
WESTGATE MANUFACTURING INC

Client:

LumCAT: LDSW-MCT5-ORB,LDSW-MCT5-BK,LDSW-MCT5-WH,LDSW-MCT5-SIL

Luminaire: LED outdoor fixture

Report No:

Ballast type:

Test No: LCZP21120064

Voltage(V): 120.000

LampCAT:

Current(A): 0.107

Lamp flux(lm): 456.5

Power (W): 11.700

Number of Lamps: 1

PF: 0.909

Length(mm): 230

Width(mm): 80

Phm Type: C

Height(mm): 210

Photometric Results

Lumens(lm): 456.48, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 39.02

Central intensity(cd): 17.713, Maximum intensity(cd): 117.202

Angle of maximum intensity: C=90.0 γ =25.0

Beam Angle(50%Imax): [C0/180]Total=140.8

[C90/270]Total=162.5

Field angle(10%Imax): [C0/180]Total=304.4

[C90/270]Total=228.2

Maximum s/h(1/2): C0_180=2.79 C90_270=3.81

Maximum s/h(1/4): C0_180=2.54 C90_270=3.62

Up flux rate of lamp(%): 33.53%

Down flux rate of lamp(%): 66.47%

Up flux rate of LUM(%): 33.53%

Down flux rate of LUM(%): 66.47%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 41.097%

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Zonal flux distribution table

Appendix Page: 2 Total:12

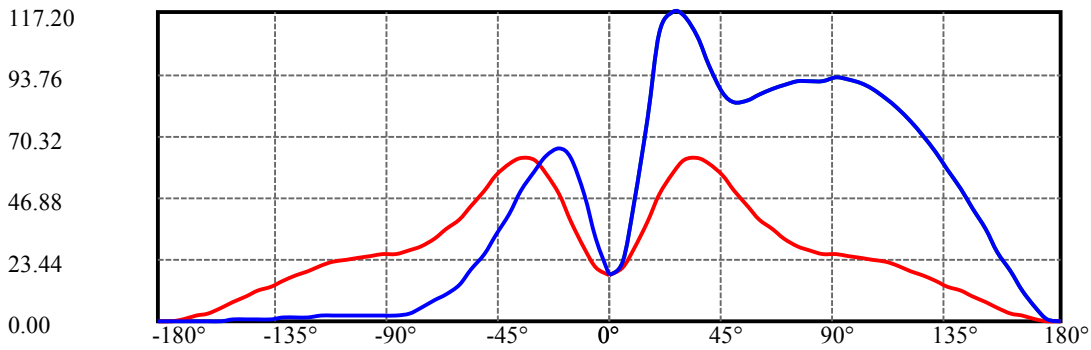
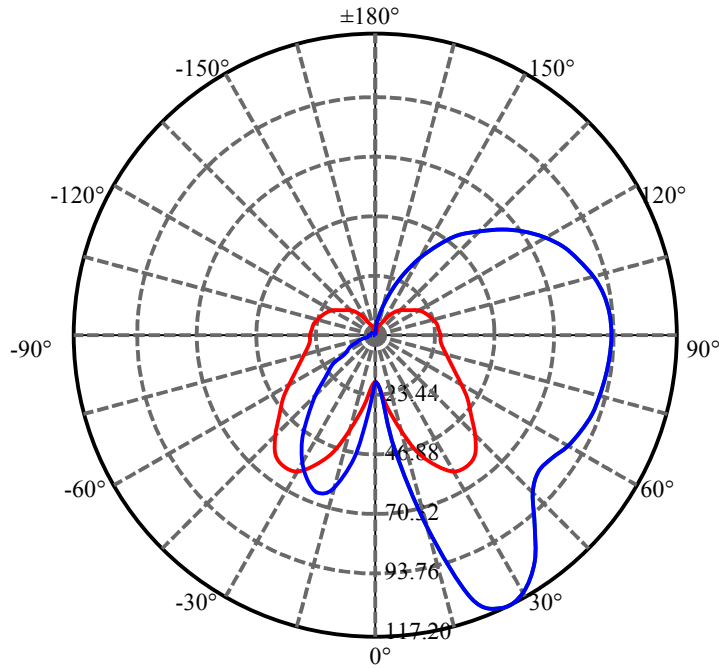
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	17.712	0.000	0	0.00%	0.00%
5.0	23.944	0.498	0.498	0.11%	0.11%
10.0	37.946	2.214	2.712	0.49%	0.59%
15.0	55.038	5.516	8.228	1.21%	1.80%
20.0	70.651	10.359	18.586	2.27%	4.07%
25.0	77.981	15.589	34.175	3.42%	7.49%
30.0	78.441	19.795	53.971	4.34%	11.82%
35.0	74.321	22.495	76.466	4.93%	16.75%
40.0	66.952	23.570	100.036	5.16%	21.91%
45.0	58.602	23.247	123.283	5.09%	27.01%
50.0	51.453	22.238	145.522	4.87%	31.88%
55.0	46.660	21.333	166.855	4.67%	36.55%
60.0	43.079	20.743	187.598	4.54%	41.10%
65.0	40.348	20.281	207.879	4.44%	45.54%
70.0	38.122	19.869	227.748	4.35%	49.89%
75.0	36.386	19.475	247.223	4.27%	54.16%
80.0	34.815	19.051	266.275	4.17%	58.33%
85.0	33.844	18.656	284.931	4.09%	62.42%
90.0	33.754	18.509	303.44	4.05%	66.47%
95.0	33.604	18.443	321.883	4.04%	70.51%
100.0	33.005	18.099	339.983	3.96%	74.48%
105.0	32.081	17.415	357.398	3.82%	78.29%
110.0	30.862	16.452	373.85	3.60%	81.90%
115.0	29.280	15.228	389.078	3.34%	85.23%
120.0	27.407	13.781	402.859	3.02%	88.25%
125.0	25.313	12.186	415.045	2.67%	90.92%
130.0	23.058	10.518	425.563	2.30%	93.23%
135.0	20.475	8.797	434.359	1.93%	95.15%
140.0	17.829	7.092	441.451	1.55%	96.71%
145.0	15.010	5.479	446.93	1.20%	97.91%
150.0	12.063	3.987	450.917	0.87%	98.78%
155.0	9.120	2.681	453.598	0.59%	99.37%
160.0	6.376	1.625	455.223	0.36%	99.73%
165.0	3.896	0.847	456.069	0.19%	99.91%
170.0	1.710	0.333	456.402	0.07%	99.98%
175.0	0.293	0.072	456.473	0.02%	100.00%
180.0	0.057	0.004	456.478	0.00%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	53.97	11.82%	11.82%
0-40	100.04	21.91%	21.91%
0-60	187.60	41.10%	41.10%
0-90	303.44	66.47%	66.47%
0-120	402.86	88.25%	88.25%
0-180	456.48	100.00%	100.00%
60-90	115.84	25.38%	25.38%
90-120	99.42	21.78%	21.78%
90-130	122.12	26.75%	26.75%
90-150	147.48	32.31%	32.31%
90-180	153.03	33.52%	33.52%
0-107.37	365.18	80.00%	80.00%

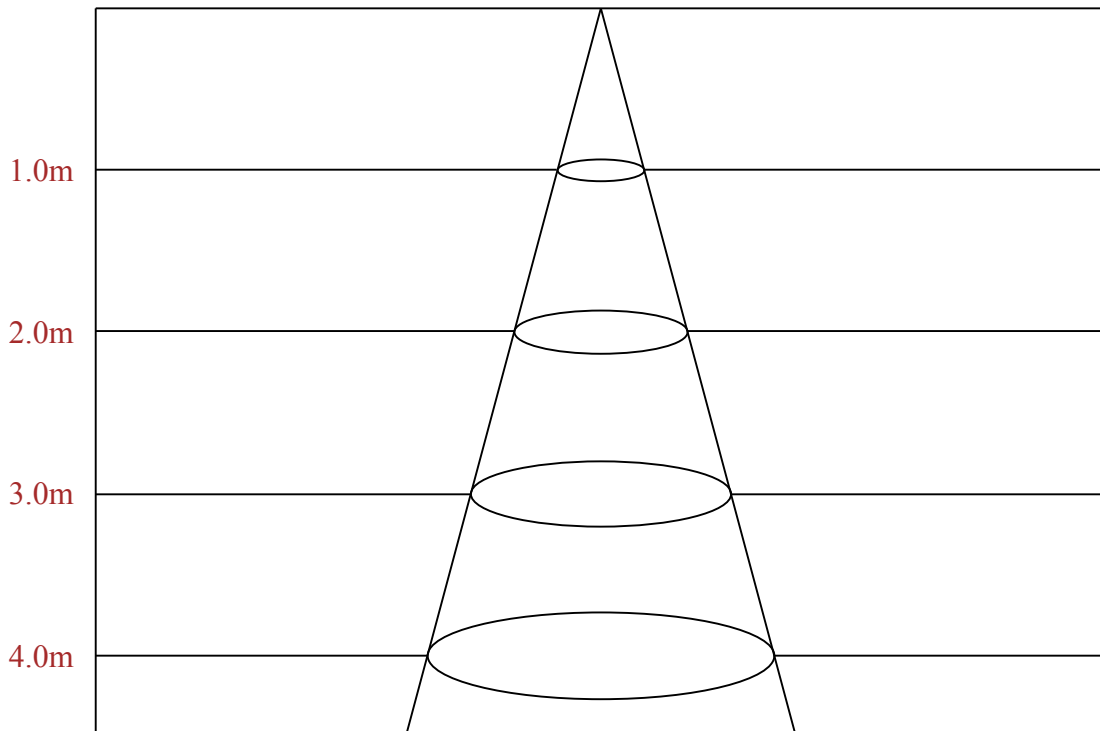
ZONAL LUMEN SUMMARY

0-10	2.71
10-20	15.87
20-30	35.38
30-40	46.07
40-50	45.49
50-60	42.08
60-70	40.15
70-80	38.53
80-90	37.17
90-100	36.54
100-110	33.87
110-120	29.01
120-130	22.70
130-140	15.89
140-150	9.47
150-160	4.31
160-170	1.18
170-180	0.07

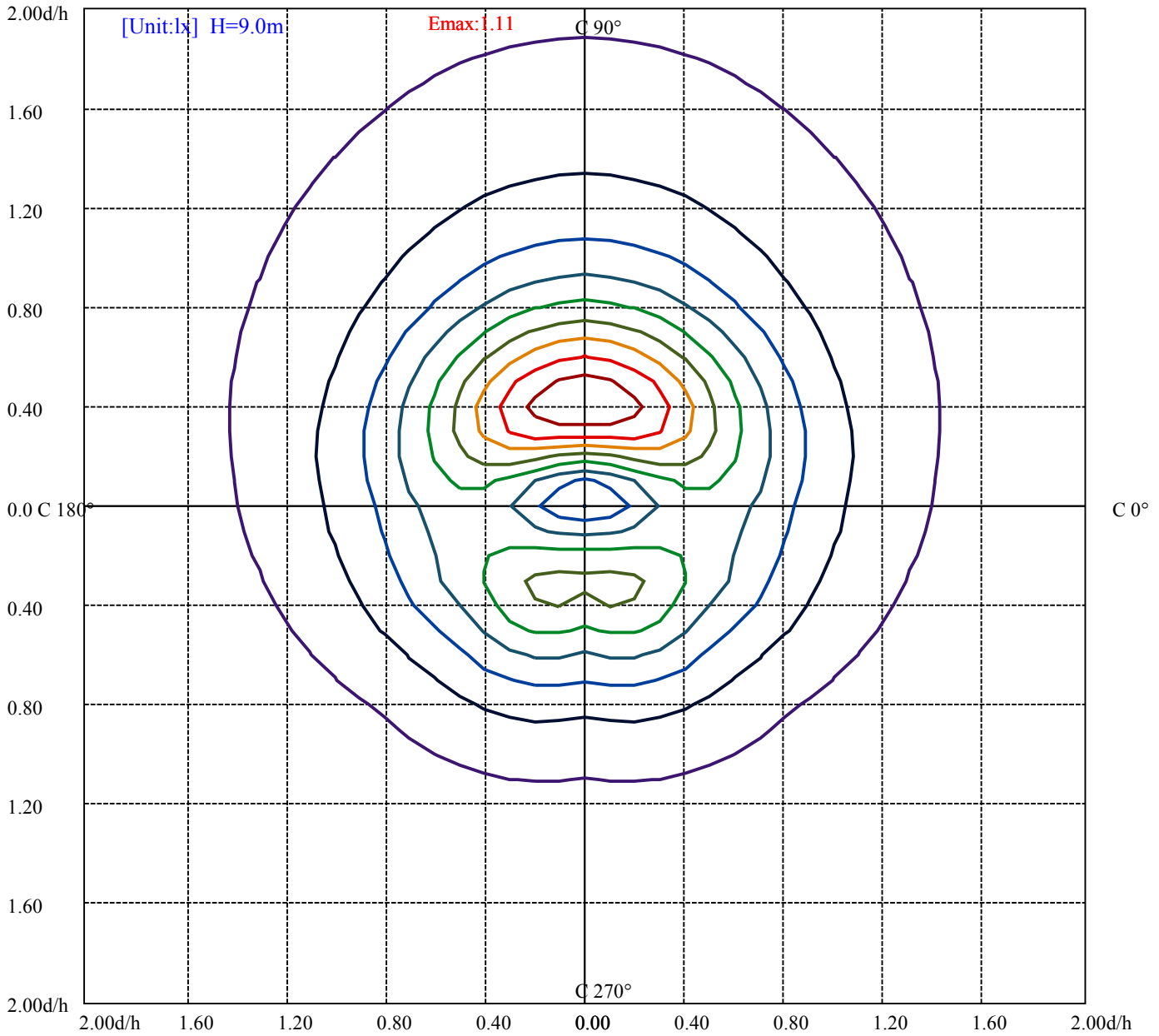


C90(Max): ———
 C0/C180: ———
 C90/C270: ———

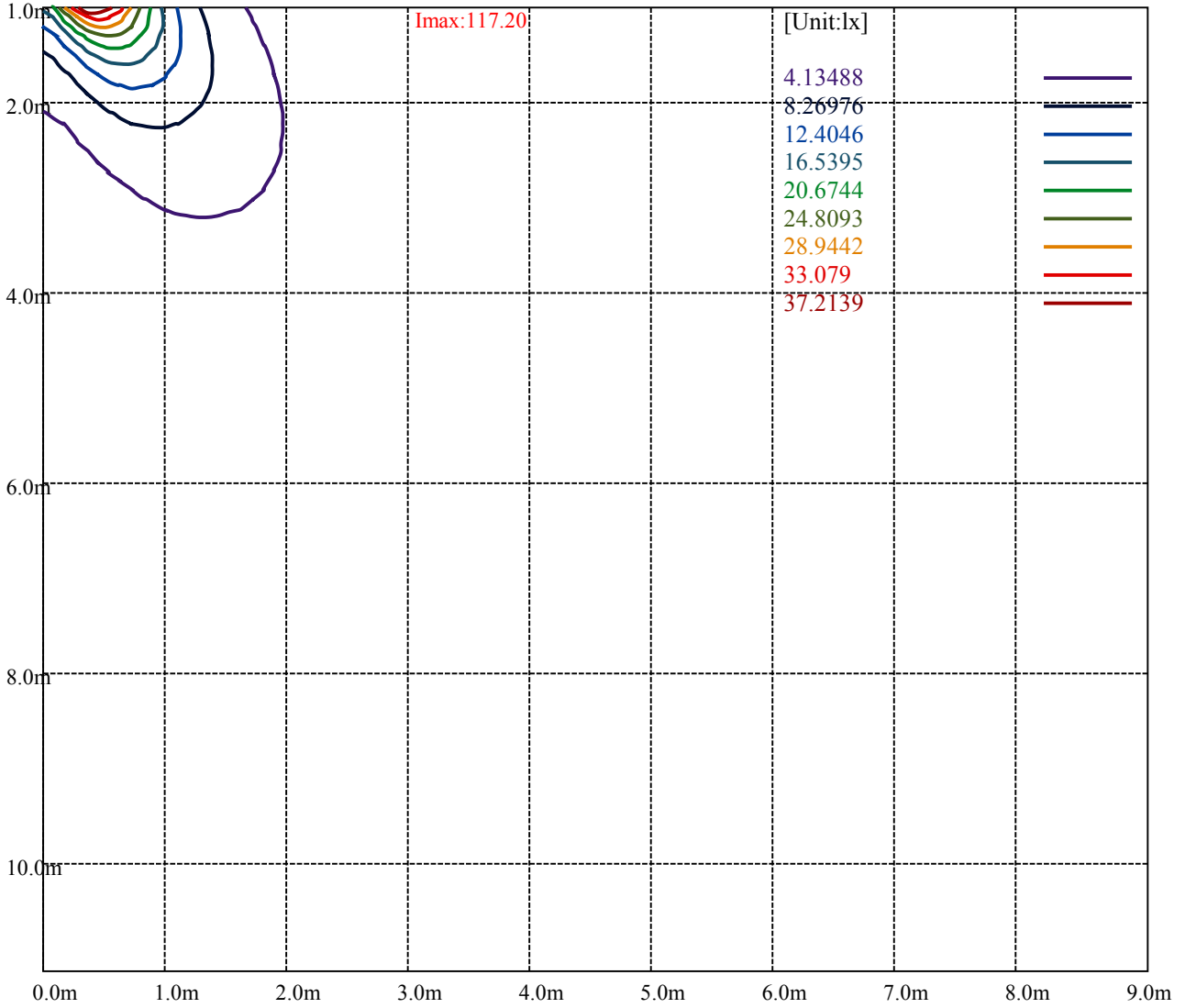
Field angle(10%Imax):C0/180Left:152.2 Right:152.2
 :C90/270Left:63.3 Right:164.9
 Beam Angle(50%Imax):C0/180Left:70.4 Right:70.4
 :C90/270Left:28.3 Right:134.2



Max , Ave Beam angle of C90 plane 220.97



- (10%Emax) 0.1105207
- (20%Emax) 0.221042
- (30%Emax) 0.3315617
- (40%Emax) 0.4420827
- (50%Emax) 0.5526037
- (60%Emax) 0.6631247
- (70%Emax) 0.7736444
- (80%Emax) 0.8841655
- (90%Emax) 0.9946865



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Luminance Limiting Curve(no luminous side)

Luminance Table

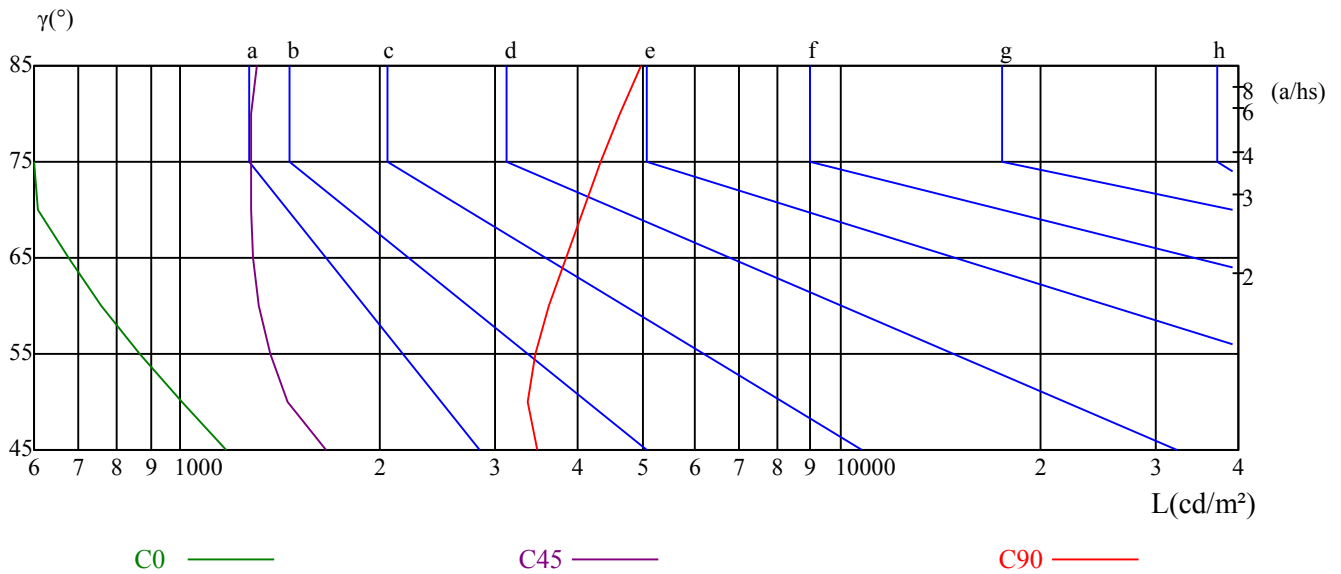
γ	45	50	55	60	65	70	75	80	85
C0	1172	1007	867	758	675	606	559	529	514
C45	1662	1454	1366	1315	1292	1275	1276	1282	1301
C90	3473	3361	3450	3621	3835	4067	4324	4616	4968

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4475	6346	4936	6037	10066	7184	15929	29041	19646

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	1.11	1.11	1.11	1.05	1.05	1.05	0.92	0.92	0.92	0.81	0.81	0.81	0.71	0.71	0.71	0.66
1	0.92	0.86	0.82	0.86	0.81	0.77	0.76	0.72	0.69	0.66	0.63	0.61	0.57	0.55	0.53	0.48
2	0.78	0.71	0.64	0.74	0.67	0.61	0.65	0.59	0.54	0.56	0.52	0.48	0.49	0.45	0.42	0.38
3	0.68	0.59	0.52	0.64	0.56	0.49	0.56	0.50	0.44	0.49	0.44	0.39	0.42	0.38	0.35	0.31
4	0.59	0.50	0.43	0.56	0.47	0.41	0.49	0.42	0.37	0.43	0.37	0.33	0.37	0.33	0.29	0.26
5	0.53	0.43	0.36	0.50	0.41	0.35	0.44	0.37	0.31	0.38	0.32	0.28	0.33	0.28	0.25	0.22
6	0.47	0.38	0.31	0.44	0.36	0.30	0.39	0.32	0.27	0.34	0.28	0.24	0.30	0.25	0.21	0.18
7	0.42	0.33	0.27	0.40	0.32	0.26	0.35	0.28	0.23	0.31	0.25	0.21	0.27	0.22	0.19	0.16
8	0.38	0.30	0.24	0.36	0.28	0.23	0.32	0.25	0.20	0.28	0.22	0.18	0.24	0.20	0.16	0.14
9	0.35	0.26	0.21	0.33	0.25	0.20	0.29	0.23	0.18	0.26	0.20	0.16	0.22	0.18	0.14	0.12
10	0.32	0.24	0.18	0.30	0.23	0.18	0.27	0.20	0.16	0.24	0.18	0.14	0.21	0.16	0.13	0.11

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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	17.71	16.82	22.79	32.22	42.90	53.94	60.70	63.91	62.93
15.0	17.71	17.62	25.42	36.84	50.57	63.59	70.14	71.47	68.19
30.0	17.71	18.69	29.73	45.84	64.35	79.22	85.00	83.67	77.17
45.0	17.71	20.29	35.69	57.68	82.15	97.02	99.96	94.70	85.27
60.0	17.71	21.43	40.03	68.28	97.33	109.20	108.31	101.67	90.33
75.0	17.71	22.07	43.88	75.48	106.81	116.07	112.86	105.65	94.97
90.0	17.71	22.38	44.85	77.19	108.83	117.20	115.62	107.51	96.58
105.0	17.71	22.63	43.74	75.23	106.63	115.76	113.70	106.81	95.45
120.0	17.71	22.23	40.58	69.31	97.24	109.62	109.98	103.47	93.17
135.0	17.71	21.86	37.59	59.92	85.26	98.74	101.66	98.17	89.13
150.0	17.71	21.35	32.36	50.07	69.13	81.96	87.32	86.46	80.52
165.0	17.71	20.83	29.78	42.33	56.45	67.05	72.89	73.87	70.85
180.0	17.71	23.59	32.84	42.99	53.58	58.66	61.42	60.53	57.05
195.0	17.71	24.27	32.95	41.62	48.00	52.78	55.09	54.64	51.54
210.0	17.71	25.46	35.69	45.22	52.96	58.21	59.19	56.07	50.11
225.0	17.71	27.24	39.79	51.89	60.79	63.11	59.99	53.23	45.22
240.0	17.71	29.05	44.10	57.92	64.74	65.18	59.87	51.63	43.13
255.0	17.71	30.35	48.15	62.31	69.69	69.34	64.98	56.96	47.35
270.0	17.71	31.11	48.38	62.04	65.47	62.65	56.57	49.44	40.62
285.0	17.71	30.42	48.31	62.35	67.90	66.91	61.81	53.94	45.09
300.0	17.71	29.10	44.55	60.46	71.57	76.45	73.56	65.07	54.94
315.0	17.71	27.23	40.89	54.64	65.20	68.78	66.14	59.45	50.41
330.0	17.71	24.89	35.71	46.82	56.58	62.90	64.91	63.38	57.45
345.0	17.71	23.75	32.89	42.24	51.48	57.22	60.92	61.99	59.37
360.0	17.71	16.82	22.79	32.22	42.90	53.94	60.70	63.91	62.93
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	58.74	52.69	45.93	40.85	36.58	33.02	30.08	27.95	26.44
15.0	62.08	54.20	48.98	45.79	43.40	40.74	38.97	37.28	36.22
30.0	68.09	59.10	55.90	53.67	51.98	50.82	49.49	48.51	47.71
45.0	73.16	66.58	64.44	63.02	62.66	61.95	61.68	60.88	60.53
60.0	79.53	74.22	73.33	73.60	74.39	74.84	74.84	75.10	74.66
75.0	84.65	80.91	81.00	83.04	84.38	85.27	86.34	86.52	86.60
90.0	86.45	83.01	83.89	86.01	88.21	89.80	90.77	91.12	91.12
105.0	85.43	81.32	81.23	83.46	84.72	86.15	86.59	86.77	87.22
120.0	81.60	75.64	74.28	74.83	75.37	75.82	76.09	75.91	75.73
135.0	78.29	70.38	67.36	66.05	65.20	64.44	63.97	63.50	62.94
150.0	72.00	63.67	59.36	57.16	54.77	53.42	52.08	50.84	49.69
165.0	64.72	57.52	52.46	48.76	46.32	43.21	41.26	39.42	38.15
180.0	51.80	45.66	40.94	36.49	33.02	29.64	27.41	25.72	24.66
195.0	46.23	40.30	34.01	28.69	23.73	19.75	16.47	14.17	12.84
210.0	42.63	34.98	28.04	21.54	16.47	12.19	8.90	6.32	4.81
225.0	36.94	29.37	22.52	16.64	12.19	8.37	5.25	2.85	1.34
240.0	34.89	27.45	20.72	15.23	11.07	7.79	4.87	2.66	1.59
255.0	37.74	29.55	21.98	15.40	10.68	7.39	4.81	2.76	1.87
270.0	32.69	25.73	19.65	14.19	10.49	7.67	5.11	3.08	2.03
285.0	36.41	28.27	21.47	15.39	11.09	7.87	6.62	2.86	1.88
300.0	44.01	34.34	25.12	17.17	11.66	8.31	5.42	3.16	1.63
315.0	45.32	32.79	25.25	18.65	13.47	9.23	5.94	3.20	1.22
330.0	49.31	40.60	32.27	25.08	18.96	14.36	10.63	7.85	6.03
345.0	53.72	46.62	39.71	33.19	27.54	22.87	19.66	17.13	15.38
360.0	58.74	52.69	45.93	40.85	36.58	33.02	30.08	27.95	26.44

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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	25.63	25.63	25.01	24.21	23.23	21.90	20.29	18.51	16.73
15.0	35.60	35.51	34.81	34.01	32.59	30.73	28.78	26.66	24.44
30.0	47.08	47.17	46.11	45.13	43.44	41.12	38.63	35.78	32.67
45.0	60.35	60.08	59.19	57.50	55.36	52.69	49.49	46.02	41.83
60.0	74.84	74.84	73.33	71.47	69.08	65.80	61.64	57.12	52.34
75.0	87.67	86.78	85.71	83.13	80.37	76.37	72.10	66.84	61.06
90.0	92.09	91.65	89.97	87.86	84.42	80.72	75.78	70.50	64.33
105.0	87.67	87.67	86.06	83.82	80.69	76.84	72.37	66.73	61.19
120.0	75.82	75.64	74.56	72.48	69.77	66.51	62.36	58.02	53.14
135.0	62.65	62.56	61.33	59.92	57.75	54.83	51.25	47.58	43.62
150.0	49.02	49.02	48.35	46.82	45.29	42.80	40.21	37.05	33.89
165.0	37.76	37.66	36.79	35.62	34.26	32.51	30.36	28.13	25.69
180.0	24.74	24.21	23.41	22.43	21.18	19.85	17.98	16.38	14.33
195.0	12.75	12.58	12.04	11.51	10.72	9.92	9.03	7.97	6.91
210.0	4.63	4.54	4.45	4.27	3.92	3.56	3.12	2.67	2.40
225.0	1.16	1.16	1.07	1.07	1.07	0.89	0.89	0.80	0.62
240.0	1.42	1.33	1.33	1.33	1.33	1.24	1.24	1.06	0.97
255.0	1.78	1.60	1.69	1.60	1.51	1.34	1.25	1.16	1.07
270.0	1.85	1.85	2.11	2.03	2.03	1.85	1.76	1.50	1.32
285.0	1.70	1.52	1.70	1.70	1.70	1.61	1.43	1.16	1.07
300.0	1.54	1.45	1.45	1.45	1.36	1.27	1.17	1.17	0.99
315.0	1.32	1.22	1.32	1.32	1.41	1.32	1.22	1.04	0.85
330.0	5.84	5.74	5.74	5.46	5.17	4.79	4.31	3.83	3.35
345.0	15.18	15.08	14.60	13.82	13.04	12.26	11.09	9.83	8.56
360.0	25.63	25.63	25.01	24.21	23.23	21.90	20.29	18.51	16.73
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	14.60	12.64	10.41	8.28	6.14	4.09	2.58	1.07	0.09
15.0	21.52	18.86	15.94	12.58	9.48	6.55	3.99	2.04	0.35
30.0	29.11	25.37	21.54	17.36	13.35	9.43	5.70	2.76	0.62
45.0	37.56	32.75	27.77	22.61	17.36	12.19	7.57	3.47	0.71
60.0	46.85	40.92	34.72	28.07	21.52	15.23	9.39	4.16	0.80
75.0	54.74	47.98	40.59	32.93	25.10	17.71	11.13	4.98	0.71
90.0	57.46	50.49	42.92	34.63	26.44	18.68	11.63	5.20	0.70
105.0	54.48	47.86	40.88	33.28	25.50	17.98	11.18	4.83	0.54
120.0	47.35	41.66	34.97	28.65	21.87	15.54	9.67	3.89	0.63
135.0	38.91	34.11	29.11	23.55	18.47	12.72	7.54	3.11	0.57
150.0	30.35	26.43	22.50	18.19	13.88	9.77	5.94	2.59	0.38
165.0	22.68	19.76	16.45	13.24	9.83	6.72	4.09	1.75	0.29
180.0	12.28	10.24	8.10	5.96	4.01	2.40	1.07	0.18	0.09
195.0	5.76	4.69	3.54	2.57	1.59	0.97	0.62	0.09	0.00
210.0	1.96	1.42	1.07	0.80	0.45	0.27	0.00	0.09	0.09
225.0	0.53	0.45	0.18	0.09	0.09	0.18	0.00	0.00	0.09
240.0	0.80	0.53	0.27	0.18	0.09	0.09	0.00	0.09	0.00
255.0	0.89	0.62	0.53	0.45	0.18	0.18	0.00	0.09	0.00
270.0	1.06	0.79	0.70	0.53	0.18	0.18	0.09	0.09	0.09
285.0	0.98	0.89	0.72	0.45	0.09	0.09	0.09	0.09	0.09
300.0	0.81	0.63	0.45	0.18	0.09	0.00	0.09	0.09	0.09
315.0	0.75	0.66	0.38	0.19	0.09	0.09	0.09	0.09	0.09
330.0	2.68	2.11	1.63	1.15	0.67	0.38	0.29	0.10	0.00
345.0	7.30	6.03	4.87	3.60	2.43	1.56	0.78	0.19	0.00
360.0	14.60	12.64	10.41	8.28	6.14	4.09	2.58	1.07	0.09

Intensity data(cd)

C/γ(°)	180.0
0.0	0.09
15.0	0.09
30.0	0.09
45.0	0.18
60.0	0.00
75.0	0.00
90.0	0.09
105.0	0.18
120.0	0.18
135.0	0.09
150.0	0.19
165.0	0.19
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	0.09