

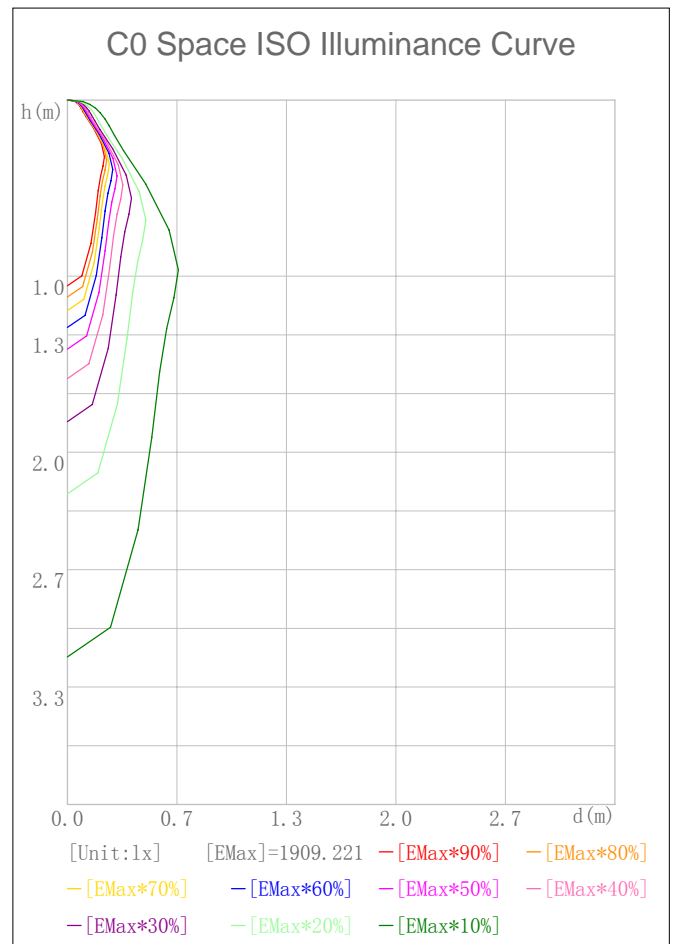
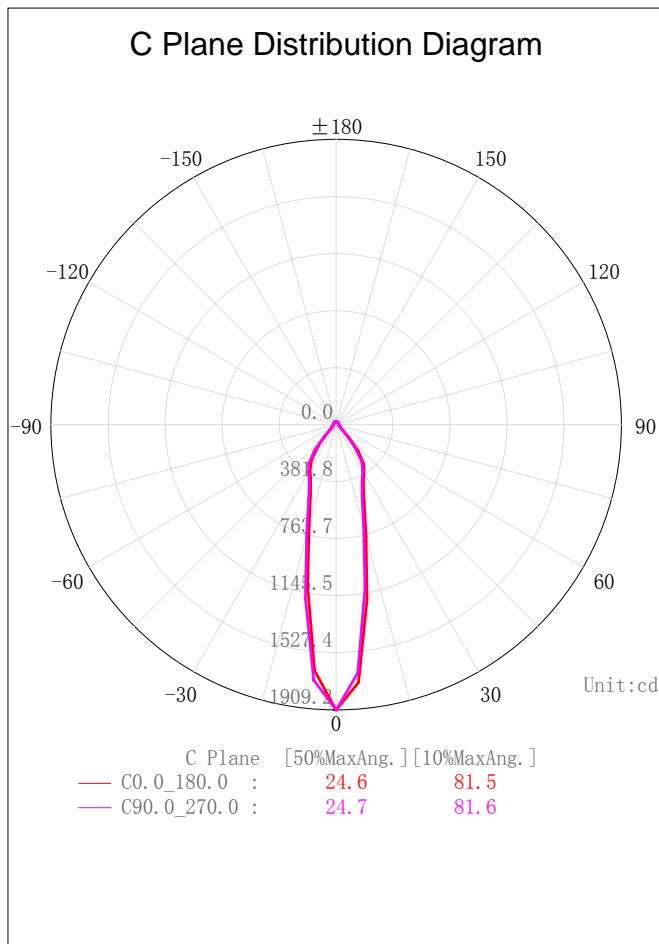
Indoor Luminaire Photometric Data

Description Information

Luminary Name: DC9W-3500K, Ra90, Reflector 24°		Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR		Lamp Catalog: lamps and lanterns	Test Date: 2017/06/13
LED Chip: Citizen CLU028-1202C4-35XH5M3		Shld. Ang(°):	Test Machine:GON-2000
Test Lab:		Frequency (Hz):	Lamp CCT(K): 3500K 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

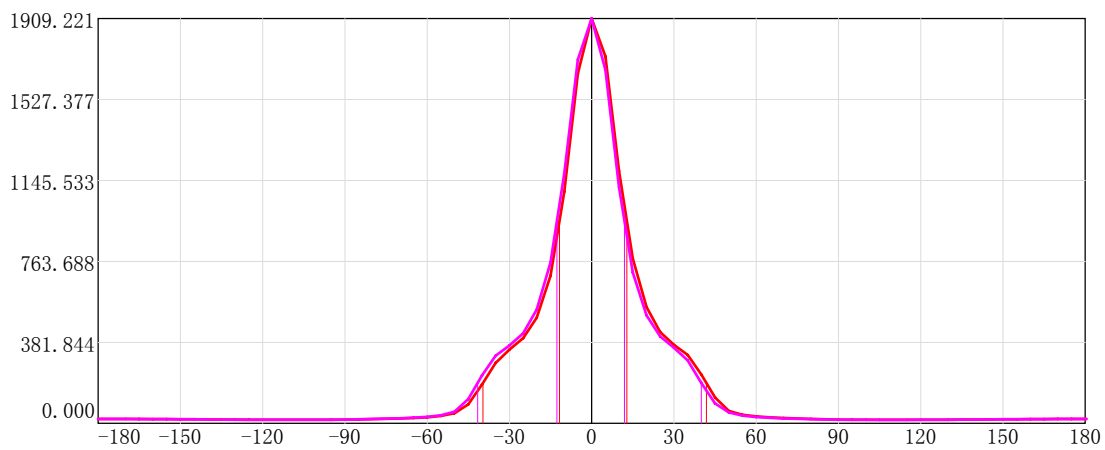
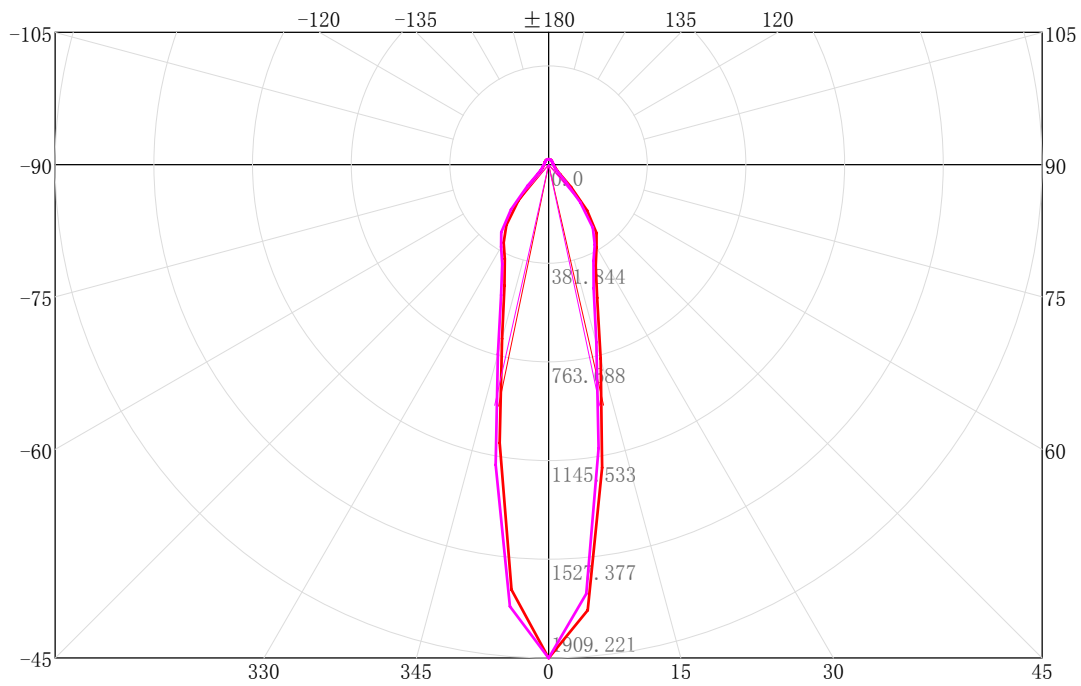
Lamp Speciality Parameter	Luminaire Speciality Parameter	
Rated Flux(lm): 921.000	Luminary Flux(lm): 1051.172	Field Angle(10%Imax): 81.5(°)
Rated Power(W): 9W	Luminary Efficiency: 114.13%	Down Lumens&Percent: 938.243lm 89.26%
Rated Voltage(V): 36V 250mA	Luminary EER(lm/W): 35.621	Up Lumens&Percent: 112.929lm 10.74%
Tested Power(W): 29.510	Max. Candela(cd): 1909.221	S/MH: C0_a180=0.410 C90_270=0.411
Lamps' Inside: 1	Max Cand@Ang. (°): C=0.0 γ=0.0	CIE Type: General Diffuse
Tested Electrics (V, A, pf): 219.8, 0.179, 0.746	Beam Angle(50%Imax): 24.6(°)	ErP φ use(90°): 787.999lm
Lamp Size (W*L*H): 0.000m*0.000m*0.000m	Left=-11.7°, Right=12.9°	IRF(%): 453.538



2D Plane Light Intensity Distribution Curve

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

C Plane Distribution Diagram

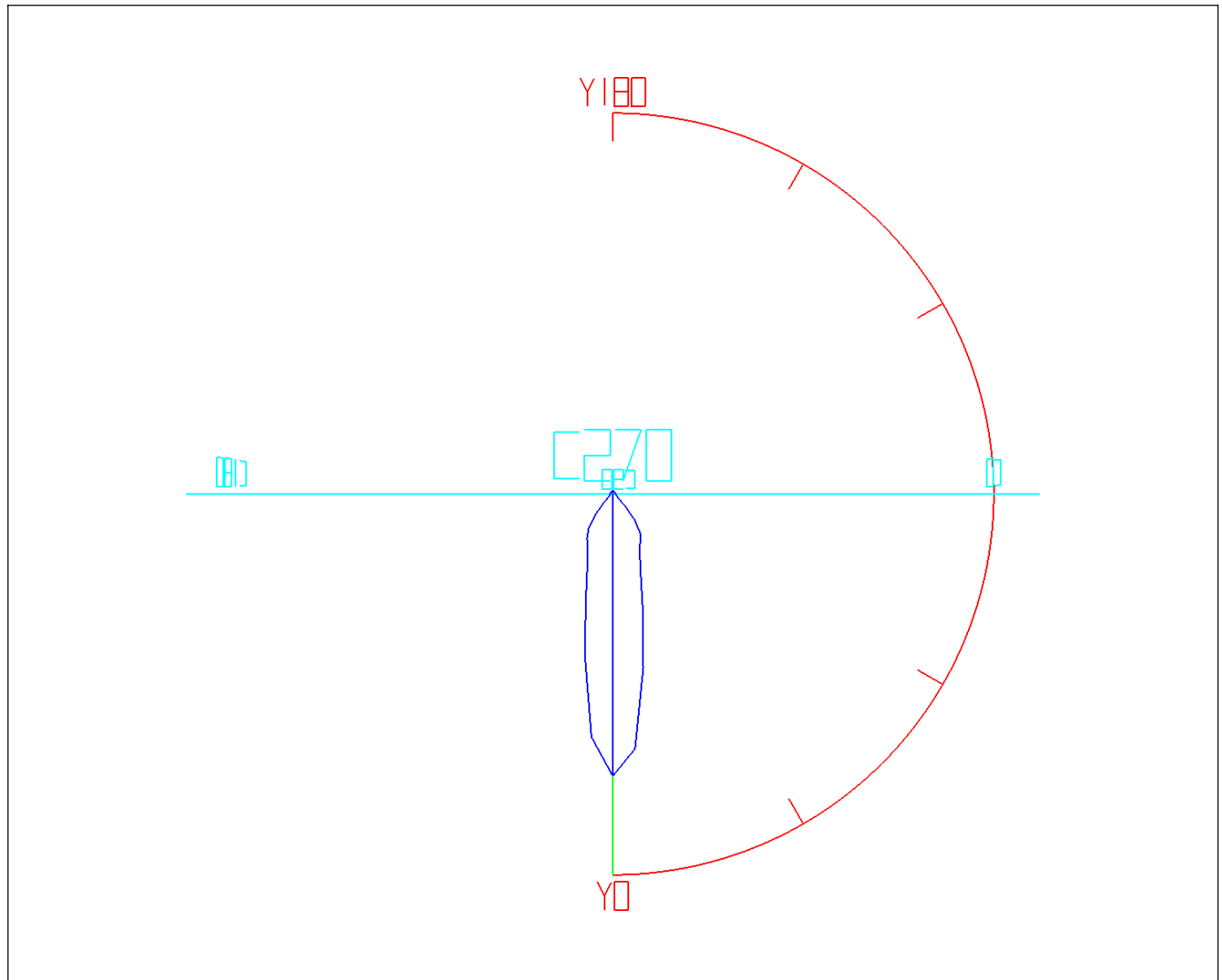


C Plane	[50%MaxAng.]	[10%MaxAng.]	Unit:cd
— C0.0_180.0 :	24.6	81.5	
— C90.0_270.0 :	24.7	81.6	

3D Light Intensity Distribution Modal

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

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

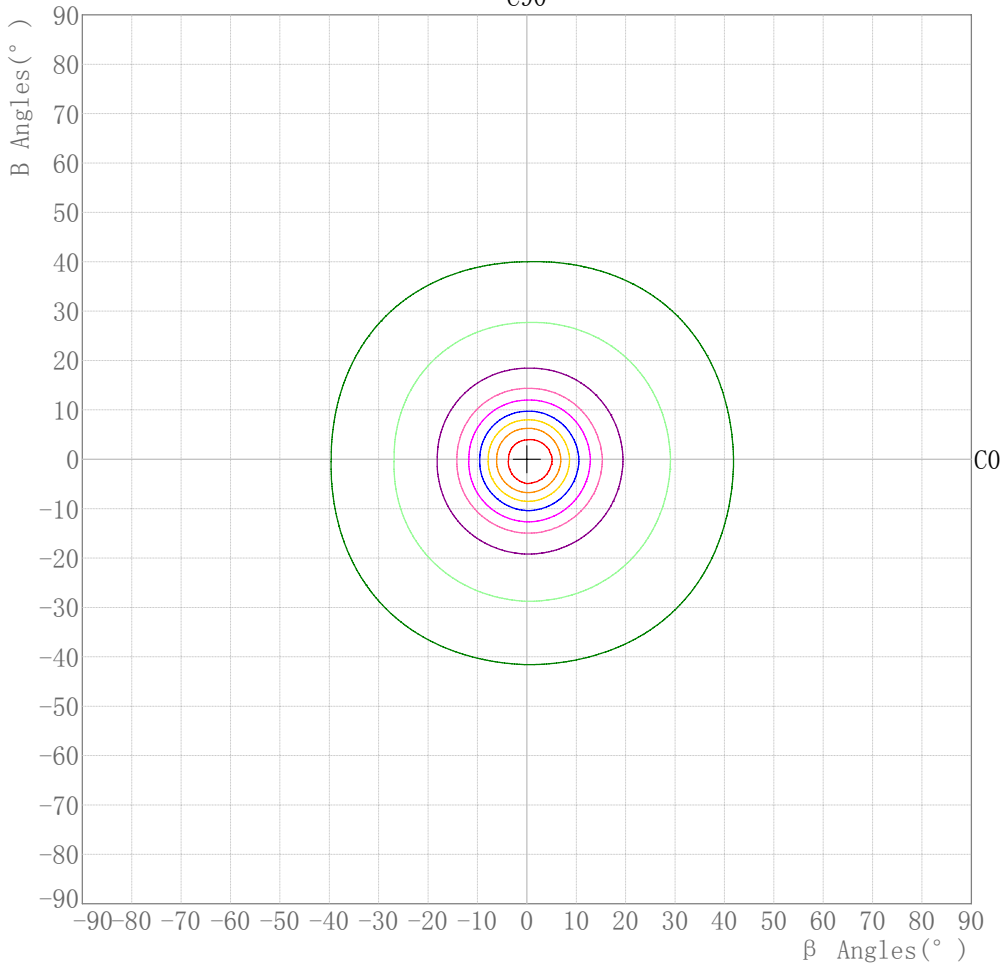
Zone(γ)	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp
0.0-5.0	43.04	43.04	4.67	4.67
5.0-10.0	101.42	144.46	11.01	15.69
10.0-15.0	111.53	255.99	12.11	27.79
15.0-20.0	103.82	359.81	11.27	39.07
20.0-25.0	98.67	458.48	10.71	49.78
25.0-30.0	98.47	556.95	10.69	60.47
30.0-35.0	98.23	655.19	10.67	71.14
35.0-40.0	85.77	740.95	9.31	80.45
40.0-45.0	57.98	798.93	6.29	86.75
45.0-50.0	32.09	831.02	3.48	90.23
50.0-55.0	19.92	850.94	2.16	92.39
55.0-60.0	15.89	866.82	1.72	94.12
60.0-65.0	13.99	880.81	1.52	95.64
65.0-70.0	12.94	893.75	1.40	97.04
70.0-75.0	12.17	905.91	1.32	98.36
75.0-80.0	11.47	917.38	1.25	99.61
80.0-85.0	10.76	928.14	1.17	100.77
85.0-90.0	10.11	938.24	1.10	101.87
90.0-95.0	9.68	947.93	1.05	102.92
95.0-100.0	9.43	957.36	1.02	103.95
100.0-105.0	9.18	966.54	1.00	104.94
105.0-110.0	8.92	975.46	0.97	105.91
110.0-115.0	8.63	984.10	0.94	106.85
115.0-120.0	8.32	992.42	0.90	107.75
120.0-125.0	7.98	1000.40	0.87	108.62
125.0-130.0	7.62	1008.02	0.83	109.45
130.0-135.0	7.22	1015.25	0.78	110.23
135.0-140.0	6.79	1022.04	0.74	110.97
140.0-145.0	6.30	1028.34	0.68	111.65
145.0-150.0	5.71	1034.05	0.62	112.28
150.0-155.0	5.02	1039.08	0.55	112.82
155.0-160.0	4.24	1043.32	0.46	113.28
160.0-165.0	3.38	1046.70	0.37	113.65
165.0-170.0	2.47	1049.17	0.27	113.92
170.0-175.0	1.50	1050.67	0.16	114.08
175.0-180.0	0.50	1051.17	0.05	114.13

Rectangle ISO Lighting Intensity Diagram

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

ISO Lighting Intensity Curve

C90



Curves:

[Unit: cd]

[IMax] =1909.221

— [IMax*90%]=1718.299

— [IMax*80%]=1527.377

— [IMax*70%]=1336.455

— [IMax*60%]=1145.533

— [IMax*50%]=954.610

— [IMax*40%]=763.688

— [IMax*30%]=572.766

— [IMax*20%]=381.844

— [IMax*10%]=190.922

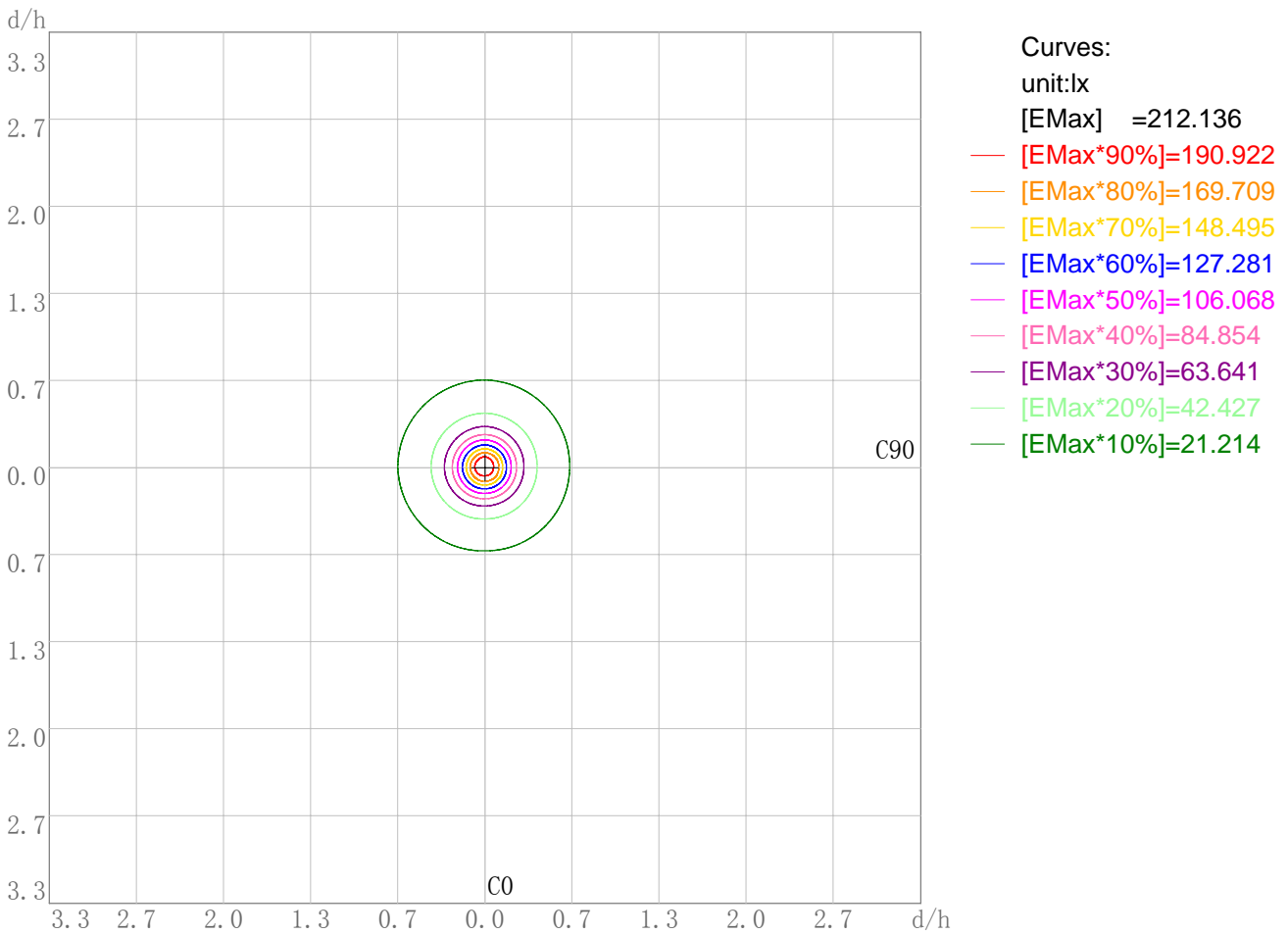
Maximum Light Intensity(cd): 1909.22

Maximum Cand.@Angle: H=0.0°,V=0.0°

Plane ISO-Illuminance Diagram

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

Plane ISO-Illuminance Curve

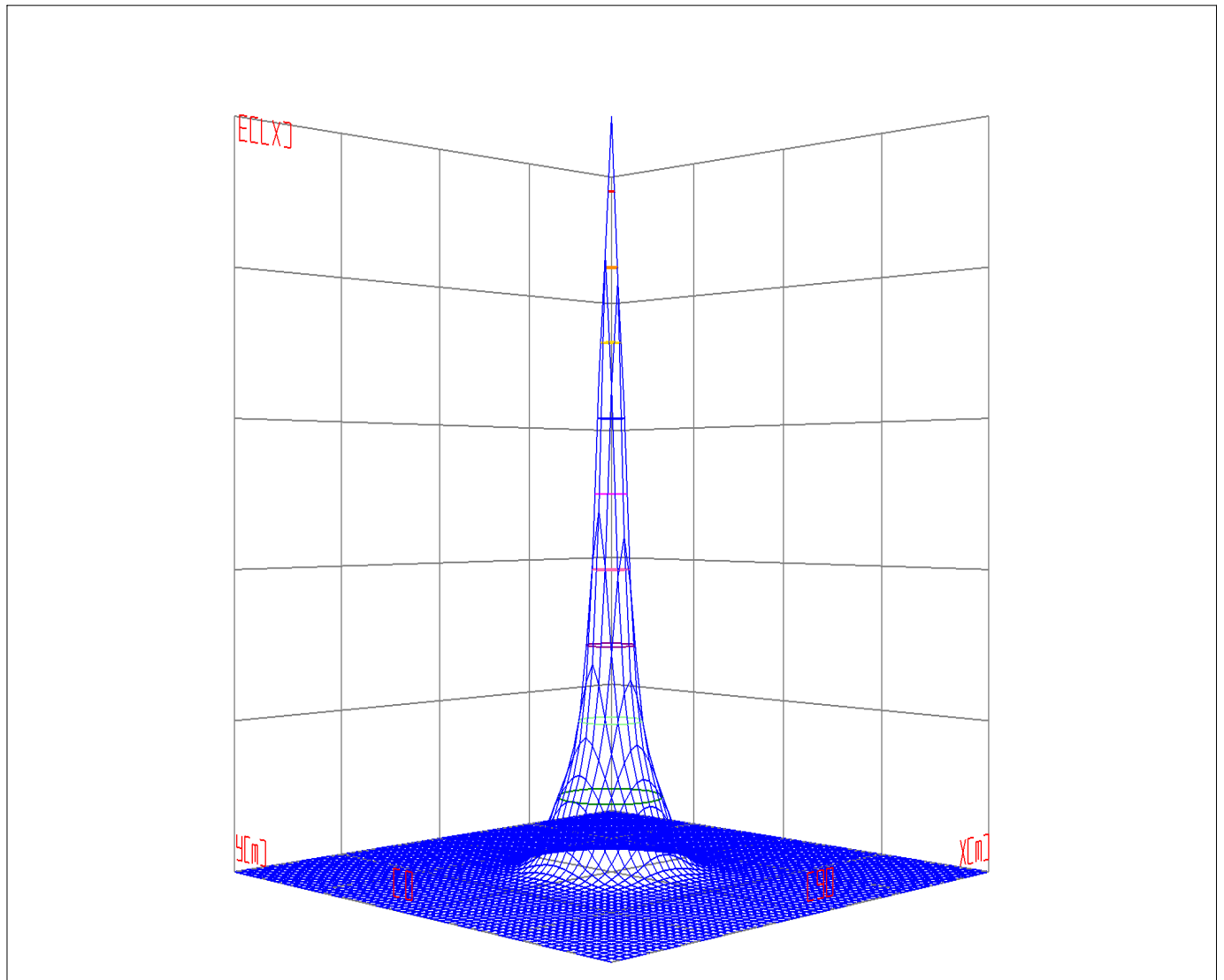


Working Plane Luminaire Mounting Height(m): 3.00
 Working Plane Maximum Illuminance(lx): 212.14
 Working Plane Maximum Illuminance Position(d/h):H0.0 V0.0

3D Plane ISO Illuminance Diagram

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

3D Plane Illuminance Modal

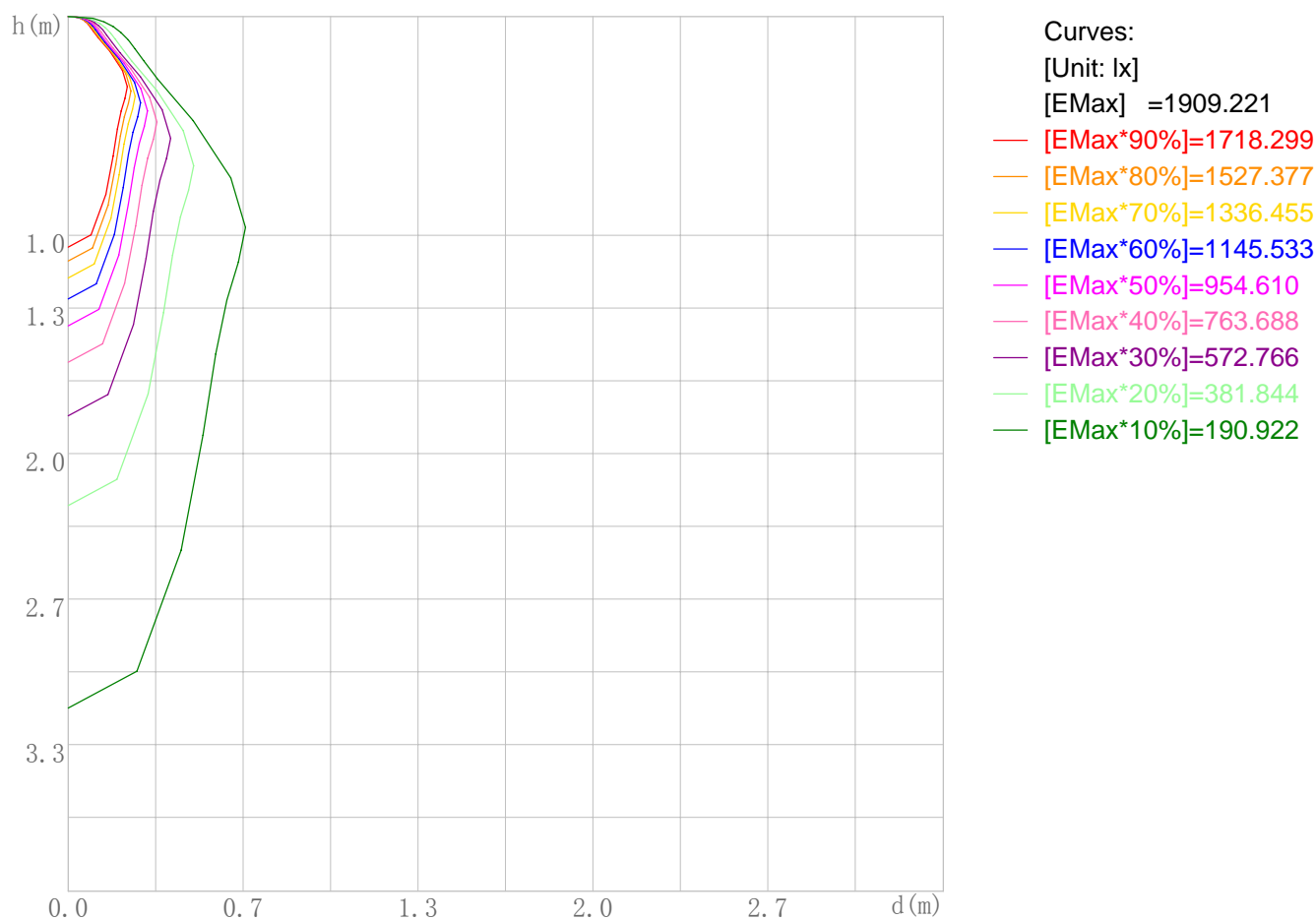


Curves: 3D Model — 90% — 80% — 70% — 60% — 50% — 40% — 30% — 20% — 10% —
 View Angles(deg): 0 Height(m): 3.0 Distance(m): 10.0

Space ISO Illuminance Diagram

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

Space ISO Illuminance Curve

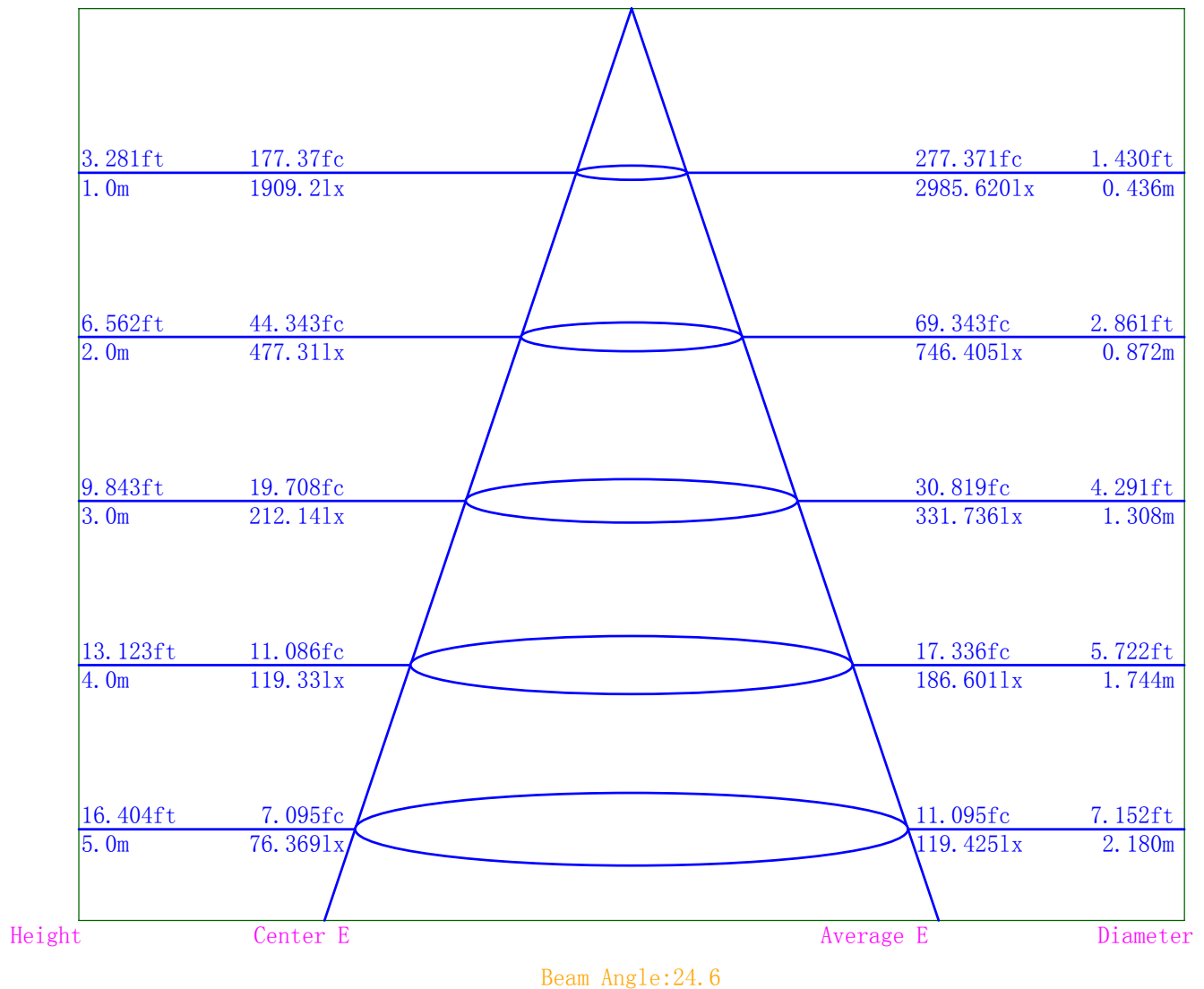


Space Plane Maximum Illuminance and @Angle:1909.22lx,0.0deg
 Plane Maximum Lighting Intensity and @Angle:1909.221cd,0deg

Illuminance-Distance Diagram

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

Illuminance-Distance Curve



Indoor Luminance Limiting Curves

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

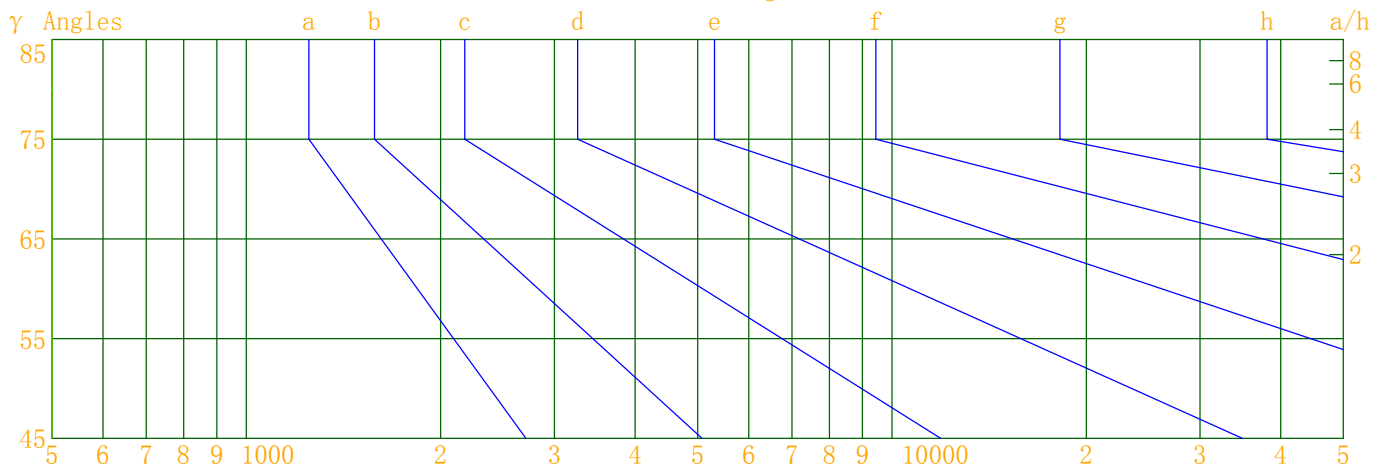
Glare Grade Table

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

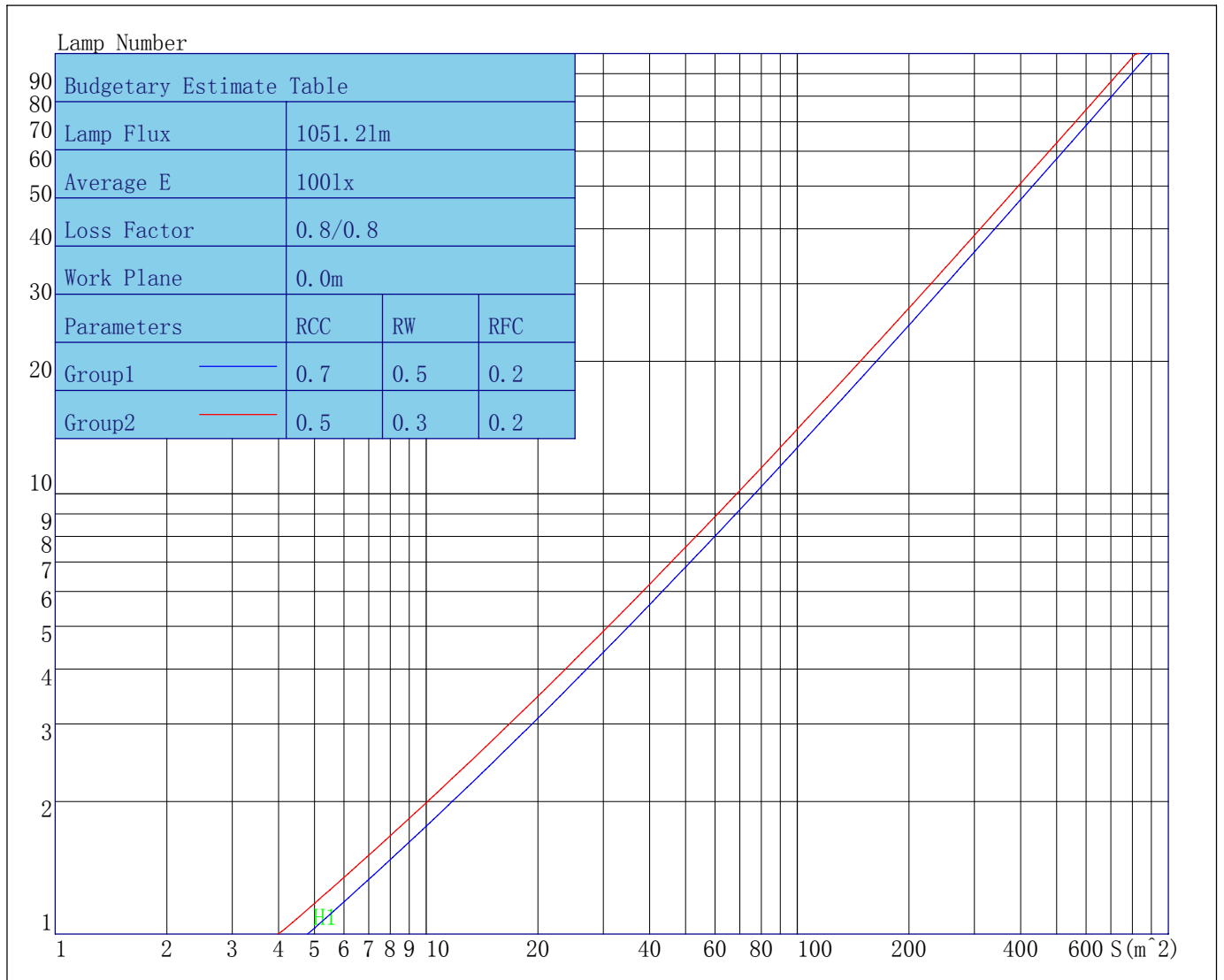
Luminance Limiting Curve



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-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13



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-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

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	50	30	10	0
RCR	Coefficient of Utilization (%)																				
0	133	133	133	133	128	128	128	128	120	120	120	112	112	112	105	105	105	102			
1	125	120	117	114	120	117	114	111	110	107	105	103	101	100	98	96	95	92			
2	117	110	105	100	113	107	102	98	101	97	94	96	93	90	91	89	86	84			
3	110	101	95	89	107	99	93	88	94	89	85	89	85	82	85	82	79	77			
4	104	94	86	81	101	92	85	80	87	82	77	84	79	75	80	76	73	71			
5	98	87	80	74	95	85	78	73	82	76	71	78	73	70	75	71	68	66			
6	93	81	74	68	90	80	73	68	77	71	66	74	69	65	71	67	63	61			
7	88	76	69	63	85	75	68	63	72	66	62	70	64	60	67	63	59	57			
8	83	72	64	59	81	70	63	59	68	62	58	66	61	57	64	59	56	54			
9	79	68	60	55	77	66	60	55	64	58	54	63	57	53	61	56	53	51			
10	76	64	57	52	74	63	56	52	61	55	51	59	54	50	58	53	50	48			

Unified Glare Rating Table

Lum. Name: DC9W-3500K, Ra90, Reflector 24°	Lum. Catalog: 1000LM	Test ID: 01
Lamp Name: CL2-9MR	Lamp Catalog: lamps and lanterns	Test Lab:
LED Chip: Citizen CLU028-1202C4-35XH5M3	Test Machine:GON-2000	Test Date: 2017/06/13

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	-2.1	-0.9	-1.5	-0.4	0.2	-2.1	-0.9	-1.5	-0.4	0.2
Y=3H	-2.3	-1.2	-1.7	-0.6	-0.0	-2.3	-1.2	-1.7	-0.6	-0.0
Y=4H	-2.4	-1.3	-1.8	-0.8	-0.1	-2.4	-1.3	-1.8	-0.8	-0.1
Y=6H	-2.5	-1.5	-1.9	-0.9	-0.3	-2.5	-1.5	-1.9	-0.9	-0.3
Y=8H	-2.5	-1.6	-1.9	-1.0	-0.4	-2.5	-1.6	-1.9	-1.0	-0.4
Y=12H	-2.6	-1.7	-2.0	-1.1	-0.4	-2.6	-1.7	-2.0	-1.1	-0.4
X=4H Y=2H	-2.4	-1.3	-1.8	-0.8	-0.1	-2.4	-1.3	-1.8	-0.8	-0.1
Y=3H	-2.6	-1.7	-2.0	-1.1	-0.4	-2.6	-1.7	-2.0	-1.1	-0.4
Y=4H	-2.7	-1.9	-2.1	-1.3	-0.6	-2.7	-1.9	-2.1	-1.3	-0.6
Y=6H	-2.8	-2.0	-2.2	-1.4	-0.7	-2.8	-2.0	-2.2	-1.4	-0.7
Y=8H	-2.9	-2.1	-2.2	-1.5	-0.8	-2.9	-2.1	-2.2	-1.5	-0.8
Y=12H	-2.9	-2.2	-2.3	-1.6	-0.9	-2.9	-2.2	-2.3	-1.6	-0.9
X=8H Y=4H	-2.9	-2.1	-2.2	-1.5	-0.8	-2.9	-2.1	-2.2	-1.5	-0.8
Y=6H	-3.0	-2.3	-2.3	-1.7	-0.9	-3.0	-2.3	-2.3	-1.7	-0.9
Y=8H	-3.1	-2.5	-2.4	-1.8	-1.1	-3.1	-2.5	-2.4	-1.8	-1.1
Y=12H	-3.1	-2.6	-2.5	-1.9	-1.1	-3.1	-2.6	-2.5	-1.9	-1.1
X=12H Y=4H	-2.9	-2.2	-2.3	-1.6	-0.9	-2.9	-2.2	-2.3	-1.6	-0.9
Y=6H	-3.1	-2.5	-2.4	-1.8	-1.1	-3.1	-2.5	-2.4	-1.8	-1.1
Y=8H	-3.1	-2.6	-2.5	-1.9	-1.1	-3.1	-2.6	-2.5	-1.9	-1.1
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	1909.22	1909.22	1909.22	1909.22
γ 5.0	1730.72	1666.70	1651.23	1716.02
γ 10.0	1190.39	1113.86	1092.81	1178.76
γ 15.0	777.00	711.89	696.66	759.16
γ 20.0	548.29	509.54	499.17	537.26
γ 25.0	431.24	410.86	402.17	424.60
γ 30.0	370.64	357.22	347.99	367.75
γ 35.0	322.99	297.55	285.09	319.16
γ 40.0	231.27	190.84	183.01	226.30
γ 45.0	122.46	94.03	89.70	114.85
γ 50.0	58.92	51.70	48.53	55.11
γ 55.0	40.78	37.15	35.48	38.71
γ 60.0	32.84	30.17	28.82	30.99
γ 65.0	28.70	26.26	25.34	27.03
γ 70.0	25.59	23.76	23.23	24.43
γ 75.0	23.32	21.73	21.51	22.63
γ 80.0	21.24	20.03	20.01	20.95
γ 85.0	19.53	18.59	18.58	19.39
γ 90.0	18.09	17.58	17.75	18.15
γ 95.0	17.72	17.21	17.30	17.67
γ 100.0	17.40	17.06	17.11	17.39
γ 105.0	17.20	16.93	17.00	17.21
γ 110.0	17.11	16.88	17.01	17.17
γ 115.0	17.02	16.91	17.12	17.16
γ 120.0	17.10	17.03	17.30	17.28
γ 125.0	17.26	17.19	17.54	17.48
γ 130.0	17.53	17.55	17.90	17.72
γ 135.0	17.98	17.83	18.36	18.11
γ 140.0	18.41	18.43	18.97	18.65
γ 145.0	18.95	18.98	19.44	19.25
γ 150.0	19.47	19.39	19.99	19.73
γ 155.0	19.96	19.85	20.32	20.03
γ 160.0	20.33	20.22	20.62	20.32
γ 165.0	20.64	20.54	20.91	20.64
γ 170.0	20.93	20.78	21.10	20.88
γ 175.0	21.02	20.91	21.18	20.98
γ 180.0	21.15	21.15	21.15	21.15
