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Client:

LumCAT: M14614WHCL

Luminaire: LED

Report No:

Ballast type:

Test No: LCZP22030125

Voltage(V): 120.060

LampCAT:

Current(A): 0.285

Lamp flux(lm): 1638.3

Power (W): 30.140

Number of Lamps: 1

PF: 0.880

Length(mm): -350

Width(mm): -350

Phm Type: C

Height(mm): 65

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#### Photometric Results

Lumens(lm): 1638.29, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 54.36

Central intensity(cd): 325.157, Maximum intensity(cd): 326.867

Angle of maximum intensity: C=15.0  $\gamma$ =10.0

Beam Angle(50%Imax): [C0/180]Total=140.0

[C90/270]Total=139.4

Field angle(10%Imax): [C0/180]Total=288.6

[C90/270]Total=291.0

Maximum s/h(1/2): C0\_180=1.40 C90\_270=1.40

Maximum s/h(1/4): C0\_180=1.53 C90\_270=1.53

Up flux rate of lamp(%): 20.20%

Down flux rate of lamp(%): 79.80%

Up flux rate of LUM(%): 20.20%

Down flux rate of LUM(%): 79.80%

CIE Type : Semidirect lighting

Output flux ratio in  $\pi$  solid angle : 52.917%

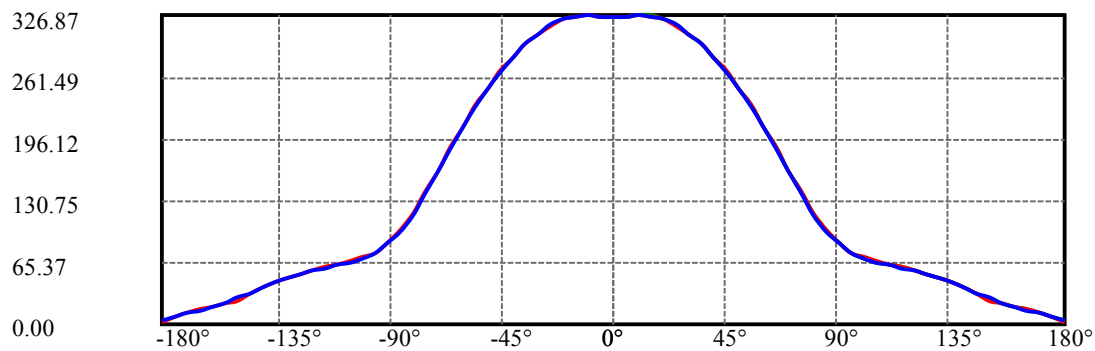
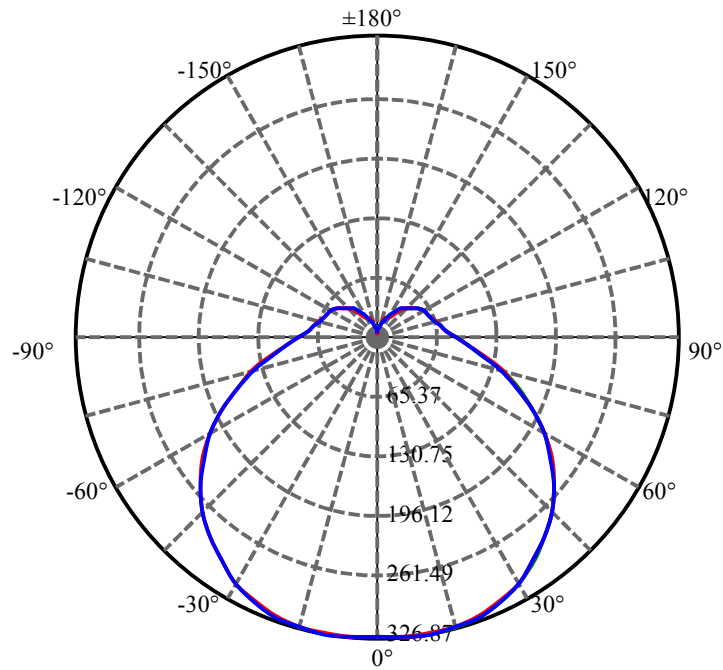
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	325.157	0.000	0	0.00%	0.00%
5.0	325.732	7.781	7.781	0.47%	0.47%
10.0	326.566	23.335	31.116	1.42%	1.90%
15.0	325.688	38.691	69.807	2.36%	4.26%
20.0	322.554	53.424	123.231	3.26%	7.52%
25.0	316.204	66.994	190.225	4.09%	11.61%
30.0	307.408	78.919	269.144	4.82%	16.43%
35.0	295.690	88.810	357.954	5.42%	21.85%
40.0	282.525	96.471	454.425	5.89%	27.74%
45.0	267.580	101.856	556.282	6.22%	33.96%
50.0	249.663	104.517	660.798	6.38%	40.33%
55.0	230.546	104.414	765.212	6.37%	46.71%
60.0	209.510	101.718	866.93	6.21%	52.92%
65.0	186.199	96.198	963.127	5.87%	58.79%
70.0	162.417	88.272	1051.399	5.39%	64.18%
75.0	139.292	78.862	1130.261	4.81%	68.99%
80.0	116.910	68.552	1198.813	4.18%	73.17%
85.0	98.301	58.478	1257.291	3.57%	76.74%
90.0	84.534	50.062	1307.353	3.06%	79.80%
95.0	75.309	43.766	1351.119	2.67%	82.47%
100.0	69.483	39.343	1390.463	2.40%	84.87%
105.0	65.716	36.176	1426.638	2.21%	87.08%
110.0	62.689	33.563	1460.201	2.05%	89.13%
115.0	59.694	30.988	1491.189	1.89%	91.02%
120.0	56.674	28.289	1519.478	1.73%	92.75%
125.0	53.166	25.389	1544.868	1.55%	94.30%
130.0	49.228	22.264	1567.131	1.36%	95.66%
135.0	44.685	18.976	1586.108	1.16%	96.81%
140.0	39.137	15.520	1601.628	0.95%	97.76%
145.0	32.527	11.956	1613.585	0.73%	98.49%
150.0	27.608	8.855	1622.44	0.54%	99.03%
155.0	22.275	6.313	1628.753	0.39%	99.42%
160.0	18.733	4.301	1633.054	0.26%	99.68%
165.0	15.369	2.810	1635.864	0.17%	99.85%
170.0	11.285	1.581	1637.445	0.10%	99.95%
175.0	8.340	0.702	1638.147	0.04%	99.99%
180.0	3.593	0.143	1638.29	0.01%	100.00%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	269.14	16.43%	16.43%
0-40	454.43	27.74%	27.74%
0-60	866.93	52.92%	52.92%
0-90	1307.35	79.80%	79.80%
0-120	1519.48	92.75%	92.75%
0-180	1638.29	100.00%	100.00%
60-90	440.42	26.88%	26.88%
90-120	212.13	12.95%	12.95%
90-130	259.78	15.86%	15.86%
90-150	315.09	19.23%	19.23%
90-180	330.79	20.19%	20.19%
0-90.37	1310.63	80.00%	80.00%

## ZONAL LUMEN SUMMARY

0-10	31.12
10-20	92.12
20-30	145.91
30-40	185.28
40-50	206.37
50-60	206.13
60-70	184.47
70-80	147.41
80-90	108.54
90-100	83.11
100-110	69.74
110-120	59.28
120-130	47.65
130-140	34.50
140-150	20.81
150-160	10.61
160-170	4.39
170-180	0.70



C15(Max): —————

C0/C180: —————

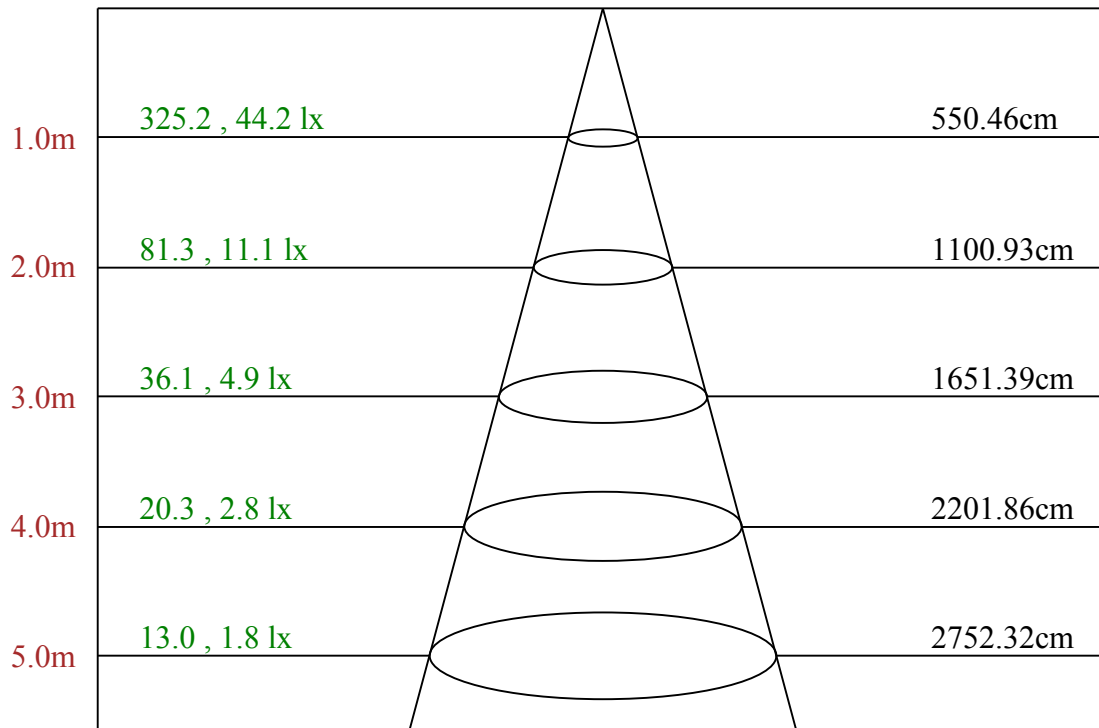
C90/C270: —————

Field angle(10%Imax):C0/180Left:154.3 Right:134.3

:C90/270Left:155.5 Right:135.5

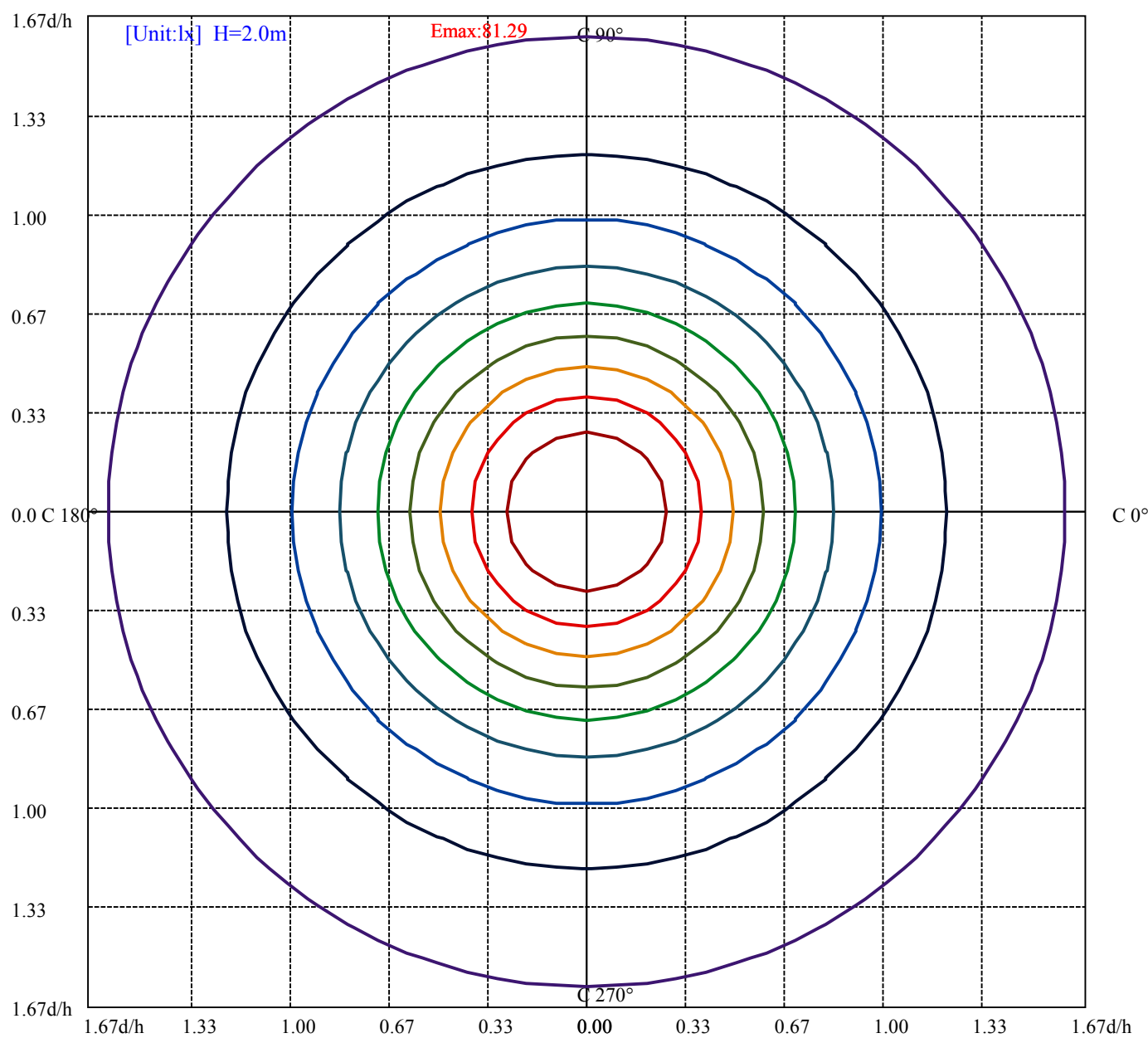
Beam Angle(50%Imax):C0/180Left:80.0 Right:60.0

:C90/270Left:79.7 Right:59.7

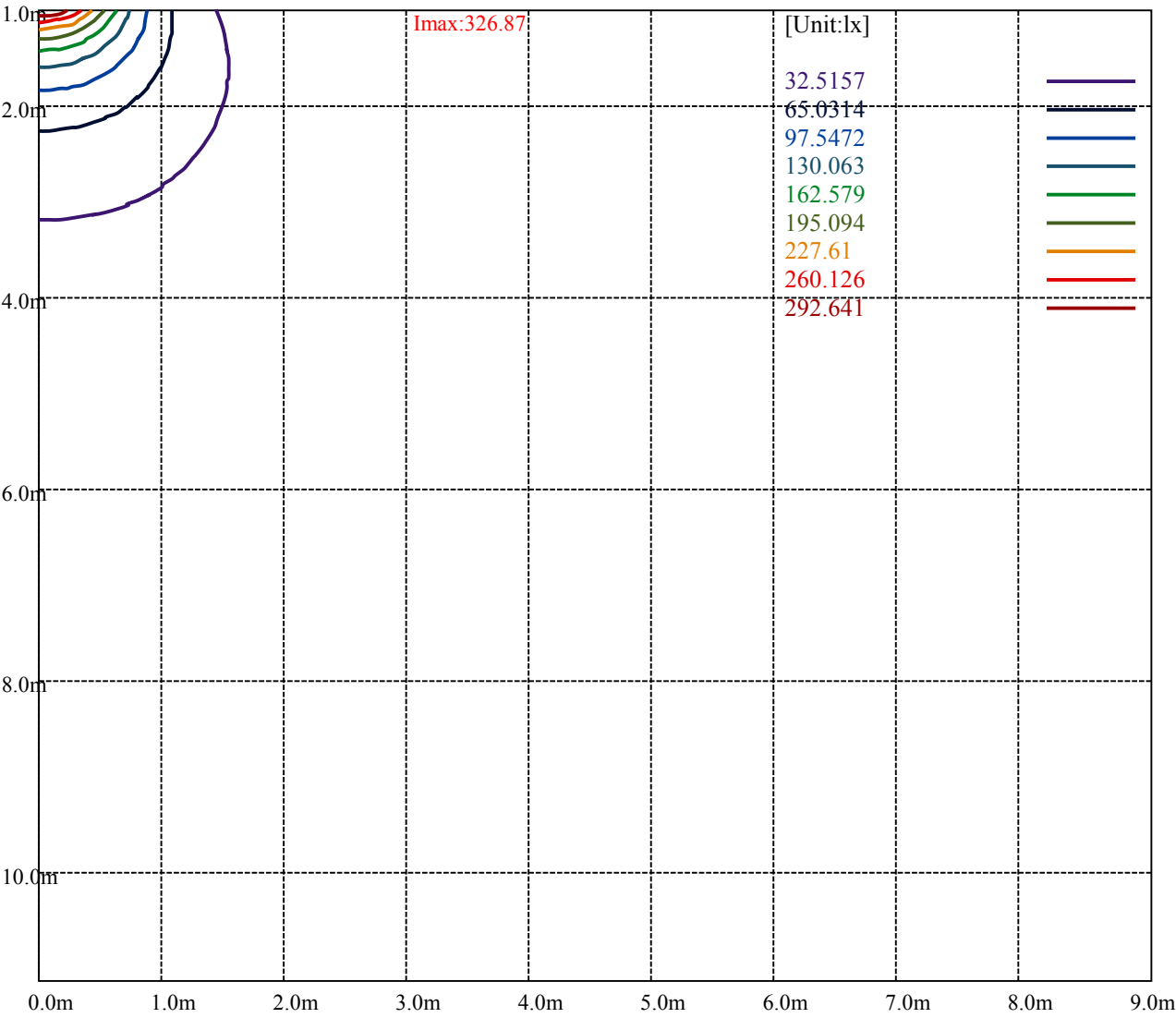


Max , Ave

Beam angle of C15 plane 140.06



(10%Emax) 8.128925	—
(20%Emax) 16.25785	—
(30%Emax) 24.3868	—
(40%Emax) 32.51575	—
(50%Emax) 40.64475	—
(60%Emax) 48.7735	—
(70%Emax) 56.9025	—
(80%Emax) 65.0315	—
(90%Emax) 73.1605	—



Luminance Table

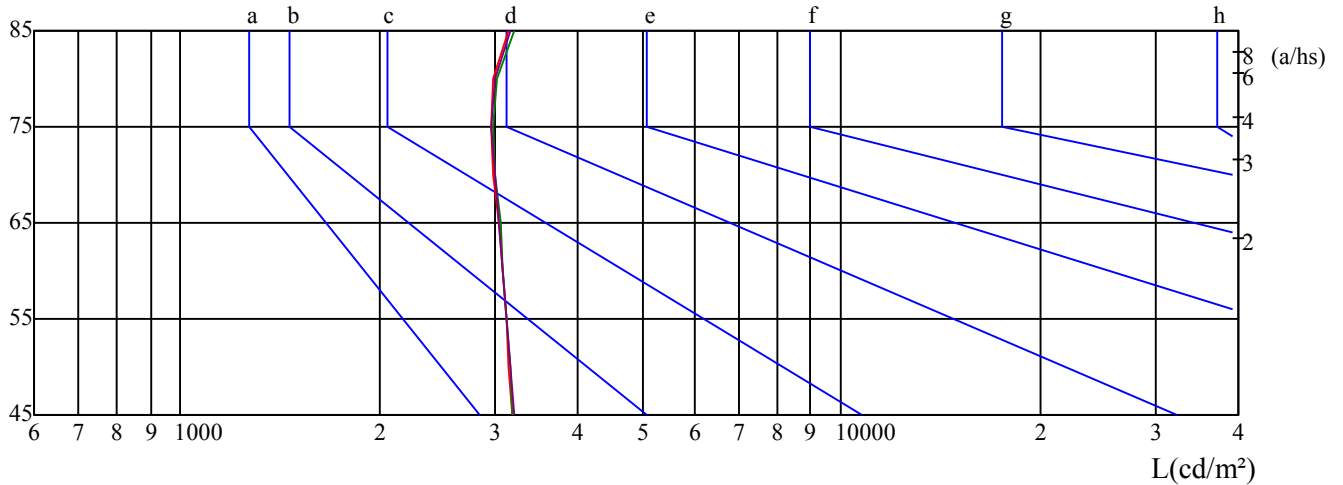
$\gamma$	45	50	55	60	65	70	75	80	85
C0	3174	3152	3122	3080	3046	3000	2973	3013	3192
C45	3202	3149	3124	3084	3041	2993	2963	2993	3161
C90	3172	3141	3112	3074	3029	2980	2955	2976	3143

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4591	4564	4583	5596	5564	5577	11819	11636	11705

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	$\leq 300$				
1.5	B		2000	1000	500	$\leq 300$			
1.85	C			2000	1000	500	$\leq 300$		
2.2	D				2000	1000	500	$\leq 300$	
2.55	E					2000	1000	500	$\leq 300$
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 

C0 ———

C45 ———

C90 ———



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	1.14	1.14	1.14	1.09	1.09	1.09	1.00	1.00	1.00	0.91	0.91	0.91	0.83	0.83	0.83	0.80
1	0.96	0.90	0.86	0.91	0.87	0.82	0.83	0.80	0.76	0.76	0.73	0.70	0.69	0.67	0.65	0.61
2	0.82	0.74	0.68	0.78	0.71	0.65	0.71	0.66	0.61	0.65	0.60	0.56	0.59	0.55	0.52	0.49
3	0.71	0.62	0.55	0.68	0.60	0.53	0.62	0.55	0.50	0.56	0.51	0.46	0.51	0.47	0.43	0.40
4	0.62	0.53	0.46	0.60	0.51	0.44	0.54	0.47	0.41	0.50	0.44	0.39	0.45	0.40	0.36	0.33
5	0.55	0.46	0.39	0.53	0.44	0.38	0.48	0.41	0.35	0.44	0.38	0.33	0.40	0.35	0.31	0.28
6	0.49	0.40	0.33	0.47	0.39	0.32	0.43	0.36	0.31	0.40	0.33	0.29	0.36	0.31	0.27	0.24
7	0.44	0.35	0.29	0.43	0.34	0.28	0.39	0.32	0.27	0.36	0.30	0.25	0.33	0.28	0.24	0.21
8	0.40	0.32	0.26	0.39	0.31	0.25	0.36	0.29	0.24	0.33	0.27	0.22	0.30	0.25	0.21	0.19
9	0.37	0.28	0.23	0.35	0.28	0.22	0.33	0.26	0.21	0.30	0.24	0.20	0.28	0.23	0.19	0.17
10	0.34	0.26	0.20	0.33	0.25	0.20	0.30	0.24	0.19	0.28	0.22	0.18	0.26	0.21	0.17	0.15

## M14614WHCL

## Intensity data(cd)

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C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	325.16	324.12	324.98	325.42	324.12	320.47	313.36	302.96	290.82
15.0	325.16	323.76	325.16	325.68	324.20	320.79	314.06	303.23	291.52
30.0	325.16	324.10	325.07	325.25	324.37	320.41	313.82	303.45	291.41
45.0	325.16	324.19	325.16	325.86	323.92	320.48	313.95	302.57	290.92
60.0	325.16	324.10	325.51	325.95	323.92	320.47	313.74	302.59	290.64
75.0	325.16	324.54	325.78	325.96	324.36	320.28	312.74	301.74	289.58
90.0	325.16	324.89	326.13	325.78	324.36	320.36	312.45	301.52	289.08
105.0	325.16	325.25	326.31	326.40	324.00	319.73	311.46	300.34	288.24
120.0	325.16	325.34	326.76	326.76	324.53	319.28	310.55	299.95	286.94
135.0	325.16	326.14	327.21	326.85	324.89	319.80	310.61	299.46	286.43
150.0	325.16	326.23	327.30	327.30	324.89	319.27	310.25	299.45	286.33
165.0	325.16	326.50	327.93	327.66	325.34	319.26	309.70	298.80	286.20
180.0	325.16	326.63	327.06	324.90	320.04	310.85	300.36	288.05	273.13
195.0	325.16	326.73	326.90	324.98	319.65	310.66	299.82	287.68	272.74
210.0	325.16	326.56	327.00	324.81	319.53	310.66	300.20	287.63	273.66
225.0	325.16	326.66	326.92	324.80	319.69	310.42	300.19	288.27	274.69
240.0	325.16	326.66	326.84	324.89	319.67	310.73	301.00	288.96	274.53
255.0	325.16	326.67	327.02	325.16	320.37	311.32	301.56	289.40	275.21
270.0	325.16	326.67	327.20	324.89	320.80	311.74	302.14	290.06	275.93
285.0	325.16	326.40	326.85	324.98	320.89	312.52	302.47	290.37	276.23
300.0	325.16	326.49	326.94	325.16	321.59	313.75	303.06	290.86	277.41
315.0	325.16	326.32	327.12	325.51	321.68	314.36	304.28	292.14	278.76
330.0	325.16	326.32	326.94	325.60	321.94	315.34	309.98	293.11	279.46
345.0	325.16	326.32	327.48	325.96	322.57	315.95	306.04	293.97	280.75
360.0	325.16	324.12	324.98	325.42	324.12	320.47	313.36	302.96	290.82
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	277.12	261.25	243.65	223.36	202.20	178.71	155.12	131.54	109.60
15.0	277.55	262.43	245.05	224.60	202.94	179.26	155.76	132.09	110.77
30.0	278.23	262.15	244.83	224.80	203.44	180.24	156.51	132.35	110.99
45.0	277.24	261.10	243.80	223.86	202.51	179.21	155.74	132.27	110.12
60.0	276.48	259.75	242.23	222.58	200.81	177.36	153.91	130.54	109.39
75.0	275.65	259.06	241.05	220.73	199.26	175.58	152.07	128.20	107.53
90.0	274.68	257.62	239.22	218.52	196.84	173.11	149.38	126.28	105.22
105.0	272.85	255.68	237.17	217.07	194.38	170.72	146.52	123.66	102.93
120.0	272.15	254.87	236.61	215.49	192.78	169.44	145.74	121.96	102.09
135.0	271.53	254.22	235.48	214.15	192.11	168.11	144.11	121.09	101.01
150.0	270.89	253.49	234.74	213.86	190.83	166.73	142.63	119.16	100.06
165.0	271.28	254.12	235.27	213.29	190.68	166.91	142.88	119.29	100.25
180.0	256.83	238.54	217.29	194.40	171.16	146.97	123.56	104.14	88.62
195.0	256.67	238.06	217.35	194.55	170.35	146.42	123.18	103.52	88.67
210.0	256.87	238.33	218.03	195.01	170.84	146.76	124.00	103.87	88.67
225.0	257.92	238.51	218.21	195.71	171.62	147.53	123.97	104.39	88.59
240.0	257.81	239.13	218.69	195.68	171.61	147.44	124.88	104.43	89.03
255.0	259.15	239.99	219.76	197.05	173.00	148.96	126.25	106.20	89.87
270.0	259.04	240.38	220.21	198.35	174.35	150.45	127.70	106.55	89.93
285.0	260.39	241.80	221.61	199.19	175.34	151.77	138.25	108.09	90.83
300.0	261.55	243.47	223.33	211.84	177.90	154.03	129.80	109.13	91.58
315.0	270.55	244.58	224.95	202.64	179.18	155.08	131.70	110.56	92.89
330.0	264.20	246.08	226.71	204.75	181.28	157.54	133.88	112.64	94.79
345.0	265.29	247.33	227.85	206.76	183.35	159.67	135.46	113.93	95.79
360.0	277.12	261.25	243.65	223.36	202.20	178.71	155.12	131.54	109.60

## M14614WHCL

## Intensity data(cd)

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C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	92.86	79.95	72.49	67.72	64.60	62.08	59.31	56.36	52.98
15.0	93.04	80.46	73.03	67.88	64.91	61.94	59.75	56.61	53.73
30.0	93.33	81.03	73.47	68.46	65.56	62.48	59.93	57.21	54.40
45.0	92.83	80.65	73.15	68.38	65.03	62.38	59.83	57.44	54.53
60.0	92.04	80.09	72.75	68.15	64.87	62.13	59.38	57.08	54.07
75.0	90.49	79.23	72.48	67.87	64.68	61.84	58.91	56.60	53.50
90.0	88.69	78.02	71.63	67.18	63.89	61.23	58.65	56.07	52.87
105.0	87.54	77.13	70.55	66.37	63.43	60.49	57.91	55.33	52.13
120.0	86.68	76.43	70.29	66.01	62.98	60.04	57.46	54.79	51.58
135.0	86.02	75.94	70.14	65.94	62.46	59.70	57.20	54.16	51.04
150.0	85.42	75.78	69.71	65.69	62.30	59.53	56.94	53.64	50.25
165.0	85.33	75.95	69.87	65.67	62.55	59.51	56.92	53.34	49.77
180.0	78.38	72.14	67.63	64.42	61.30	58.70	55.06	51.07	46.39
195.0	78.36	72.33	67.88	64.38	61.33	58.53	54.78	50.49	45.86
210.0	78.13	72.33	67.67	64.15	61.52	58.26	54.57	50.44	45.79
225.0	78.36	72.18	67.59	64.15	61.24	58.06	54.18	50.21	45.44
240.0	78.15	71.95	67.26	63.99	61.07	57.79	55.84	50.18	45.31
255.0	78.61	72.22	67.34	65.56	61.13	57.85	54.30	50.13	45.25
270.0	82.91	71.71	67.00	63.81	61.14	57.67	54.39	50.21	45.23
285.0	78.73	71.35	66.54	63.70	61.03	57.65	54.09	50.00	45.37
300.0	79.37	71.71	66.46	63.61	60.93	57.46	53.99	49.80	45.25
315.0	79.77	71.74	66.48	63.62	61.03	57.82	54.16	50.33	45.69
330.0	81.13	72.92	67.48	64.71	62.39	59.18	55.61	51.59	46.68
345.0	82.65	74.16	68.71	65.76	63.17	60.31	57.01	52.90	48.34
360.0	92.86	79.95	72.49	67.72	64.60	62.08	59.31	56.36	52.98
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	48.56	43.18	36.85	28.18	24.63	22.11	18.82	14.48	9.80
15.0	49.62	44.99	38.96	31.36	24.37	21.75	18.78	14.85	10.13
30.0	50.71	46.14	40.16	33.39	24.34	21.44	18.72	14.85	10.46
45.0	51.00	46.50	40.77	34.24	25.77	20.91	18.27	14.82	10.50
60.0	50.53	46.38	40.98	34.60	25.84	20.36	17.88	14.60	10.53
75.0	49.95	45.69	40.54	34.25	26.08	20.05	17.48	14.28	10.38
90.0	49.23	45.14	39.72	33.59	25.24	19.82	17.15	13.86	10.04
105.0	48.66	44.66	39.05	32.65	24.11	19.39	16.81	13.61	9.87
120.0	48.02	43.56	38.13	31.71	22.27	19.15	16.57	13.27	9.62
135.0	47.20	42.38	36.85	30.34	21.42	19.01	16.42	12.94	9.28
150.0	46.32	41.59	35.79	28.74	21.15	18.74	16.07	12.41	8.84
165.0	45.84	40.66	34.76	27.25	21.09	18.76	15.99	12.06	8.49
180.0	40.84	34.51	26.45	21.42	19.08	16.21	12.40	7.89	5.90
195.0	39.92	33.28	25.68	21.49	19.13	16.16	14.33	7.51	5.94
210.0	39.63	33.04	25.40	22.85	19.16	16.17	11.78	7.38	5.98
225.0	42.18	33.27	24.97	22.24	19.50	16.41	11.91	7.50	6.18
240.0	39.83	33.54	25.49	22.83	19.91	16.55	12.12	7.79	6.28
255.0	39.92	33.62	26.17	23.33	20.23	16.86	12.60	7.98	6.48
270.0	39.90	33.95	26.48	23.82	20.79	17.33	12.89	8.53	6.84
285.0	40.30	34.16	26.78	24.46	21.35	17.61	13.43	8.99	7.12
300.0	40.18	34.30	26.90	24.77	21.83	18.17	13.99	9.62	7.48
315.0	40.60	34.35	27.22	24.98	22.22	18.56	14.37	10.17	7.76
330.0	40.97	34.72	27.67	25.08	22.49	18.83	14.82	10.44	8.03
345.0	42.53	35.65	28.86	25.02	22.61	19.21	15.28	10.99	8.22
360.0	48.56	43.18	36.85	28.18	24.63	22.11	18.82	14.48	9.80

## Intensity data(cd)

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C/ $\gamma$ (°)	180.0
0.0	6.07
15.0	6.90
30.0	7.12
45.0	7.32
60.0	7.52
75.0	7.36
90.0	7.46
105.0	7.38
120.0	7.30
135.0	7.32
150.0	7.32
165.0	7.15
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	6.07