
AFX

Client:

LumCAT: ELZP42LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.000

LampCAT:

Current(A): 0.200

Lamp flux(lm): 2218.0

Power (W): 23.680

Number of Lamps: 1

PF: 0.986

Length(mm): 1040

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 2218.04, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 93.67

Central intensity(cd): 603.056, Maximum intensity(cd): 604.396

Angle of maximum intensity: C=90.0 γ =5.0

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

[C90/270]Total=133.4

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 : 62.738%

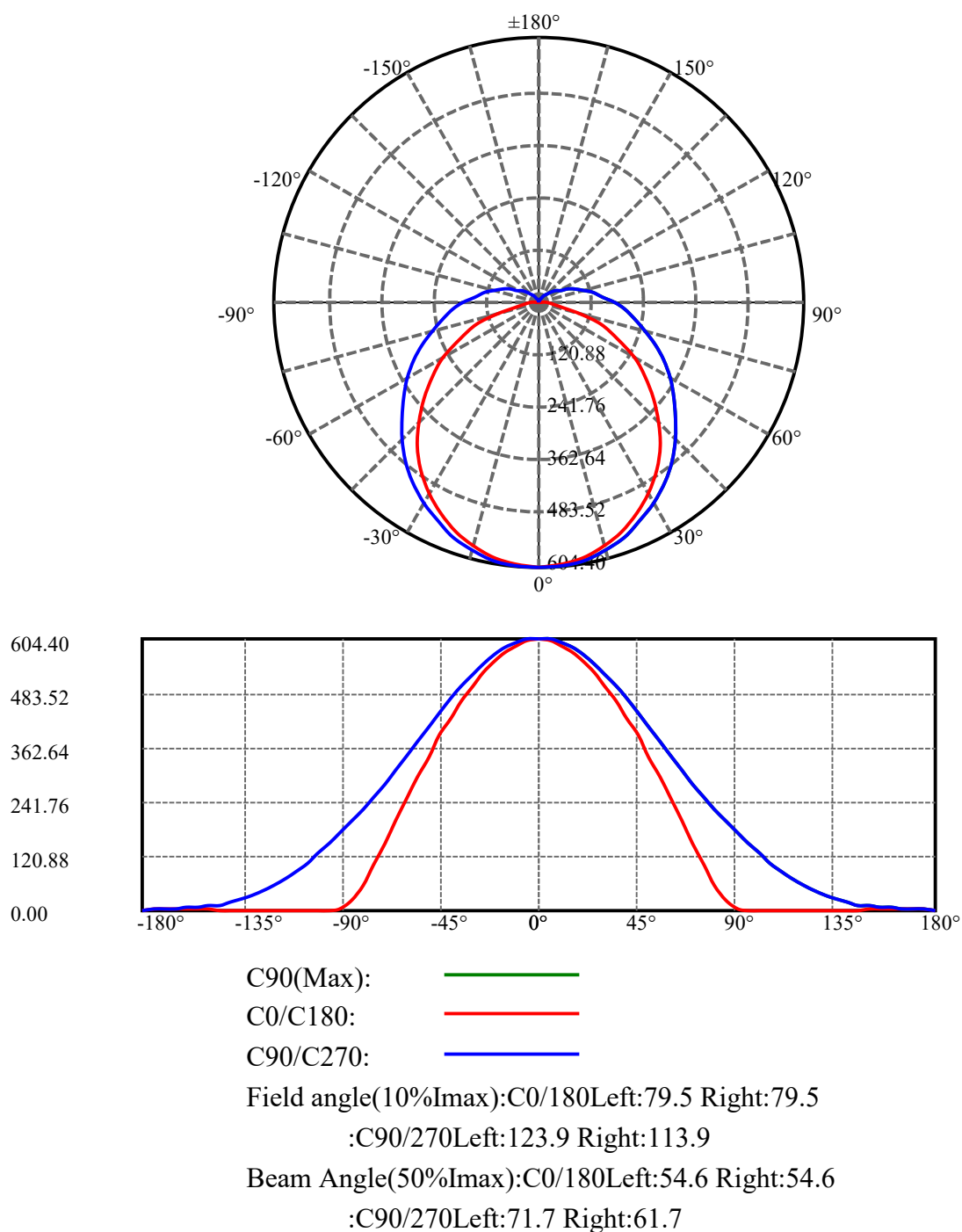
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	603.056	0.000	0	0.00%	0.00%
5.0	600.661	14.390	14.39	0.65%	0.65%
10.0	592.435	42.681	57.071	1.92%	2.57%
15.0	579.311	69.507	126.578	3.13%	5.71%
20.0	560.992	93.977	220.555	4.24%	9.94%
25.0	538.518	115.318	335.873	5.20%	15.14%
30.0	511.970	132.940	468.813	5.99%	21.14%
35.0	481.907	146.355	615.169	6.60%	27.73%
40.0	448.038	155.154	770.323	7.00%	34.73%
45.0	413.518	159.524	929.847	7.19%	41.92%
50.0	375.824	159.498	1089.345	7.19%	49.11%
55.0	337.944	155.197	1244.542	7.00%	56.11%
60.0	298.079	147.015	1391.557	6.63%	62.74%
65.0	260.832	135.872	1527.429	6.13%	68.86%
70.0	224.745	122.951	1650.38	5.54%	74.41%
75.0	188.284	107.959	1758.339	4.87%	79.27%
80.0	154.779	91.794	1850.133	4.14%	83.41%
85.0	127.114	76.597	1926.73	3.45%	86.87%
90.0	104.464	63.408	1990.138	2.86%	89.73%
95.0	84.958	51.865	2042.003	2.34%	92.06%
100.0	69.345	41.928	2083.931	1.89%	93.95%
105.0	56.164	33.583	2117.514	1.51%	95.47%
110.0	45.377	26.541	2144.055	1.20%	96.66%
115.0	35.635	20.513	2164.568	0.92%	97.59%
120.0	27.799	15.421	2179.989	0.70%	98.28%
125.0	21.307	11.351	2191.339	0.51%	98.80%
130.0	16.084	8.130	2199.469	0.37%	99.16%
135.0	12.204	5.716	2205.185	0.26%	99.42%
140.0	9.219	3.967	2209.152	0.18%	99.60%
145.0	7.355	2.765	2211.917	0.12%	99.72%
150.0	6.236	2.001	2213.918	0.09%	99.81%
155.0	5.491	1.484	2215.402	0.07%	99.88%
160.0	4.894	1.089	2216.492	0.05%	99.93%
165.0	4.297	0.757	2217.249	0.03%	99.96%
170.0	3.737	0.477	2217.726	0.02%	99.99%
175.0	3.290	0.251	2217.977	0.01%	100.00%
180.0	1.794	0.061	2218.038	0.00%	100.00%

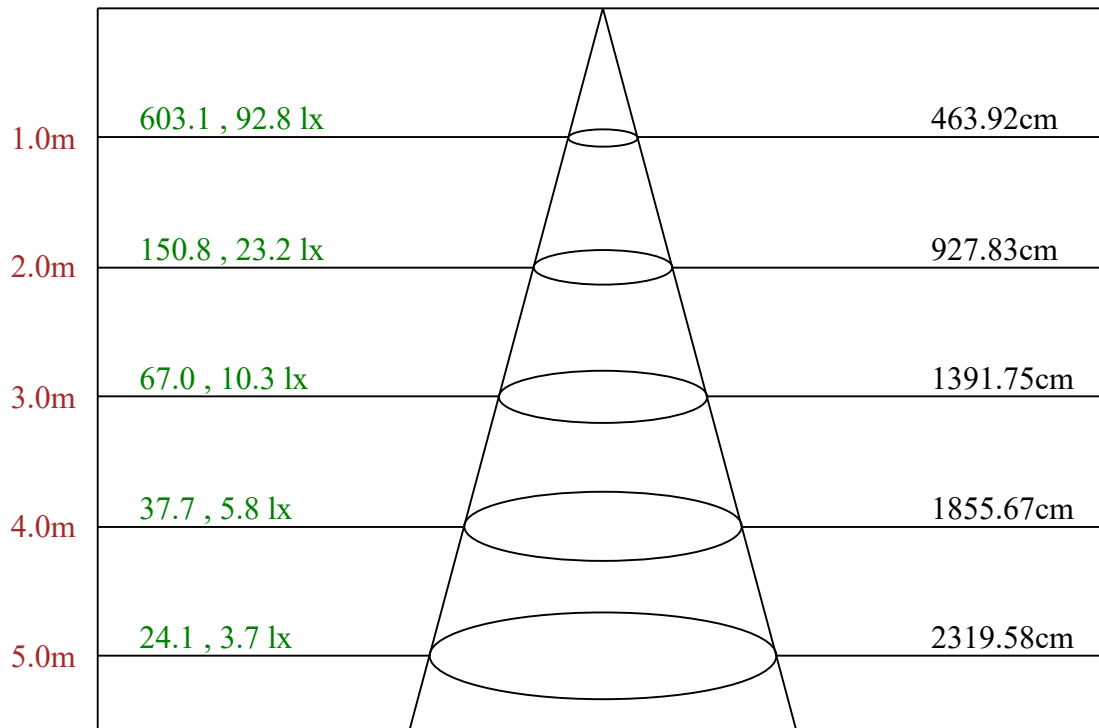
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	468.81	21.14%	21.14%
0-40	770.32	34.73%	34.73%
0-60	1391.56	62.74%	62.74%
0-90	1990.14	89.73%	89.73%
0-120	2179.99	98.28%	98.28%
0-180	2218.04	100.00%	100.00%
60-90	598.58	26.99%	26.99%
90-120	189.85	8.56%	8.56%
90-130	209.33	9.44%	9.44%
90-150	223.78	10.09%	10.09%
90-180	227.84	10.27%	10.27%
0-75.88	1774.43	80.00%	80.00%

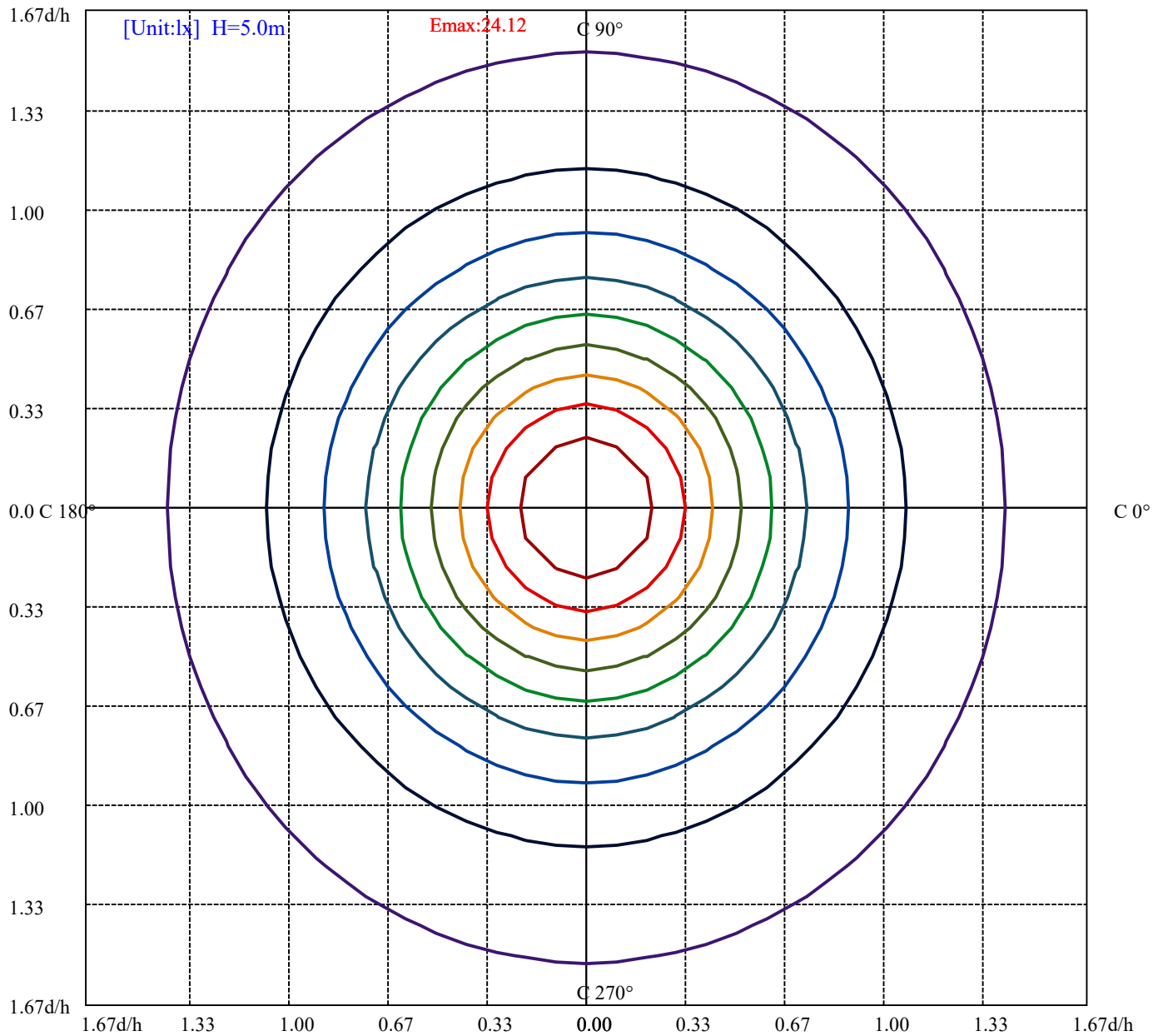
ZONAL LUMEN SUMMARY

0-10	57.07
10-20	163.48
20-30	248.26
30-40	301.51
40-50	319.02
50-60	302.21
60-70	258.82
70-80	199.75
80-90	140.00
90-100	93.79
100-110	60.12
110-120	35.93
120-130	19.48
130-140	9.68
140-150	4.77
150-160	2.57
160-170	1.23
170-180	0.25

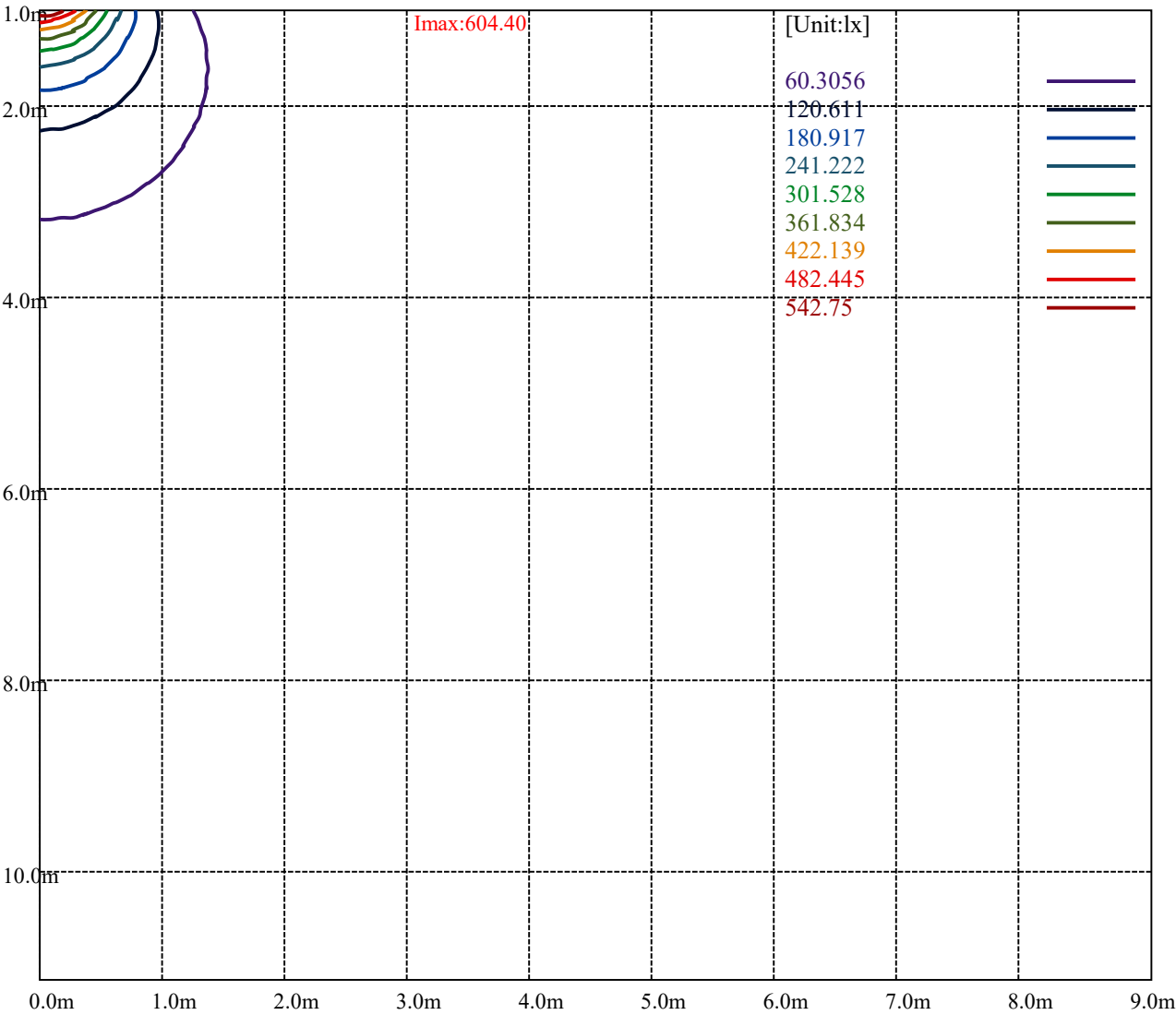




Max , Ave Beam angle of C90 plane 133.36



(10%Emax) 2.412224	—
(20%Emax) 4.82444	—
(30%Emax) 7.236681	—
(40%Emax) 9.64888	—
(50%Emax) 12.06112	—
(60%Emax) 14.47332	—
(70%Emax) 16.88556	—
(80%Emax) 19.2978	—
(90%Emax) 21.71	—



Luminance Table

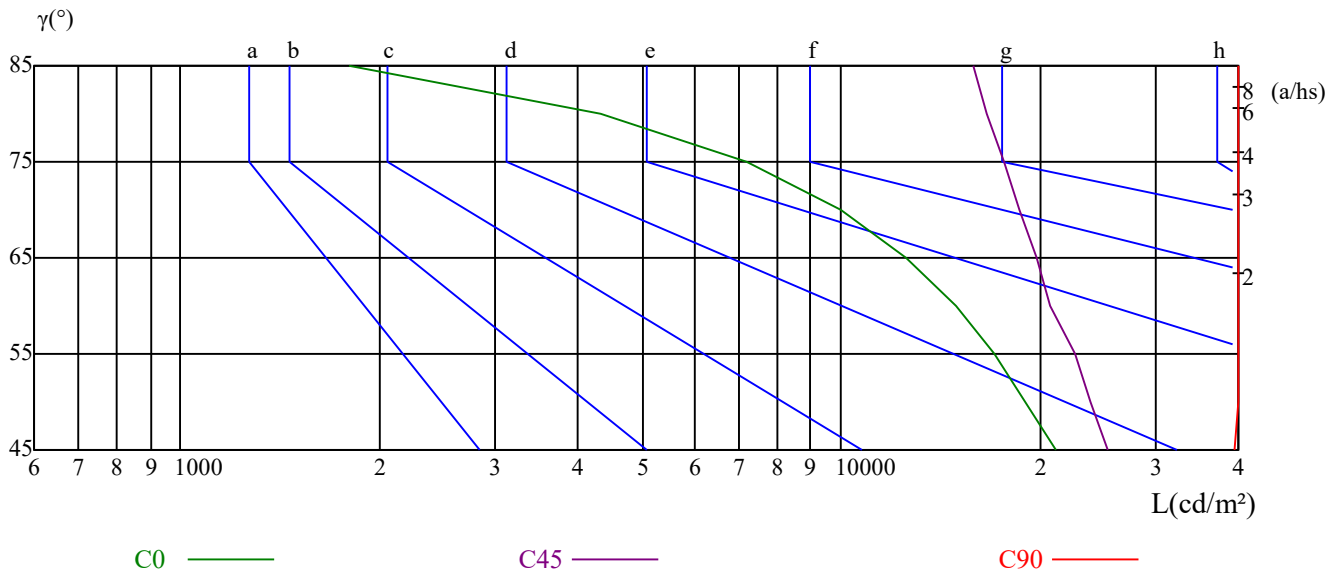
γ	45	50	55	60	65	70	75	80	85
C0	21153	19072	17032	14955	12531	9994	7190	4324	1797
C45	25358	23900	22571	20689	19841	18645	17619	16666	15924
C90	39509	40212	41565	43601	46471	51388	60131	78344	130840

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
30445	47430	40188	25078	62289	49063	15488	145220	102963

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)

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	603.06	602.16	594.99	583.34	565.42	540.33	514.34	481.19	445.35
15.0	603.06	602.16	594.96	581.45	564.35	539.15	511.25	478.84	444.64
30.0	603.06	600.36	592.27	580.59	563.51	537.45	508.69	479.93	444.88
45.0	603.06	601.26	594.07	580.59	562.61	540.14	513.18	481.73	447.57
60.0	603.06	599.47	589.59	579.72	559.98	541.14	514.21	485.50	454.98
75.0	603.06	600.36	592.29	580.62	563.57	542.93	518.70	490.88	460.37
90.0	603.06	602.16	593.23	582.51	566.43	546.77	523.54	495.85	465.47
105.0	603.06	599.48	591.44	578.04	547.66	541.41	517.29	490.49	459.22
120.0	603.06	599.49	590.57	577.19	560.24	537.04	512.95	483.52	427.31
135.0	603.06	599.47	591.41	577.07	558.25	536.75	508.97	478.50	443.56
150.0	603.06	601.26	591.39	578.83	559.08	533.06	504.34	470.24	436.14
165.0	603.06	599.43	591.28	575.89	556.88	531.52	504.36	470.85	433.73
180.0	603.06	597.68	586.03	568.11	545.71	518.83	486.57	453.41	413.98
195.0	603.06	599.46	588.65	572.45	550.85	524.75	493.25	459.94	423.04
210.0	603.06	598.56	589.57	575.19	553.63	530.26	502.40	469.14	434.99
225.0	603.06	602.16	593.17	579.69	562.61	539.25	510.49	479.93	446.67
240.0	603.06	600.36	593.18	579.72	562.67	544.72	517.80	490.88	461.27
255.0	603.06	602.16	594.98	583.31	579.72	546.52	525.88	498.96	472.03
270.0	603.06	606.63	601.27	588.76	572.68	553.02	530.69	504.78	477.98
285.0	603.06	601.27	595.91	585.19	569.11	551.24	528.01	502.10	474.40
300.0	603.06	601.27	595.03	583.43	566.48	546.85	522.77	496.00	463.89
315.0	603.06	600.37	593.20	580.65	563.63	540.33	515.24	486.57	453.41
330.0	603.06	601.26	591.39	577.03	556.39	532.16	504.34	472.03	438.83
345.0	603.06	597.62	588.57	574.08	552.35	528.81	498.02	464.52	429.20
360.0	603.06	602.16	594.99	583.34	565.42	540.33	514.34	481.19	445.35
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	406.82	361.12	316.31	270.61	222.23	170.25	119.18	71.69	32.26
15.0	403.24	360.93	314.13	267.32	220.52	171.92	127.81	85.51	52.20
30.0	406.23	363.99	319.95	275.02	234.57	193.23	155.48	121.33	93.47
45.0	411.62	374.78	336.13	298.38	258.84	223.79	188.74	159.98	132.12
60.0	420.88	385.88	350.89	315.89	283.58	251.27	219.86	192.04	163.33
75.0	430.75	395.76	365.24	332.94	300.63	271.02	240.50	211.79	183.97
90.0	434.20	402.04	370.77	340.39	306.44	275.17	244.80	217.10	191.19
105.0	430.63	397.57	365.41	332.35	301.08	270.71	240.33	211.74	184.94
120.0	418.39	387.17	350.59	317.59	283.69	250.68	220.35	191.80	164.15
135.0	407.71	370.08	333.34	267.93	258.07	223.12	192.66	161.29	134.41
150.0	394.86	355.37	312.30	270.12	228.84	192.04	156.15	102.30	95.12
165.0	391.17	348.61	307.87	258.97	212.79	165.70	124.96	84.21	56.14
180.0	370.97	325.27	278.68	232.08	179.21	131.72	83.33	40.32	9.86
195.0	383.44	335.73	293.43	247.52	199.82	154.81	111.61	74.71	45.00
210.0	396.35	356.80	314.56	272.32	232.77	195.03	157.28	125.82	97.06
225.0	414.32	375.67	340.62	302.88	266.93	233.67	201.32	169.86	142.90
240.0	428.96	395.76	360.76	328.45	296.14	287.17	231.53	202.81	176.79
255.0	441.52	410.11	377.81	344.60	313.19	283.58	253.07	225.25	197.43
270.0	445.81	413.65	383.28	351.11	318.95	287.68	258.20	230.50	203.70
285.0	443.13	411.86	378.81	347.54	314.48	283.21	254.62	226.03	199.23
300.0	434.45	399.66	368.44	334.54	301.53	268.52	237.30	207.86	181.10
315.0	420.26	384.41	349.47	310.94	275.99	240.15	209.68	179.21	150.54
330.0	398.45	361.65	322.17	280.89	241.40	202.81	167.81	135.51	107.69
345.0	390.27	345.90	299.72	253.54	208.26	166.61	122.24	86.02	56.14
360.0	406.82	361.12	316.31	270.61	222.23	170.25	119.18	71.69	32.26

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	5.38	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
15.0	28.80	16.20	8.10	5.40	3.60	2.70	2.70	1.80	1.80
30.0	69.20	50.33	35.95	25.16	17.97	11.68	8.99	7.19	5.39
45.0	107.85	86.28	68.30	53.92	40.44	31.46	22.47	16.18	12.58
60.0	139.10	115.77	96.92	78.07	63.72	49.36	38.59	28.72	20.64
75.0	157.94	135.51	114.87	95.12	78.07	61.92	48.46	37.69	27.82
90.0	164.39	142.05	119.72	100.06	82.19	67.90	52.71	41.99	30.38
105.0	159.03	135.80	116.14	95.60	78.62	63.43	50.03	38.42	27.70
120.0	140.06	118.65	98.13	80.29	65.12	51.74	40.14	29.44	21.41
135.0	110.22	89.61	71.69	57.35	43.91	33.15	24.19	17.03	13.44
150.0	72.69	54.74	40.38	28.72	21.54	13.46	9.87	7.18	5.38
165.0	32.60	19.02	10.87	5.43	3.62	2.72	2.72	2.72	2.72
180.0	2.69	1.79	1.79	1.79	1.79	1.79	0.90	0.90	0.90
195.0	27.00	16.20	9.90	7.20	5.40	5.40	4.50	3.60	3.60
210.0	73.70	54.82	40.44	29.66	27.86	16.18	12.58	9.89	8.09
225.0	136.61	96.17	78.19	62.01	48.53	36.85	27.86	21.57	16.18
240.0	151.66	128.33	107.69	88.84	72.69	57.43	44.87	34.10	26.02
255.0	173.20	148.97	126.53	106.79	87.95	71.79	57.43	43.97	33.20
270.0	179.58	154.56	133.12	112.57	93.81	76.83	61.65	48.24	36.63
285.0	174.22	150.99	127.76	108.10	90.24	72.37	58.07	44.67	33.95
300.0	157.01	133.81	112.40	92.78	74.94	59.77	46.39	35.68	26.76
315.0	126.35	103.05	83.33	66.31	52.87	40.32	30.47	23.30	17.92
330.0	82.56	63.72	47.56	35.90	26.02	19.74	15.26	11.67	8.97
345.0	35.31	21.73	13.58	9.96	7.24	6.34	5.43	4.53	3.62
360.0	5.38	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	3.58	3.58	3.58	3.58
15.0	1.80	1.80	2.70	2.70	2.70	3.60	3.60	3.60	3.60
30.0	4.49	3.59	4.49	4.49	4.49	3.59	3.59	3.59	3.59
45.0	8.99	6.29	6.29	5.39	5.39	4.49	4.49	3.59	3.59
60.0	15.26	10.77	8.08	7.18	6.28	5.38	5.38	3.59	3.59
75.0	19.74	14.36	10.77	8.08	7.18	6.28	5.38	4.49	3.59
90.0	22.34	16.08	11.61	8.93	7.15	6.25	5.36	4.47	2.68
105.0	20.55	15.19	10.72	8.04	7.15	6.25	5.36	4.47	2.68
120.0	16.06	11.60	8.92	7.14	6.24	6.24	5.35	3.57	3.57
135.0	9.86	7.17	6.27	6.27	6.27	5.38	4.48	3.58	3.58
150.0	4.49	4.49	4.49	4.49	4.49	4.49	3.59	3.59	3.59
165.0	2.72	2.72	2.72	2.72	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	5.39	5.39	4.49	4.49	3.59	3.59	3.59	2.70
225.0	12.58	9.89	8.09	7.19	6.29	5.39	4.49	3.59	3.59
240.0	19.74	14.36	10.77	8.97	7.18	6.28	5.38	4.49	3.59
255.0	25.13	18.85	13.46	10.77	8.08	7.18	5.38	4.49	3.59
270.0	27.70	19.66	14.29	10.72	8.93	7.15	5.36	4.47	3.57
285.0	25.02	18.76	13.40	10.72	8.04	7.15	5.36	4.47	2.68
300.0	20.52	15.17	11.60	8.92	7.14	6.24	4.46	3.57	3.57
315.0	13.44	10.75	8.96	7.17	6.27	4.48	3.58	3.58	2.69
330.0	7.18	6.28	5.38	5.38	4.49	3.59	3.59	3.59	2.69
345.0	3.62	3.62	2.72	2.72	2.72	2.72	2.72	2.72	2.72
360.0	0.90	0.90	1.79	2.69	2.69	3.58	3.58	3.58	3.58

Intensity data(cd)

C/ $\gamma(^{\circ})$	180.0
0.0	3.58
15.0	3.60
30.0	3.59
45.0	3.59
60.0	3.59
75.0	3.59
90.0	3.57
105.0	3.57
120.0	3.57
135.0	3.58
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	3.58