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AFX

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Client:

LumCAT: ELZV2402LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.990

LampCAT:

Current(A): 0.138

Lamp flux(lm): 1484.3

Power (W): 16.280

Number of Lamps: 1

PF: 0.985

Length(mm): 600

Width(mm): 15

Phm Type: C

Height(mm): 10

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Photometric Results

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Lumens(lm): 1484.28, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 91.17

Central intensity(cd): 361.415, Maximum intensity(cd): 426.633

Angle of maximum intensity: C=90.0  $\gamma$ =30.0

Beam Angle(50%Imax): [C0/180]Total=108.4

[C90/270]Total=121.5

Field angle(10%Imax): [C0/180]Total=159.8

[C90/270]Total=232.9

Maximum s/h(1/2): C0\_180=1.23 C90\_270=1.74

Maximum s/h(1/4): C0\_180=1.35 C90\_270=1.84

Up flux rate of lamp(%): 15.80%

Down flux rate of lamp(%): 84.20%

Up flux rate of LUM(%): 15.80%

Down flux rate of LUM(%): 84.20%

CIE Type : Semidirect lighting

Output flux ratio in  $\pi$  solid angle : 56.427%

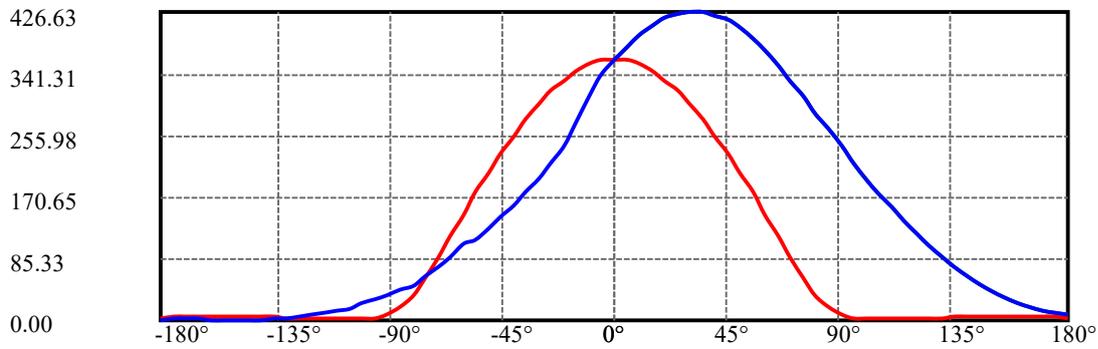
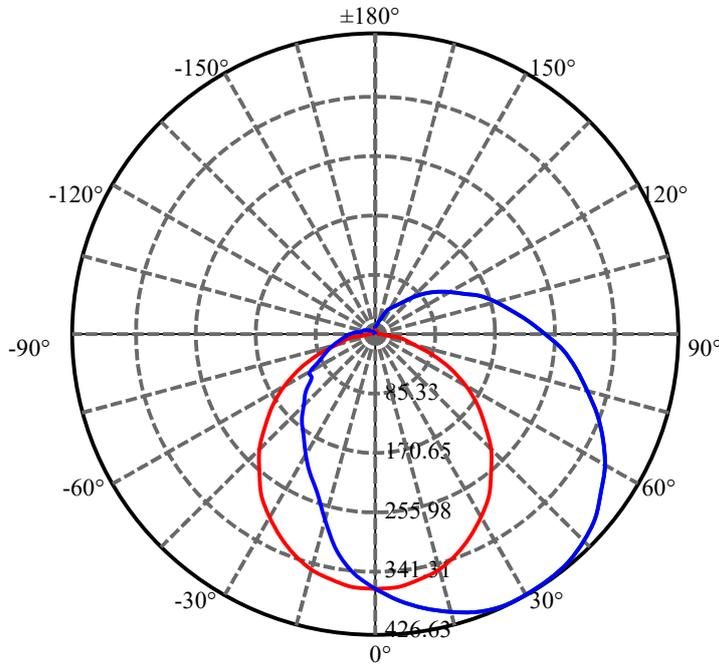
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	361.415	0.000	0	0.00%	0.00%
5.0	358.957	8.612	8.612	0.58%	0.58%
10.0	352.826	25.463	34.075	1.72%	2.30%
15.0	342.615	41.253	75.328	2.78%	5.08%
20.0	330.509	55.475	130.803	3.74%	8.81%
25.0	315.939	67.800	198.603	4.57%	13.38%
30.0	301.151	78.093	276.696	5.26%	18.64%
35.0	285.277	86.356	363.052	5.82%	24.46%
40.0	268.733	92.432	455.484	6.23%	30.69%
45.0	250.054	96.058	551.542	6.47%	37.16%
50.0	230.930	97.190	648.732	6.55%	43.71%
55.0	210.681	96.021	744.752	6.47%	50.18%
60.0	190.742	92.788	837.54	6.25%	56.43%
65.0	169.895	87.672	925.212	5.91%	62.33%
70.0	149.792	80.947	1006.158	5.45%	67.79%
75.0	130.214	73.189	1079.347	4.93%	72.72%
80.0	112.167	64.854	1144.201	4.37%	77.09%
85.0	96.240	56.629	1200.83	3.82%	80.90%
90.0	82.216	48.862	1249.693	3.29%	84.20%
95.0	70.654	41.857	1291.55	2.82%	87.02%
100.0	61.405	35.884	1327.433	2.42%	89.43%
105.0	53.280	30.686	1358.12	2.07%	91.50%
110.0	46.050	25.963	1384.083	1.75%	93.25%
115.0	39.832	21.746	1405.829	1.47%	94.71%
120.0	34.249	18.009	1423.838	1.21%	95.93%
125.0	29.264	14.681	1438.518	0.99%	96.92%
130.0	24.767	11.748	1450.267	0.79%	97.71%
135.0	20.868	9.221	1459.488	0.62%	98.33%
140.0	17.531	7.110	1466.598	0.48%	98.81%
145.0	14.944	5.418	1472.016	0.37%	99.17%
150.0	12.768	4.081	1476.097	0.27%	99.45%
155.0	10.967	3.004	1479.101	0.20%	99.65%
160.0	9.505	2.147	1481.248	0.14%	99.80%
165.0	8.344	1.471	1482.719	0.10%	99.89%
170.0	7.331	0.930	1483.649	0.06%	99.96%
175.0	6.881	0.508	1484.157	0.03%	99.99%
180.0	3.552	0.125	1484.282	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	276.70	18.64%	18.64%
0-40	455.48	30.69%	30.69%
0-60	837.54	56.43%	56.43%
0-90	1249.69	84.20%	84.20%
0-120	1423.84	95.93%	95.93%
0-180	1484.28	100.00%	100.00%
60-90	412.15	27.77%	27.77%
90-120	174.14	11.73%	11.73%
90-130	200.57	13.51%	13.51%
90-150	226.40	15.25%	15.25%
90-180	234.46	15.80%	15.80%
0-83.82	1187.43	80.00%	80.00%

ZONAL LUMEN SUMMARY

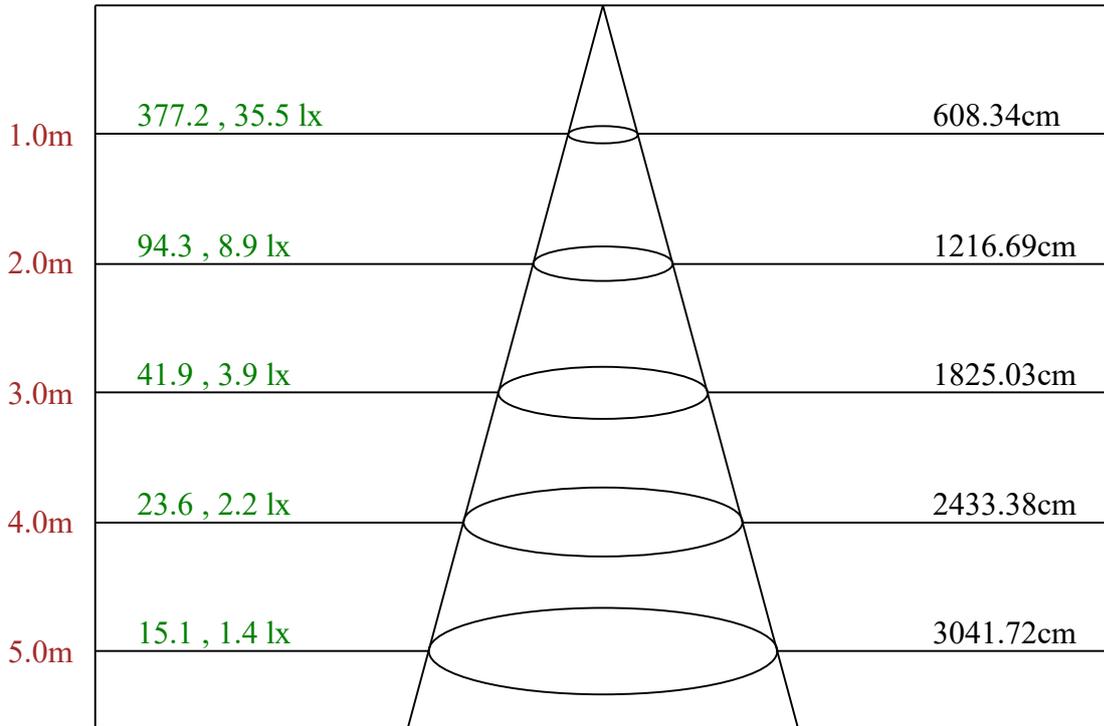
0-10	34.07
10-20	96.73
20-30	145.89
30-40	178.79
40-50	193.25
50-60	188.81
60-70	168.62
70-80	138.04
80-90	105.49
90-100	77.74
100-110	56.65
110-120	39.75
120-130	26.43
130-140	16.33
140-150	9.50
150-160	5.15
160-170	2.40
170-180	0.51



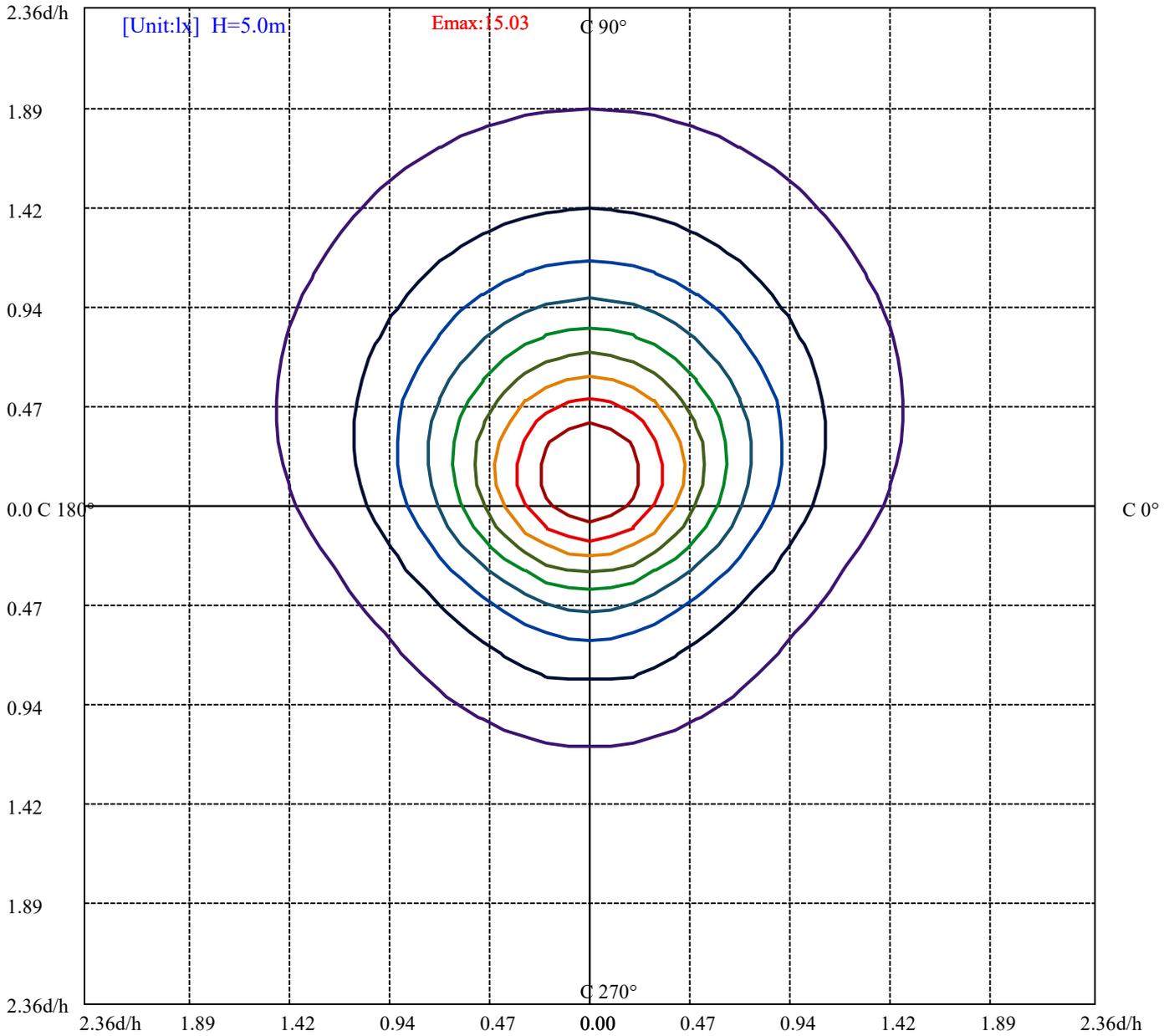
C90(Max): ———  
 C0/C180: ———  
 C90/C270: ———

Field angle(10%Imax):C0/180Left:79.9 Right:79.9  
 :C90/270Left:114.3 Right:118.6

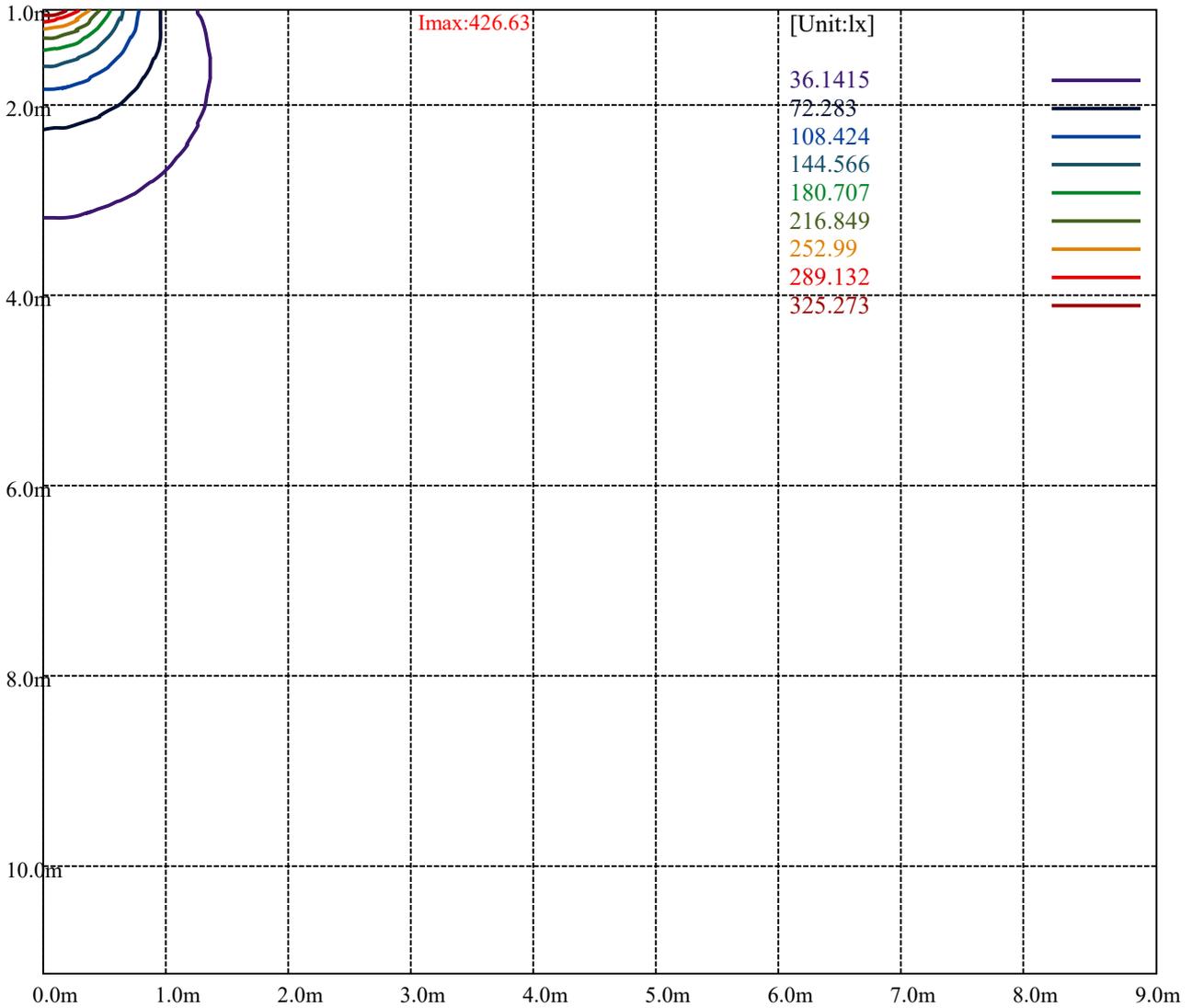
Beam Angle(50%Imax):C0/180Left:54.2 Right:54.2  
 :C90/270Left:55.8 Right:65.7



Max , Ave      Beam angle of C90 plane 143.60



(10%Emax) 1.50288	—
(20%Emax) 3.005756	—
(30%Emax) 4.50864	—
(40%Emax) 6.01152	—
(50%Emax) 7.5144	—
(60%Emax) 9.017281	—
(70%Emax) 10.52016	—
(80%Emax) 12.02304	—
(90%Emax) 13.52592	—



Luminance Table

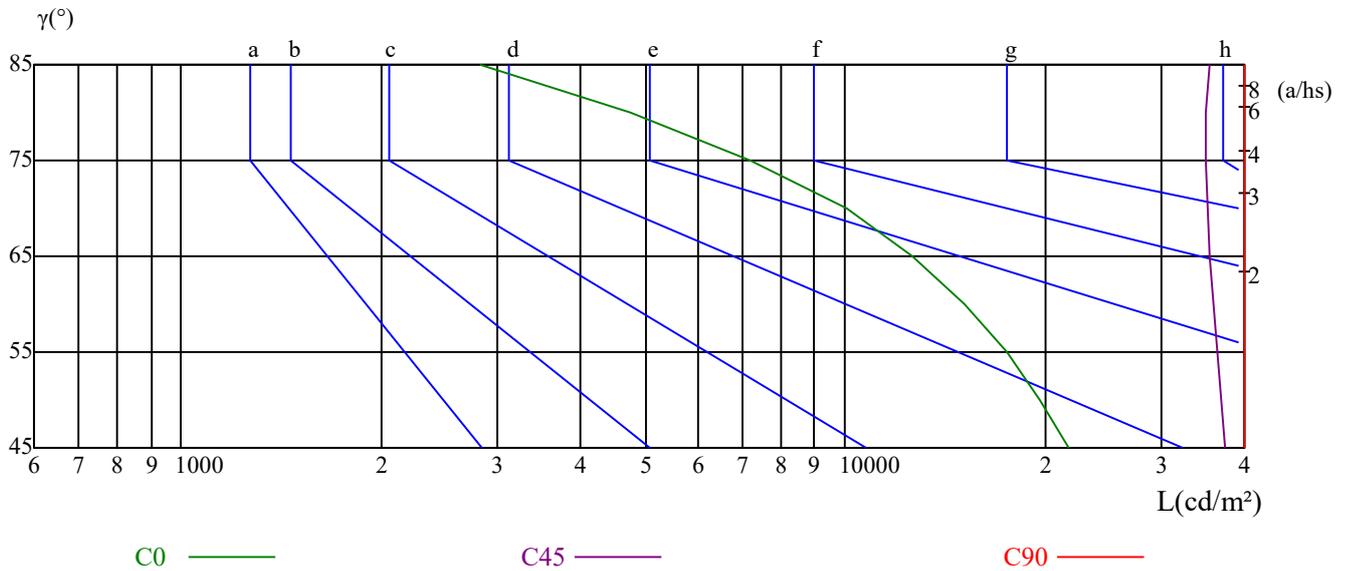
$\gamma$	45	50	55	60	65	70	75	80	85
C0	21684	19631	17492	15111	12636	10086	7213	4754	2824
C45	37461	36983	36454	35895	35499	35208	35022	35092	35483
C90	64120	68626	73697	80604	89672	102985	125569	167863	283235

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
30701	57869	45081	25160	79716	58724	24339	195156	132165

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	1.15	1.15	1.15	1.11	1.11	1.11	1.02	1.02	1.02	0.95	0.95	0.95	0.88	0.88	0.88	0.84
1	0.96	0.91	0.86	0.93	0.88	0.84	0.85	0.82	0.78	0.79	0.76	0.73	0.73	0.70	0.68	0.65
2	0.83	0.75	0.68	0.79	0.72	0.66	0.73	0.67	0.62	0.67	0.63	0.59	0.62	0.58	0.55	0.52
3	0.72	0.63	0.56	0.69	0.61	0.54	0.64	0.57	0.51	0.59	0.53	0.48	0.54	0.50	0.46	0.43
4	0.63	0.54	0.47	0.61	0.52	0.45	0.56	0.49	0.43	0.52	0.46	0.41	0.48	0.43	0.39	0.36
5	0.56	0.47	0.40	0.54	0.45	0.39	0.50	0.43	0.37	0.46	0.40	0.35	0.43	0.38	0.33	0.31
6	0.50	0.41	0.34	0.49	0.40	0.34	0.45	0.38	0.32	0.42	0.35	0.30	0.39	0.33	0.29	0.27
7	0.45	0.36	0.30	0.44	0.35	0.29	0.41	0.33	0.28	0.38	0.32	0.27	0.35	0.30	0.26	0.23
8	0.41	0.33	0.27	0.40	0.32	0.26	0.37	0.30	0.25	0.35	0.29	0.24	0.32	0.27	0.23	0.21
9	0.38	0.29	0.24	0.37	0.29	0.23	0.34	0.27	0.22	0.32	0.26	0.21	0.30	0.25	0.21	0.19
10	0.35	0.27	0.21	0.34	0.26	0.21	0.32	0.25	0.20	0.30	0.24	0.19	0.28	0.22	0.19	0.17

## 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	361.41	364.08	362.30	356.97	348.09	335.66	320.57	303.70	281.50
15.0	361.41	368.57	371.26	370.36	367.68	361.41	350.68	336.37	321.16
30.0	361.41	372.18	380.25	386.53	388.32	385.63	380.25	370.38	358.72
45.0	361.41	374.87	387.42	398.18	403.57	404.46	401.77	396.39	386.53
60.0	361.41	377.56	393.70	405.36	414.33	417.91	417.91	414.33	408.05
75.0	361.41	377.64	393.86	407.38	417.29	422.70	425.41	423.60	419.10
90.0	361.41	378.63	394.93	408.52	419.39	424.82	426.63	425.73	421.20
105.0	361.41	375.87	392.14	403.88	412.01	416.53	416.53	414.72	408.40
120.0	361.41	374.03	386.65	395.66	401.07	402.87	400.17	393.86	384.85
135.0	361.41	363.18	371.11	375.52	377.28	374.64	368.47	359.65	348.19
150.0	361.41	367.74	370.45	370.45	361.41	359.61	349.67	337.02	320.76
165.0	361.41	363.21	360.52	355.14	345.27	333.61	318.37	301.33	278.91
180.0	361.41	356.09	345.43	333.89	317.02	298.37	277.06	253.08	229.10
195.0	361.41	351.57	337.26	320.26	298.79	275.53	246.91	217.39	185.18
210.0	361.41	347.07	328.23	303.12	277.11	244.83	210.75	182.95	157.84
225.0	361.41	344.38	320.16	288.77	254.69	222.41	198.20	173.98	153.35
240.0	361.41	341.69	312.09	277.11	240.35	213.44	191.92	171.29	152.46
255.0	361.41	340.69	308.24	272.19	237.04	214.51	192.87	175.75	156.82
270.0	361.41	339.68	310.69	271.74	240.04	216.49	196.56	177.54	159.42
285.0	361.41	341.54	312.62	278.29	243.05	219.56	199.68	179.80	176.19
300.0	361.41	344.29	319.96	289.31	280.30	225.32	203.69	182.96	163.13
315.0	361.41	341.14	320.87	297.07	267.98	237.12	208.92	186.00	164.84
330.0	361.41	352.38	338.83	319.85	299.07	272.87	244.86	213.23	183.42
345.0	361.41	356.93	348.86	337.20	321.06	302.23	279.81	255.59	230.48
360.0	361.41	364.08	362.30	356.97	348.09	335.66	320.57	303.70	281.50
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	259.30	235.32	208.68	180.26	151.85	123.43	93.24	63.05	36.41
15.0	301.48	280.01	256.75	232.59	205.76	177.13	147.61	118.09	93.04
30.0	341.69	322.85	302.23	278.91	254.69	227.79	203.58	176.67	151.56
45.0	373.97	358.72	339.89	320.16	298.64	275.32	251.11	227.79	201.78
60.0	399.08	385.63	369.49	350.65	330.03	308.50	286.98	262.77	238.55
75.0	412.79	401.07	386.65	370.43	350.60	330.77	308.24	284.81	261.37
90.0	414.86	404.89	389.49	373.19	353.26	331.52	310.69	287.14	264.49
105.0	399.36	386.71	371.35	355.09	336.12	316.24	291.84	271.06	246.67
120.0	372.23	358.71	341.59	322.66	301.03	279.40	258.67	234.33	212.70
135.0	333.21	315.58	296.18	273.26	251.23	229.19	206.27	182.47	161.31
150.0	301.78	280.10	257.51	232.21	206.01	180.71	153.60	129.21	105.71
165.0	258.28	234.96	210.75	182.05	154.25	123.76	93.27	65.47	43.94
180.0	200.69	172.27	143.86	112.78	81.70	52.39	23.98	7.99	1.78
195.0	152.98	124.35	99.30	74.25	51.89	33.99	20.58	11.63	6.26
210.0	135.42	112.10	93.27	73.54	57.40	43.05	32.29	23.32	17.04
225.0	133.62	113.90	95.96	80.71	66.36	53.81	43.94	34.98	26.90
240.0	134.52	118.38	101.34	87.89	75.33	63.67	52.91	43.94	35.87
255.0	139.70	124.38	107.25	95.54	82.02	71.20	58.58	54.98	40.56
270.0	143.12	126.81	110.51	106.88	86.96	73.37	60.69	48.91	41.67
285.0	143.66	127.40	108.42	98.49	84.03	69.57	56.92	46.98	39.76
300.0	145.11	126.18	108.15	91.03	79.31	66.70	52.27	41.46	33.35
315.0	144.57	125.17	105.78	87.27	69.64	58.18	45.84	32.62	24.68
330.0	158.12	134.63	112.04	90.35	69.57	50.60	38.85	26.20	17.17
345.0	201.78	172.19	139.90	107.62	79.82	54.71	33.18	16.14	7.17
360.0	259.30	235.32	208.68	180.26	151.85	123.43	93.24	63.05	36.41

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	13.32	2.66	1.78	1.78	2.66	2.66	2.66	3.55	3.55
15.0	68.88	50.10	36.68	28.63	22.36	19.68	17.00	15.21	13.42
30.0	128.24	106.72	90.58	76.23	63.67	52.91	44.84	37.67	32.29
45.0	178.47	156.05	136.32	119.28	104.03	88.78	76.23	64.57	53.81
60.0	214.34	191.92	171.29	153.35	134.52	117.48	101.34	86.99	73.54
75.0	237.04	212.70	191.97	170.34	152.32	134.29	118.07	100.94	85.62
90.0	240.04	216.49	194.75	175.73	155.80	137.68	120.47	103.26	88.77
105.0	224.08	201.49	180.71	161.73	143.66	126.50	110.23	94.87	80.41
120.0	190.17	170.34	150.51	134.29	117.17	102.75	88.33	75.71	64.89
135.0	141.04	122.53	106.66	92.56	80.22	68.76	59.06	51.13	43.19
150.0	86.74	71.38	59.63	49.69	41.56	36.14	30.72	27.11	23.49
165.0	26.90	18.83	14.35	11.66	10.76	9.86	8.97	8.97	8.97
180.0	0.89	0.89	1.78	1.78	1.78	2.66	2.66	2.66	3.55
195.0	3.58	2.68	1.79	1.79	0.89	0.89	0.89	0.89	0.89
210.0	10.76	8.07	5.38	4.48	2.69	2.69	1.79	0.90	0.90
225.0	19.73	15.25	11.66	8.97	6.28	4.48	4.48	2.69	0.90
240.0	27.80	22.42	20.63	13.45	9.86	7.17	5.38	3.59	2.69
255.0	33.35	27.04	21.63	16.22	12.62	9.01	6.31	4.51	2.70
270.0	34.42	28.08	22.65	17.21	13.59	9.96	7.25	5.43	3.62
285.0	32.53	26.20	20.78	16.26	11.75	9.04	6.32	4.52	2.71
300.0	27.04	21.63	16.22	12.62	9.01	6.31	4.51	3.61	1.80
315.0	19.39	14.10	10.58	7.05	5.29	3.53	2.64	1.76	0.88
330.0	10.84	6.32	4.52	2.71	1.81	1.81	0.90	0.90	0.90
345.0	3.59	1.79	0.90	0.90	0.90	0.90	0.90	0.90	0.90
360.0	13.32	2.66	1.78	1.78	2.66	2.66	2.66	3.55	3.55
C/ $\gamma$ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	4.44	4.44	5.33	6.22	7.10	7.10	6.22	6.22	6.22
15.0	12.52	11.63	10.74	10.74	10.74	9.84	8.95	7.16	6.26
30.0	26.90	23.32	20.63	17.94	15.25	13.45	11.66	8.97	7.17
45.0	44.84	37.67	31.39	26.01	21.52	17.94	14.35	11.66	7.17
60.0	61.88	50.22	41.25	34.08	26.90	21.52	17.04	12.56	9.86
75.0	72.10	59.48	48.67	38.76	30.64	23.43	18.93	13.52	10.82
90.0	74.28	61.59	49.82	39.86	31.70	24.46	19.02	13.59	10.87
105.0	67.77	56.02	46.08	37.05	29.82	23.49	18.07	13.55	10.84
120.0	54.08	45.06	36.95	30.64	25.24	19.83	16.22	12.62	9.91
135.0	36.14	30.85	25.56	22.04	18.51	15.87	13.22	10.58	8.81
150.0	20.78	18.07	16.26	14.46	13.55	12.65	10.84	9.94	9.04
165.0	8.97	8.97	8.97	8.97	8.97	8.97	8.97	8.07	8.07
180.0	3.55	3.55	4.44	5.33	5.33	5.33	4.44	5.33	6.22
195.0	0.89	0.89	1.79	2.68	2.68	2.68	3.58	4.47	5.37
210.0	0.90	0.90	0.90	0.90	1.79	2.69	2.69	4.48	5.38
225.0	0.90	0.90	0.90	0.90	1.79	2.69	2.69	3.59	4.48
240.0	0.90	0.90	0.90	0.90	0.90	1.79	2.69	3.59	3.59
255.0	1.80	0.90	0.90	0.90	0.90	1.80	2.70	3.61	3.61
270.0	1.81	0.91	0.91	0.91	0.91	0.91	2.72	2.72	3.62
285.0	1.81	0.90	0.90	0.90	0.90	1.81	2.71	2.71	4.52
300.0	0.90	0.90	0.90	0.90	0.90	1.80	2.70	3.61	5.41
315.0	0.88	0.88	0.88	0.88	1.76	1.76	2.64	3.53	5.29
330.0	0.90	0.00	0.90	1.81	1.81	2.71	2.71	4.52	6.32
345.0	0.90	1.79	2.69	2.69	3.59	3.59	4.48	5.38	6.28
360.0	4.44	4.44	5.33	6.22	7.10	7.10	6.22	6.22	6.22

Intensity data(cd)

C/γ(°)	180.0
0.0	6.22
15.0	6.26
30.0	6.28
45.0	6.28
60.0	5.38
75.0	8.11
90.0	8.15
105.0	8.13
120.0	8.11
135.0	7.93
150.0	7.23
165.0	7.17
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	6.22