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AFX

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Client:

LumCAT: MIAV2404LAJUDBK

Luminaire: LED LAMP

Report No:

Ballast type:

Test No: LCZP25100195

Voltage(V): 120.070

LampCAT:

Current(A): 0.200

Lamp flux(lm): 1902.1

Power (W): 23.850

Number of Lamps: 1

PF: 0.993

Length(mm): 590

Width(mm): 50

Phm Type: C

Height(mm): 50

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Photometric Results

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Lumens(lm): 1902.08, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 79.75

Central intensity(cd): 288.265, Maximum intensity(cd): 299.210

Angle of maximum intensity: C=90.0  $\gamma$ =55.0

Beam Angle(50%Imax): [C0/180]Total=N.A.

[C90/270]Total=N.A.

Field angle(10%Imax): [C0/180]Total=N.A.

[C90/270]Total=N.A.

Maximum s/h(1/2): C0\_180=1.27 C90\_270=1.59

Maximum s/h(1/4): C0\_180=1.39 C90\_270=1.80

Up flux rate of lamp(%): 46.44%

Down flux rate of lamp(%): 53.56%

Up flux rate of LUM(%): 46.44%

Down flux rate of LUM(%): 53.56%

CIE Type : General diffuse lighting

Output flux ratio in  $\pi$  solid angle : 34.667%

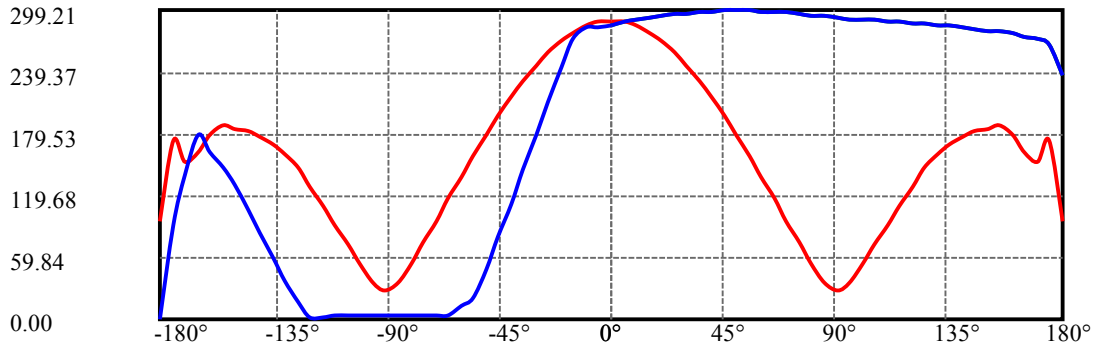
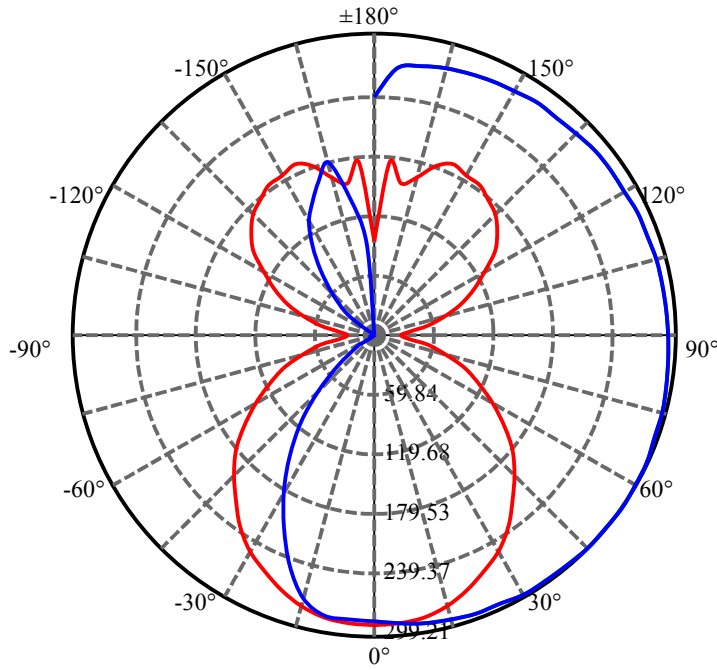
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	285.693	0.000	0	0.00%	0.00%
5.0	285.300	6.826	6.826	0.36%	0.36%
10.0	284.052	20.368	27.194	1.07%	1.43%
15.0	280.261	33.475	60.668	1.76%	3.19%
20.0	271.599	45.481	106.149	2.39%	5.58%
25.0	258.374	55.584	161.734	2.92%	8.50%
30.0	243.992	63.575	225.308	3.34%	11.85%
35.0	227.854	69.483	294.791	3.65%	15.50%
40.0	211.993	73.385	368.176	3.86%	19.36%
45.0	193.429	75.067	443.244	3.95%	23.30%
50.0	175.575	74.563	517.806	3.92%	27.22%
55.0	157.575	72.438	590.244	3.81%	31.03%
60.0	141.594	69.152	659.396	3.64%	34.67%
65.0	129.060	65.796	725.192	3.46%	38.13%
70.0	119.452	62.925	788.117	3.31%	41.43%
75.0	111.980	60.493	848.61	3.18%	44.61%
80.0	106.036	58.335	906.945	3.07%	47.68%
85.0	102.013	56.532	963.477	2.97%	50.65%
90.0	99.886	55.282	1018.758	2.91%	53.56%
95.0	100.365	54.830	1073.589	2.88%	56.44%
100.0	103.307	55.342	1128.931	2.91%	59.35%
105.0	107.598	56.432	1185.363	2.97%	62.32%
110.0	113.258	57.728	1243.092	3.04%	65.35%
115.0	120.477	59.183	1302.275	3.11%	68.47%
120.0	128.663	60.566	1362.841	3.18%	71.65%
125.0	141.101	62.355	1425.196	3.28%	74.93%
130.0	153.676	64.094	1489.291	3.37%	78.30%
135.0	165.179	64.429	1553.72	3.39%	81.69%
140.0	176.113	63.193	1616.913	3.32%	85.01%
145.0	186.517	60.502	1677.415	3.18%	88.19%
150.0	196.046	56.335	1733.75	2.96%	91.15%
155.0	203.844	50.606	1784.356	2.66%	93.81%
160.0	207.115	43.102	1827.458	2.27%	96.08%
165.0	202.367	33.747	1861.205	1.77%	97.85%
170.0	194.475	23.540	1884.746	1.24%	99.09%
175.0	192.464	13.842	1898.588	0.73%	99.82%
180.0	99.303	3.488	1902.076	0.18%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	225.31	11.85%	11.85%
0-40	368.18	19.36%	19.36%
0-60	659.40	34.67%	34.67%
0-90	1018.76	53.56%	53.56%
0-120	1362.84	71.65%	71.65%
0-180	1902.08	100.00%	100.00%
60-90	359.36	18.89%	18.89%
90-120	344.08	18.09%	18.09%
90-130	470.53	24.74%	24.74%
90-150	714.99	37.59%	37.59%
90-180	879.83	46.26%	46.26%
0-132.51	1521.66	80.00%	80.00%

ZONAL LUMEN SUMMARY

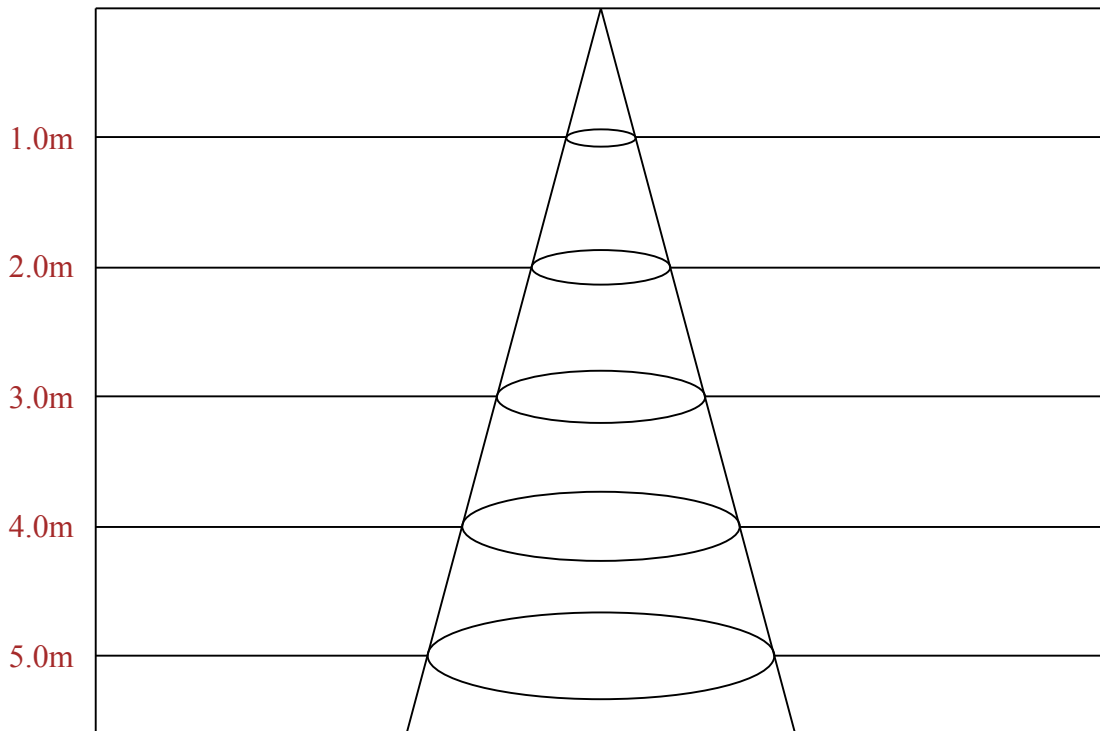
0-10	27.19
10-20	78.96
20-30	119.16
30-40	142.87
40-50	149.63
50-60	141.59
60-70	128.72
70-80	118.83
80-90	111.81
90-100	110.17
100-110	114.16
110-120	119.75
120-130	126.45
130-140	127.62
140-150	116.84
150-160	93.71
160-170	57.29
170-180	13.84



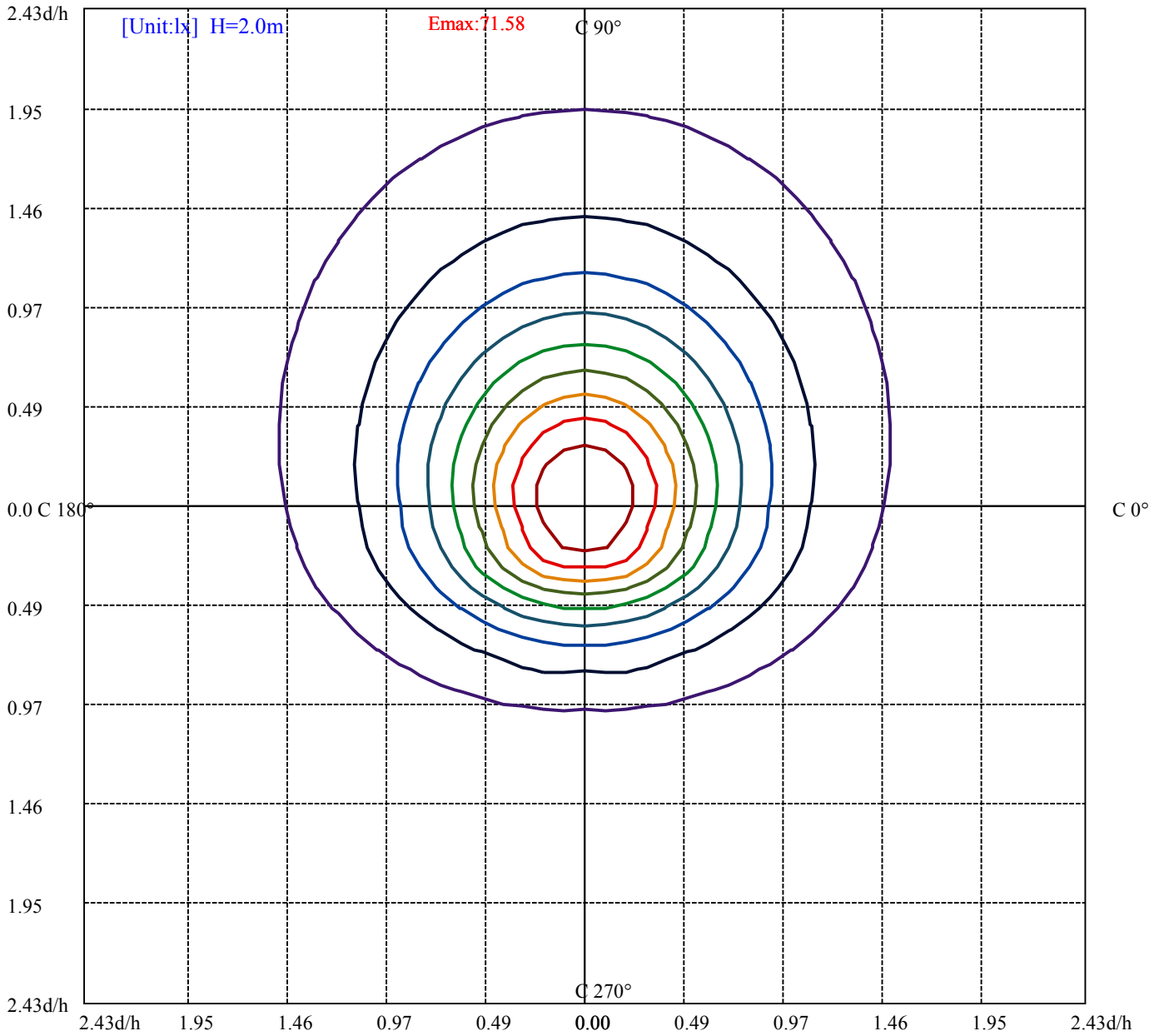
C90(Max): ———  
 C0/C180: ———  
 C90/C270: ———

Field angle(10%Imax):C0/180Left:0.0 Right:0.0  
 :C90/270Left:0.0 Right:0.0

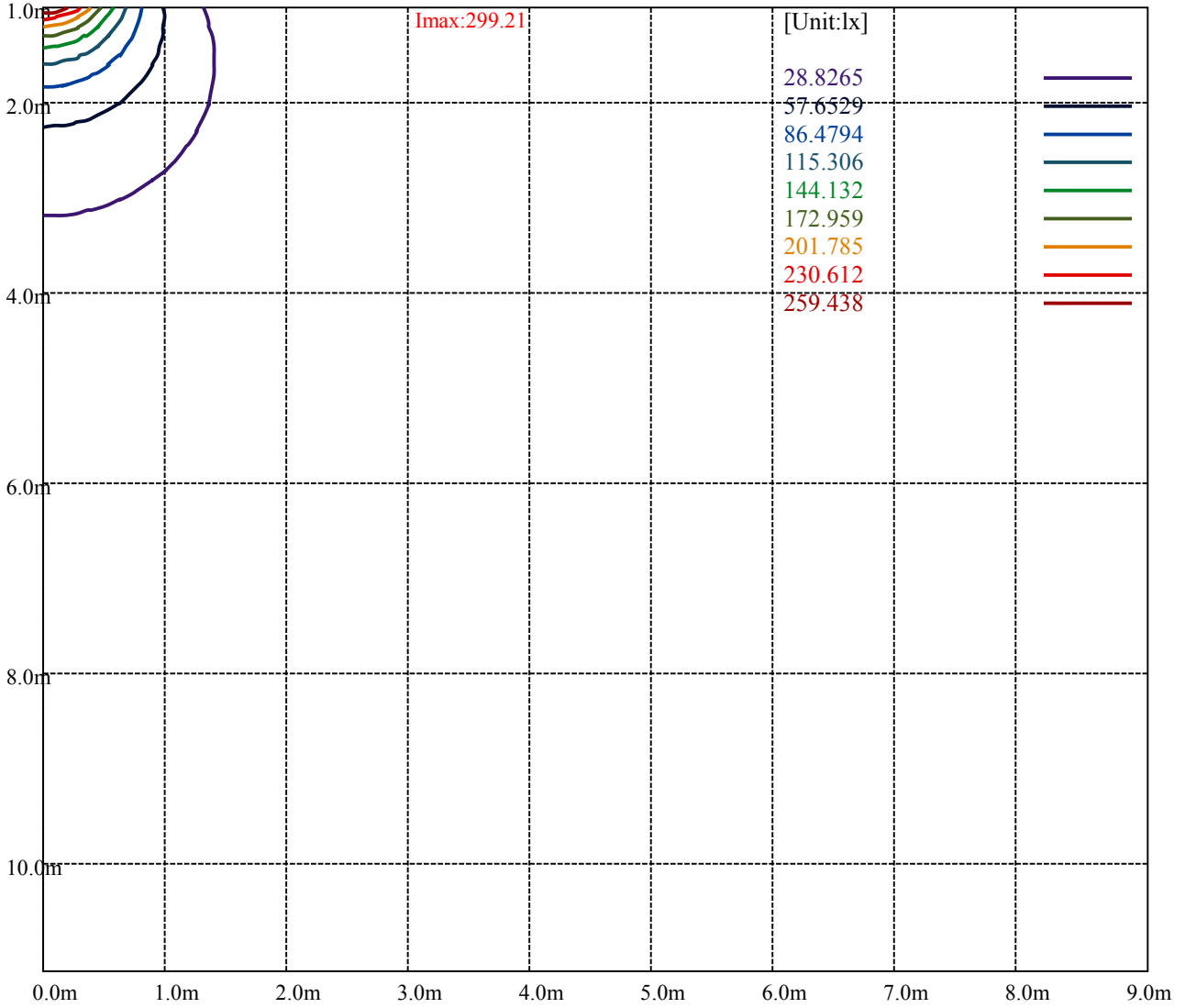
Beam Angle(50%Imax):C0/180Left:176.8 Right:176.8  
 :C90/270Left:0.0 Right:0.0



Max , Ave      Beam angle of C90 plane 215.59



- (10%Emax) 7.158375
- (20%Emax) 14.31678
- (30%Emax) 21.47515
- (40%Emax) 28.6335
- (50%Emax) 35.792
- (60%Emax) 42.95025
- (70%Emax) 50.10875
- (80%Emax) 57.267
- (90%Emax) 64.4255



Luminance Table

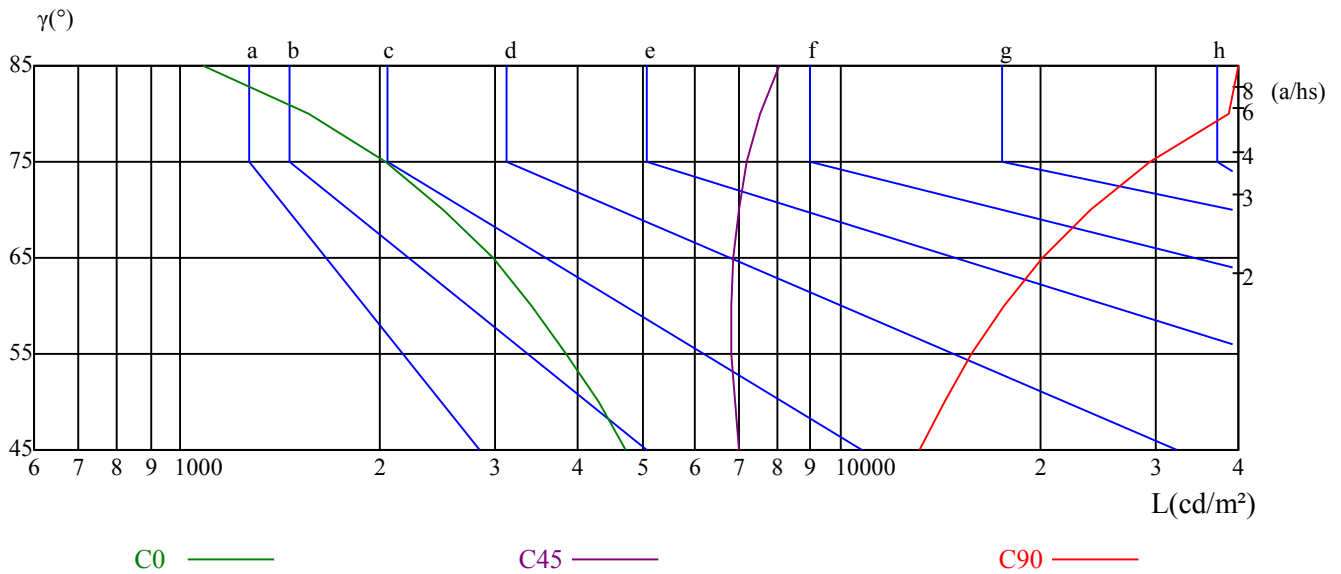
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4725	4292	3845	3412	2966	2501	2042	1563	1081
C45	6989	6896	6833	6827	6880	6997	7222	7560	8080
C90	13188	14310	15774	17631	20217	23831	29379	38752	57838

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9326	12061	9875	9665	19553	14959	13435	57629	42476

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



RHOCC	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	1.08	1.08	1.08	1.00	1.00	1.00	0.85	0.85	0.85	0.72	0.72	0.72	0.59	0.59	0.59	0.54
1	0.91	0.86	0.81	0.84	0.80	0.76	0.71	0.68	0.65	0.59	0.57	0.55	0.49	0.47	0.45	0.40
2	0.78	0.71	0.65	0.72	0.66	0.61	0.61	0.56	0.52	0.51	0.47	0.44	0.42	0.39	0.37	0.32
3	0.68	0.60	0.53	0.63	0.56	0.50	0.53	0.48	0.43	0.45	0.40	0.37	0.36	0.33	0.30	0.26
4	0.60	0.51	0.45	0.56	0.48	0.42	0.47	0.41	0.36	0.39	0.35	0.31	0.32	0.29	0.26	0.22
5	0.53	0.44	0.38	0.49	0.42	0.36	0.42	0.36	0.31	0.35	0.30	0.27	0.29	0.25	0.22	0.19
6	0.48	0.39	0.33	0.44	0.37	0.31	0.38	0.32	0.27	0.32	0.27	0.23	0.26	0.22	0.19	0.17
7	0.43	0.35	0.29	0.40	0.32	0.27	0.34	0.28	0.24	0.29	0.24	0.20	0.24	0.20	0.17	0.15
8	0.39	0.31	0.25	0.36	0.29	0.24	0.31	0.25	0.21	0.26	0.22	0.18	0.22	0.18	0.15	0.13
9	0.36	0.28	0.22	0.33	0.26	0.21	0.29	0.23	0.19	0.24	0.20	0.16	0.20	0.17	0.14	0.12
10	0.33	0.25	0.20	0.30	0.24	0.19	0.26	0.21	0.17	0.22	0.18	0.15	0.19	0.15	0.12	0.10

## Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	288.26	288.17	286.11	281.09	274.00	264.76	253.18	239.28	223.85
15.0	287.82	288.17	287.01	283.33	277.50	269.15	259.11	246.73	233.45
30.0	286.38	288.09	288.00	285.93	281.45	275.61	268.17	259.02	248.70
45.0	286.74	288.53	289.61	288.98	287.10	283.96	279.92	273.73	267.81
60.0	286.11	288.98	290.87	291.67	291.40	290.42	288.71	286.47	283.96
75.0	285.75	288.89	290.87	292.66	293.56	294.37	295.26	294.99	295.44
90.0	284.68	287.73	290.33	292.21	293.92	295.08	296.07	297.06	297.95
105.0	284.95	288.26	290.51	292.12	293.02	293.47	293.47	293.56	293.20
120.0	284.59	287.37	288.89	289.43	288.98	287.46	286.02	283.69	280.73
135.0	285.93	285.93	286.65	286.38	284.14	280.19	274.99	268.89	262.16
150.0	282.97	284.95	284.59	282.34	273.19	271.40	263.41	254.17	243.41
165.0	284.14	285.03	283.60	279.83	273.64	265.21	254.62	242.33	226.63
180.0	288.26	286.11	281.18	273.91	263.95	251.84	238.65	223.04	205.81
195.0	287.82	283.96	279.38	272.03	262.61	251.12	238.02	223.31	207.16
210.0	286.38	283.33	279.02	273.19	266.46	255.52	234.79	208.77	181.14
225.0	286.74	283.69	281.18	276.87	265.57	240.00	211.82	182.40	154.14
240.0	286.11	283.96	281.89	277.95	254.35	223.40	194.24	162.66	131.08
255.0	285.75	284.23	282.88	273.37	245.29	214.25	181.59	150.55	115.38
270.0	284.68	283.33	282.25	270.50	243.05	210.30	178.90	145.61	112.15
285.0	284.95	283.33	282.34	273.55	246.01	215.41	183.11	150.64	142.92
300.0	284.59	282.52	280.55	276.51	273.01	225.91	195.68	164.63	134.49
315.0	285.93	281.36	277.95	273.46	265.48	241.34	214.61	186.08	157.01
330.0	282.97	280.28	275.97	269.96	262.16	252.65	236.41	210.66	185.27
345.0	284.14	281.00	275.61	268.98	258.57	248.16	235.06	220.26	204.02
360.0	288.26	288.17	286.11	281.09	274.00	264.76	253.18	239.28	223.85
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	206.80	188.95	168.67	149.11	128.21	106.50	85.05	65.05	43.87
15.0	218.46	202.22	185.36	168.04	150.73	134.49	117.98	102.82	89.81
30.0	237.39	225.37	213.98	200.97	189.48	177.73	166.61	157.01	150.46
45.0	260.72	253.45	245.65	237.93	230.49	223.13	217.30	211.56	207.43
60.0	281.00	277.77	274.90	271.22	267.18	263.23	259.64	256.50	254.53
75.0	295.17	294.54	293.74	292.30	290.60	288.71	287.64	285.84	284.50
90.0	298.40	298.76	299.21	298.22	297.86	296.43	295.26	293.92	292.75
105.0	293.38	292.66	291.40	289.88	288.17	286.02	283.96	282.43	280.82
120.0	277.32	273.73	269.78	265.66	261.35	257.31	253.36	250.22	247.44
135.0	254.53	247.17	238.92	231.02	223.22	215.59	208.68	202.85	198.37
150.0	231.74	219.18	206.17	193.07	180.69	168.67	157.10	147.41	140.14
165.0	213.17	196.21	179.26	161.13	143.19	125.34	108.92	93.04	79.58
180.0	187.42	167.77	147.32	125.87	104.34	82.63	62.53	41.81	25.21
195.0	185.36	161.22	132.96	108.11	82.27	58.05	36.16	24.85	24.49
210.0	152.88	124.89	97.52	71.06	47.55	25.30	20.90	20.64	20.46
225.0	122.38	94.74	65.05	39.92	16.69	15.16	15.34	15.43	15.43
240.0	99.59	69.08	40.37	14.71	9.24	9.42	9.69	9.87	9.87
255.0	84.51	53.29	24.22	3.59	3.68	3.95	4.04	4.04	4.31
270.0	79.31	48.18	20.81	13.46	2.87	3.05	3.32	3.50	3.59
285.0	86.04	55.09	26.29	4.49	4.58	4.76	5.02	5.11	5.29
300.0	103.80	73.93	45.40	19.47	9.96	10.23	10.50	10.68	10.77
315.0	127.76	99.05	71.06	45.85	22.07	15.52	15.52	15.61	15.61
330.0	158.26	131.26	104.34	78.41	53.65	30.95	20.81	20.64	20.46
345.0	186.88	165.26	139.42	114.75	89.36	64.69	42.17	24.04	23.15
360.0	206.80	188.95	168.67	149.11	128.21	106.50	85.05	65.05	43.87

## Intensity data(cd)

C/ $\gamma$ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	26.83	26.47	43.24	61.46	80.66	99.50	118.97	138.08	154.23
15.0	81.82	81.64	88.64	99.68	113.22	128.03	143.55	158.80	174.59
30.0	146.15	145.52	148.39	153.96	161.67	170.91	180.60	191.19	201.96
45.0	204.92	204.20	205.19	207.34	211.47	216.13	221.51	226.81	233.00
60.0	252.92	252.02	252.02	252.65	253.63	254.89	256.77	258.66	260.81
75.0	283.15	282.25	281.89	281.45	281.45	281.09	280.73	280.37	279.29
90.0	291.67	290.78	290.51	290.06	288.62	288.09	286.92	286.11	285.03
105.0	279.65	279.02	278.49	277.77	277.86	277.95	277.77	277.68	277.95
120.0	246.01	245.11	245.38	246.46	248.07	250.22	252.38	254.89	257.40
135.0	195.77	195.50	197.11	199.71	204.02	209.31	215.41	221.87	228.69
150.0	135.65	135.47	138.97	145.61	154.23	164.54	175.22	186.70	198.28
165.0	71.24	72.04	80.12	93.31	107.48	123.54	139.96	156.38	172.17
180.0	27.81	45.22	64.06	83.08	101.02	121.12	138.44	154.58	166.70
195.0	24.49	24.85	30.06	43.15	57.33	72.76	88.55	100.84	115.56
210.0	20.46	20.37	20.55	20.55	28.35	43.15	58.14	75.81	93.93
225.0	15.52	15.34	15.16	14.89	14.53	19.74	22.34	52.40	69.98
240.0	9.87	9.69	9.60	9.06	8.61	8.34	14.71	32.66	52.84
255.0	4.31	4.22	4.04	3.86	3.50	3.23	3.14	19.11	41.00
270.0	3.68	3.50	3.32	3.23	2.87	2.60	2.60	16.15	36.78
285.0	5.38	5.20	5.02	4.84	4.40	4.13	4.04	20.90	42.62
300.0	10.77	10.59	10.41	10.14	9.78	9.42	16.96	35.98	56.61
315.0	15.61	15.52	15.34	15.07	14.89	21.71	39.12	57.78	77.34
330.0	20.37	20.46	20.37	20.55	31.49	46.83	60.65	79.22	95.82
345.0	23.24	23.78	31.49	44.50	59.03	74.20	89.45	103.45	115.65
360.0	26.83	26.47	43.24	61.46	80.66	99.50	118.97	138.08	154.23
C/ $\gamma$ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	167.41	176.57	183.56	186.70	192.98	185.09	171.27	148.84	159.43
15.0	189.75	204.11	217.48	228.51	238.11	242.60	223.31	179.44	161.49
30.0	211.65	222.14	232.46	241.97	249.87	255.34	250.94	216.76	173.87
45.0	238.92	244.93	251.03	255.61	260.27	263.59	265.03	250.40	184.10
60.0	262.34	264.94	266.55	268.44	269.96	270.59	270.05	267.90	234.97
75.0	278.58	278.04	277.59	276.96	276.51	275.08	273.01	270.05	262.69
90.0	283.69	282.34	280.91	279.56	278.04	276.15	273.73	271.40	265.12
105.0	277.14	276.87	276.69	276.51	276.15	274.99	274.00	271.58	265.92
120.0	259.91	262.16	264.76	267.36	269.24	270.23	270.32	269.33	261.80
135.0	235.15	241.61	247.89	253.90	259.02	262.78	264.94	265.75	254.71
150.0	209.76	220.71	231.47	241.07	248.52	255.52	260.09	256.86	246.10
165.0	187.69	202.31	215.32	227.44	234.97	238.74	238.38	234.97	225.37
180.0	172.53	176.21	179.62	179.44	180.60	170.37	152.88	157.01	185.81
195.0	129.01	141.58	147.95	152.70	151.62	148.21	137.72	148.48	184.82
210.0	105.51	107.03	129.10	147.77	162.30	168.40	147.68	145.52	176.83
225.0	89.27	111.25	123.63	139.69	157.19	172.26	174.05	168.49	162.39
240.0	74.11	97.16	117.98	133.50	150.37	167.15	182.67	180.96	137.63
255.0	62.71	85.05	107.93	130.18	146.69	163.56	179.17	184.64	99.41
270.0	59.84	83.44	106.59	129.19	146.24	161.49	178.27	139.15	90.97
285.0	64.69	87.56	111.25	132.78	148.39	162.03	176.39	99.95	139.24
300.0	77.25	98.87	119.33	134.04	148.57	164.09	128.93	115.11	170.02
315.0	96.36	112.87	120.67	135.65	153.60	152.52	115.47	128.21	187.15
330.0	103.00	112.06	127.40	143.82	154.41	135.21	119.95	144.18	193.52
345.0	128.03	136.91	139.24	142.29	138.61	134.76	128.57	152.43	195.77
360.0	167.41	176.57	183.56	186.70	192.98	185.09	171.27	148.84	159.43

## Intensity data(cd)

C/ $\gamma$ (°)	180.0
0.0	188.59
15.0	182.22
30.0	172.08
45.0	155.21
60.0	137.81
75.0	175.49
90.0	235.42
105.0	235.78
120.0	234.79
135.0	229.05
150.0	224.83
165.0	212.00
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	188.59