
AFX

Client:

LumCAT: ELZV3602LAJD4SN

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.980

LampCAT:

Current(A): 0.164

Lamp flux(lm): 2012.5

Power (W): 19.380

Number of Lamps: 1

PF: 0.984

Length(mm): 890

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 2012.49, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 103.84

Central intensity(cd): 504.964, Maximum intensity(cd): 573.080

Angle of maximum intensity: C=90.0 γ =25.0

Beam Angle(50%Imax): [C0/180]Total=109.4

[C90/270]Total=126.3

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

[C90/270]Total=236.2

Maximum s/h(1/2): C0_180=1.24 C90_270=1.67

Maximum s/h(1/4): C0_180=1.35 C90_270=1.78

Up flux rate of lamp(%): 14.26%

Down flux rate of lamp(%): 85.74%

Up flux rate of LUM(%): 14.26%

Down flux rate of LUM(%): 85.74%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 58.229%

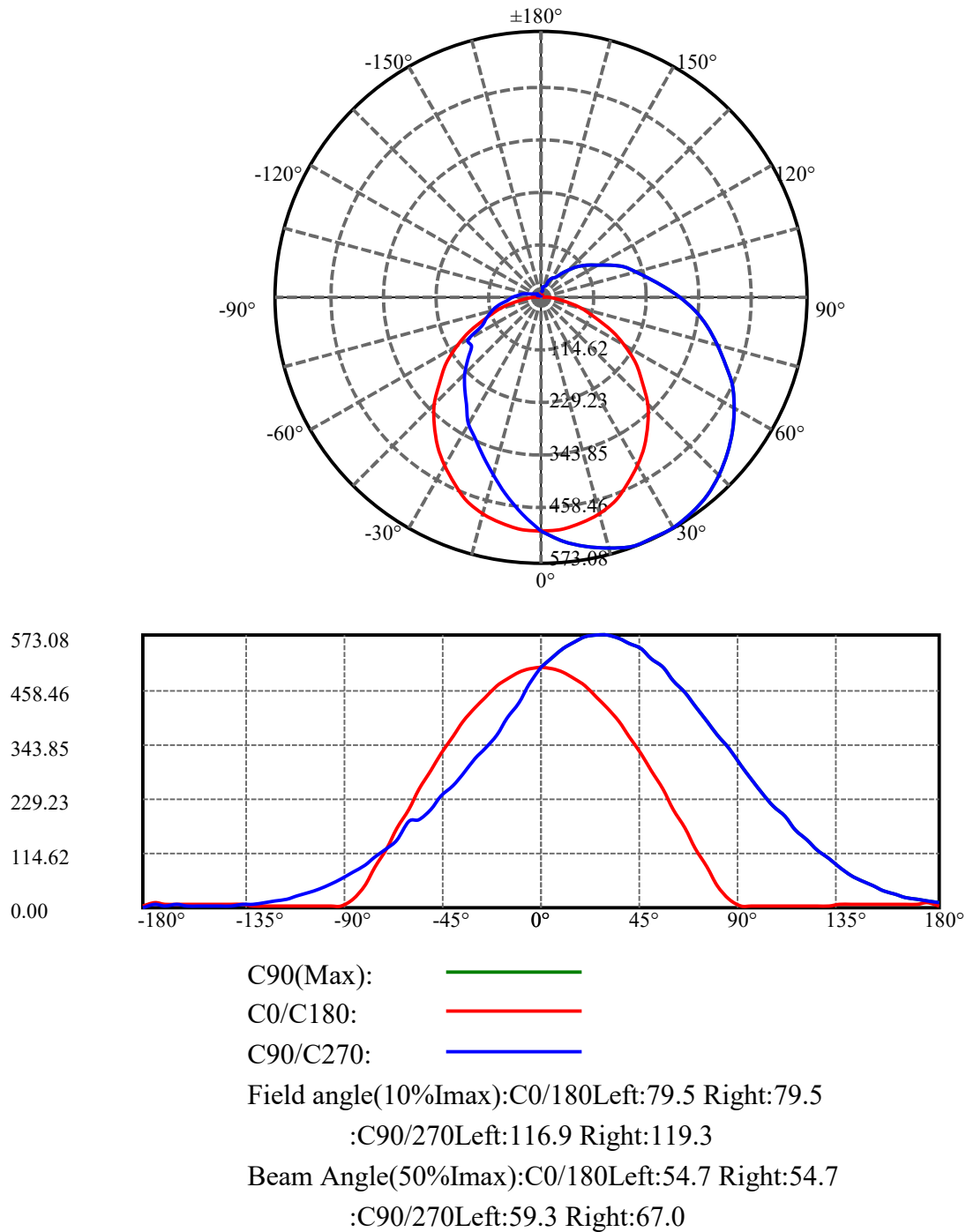
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	504.964	0.000	0	0.00%	0.00%
5.0	498.968	12.002	12.002	0.60%	0.60%
10.0	489.098	35.346	47.348	1.76%	2.35%
15.0	476.129	57.257	104.605	2.85%	5.20%
20.0	462.082	77.322	181.926	3.84%	9.04%
25.0	443.631	94.993	276.919	4.72%	13.76%
30.0	423.945	109.792	386.711	5.46%	19.22%
35.0	401.561	121.561	508.273	6.04%	25.26%
40.0	378.066	130.075	638.347	6.46%	31.72%
45.0	350.531	134.906	773.253	6.70%	38.42%
50.0	322.355	135.967	909.22	6.76%	45.18%
55.0	293.404	133.887	1043.106	6.65%	51.83%
60.0	263.636	128.758	1171.865	6.40%	58.23%
65.0	233.210	120.784	1292.649	6.00%	64.23%
70.0	202.938	110.436	1403.084	5.49%	69.72%
75.0	174.874	98.754	1501.838	4.91%	74.63%
80.0	148.643	86.564	1588.402	4.30%	78.93%
85.0	124.715	74.278	1662.68	3.69%	82.62%
90.0	105.006	62.899	1725.58	3.13%	85.74%
95.0	89.252	53.189	1778.769	2.64%	88.39%
100.0	76.638	45.076	1823.845	2.24%	90.63%
105.0	65.481	38.027	1861.872	1.89%	92.52%
110.0	56.084	31.775	1893.647	1.58%	94.09%
115.0	47.767	26.296	1919.943	1.31%	95.40%
120.0	40.611	21.485	1941.428	1.07%	96.47%
125.0	34.280	17.311	1958.739	0.86%	97.33%
130.0	28.847	13.726	1972.465	0.68%	98.01%
135.0	24.273	10.734	1983.198	0.53%	98.54%
140.0	20.413	8.274	1991.472	0.41%	98.96%
145.0	17.450	6.317	1997.79	0.31%	99.27%
150.0	14.862	4.758	2002.548	0.24%	99.51%
155.0	13.023	3.529	2006.077	0.18%	99.68%
160.0	11.338	2.555	2008.632	0.13%	99.81%
165.0	10.549	1.804	2010.436	0.09%	99.90%
170.0	9.723	1.203	2011.638	0.06%	99.96%
175.0	9.421	0.685	2012.323	0.03%	99.99%
180.0	4.786	0.170	2012.493	0.01%	100.00%

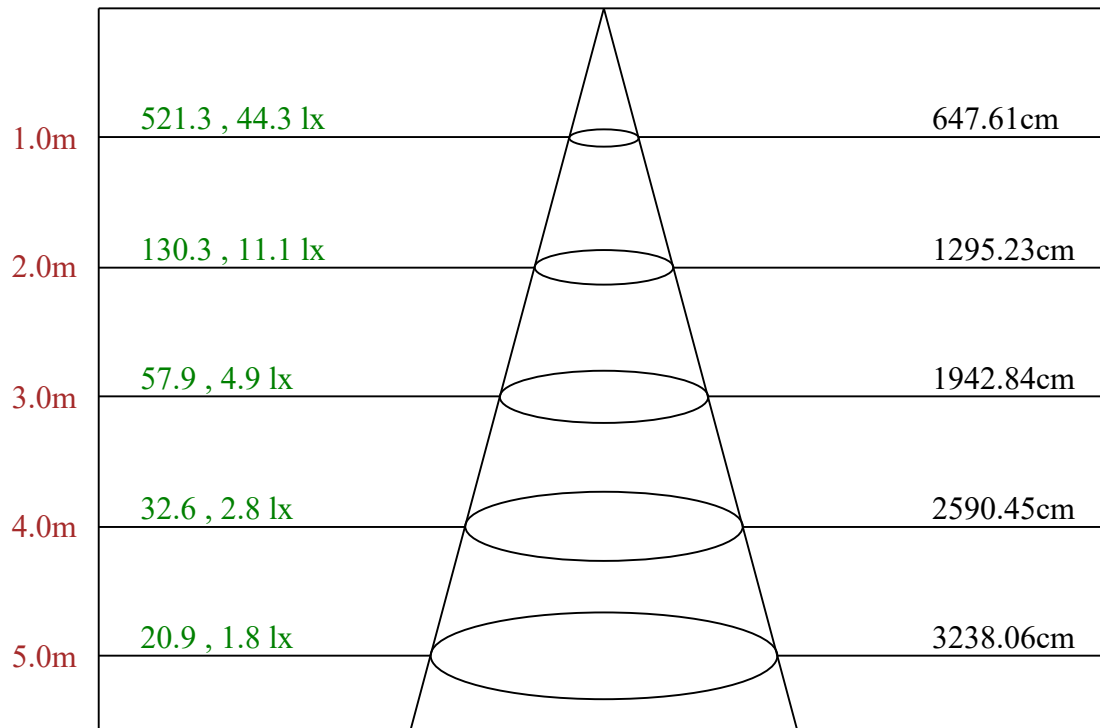
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	386.71	19.22%	19.22%
0-40	638.35	31.72%	31.72%
0-60	1171.86	58.23%	58.23%
0-90	1725.58	85.74%	85.74%
0-120	1941.43	96.47%	96.47%
0-180	2012.49	100.00%	100.00%
60-90	553.72	27.51%	27.51%
90-120	215.85	10.73%	10.73%
90-130	246.89	12.27%	12.27%
90-150	276.97	13.76%	13.76%
90-180	286.74	14.25%	14.25%
0-81.45	1609.99	80.00%	80.00%

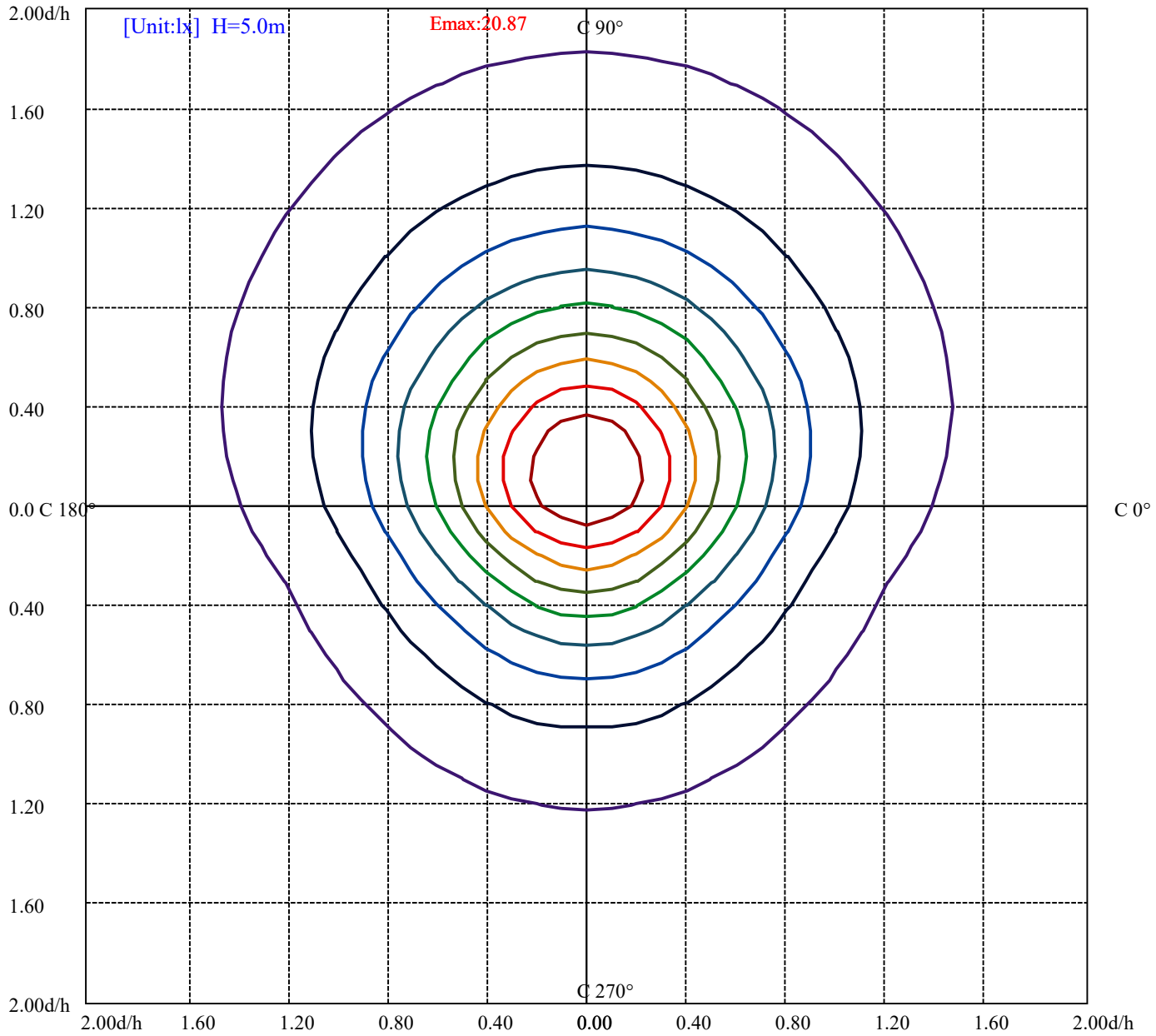
ZONAL LUMEN SUMMARY

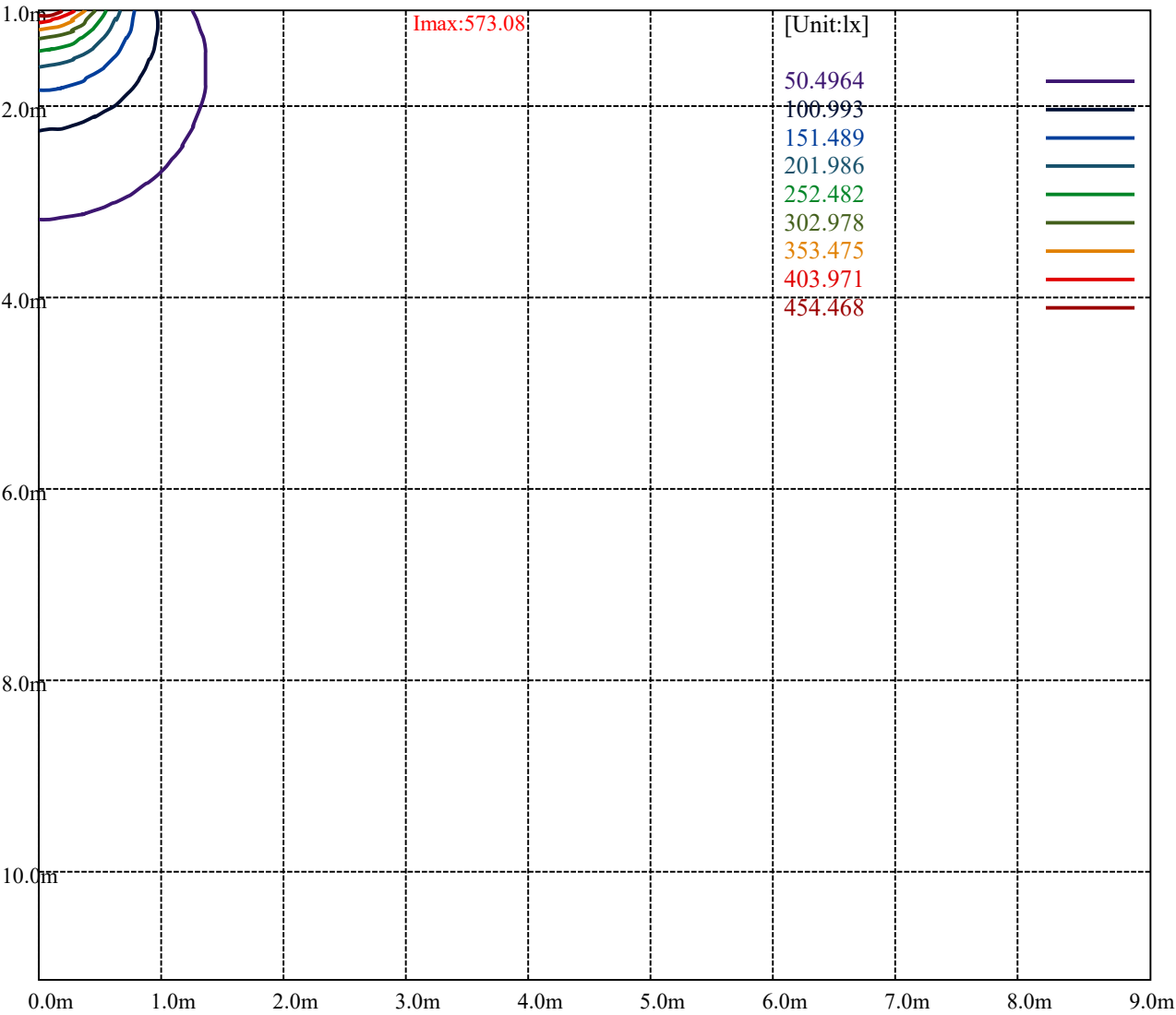
0-10	47.35
10-20	134.58
20-30	204.78
30-40	251.64
40-50	270.87
50-60	262.64
60-70	231.22
70-80	185.32
80-90	137.18
90-100	98.27
100-110	69.80
110-120	47.78
120-130	31.04
130-140	19.01
140-150	11.08
150-160	6.08
160-170	3.01
170-180	0.68





Max , Ave Beam angle of C90 plane 145.68





Luminance Table

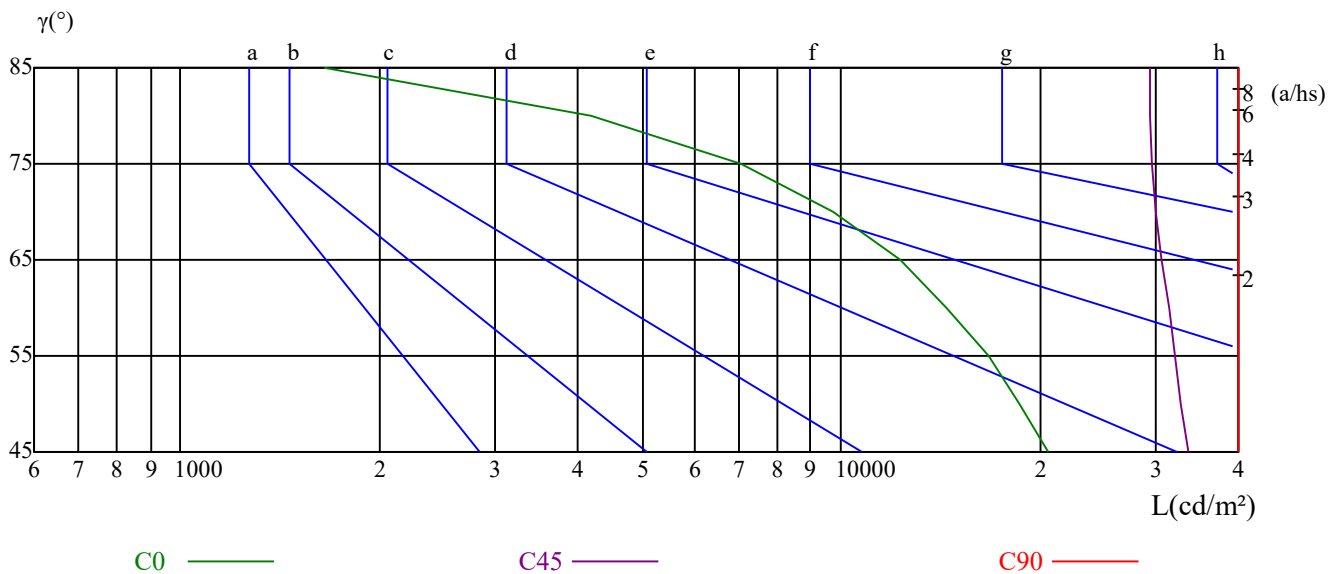
γ	45	50	55	60	65	70	75	80	85
C0	20613	18684	16742	14422	12301	9764	7070	4186	1646
C45	33504	32827	32153	31444	30671	30029	29657	29451	29446
C90	56989	60365	64788	70335	78436	89915	108981	147321	253864

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
29887	52800	41268	24659	72021	52318	14185	175237	115186

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	1.11	1.11	1.11	1.03	1.03	1.03	0.96	0.96	0.96	0.89	0.89	0.89	0.86
1	0.97	0.92	0.87	0.93	0.89	0.84	0.86	0.83	0.79	0.80	0.77	0.74	0.74	0.72	0.69	0.66
2	0.83	0.76	0.69	0.80	0.73	0.67	0.74	0.68	0.63	0.69	0.64	0.60	0.64	0.60	0.56	0.53
3	0.72	0.63	0.56	0.70	0.61	0.55	0.65	0.58	0.52	0.60	0.54	0.49	0.55	0.51	0.47	0.44
4	0.64	0.54	0.47	0.61	0.53	0.46	0.57	0.50	0.44	0.53	0.47	0.42	0.49	0.44	0.40	0.37
5	0.57	0.47	0.40	0.55	0.46	0.39	0.51	0.43	0.38	0.47	0.41	0.36	0.44	0.39	0.34	0.32
6	0.51	0.41	0.35	0.49	0.40	0.34	0.46	0.38	0.33	0.43	0.36	0.31	0.40	0.34	0.30	0.27
7	0.46	0.37	0.30	0.44	0.36	0.30	0.41	0.34	0.29	0.39	0.32	0.27	0.36	0.31	0.26	0.24
8	0.42	0.33	0.27	0.40	0.32	0.26	0.38	0.31	0.25	0.35	0.29	0.24	0.33	0.28	0.23	0.21
9	0.38	0.30	0.24	0.37	0.29	0.24	0.35	0.28	0.23	0.33	0.26	0.22	0.31	0.25	0.21	0.19
10	0.35	0.27	0.22	0.34	0.26	0.21	0.32	0.25	0.21	0.30	0.24	0.20	0.28	0.23	0.19	0.17

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	504.96	504.07	498.72	489.80	474.63	455.00	432.70	405.93	375.60
15.0	504.96	510.33	509.43	505.86	495.13	482.62	463.85	443.30	418.27
30.0	504.96	513.90	519.26	521.95	519.26	512.11	500.50	481.73	462.06
45.0	504.96	519.34	529.22	537.31	540.01	538.21	529.22	514.85	498.67
60.0	504.96	523.00	537.43	550.05	556.36	556.36	551.85	542.84	529.31
75.0	504.96	524.87	542.97	555.64	565.60	569.22	566.50	559.26	549.31
90.0	504.96	526.76	545.83	560.36	571.26	573.08	572.17	565.81	556.73
105.0	504.96	524.77	542.77	557.17	565.27	567.07	564.37	558.97	547.27
120.0	504.96	522.87	536.30	547.04	554.21	553.31	547.04	537.20	522.87
135.0	504.96	509.33	516.32	523.31	526.81	522.44	511.95	499.72	482.25
150.0	504.96	515.84	521.28	522.19	514.94	510.40	500.43	480.49	458.73
165.0	504.96	508.56	507.66	500.47	490.59	477.11	458.24	438.47	409.72
180.0	504.96	499.61	489.80	474.63	455.00	430.91	405.04	374.71	341.70
195.0	504.96	493.35	476.36	454.91	428.10	398.61	363.75	328.00	290.47
210.0	504.96	486.20	461.17	430.78	398.61	363.75	328.90	296.72	263.65
225.0	504.96	479.81	447.46	413.32	377.38	345.03	315.38	284.83	256.08
240.0	504.96	474.31	438.24	398.56	367.00	337.24	308.39	279.53	252.48
255.0	504.96	472.39	432.57	394.56	363.79	335.74	307.68	281.44	255.20
270.0	504.96	469.54	431.40	396.89	363.28	336.04	311.52	282.45	257.02
285.0	504.96	473.46	432.95	394.25	365.45	337.54	310.54	284.44	276.34
300.0	504.96	473.63	439.61	401.11	393.05	339.33	311.57	282.92	256.96
315.0	504.96	468.27	440.31	406.24	369.55	338.10	310.14	281.31	250.73
330.0	504.96	488.65	464.17	433.34	402.52	367.16	334.53	300.98	267.44
345.0	504.96	492.38	477.11	457.34	432.18	400.74	368.39	331.55	294.71
360.0	504.96	504.07	498.72	489.80	474.63	455.00	432.70	405.93	375.60
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	342.59	306.90	268.54	227.50	188.25	145.42	103.49	62.45	26.76
15.0	389.67	358.39	323.53	285.10	243.99	204.67	160.87	120.66	84.01
30.0	437.04	406.65	374.48	337.83	302.08	264.55	227.01	190.37	159.09
45.0	477.11	450.15	425.00	391.75	358.51	324.36	292.02	258.77	226.43
60.0	511.28	490.54	464.39	437.33	406.68	376.92	344.46	312.00	280.44
75.0	533.02	514.01	492.29	466.05	438.90	409.94	379.18	350.22	318.54
90.0	544.02	524.94	504.06	478.63	453.20	423.23	392.35	363.28	333.31
105.0	531.97	511.26	490.56	465.36	438.36	408.65	378.05	344.74	315.94
120.0	504.96	482.58	457.51	431.55	402.00	371.56	340.22	307.10	277.55
135.0	458.66	435.07	404.50	376.54	343.34	311.02	279.56	248.99	217.54
150.0	432.44	402.52	372.60	336.34	300.98	260.19	224.83	191.29	155.93
165.0	382.77	352.22	318.07	281.23	240.80	197.67	156.34	115.91	81.76
180.0	306.01	268.54	231.96	187.35	148.99	107.06	66.91	30.33	6.25
195.0	250.25	213.60	176.96	140.32	103.67	70.61	43.79	21.45	10.72
210.0	228.80	196.62	164.45	134.96	105.46	74.18	58.09	41.11	27.71
225.0	225.53	194.08	167.12	137.47	115.91	96.14	76.37	60.20	45.82
240.0	224.53	198.38	173.13	150.59	129.85	109.11	91.98	75.74	61.32
255.0	228.95	203.61	180.99	159.27	138.46	117.64	101.35	96.83	70.59
270.0	234.32	207.07	184.37	179.83	142.59	123.52	105.35	89.00	74.47
285.0	229.53	205.23	180.92	158.42	138.62	118.82	101.71	84.61	71.11
300.0	227.41	202.34	171.01	147.73	127.14	108.33	91.32	75.21	60.88
315.0	221.90	193.07	165.12	134.54	113.57	93.48	75.13	59.41	46.30
330.0	236.62	203.07	170.44	138.71	107.88	78.87	60.74	41.70	29.01
345.0	253.38	215.64	179.70	142.86	107.82	74.58	45.82	26.06	11.68
360.0	342.59	306.90	268.54	227.50	188.25	145.42	103.49	62.45	26.76

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	5.35	1.78	1.78	1.78	1.78	2.68	3.57	3.57	4.46
15.0	54.52	35.75	25.02	19.66	16.09	14.30	12.51	11.62	11.62
30.0	126.91	103.67	84.91	69.71	56.31	47.37	39.32	33.96	28.60
45.0	195.88	168.02	144.66	124.89	106.92	89.85	76.37	63.79	53.91
60.0	251.58	221.82	195.67	171.33	149.69	128.95	110.01	92.88	78.45
75.0	285.97	255.20	228.05	201.80	177.37	155.65	133.93	113.12	95.02
90.0	297.89	268.83	238.86	212.52	190.72	164.39	140.77	121.70	101.72
105.0	282.64	253.83	225.93	200.73	177.32	154.82	132.32	112.51	94.51
120.0	248.01	216.67	193.39	171.01	147.73	127.14	109.23	92.22	77.89
135.0	188.71	162.50	140.66	120.56	103.09	88.24	75.13	62.90	52.42
150.0	127.83	105.16	85.22	70.71	58.02	48.05	40.80	35.36	29.92
165.0	54.81	36.84	26.06	20.67	17.07	14.38	13.48	12.58	11.68
180.0	2.68	2.68	2.68	2.68	3.57	3.57	4.46	4.46	5.35
195.0	5.36	3.57	2.68	2.68	1.79	1.79	1.79	1.79	1.79
210.0	18.77	13.41	8.94	6.26	5.36	4.47	3.57	2.68	1.79
225.0	35.04	26.06	19.77	14.38	10.78	8.09	7.19	4.49	3.59
240.0	48.69	37.87	36.07	23.44	17.13	12.62	9.92	7.21	5.41
255.0	57.92	47.06	37.10	28.96	22.62	17.19	12.67	9.05	7.24
270.0	61.76	49.95	39.96	30.88	24.52	18.16	13.62	9.99	7.27
285.0	58.51	46.81	37.80	28.80	22.50	17.10	12.60	9.90	7.20
300.0	49.24	39.39	30.44	23.28	17.01	13.43	9.85	7.16	5.37
315.0	34.95	27.08	20.09	14.85	10.48	7.86	6.12	5.24	3.49
330.0	20.85	14.51	9.97	7.25	5.44	4.53	3.63	2.72	1.81
345.0	6.29	3.59	3.59	2.70	2.70	1.80	1.80	1.80	1.80
360.0	5.35	1.78	1.78	1.78	1.78	2.68	3.57	3.57	4.46
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	5.35	6.25	7.14	8.03	8.03	8.03	8.03	8.03	8.92
15.0	10.72	10.72	11.62	11.62	10.72	9.83	9.83	8.94	8.94
30.0	25.02	22.34	19.66	17.87	16.09	13.41	11.62	9.83	9.83
45.0	44.93	37.74	31.45	26.06	22.46	18.87	15.27	11.68	9.88
60.0	64.92	53.20	44.18	35.17	28.86	22.54	18.94	14.43	10.82
75.0	78.73	64.25	52.49	42.53	33.48	26.24	20.81	16.29	12.67
90.0	84.46	69.02	55.40	45.41	35.42	27.25	20.89	16.35	12.71
105.0	78.31	64.81	52.21	42.31	33.30	26.10	20.70	16.20	12.60
120.0	64.46	52.82	42.98	35.81	28.65	23.28	18.80	15.22	12.53
135.0	44.56	36.69	31.45	26.21	21.84	18.35	15.73	13.10	11.36
150.0	26.29	22.66	19.94	18.13	16.32	14.51	13.60	12.69	10.88
165.0	11.68	11.68	11.68	11.68	11.68	10.78	10.78	10.78	10.78
180.0	5.35	6.25	6.25	7.14	7.14	7.14	7.14	8.03	8.92
195.0	2.68	2.68	3.57	4.47	5.36	5.36	6.26	7.15	8.04
210.0	0.89	0.89	2.68	3.57	4.47	4.47	6.26	7.15	8.04
225.0	2.70	1.80	1.80	1.80	3.59	4.49	5.39	6.29	8.09
240.0	4.51	3.61	2.71	1.80	2.71	3.61	5.41	6.31	7.21
255.0	5.43	4.52	3.62	1.81	2.71	3.62	5.43	6.33	6.33
270.0	5.45	4.54	3.63	2.72	2.72	3.63	5.45	4.54	5.45
285.0	5.40	4.50	3.60	1.80	1.80	3.60	4.50	5.40	8.10
300.0	4.48	3.58	2.69	1.79	2.69	3.58	4.48	6.27	8.06
315.0	2.62	1.75	1.75	1.75	3.49	3.49	5.24	6.99	7.86
330.0	0.91	0.91	2.72	2.72	3.63	4.53	5.44	7.25	9.07
345.0	2.70	2.70	3.59	4.49	5.39	5.39	7.19	8.09	8.99
360.0	5.35	6.25	7.14	8.03	8.03	8.03	8.03	8.03	8.92

Intensity data(cd)

C/ $\gamma(^{\circ})$	180.0
0.0	8.92
15.0	8.94
30.0	8.94
45.0	8.99
60.0	8.12
75.0	9.05
90.0	10.90
105.0	10.80
120.0	10.74
135.0	9.61
150.0	9.97
165.0	9.88
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	8.92