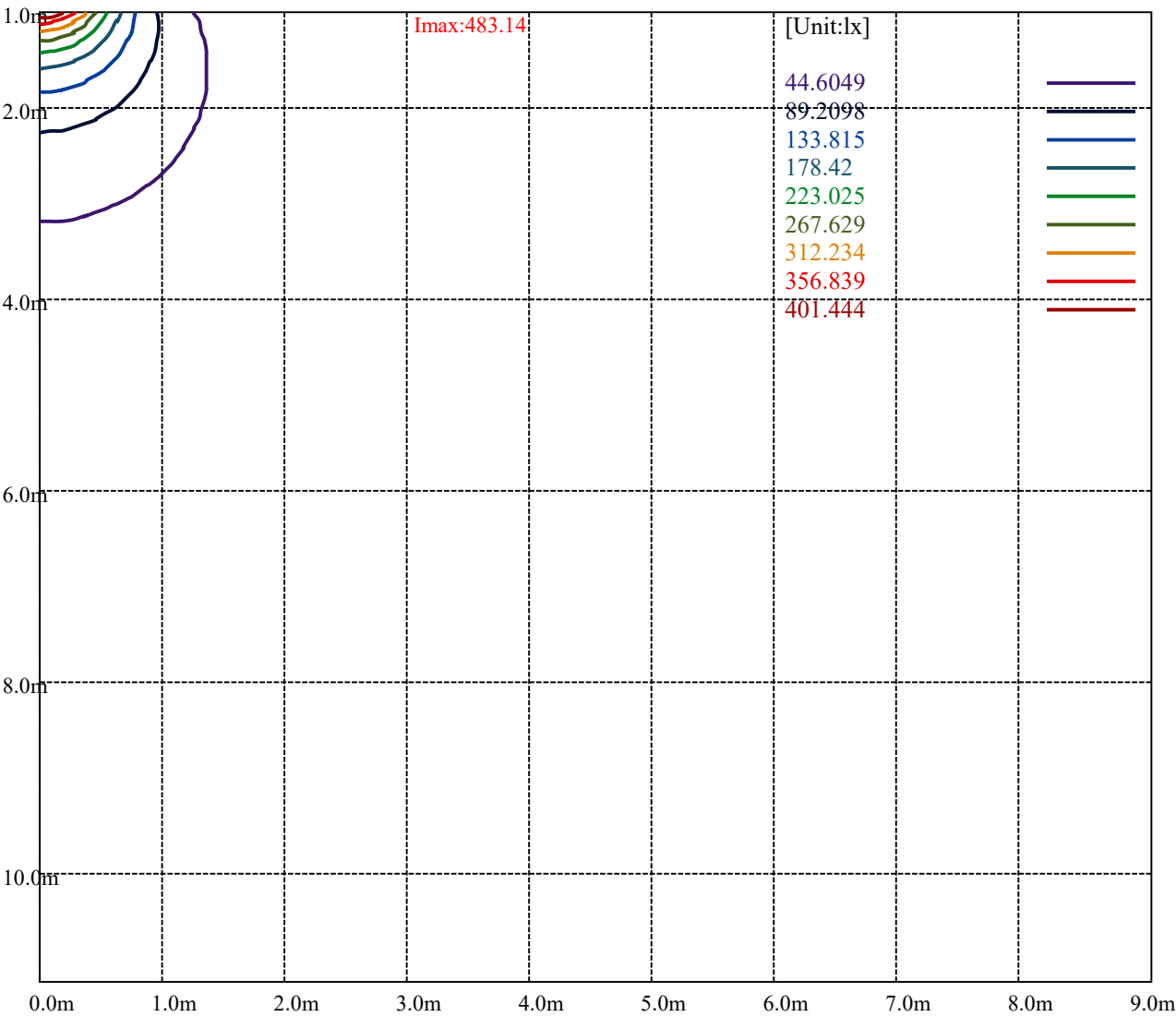




Max , Ave Beam angle of C90 plane 141.37



(10%Emax) 1.821396	—
(20%Emax) 3.642792	—
(30%Emax) 5.4642	—
(40%Emax) 7.2856	—
(50%Emax) 9.107	—
(60%Emax) 10.9284	—
(70%Emax) 12.74976	—
(80%Emax) 14.57116	—
(90%Emax) 16.39256	—



Luminance Table

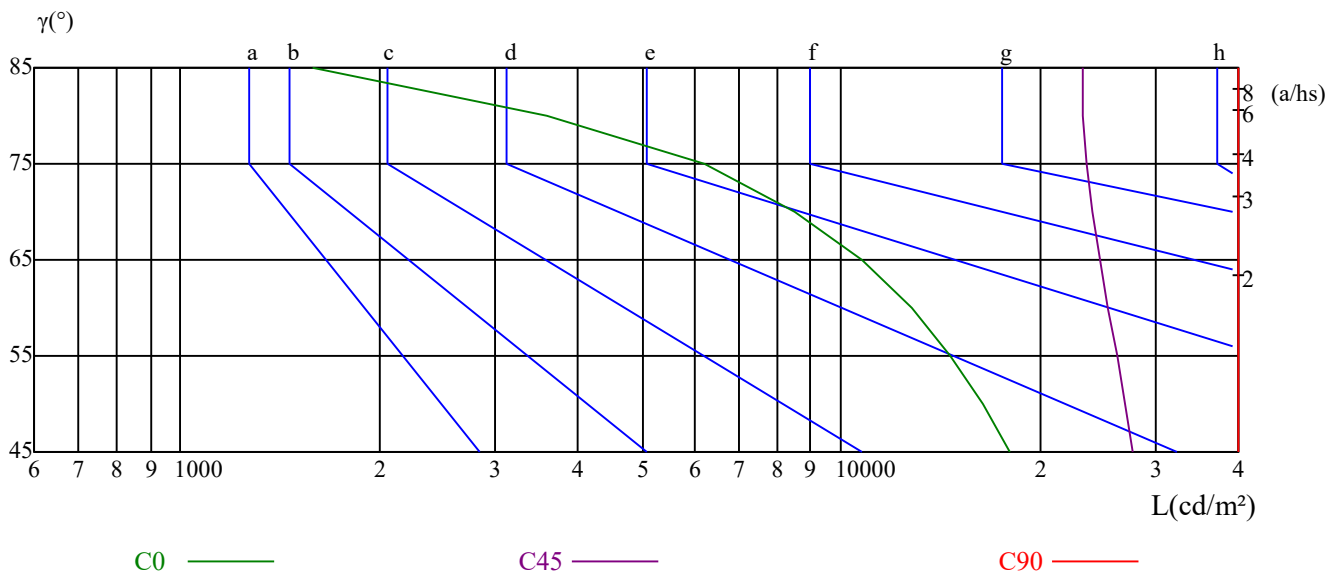
γ	45	50	55	60	65	70	75	80	85
C0	18043	16393	14666	12779	10758	8529	6210	3596	1590
C45	27659	26886	26161	25353	24688	24040	23517	23175	23235
C90	46213	48878	52334	56812	63041	72066	87022	117635	201282

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
26139	44244	34889	21661	59816	43797	13702	144565	95475

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	1.16	1.16	1.16	1.12	1.12	1.12	1.04	1.04	1.04	0.97	0.97	0.97	0.90	0.90	0.90	0.87
1	0.97	0.92	0.88	0.94	0.89	0.85	0.87	0.83	0.80	0.81	0.78	0.75	0.75	0.73	0.70	0.67
2	0.84	0.76	0.69	0.81	0.74	0.68	0.75	0.69	0.64	0.69	0.65	0.61	0.65	0.61	0.57	0.54
3	0.73	0.64	0.57	0.70	0.62	0.55	0.65	0.58	0.53	0.61	0.55	0.50	0.56	0.52	0.48	0.45
4	0.64	0.55	0.48	0.62	0.53	0.46	0.58	0.50	0.44	0.54	0.47	0.42	0.50	0.45	0.40	0.38
5	0.57	0.48	0.41	0.55	0.46	0.40	0.51	0.44	0.38	0.48	0.42	0.36	0.45	0.39	0.35	0.32
6	0.51	0.42	0.35	0.49	0.41	0.34	0.46	0.39	0.33	0.43	0.37	0.32	0.41	0.35	0.30	0.28
7	0.46	0.37	0.31	0.45	0.36	0.30	0.42	0.35	0.29	0.39	0.33	0.28	0.37	0.31	0.27	0.25
8	0.42	0.33	0.27	0.41	0.33	0.27	0.38	0.31	0.26	0.36	0.30	0.25	0.34	0.28	0.24	0.22
9	0.38	0.30	0.24	0.37	0.29	0.24	0.35	0.28	0.23	0.33	0.27	0.22	0.31	0.26	0.22	0.20
10	0.35	0.27	0.22	0.34	0.27	0.22	0.33	0.26	0.21	0.31	0.25	0.20	0.29	0.24	0.20	0.18

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	446.05	446.94	442.47	433.51	421.87	404.85	384.25	360.96	335.88
15.0	446.05	451.44	451.44	446.95	437.96	425.37	409.18	389.39	366.01
30.0	446.05	454.13	457.72	457.72	453.23	444.25	431.69	414.64	394.00
45.0	446.05	456.84	464.03	466.73	465.83	461.34	451.44	437.96	421.77
60.0	446.05	459.54	469.43	474.83	476.63	473.93	467.63	457.74	443.35
75.0	446.05	460.47	471.28	479.39	482.09	481.19	475.79	468.58	456.86
90.0	446.05	460.53	472.29	479.53	483.14	483.14	478.62	470.48	459.62
105.0	446.05	458.59	469.34	476.50	479.19	478.29	472.02	464.86	451.42
120.0	446.05	457.65	465.68	471.03	470.14	465.68	458.54	446.05	431.78
135.0	446.05	449.57	454.85	455.73	453.09	445.17	434.61	419.66	400.30
150.0	446.05	451.47	453.27	449.66	443.34	433.41	418.96	400.90	380.13
165.0	446.05	448.75	445.15	439.75	428.06	413.67	394.79	373.21	347.13
180.0	446.05	440.68	431.72	418.28	401.27	379.77	355.59	329.61	299.16
195.0	446.05	437.96	424.47	406.48	384.90	357.02	328.24	297.67	262.59
210.0	446.05	433.48	414.64	388.61	359.89	327.58	295.27	264.76	237.83
225.0	446.05	428.96	401.98	372.31	340.83	310.26	284.18	258.10	231.12
240.0	446.05	424.47	394.79	360.62	328.24	301.26	277.88	252.70	230.22
255.0	446.05	423.52	390.18	355.04	327.10	301.87	278.44	255.92	232.49
270.0	446.05	424.33	392.67	358.29	329.33	303.10	280.48	256.95	236.14
285.0	446.05	422.76	393.20	359.17	329.61	305.43	282.14	258.85	254.37
300.0	446.05	428.21	397.88	366.65	358.62	309.56	284.58	259.60	235.51
315.0	446.05	425.81	402.94	373.03	341.36	311.44	286.81	261.30	235.78
330.0	446.05	436.12	418.96	396.39	369.30	338.60	307.00	277.20	247.40
345.0	446.05	440.65	428.96	414.57	395.69	369.61	341.73	312.05	277.88
360.0	446.05	446.94	442.47	433.51	421.87	404.85	384.25	360.96	335.88
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	304.53	274.97	241.83	206.90	170.18	132.56	96.73	58.22	27.77
15.0	339.03	309.36	277.88	243.71	210.43	173.56	137.59	102.52	71.94
30.0	369.76	346.43	316.81	285.40	252.19	219.88	187.57	158.85	131.03
45.0	401.08	376.80	352.52	323.75	295.87	267.09	239.21	210.43	186.15
60.0	426.26	403.78	383.10	359.72	333.64	307.56	281.48	255.40	229.32
75.0	442.44	425.32	404.60	382.07	358.64	335.21	309.08	283.85	257.72
90.0	446.05	429.76	411.67	390.86	368.24	342.91	316.67	293.14	266.91
105.0	436.20	418.28	396.79	375.29	352.00	327.82	301.84	276.77	251.69
120.0	414.83	392.52	371.11	345.24	320.26	293.50	268.52	243.54	218.56
135.0	380.07	356.31	329.92	302.64	275.37	247.22	219.07	193.55	168.04
150.0	355.76	329.57	297.97	268.17	234.76	202.26	170.65	142.66	116.48
165.0	320.15	290.47	258.10	223.92	189.75	151.98	118.71	84.53	55.76
180.0	269.60	235.56	201.53	164.81	128.08	90.46	54.64	22.39	4.48
195.0	226.62	191.55	160.07	125.90	95.33	65.65	42.27	25.18	13.49
210.0	207.32	180.39	152.57	124.75	99.62	77.18	60.13	43.08	30.51
225.0	205.04	178.96	154.68	132.20	110.61	92.63	75.54	60.25	46.76
240.0	205.94	183.46	161.87	141.19	121.40	104.32	88.13	74.64	60.25
255.0	209.96	189.23	169.41	148.68	131.56	113.54	98.22	94.62	69.39
270.0	212.62	193.62	172.81	168.29	136.62	118.52	101.33	87.76	73.29
285.0	214.07	191.68	171.08	151.37	131.67	114.65	97.63	84.19	70.76
300.0	212.32	188.23	166.82	144.52	125.79	107.94	90.99	75.83	61.55
315.0	210.27	184.75	159.24	136.37	114.37	95.02	78.30	61.58	48.39
330.0	218.51	190.52	162.53	134.54	108.35	84.88	64.11	46.95	33.41
345.0	243.71	207.74	171.76	138.49	107.92	75.54	49.46	29.68	15.29
360.0	304.53	274.97	241.83	206.90	170.18	132.56	96.73	58.22	27.77

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	5.37	0.90	0.90	0.90	0.90	0.90	0.90	1.79	1.79
15.0	48.56	31.48	22.48	17.09	13.49	10.79	9.89	8.99	8.09
30.0	106.80	86.16	70.00	57.44	46.67	38.59	32.31	26.92	22.44
45.0	161.87	139.39	119.61	101.62	86.33	71.94	60.25	51.26	42.27
60.0	205.04	182.56	159.17	138.49	120.51	102.52	87.23	72.84	61.15
75.0	234.29	209.96	186.53	164.00	142.38	122.55	105.43	88.31	73.89
90.0	241.57	218.05	194.52	170.10	150.19	131.19	111.29	94.10	77.81
105.0	226.61	204.22	180.03	159.43	137.93	119.13	102.11	86.88	72.55
120.0	194.48	172.17	150.76	131.14	114.19	96.35	82.97	69.58	57.99
135.0	146.04	124.93	108.21	91.50	78.30	65.98	55.43	45.75	38.71
150.0	93.91	75.85	61.40	49.66	41.53	34.31	28.89	24.38	20.77
165.0	35.07	23.38	16.19	12.59	10.79	8.99	8.09	7.19	7.19
180.0	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79
195.0	5.40	2.70	1.80	1.80	0.90	0.90	0.90	0.90	0.90
210.0	19.74	12.56	8.08	5.38	3.59	1.79	1.79	0.90	0.90
225.0	35.97	26.08	18.89	13.49	8.99	5.40	5.40	1.80	0.90
240.0	48.56	37.77	35.07	21.58	15.29	10.79	7.19	4.50	1.80
255.0	56.77	45.96	36.04	27.93	20.73	14.42	9.91	6.31	3.60
270.0	60.62	48.86	38.90	29.86	22.62	16.29	10.86	6.33	3.62
285.0	57.32	44.78	35.83	26.87	19.70	14.33	9.85	6.27	3.58
300.0	49.07	36.58	28.55	20.52	15.17	10.71	7.14	4.46	1.78
315.0	36.07	25.51	18.48	12.32	8.80	5.28	3.52	1.76	0.88
330.0	19.86	12.64	8.13	5.42	3.61	1.81	1.81	0.90	0.90
345.0	6.30	2.70	1.80	0.90	0.90	0.90	0.90	0.90	0.90
360.0	5.37	0.90	0.90	0.90	0.90	0.90	0.90	1.79	1.79
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.79	2.69	3.58	3.58	4.48	4.48	4.48	4.48	4.48
15.0	7.19	7.19	7.19	7.19	6.30	6.30	5.40	5.40	4.50
30.0	18.85	16.15	14.36	12.56	10.77	8.97	7.18	6.28	5.38
45.0	34.17	28.78	23.38	18.89	15.29	12.59	9.89	7.19	5.40
60.0	49.46	40.47	33.27	26.08	20.68	16.19	11.69	8.99	5.40
75.0	60.37	48.66	39.65	31.54	24.33	18.02	13.52	9.91	7.21
90.0	65.14	51.57	41.62	32.57	25.33	19.00	13.57	9.95	7.24
105.0	59.11	48.37	38.51	30.45	23.29	17.91	13.44	9.85	7.17
120.0	47.28	39.25	31.22	24.98	19.63	15.17	11.60	8.92	6.24
135.0	31.67	26.39	21.99	17.60	14.96	12.32	9.68	7.92	6.16
150.0	17.16	15.35	13.54	11.74	9.93	9.03	8.13	6.32	5.42
165.0	6.30	6.30	6.30	6.30	6.30	6.30	6.30	5.40	5.40
180.0	1.79	1.79	2.69	2.69	2.69	2.69	3.58	3.58	4.48
195.0	0.90	0.90	0.90	0.90	1.80	1.80	2.70	3.60	4.50
210.0	0.90	0.90	0.90	0.90	1.79	1.79	2.69	3.59	3.59
225.0	0.90	0.90	0.90	1.80	1.80	1.80	2.70	2.70	3.60
240.0	0.90	0.90	0.90	1.80	1.80	1.80	1.80	2.70	3.60
255.0	1.80	0.90	0.90	1.80	1.80	1.80	1.80	2.70	3.60
270.0	1.81	0.90	0.90	1.81	1.81	1.81	1.81	2.71	3.62
285.0	1.79	0.90	0.90	1.79	1.79	1.79	1.79	2.69	3.58
300.0	0.89	0.89	0.89	1.78	1.78	1.78	2.68	2.68	3.57
315.0	0.88	0.88	0.88	1.76	1.76	1.76	2.64	2.64	3.52
330.0	0.90	0.90	0.90	0.90	1.81	1.81	2.71	3.61	4.51
345.0	0.90	0.90	0.90	1.80	1.80	2.70	2.70	3.60	4.50
360.0	1.79	2.69	3.58	3.58	4.48	4.48	4.48	4.48	4.48

Intensity data(cd)

C/ γ (°)	180.0
0.0	4.48
15.0	4.50
30.0	4.49
45.0	4.50
60.0	4.50
75.0	4.51
90.0	5.43
105.0	5.37
120.0	5.35
135.0	5.28
150.0	4.51
165.0	4.50
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	4.48