

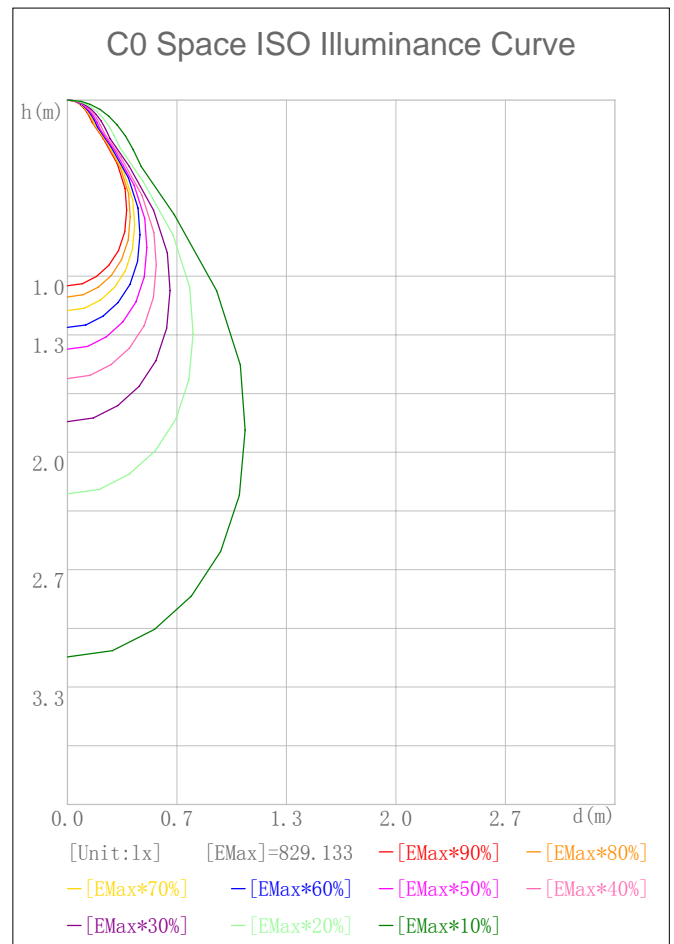
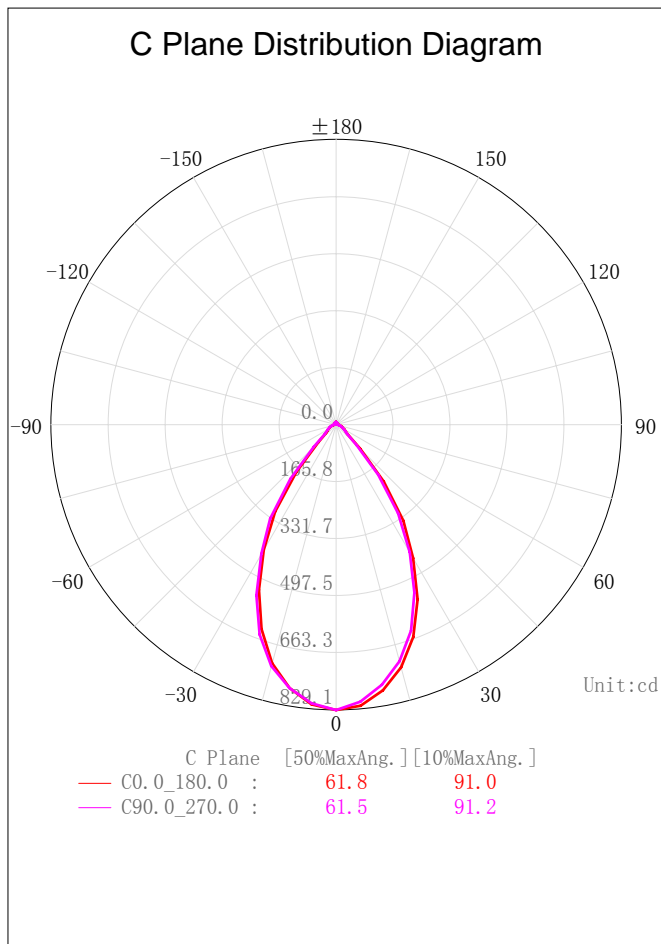
Indoor Luminaire Photometric Data

Description Information

Luminary Name: DC9W-3000K, Ra90, Reflector 60°		Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR		Lamp Catalog: lamps and lanterns	Test Date: 2017/04/13
LED Chip: Citizen CLU028-1202C4-30XH5M3		Shld. Ang(°):	Test Machine:GON-2000
Test Lab:		Frequency (Hz):	Lamp CCT(K): 3000K Ra:90
Lum. Size (W*L*H): 0.000m*0.000m*0.000m		Lum. Area (m2): 0.000	Lum. W (kg): 0.000
Test System: C, γ	Test Step: C=90.0 γ =5.0	Temp. (°C): 25	Humidity(%): 50.0

Character Parameter

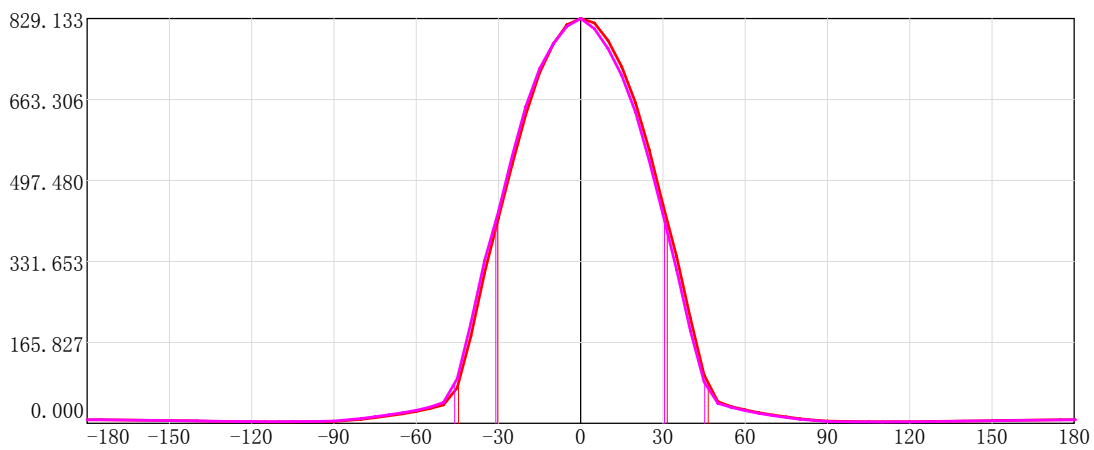
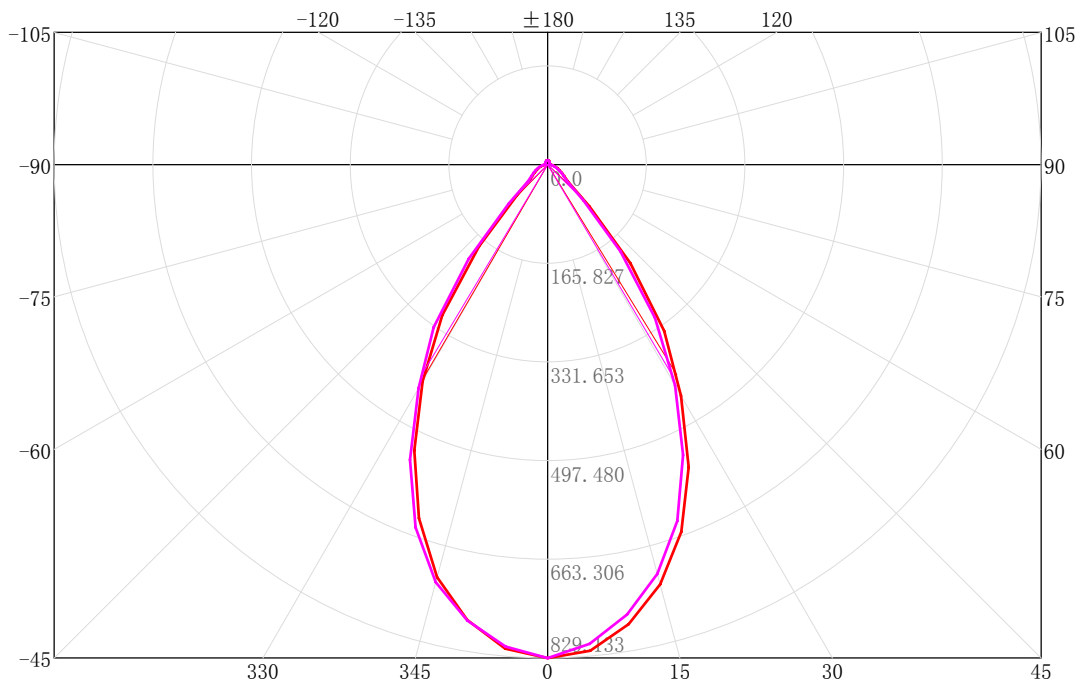
Lamp Speciality Parameter	Luminaire Speciality Parameter	
Rated Flux(lm): 838.000	Luminary Flux(lm): 902.991	Field Angle(10%Imax): 91.0(°)
Rated Power(W): 9W	Luminary Efficiency: 107.76%	Down Lumens&Percent: 875.516lm 96.96%
Rated Voltage(V): 36V 250mA	Luminary EER(lm/W): 31.852	Up Lumens&Percent: 27.475lm 3.04%
Tested Power(W): 28.350	Max. Candela(cd): 829.133	S/MH: C0_a180=0.919 C90_270=0.915
Lamps' Inside: 1	Max Cand@Ang. (°): C=0.0 γ =0.0	CIE Type: Semi-Direct
Tested Electrics (V, A, pf): 220.3, 0.173, 0.742	Beam Angle(50%Imax): 61.8(°)	ErP ϕ use(90°): 771.567lm
Lamp Size (W*L*H): 0.000m*0.000m*0.000m	Left=-30.2°, Right=31.6°	IRF(%): 209.712



2D Plane Light Intensity Distribution Curve

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

C Plane Distribution Diagram

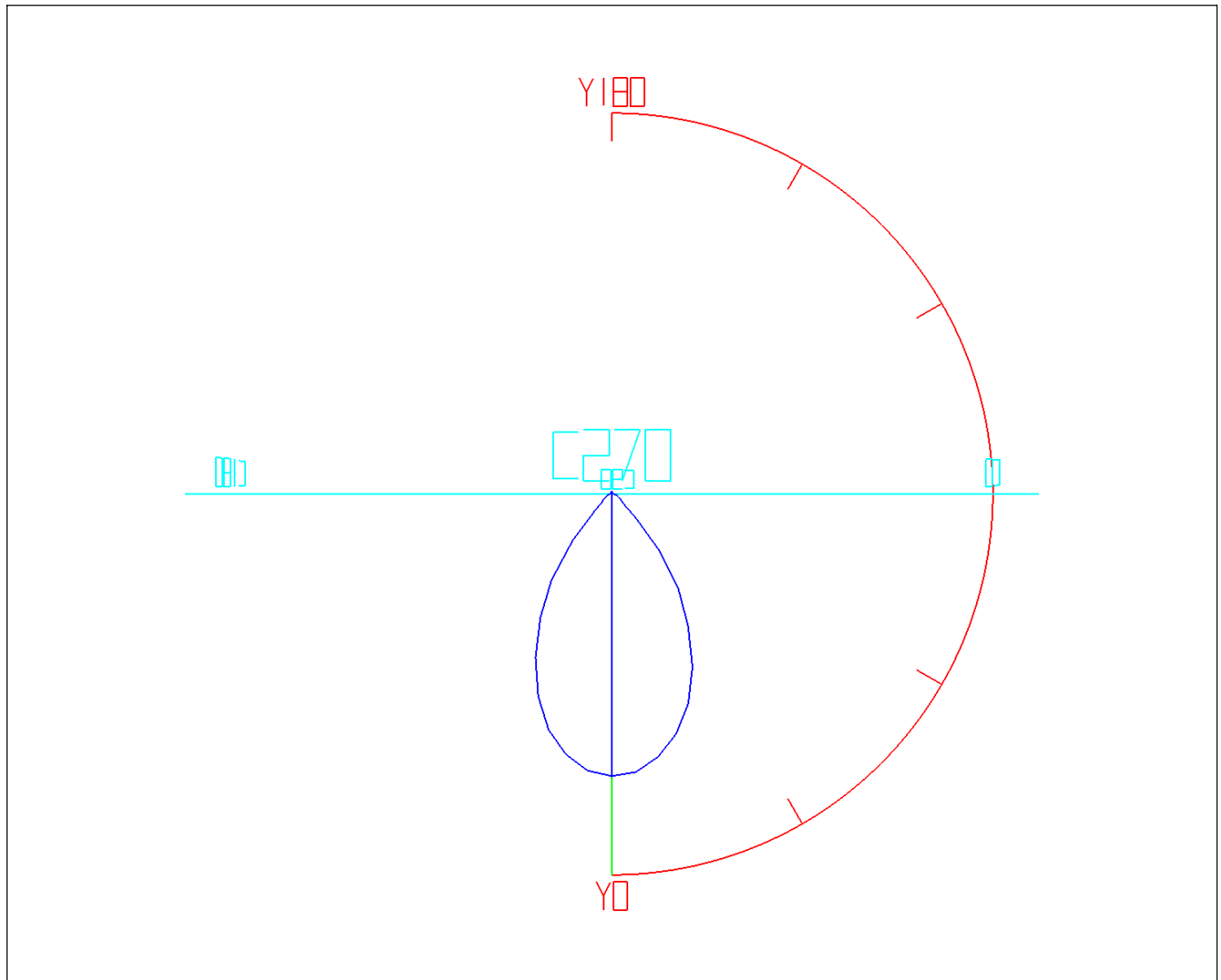


C Plane	[50%MaxAng.]	[10%MaxAng.]	Unit:cd
— C0.0_180.0	: 61.8	91.0	
— C90.0_270.0	: 61.5	91.2	

3D Light Intensity Distribution Modal

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

3D Light Intensity Distribution Modal



Curves: 3D Model — Fixture — Vert. HUD — Hori. HUD —
 View Angles: Orient:0 Tilt:0 Roll:0 Spin:0

Zonal Flux Tabulation

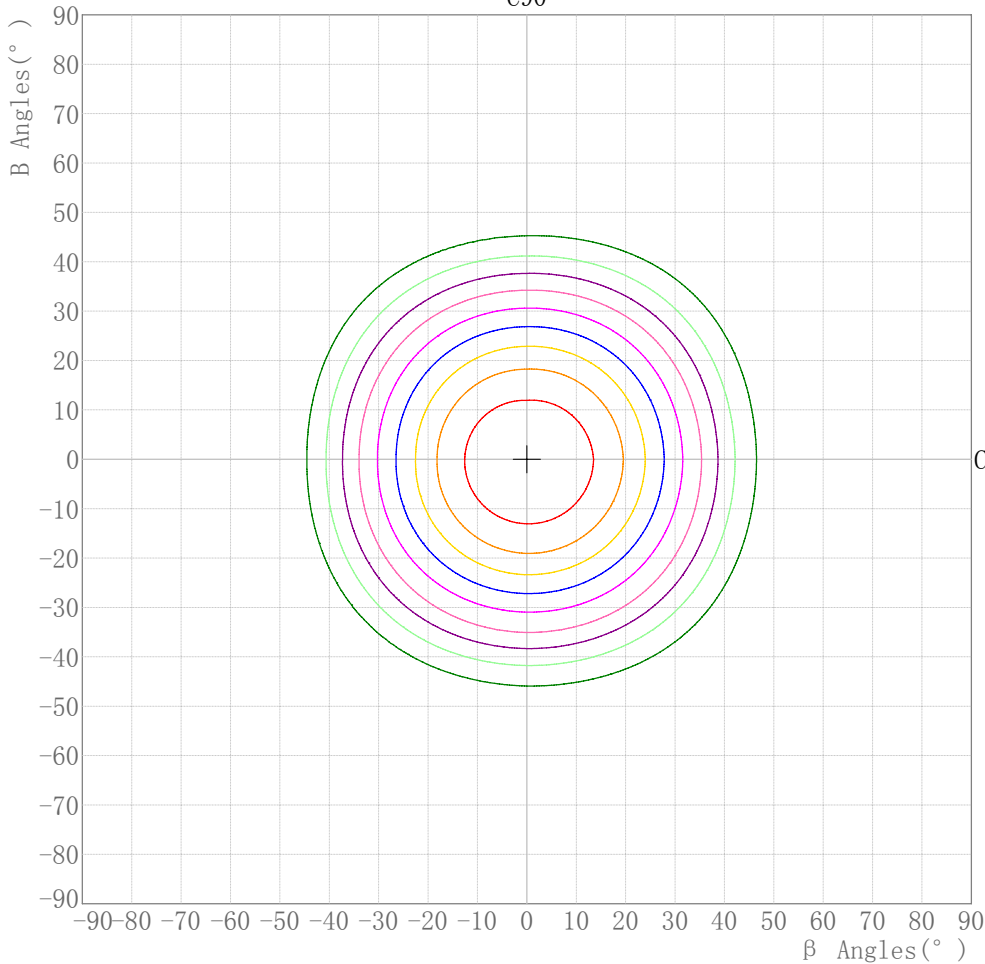
Zone(γ)	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp
0.0-5.0	19.65	19.65	2.34	2.34
5.0-10.0	56.91	76.56	6.79	9.14
10.0-15.0	88.86	165.42	10.60	19.74
15.0-20.0	112.51	277.93	13.43	33.17
20.0-25.0	124.57	402.49	14.86	48.03
25.0-30.0	123.59	526.08	14.75	62.78
30.0-35.0	111.46	637.54	13.30	76.08
35.0-40.0	87.17	724.71	10.40	86.48
40.0-45.0	52.86	777.57	6.31	92.79
45.0-50.0	26.08	803.65	3.11	95.90
50.0-55.0	16.19	819.84	1.93	97.83
55.0-60.0	13.68	833.52	1.63	99.47
60.0-65.0	11.52	845.05	1.38	100.84
65.0-70.0	9.56	854.60	1.14	101.98
70.0-75.0	7.71	862.31	0.92	102.90
75.0-80.0	5.87	868.18	0.70	103.60
80.0-85.0	4.30	872.48	0.51	104.11
85.0-90.0	3.04	875.52	0.36	104.48
90.0-95.0	2.31	877.82	0.28	104.75
95.0-100.0	2.09	879.91	0.25	105.00
100.0-105.0	1.92	881.83	0.23	105.23
105.0-110.0	1.80	883.64	0.22	105.45
110.0-115.0	1.74	885.38	0.21	105.65
115.0-120.0	1.72	887.10	0.21	105.86
120.0-125.0	1.73	888.83	0.21	106.07
125.0-130.0	1.75	890.59	0.21	106.28
130.0-135.0	1.78	892.36	0.21	106.49
135.0-140.0	1.78	894.14	0.21	106.70
140.0-145.0	1.74	895.88	0.21	106.91
145.0-150.0	1.65	897.53	0.20	107.10
150.0-155.0	1.51	899.04	0.18	107.28
155.0-160.0	1.32	900.36	0.16	107.44
160.0-165.0	1.10	901.46	0.13	107.57
165.0-170.0	0.83	902.29	0.10	107.67
170.0-175.0	0.52	902.81	0.06	107.73
175.0-180.0	0.18	902.99	0.02	107.76

Rectangle ISO Lighting Intensity Diagram

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

ISO Lighting Intensity Curve

C90



Curves:

[Unit: cd]

[IMax] =829.133

— [IMax*90%]=746.220

— [IMax*80%]=663.306

— [IMax*70%]=580.393

— [IMax*60%]=497.480

— [IMax*50%]=414.566

— [IMax*40%]=331.653

— [IMax*30%]=248.740

— [IMax*20%]=165.827

— [IMax*10%]=82.913

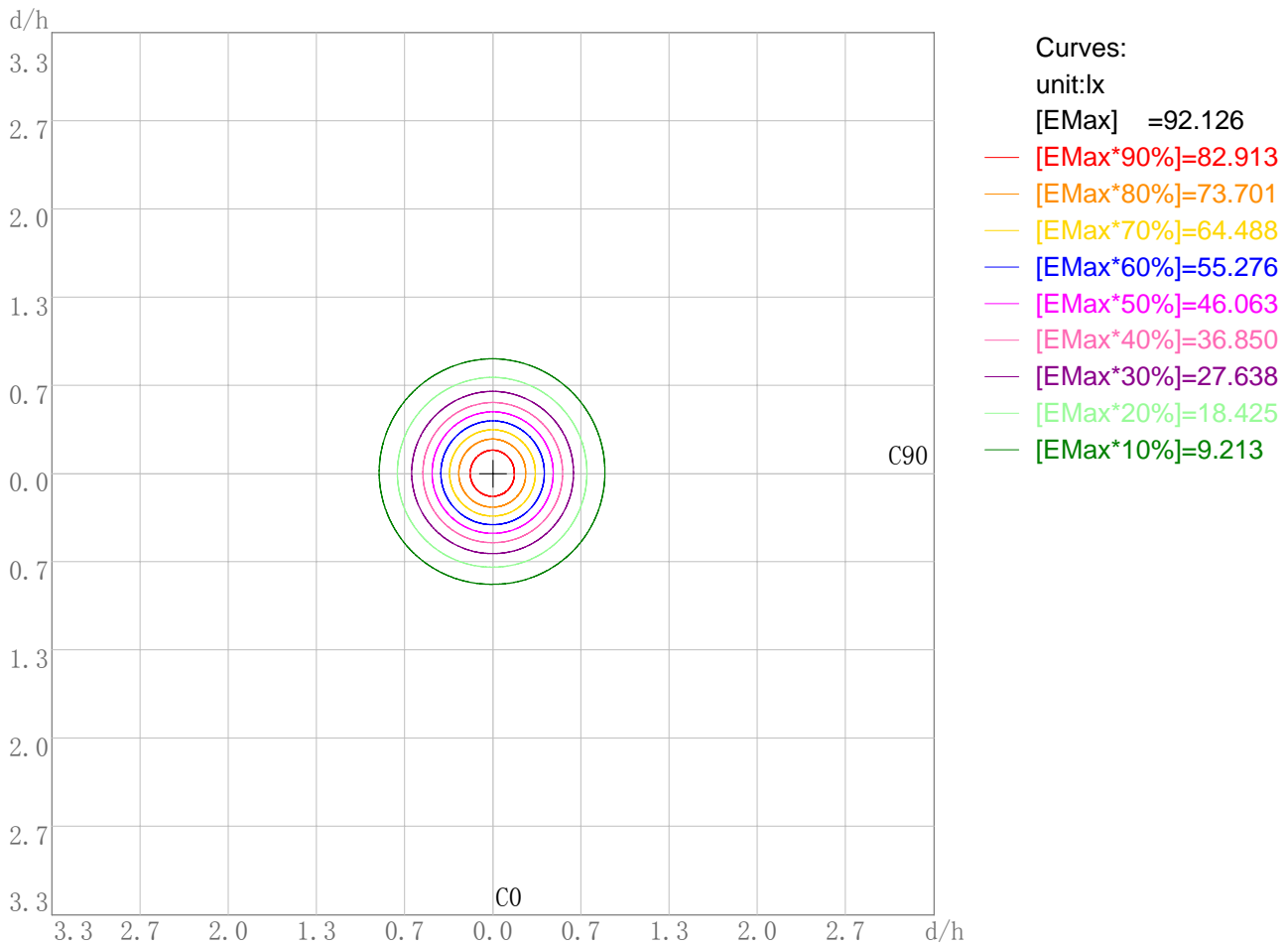
Maximum Light Intensity(cd): 829.13

Maximum Cand.@Angle: H=0.0°,V=0.0°

Plane ISO-Illuminance Diagram

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

Plane ISO-Illuminance Curve

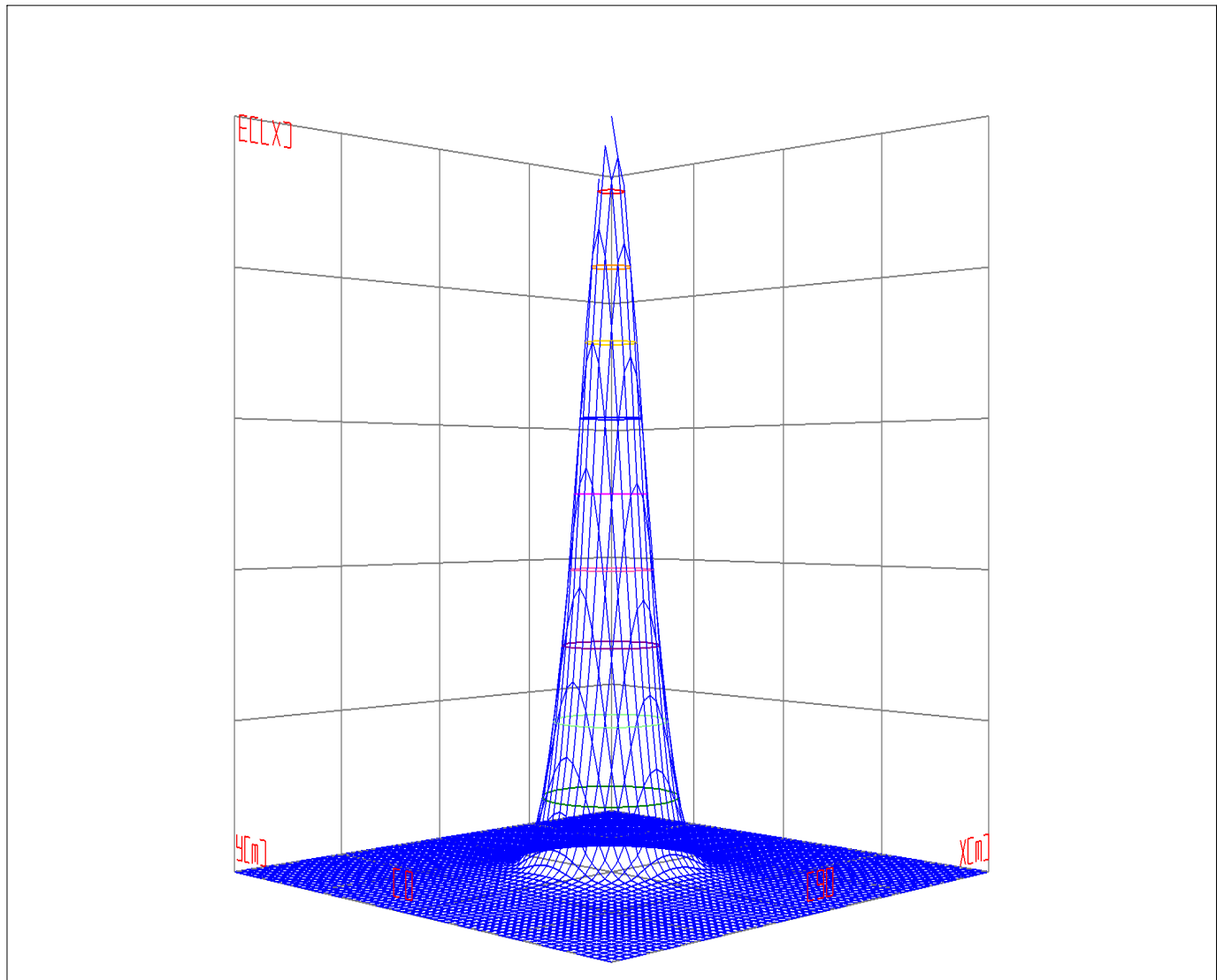


Working Plane Luminaire Mounting Height(m): 3.00
 Working Plane Maximum Illuminance(lx): 92.13
 Working Plane Maximum Illuminance Position(d/h):H0.0 V0.0

3D Plane ISO Illuminance Diagram

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

3D Plane Illuminance Modal

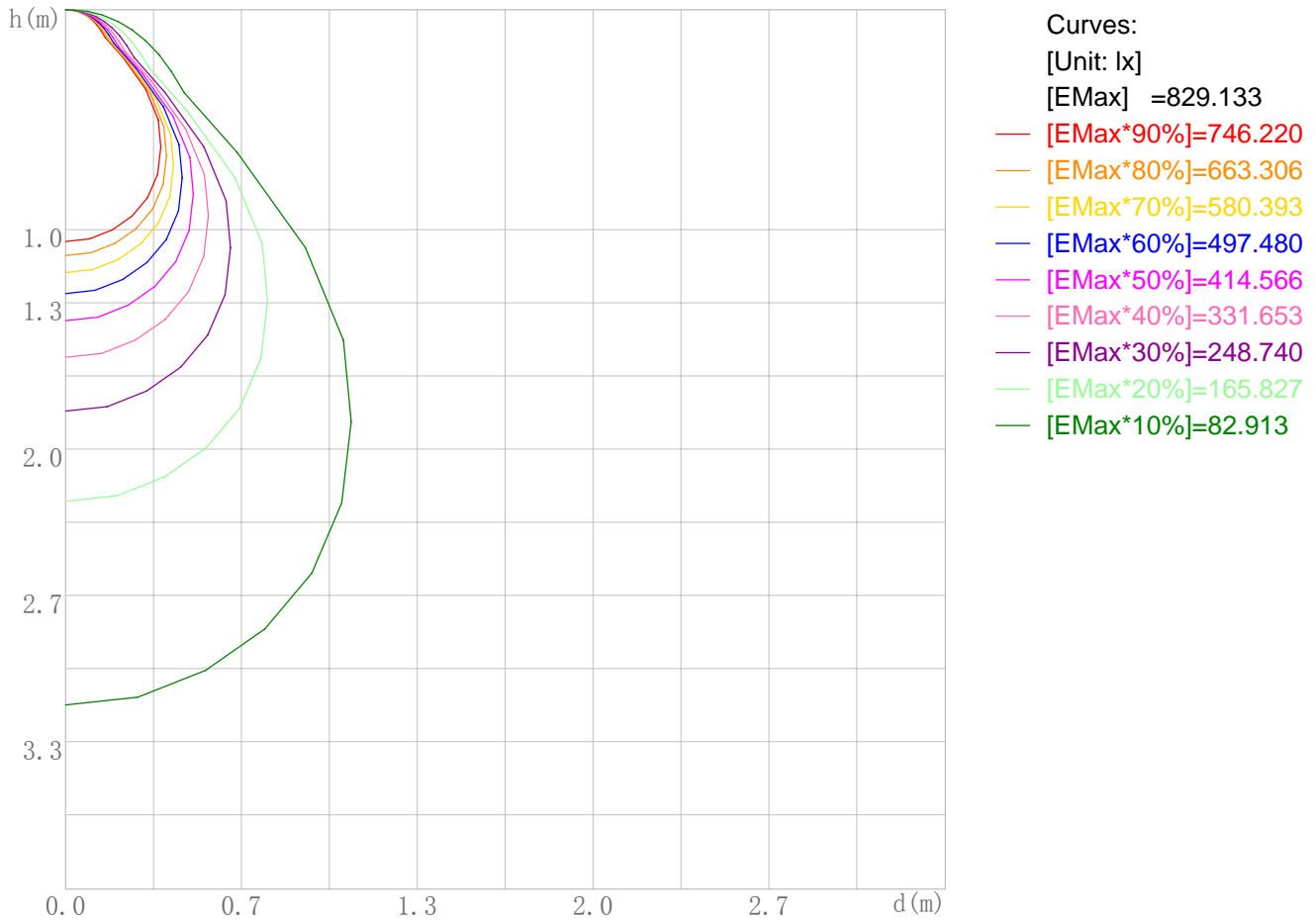


Curves: 3D Model — 90% — 80% — 70% — 60% — 50% — 40% — 30% — 20% — 10% —
 View Angles(deg): 0 Height(m): 3.0 Distance(m): 10.0

Space ISO Illuminance Diagram

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

Space ISO Illuminance Curve

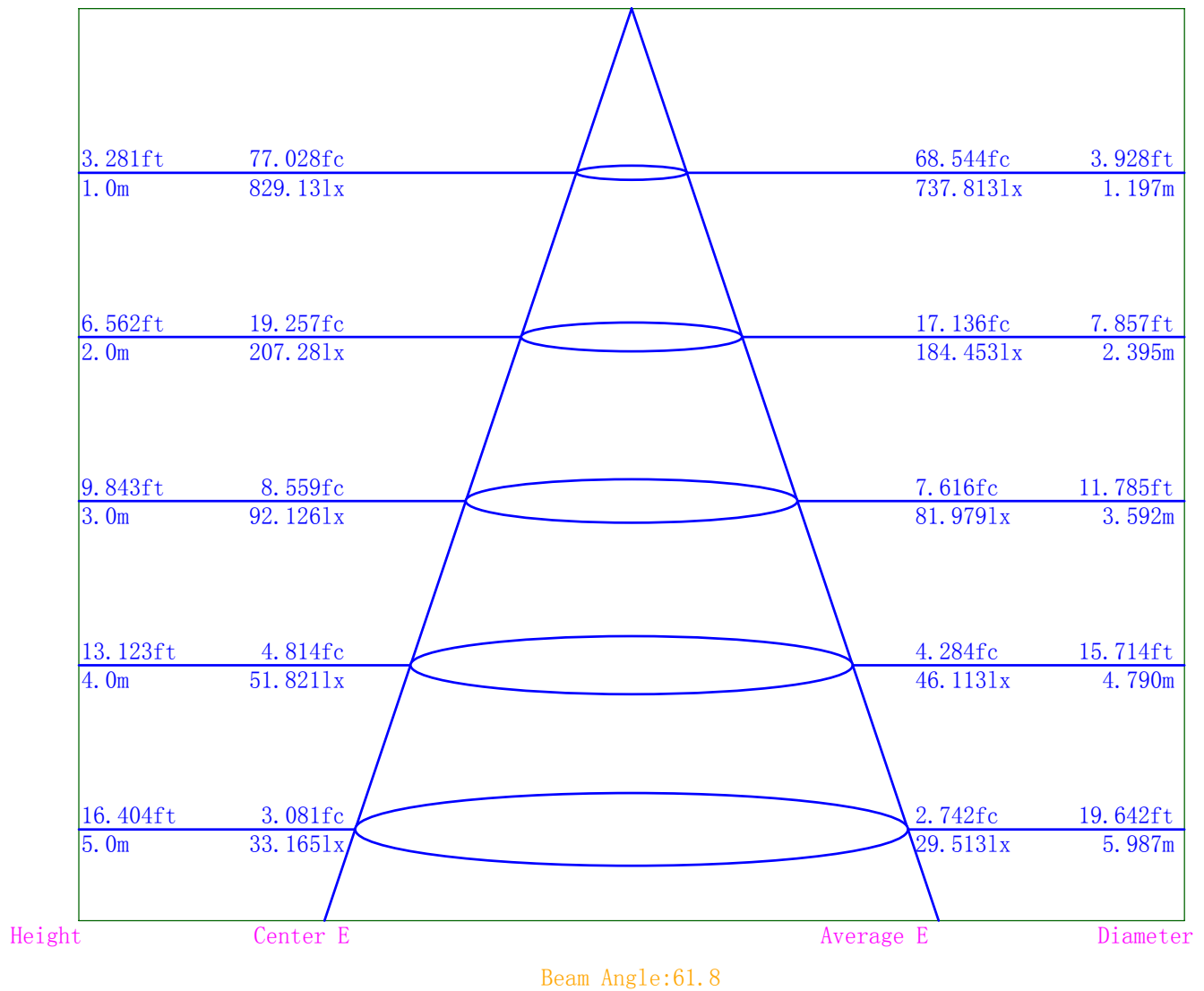


Space Plane Maximum Illuminance and @Angle:829.13lx,0.0deg
 Plane Maximum Lighting Intensity and @Angle:829.133cd,0deg

Illuminance-Distance Diagram

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

Illuminance-Distance Curve



Indoor Luminance Limiting Curves

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

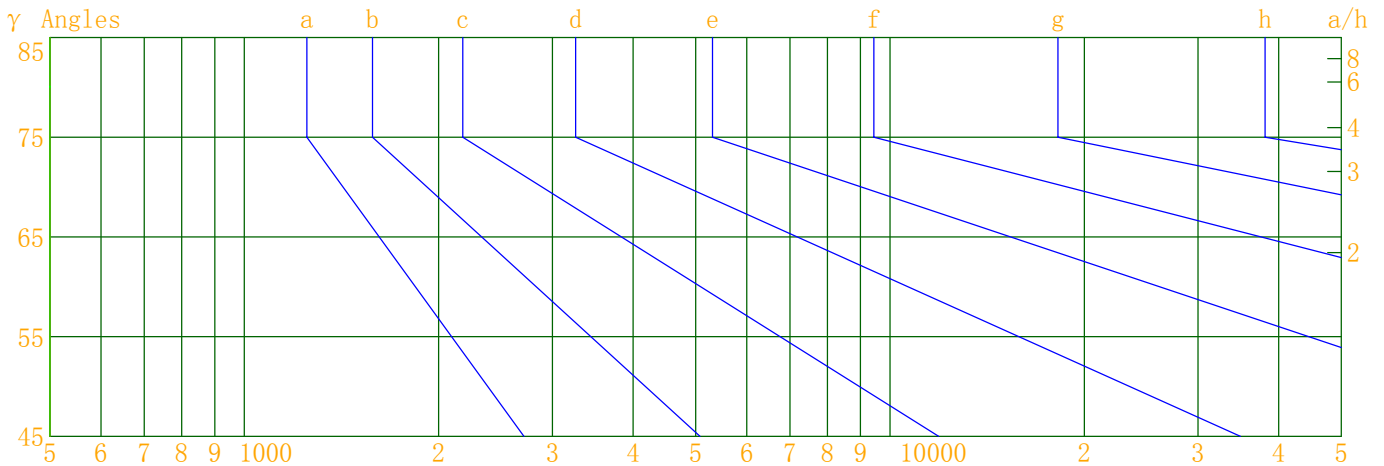
Glare Grade Table

GI	Quality	Using Illuminance							
		a	b	c	d	e	f	g	h
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	a				2000	1000	500	<=300
			b	c	d	e	f	g	h

Luminance Table

Gama (deg)	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

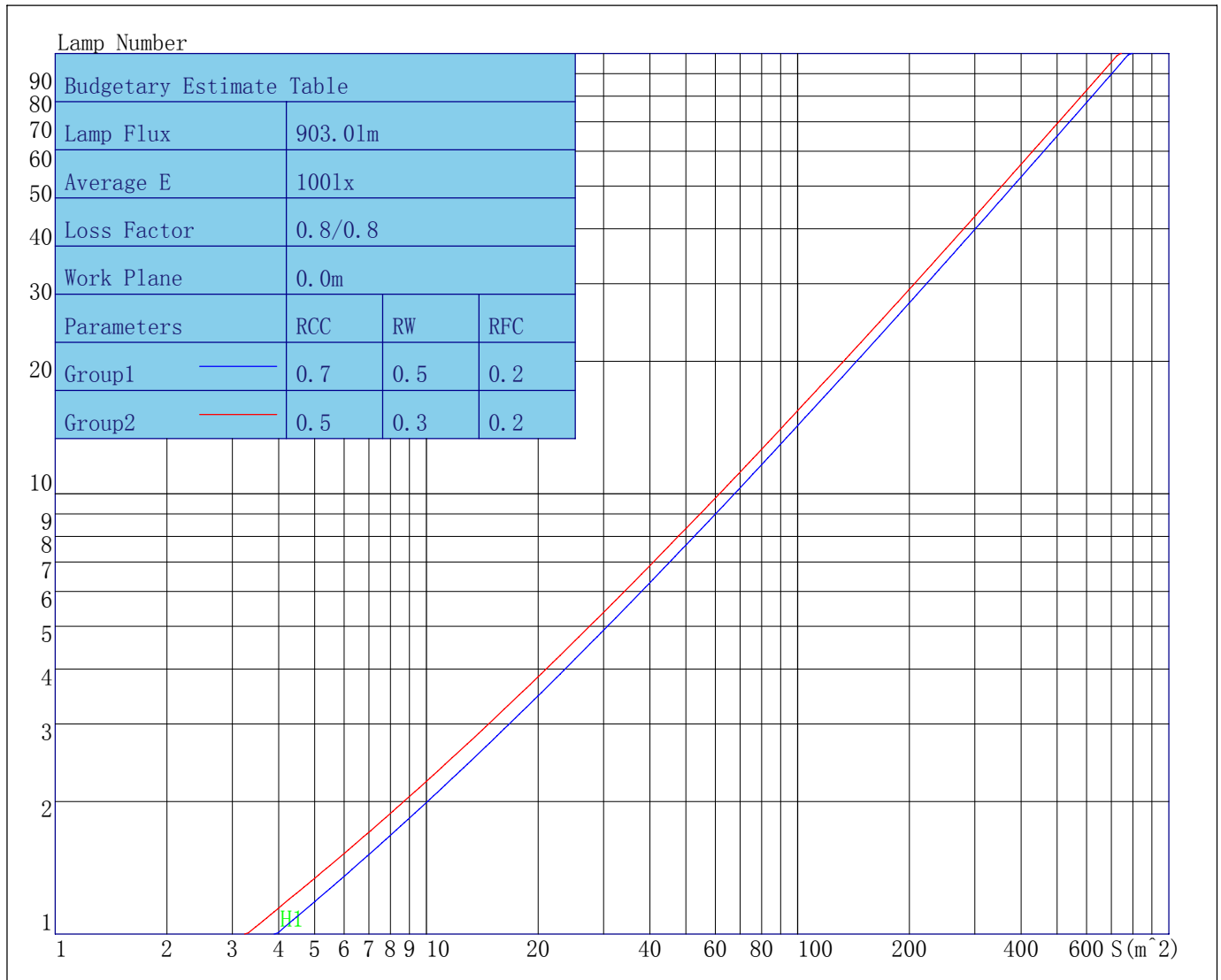
Luminance Limiting Curve



Luminous Size: Length(m)=0.000 Width(m)=0.000 Height(m)=0.000 Area(m²)=0.000000
 Luminous Type: Without Luminous Side
 Luminous Curves: C0-C180 Color: — C90-C270 Color: —

Indoor Budgetary Estimate Table

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13



Parameters1: Rhocc = 0.7 Rhow = 0.5 Rhofc = 0.2 LLF = 0.8
 Parameters2: Rhocc = 0.5 Rhow = 0.3 Rhofc = 0.2 LLF = 0.8
 Average Illuminance(lx): 100 Cavity Height: H1(m) = 2

Indoor Coefficient of Utilization Table

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

Coefficients of Utilization - Zonal Cavity Method																		
Coef.	Effective Floor Cavity Reflectance RFC=0.20																	
RhoCC (%)	80				70				50			30			10		0	
RhoW (%)	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	Coefficient of Utilization (%)																	
0	127	127	127	127	124	124	124	124	118	118	118	112	112	112	107	107	107	104
1	120	117	114	111	117	114	111	109	109	107	105	104	103	101	100	99	97	95
2	113	107	102	98	110	105	100	96	101	97	94	97	94	91	94	91	89	87
3	107	99	92	88	104	97	91	87	93	89	85	90	86	83	87	84	81	79
4	100	91	84	79	98	90	83	79	87	81	77	84	80	76	82	78	75	73
5	95	84	77	72	93	83	77	72	81	75	71	79	74	70	77	72	69	67
6	89	79	71	66	87	78	71	66	76	70	65	74	68	64	72	67	64	62
7	84	73	66	61	83	72	66	61	71	65	60	69	64	60	68	63	59	57
8	80	69	62	57	78	68	61	56	66	60	56	65	59	56	64	59	55	53
9	76	64	57	53	74	64	57	53	62	56	52	61	56	52	60	55	51	50
10	72	61	54	49	71	60	53	49	59	53	49	58	52	49	57	52	48	47

Unified Glare Rating Table

Lum. Name: DC9W-3000K, Ra90, Reflector 60°	Lum. Catalog: 900LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-30XH5M3	Test Machine:GON-2000	Test Date: 2017/04/13

Unified Glare Rating Table

Ceiling RCC	0.70	0.70	0.50	0.50	0.30	0.70	0.70	0.50	0.50	0.30
Wall RW	0.50	0.30	0.50	0.30	0.30	0.50	0.30	0.50	0.30	0.30
Floor RFC	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Room Size	Vewed crosswise					Vewed endwise				
X=2H Y=2H	-1.9	-0.8	-1.5	-0.4	0.0	-1.9	-0.8	-1.5	-0.4	0.0
Y=3H	-2.1	-1.1	-1.7	-0.7	-0.2	-2.1	-1.1	-1.7	-0.7	-0.2
Y=4H	-2.2	-1.2	-1.8	-0.8	-0.3	-2.2	-1.2	-1.8	-0.8	-0.3
Y=6H	-2.3	-1.4	-1.9	-1.0	-0.5	-2.3	-1.4	-1.9	-1.0	-0.5
Y=8H	-2.4	-1.5	-1.9	-1.0	-0.6	-2.4	-1.5	-1.9	-1.0	-0.6
Y=12H	-2.4	-1.6	-2.0	-1.1	-0.6	-2.4	-1.6	-2.0	-1.1	-0.6
X=4H Y=2H	-2.2	-1.2	-1.8	-0.8	-0.3	-2.2	-1.2	-1.8	-0.8	-0.3
Y=3H	-2.4	-1.6	-2.0	-1.1	-0.6	-2.4	-1.6	-2.0	-1.1	-0.6
Y=4H	-2.6	-1.8	-2.1	-1.3	-0.8	-2.6	-1.8	-2.1	-1.3	-0.8
Y=6H	-2.7	-2.0	-2.1	-1.5	-0.9	-2.7	-2.0	-2.1	-1.5	-0.9
Y=8H	-2.7	-2.1	-2.2	-1.6	-1.0	-2.7	-2.1	-2.2	-1.6	-1.0
Y=12H	-2.8	-2.2	-2.2	-1.6	-1.1	-2.8	-2.2	-2.2	-1.6	-1.1
X=8H Y=4H	-2.7	-2.1	-2.2	-1.6	-1.0	-2.7	-2.1	-2.2	-1.6	-1.0
Y=6H	-2.9	-2.3	-2.3	-1.7	-1.1	-2.9	-2.3	-2.3	-1.7	-1.1
Y=8H	-2.9	-2.4	-2.4	-1.8	-1.3	-2.9	-2.4	-2.4	-1.8	-1.3
Y=12H	-3.0	-2.5	-2.4	-1.9	-1.3	-3.0	-2.5	-2.4	-1.9	-1.3
X=12H Y=4H	-2.8	-2.2	-2.2	-1.6	-1.1	-2.8	-2.2	-2.2	-1.6	-1.1
Y=6H	-2.9	-2.4	-2.3	-1.9	-1.3	-2.9	-2.4	-2.3	-1.9	-1.3
Y=8H	-3.0	-2.5	-2.4	-1.9	-1.3	-3.0	-2.5	-2.4	-1.9	-1.3
Variations with the objerver position at spacings										
S=1.0H	0.0/0.0					0.0/0.0				
S=1.5H	0.0/0.0					0.0/0.0				
S=2.0H	0.0/0.0					0.0/0.0				
Reduced UGR Table:										
Nordic Standard Table:	BKO					BKO				
Correction Value	0.0					0.0				

the CIE Pub.117, data has been corrected, refers to the lamp's lumens 8.2flm.

Candela Tabulation

V/H	C0.0	C90.0	C180.0	C270.0
γ 0.0	829.13	829.13	829.13	829.13
γ 5.0	820.00	808.22	816.26	812.94
γ 10.0	784.10	767.51	776.80	777.68
γ 15.0	730.03	712.01	717.61	726.30
γ 20.0	656.42	637.02	632.33	648.81
γ 25.0	560.75	538.27	529.97	547.25
γ 30.0	448.27	428.23	420.02	433.57
γ 35.0	341.11	313.99	308.70	333.72
γ 40.0	216.19	190.41	179.38	206.32
γ 45.0	99.47	85.23	73.08	91.86
γ 50.0	44.43	41.39	37.96	42.91
γ 55.0	34.47	32.88	30.57	33.27
γ 60.0	27.72	26.29	24.48	27.03
γ 65.0	22.01	20.69	19.52	21.86
γ 70.0	17.45	16.22	15.67	17.53
γ 75.0	13.49	12.07	11.84	13.68
γ 80.0	9.61	8.44	8.54	10.04
γ 85.0	6.77	6.11	6.32	7.47
γ 90.0	4.78	3.94	4.09	4.89
γ 95.0	4.30	3.58	3.74	4.38
γ 100.0	3.93	3.32	3.47	4.02
γ 105.0	3.67	3.15	3.35	3.79
γ 110.0	3.54	3.11	3.33	3.68
γ 115.0	3.54	3.18	3.44	3.71
γ 120.0	3.65	3.37	3.64	3.83
γ 125.0	3.86	3.62	3.93	4.06
γ 130.0	4.15	3.98	4.30	4.36
γ 135.0	4.53	4.38	4.73	4.73
γ 140.0	4.94	4.82	5.16	5.13
γ 145.0	5.34	5.22	5.57	5.51
γ 150.0	5.71	5.59	5.95	5.86
γ 155.0	6.06	5.95	6.31	6.20
γ 160.0	6.44	6.33	6.68	6.54
γ 165.0	6.81	6.70	7.02	6.86
γ 170.0	7.14	7.04	7.32	7.15
γ 175.0	7.41	7.32	7.54	7.39
γ 180.0	7.54	7.54	7.54	7.54
