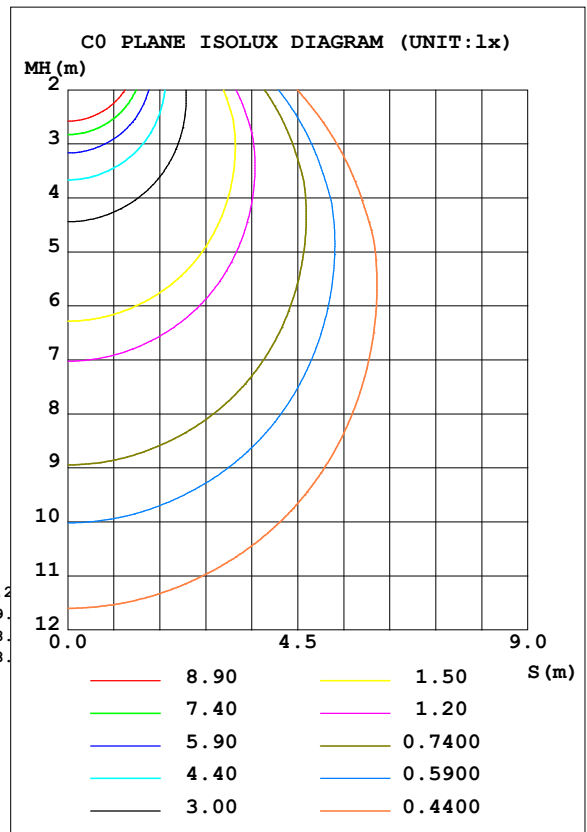
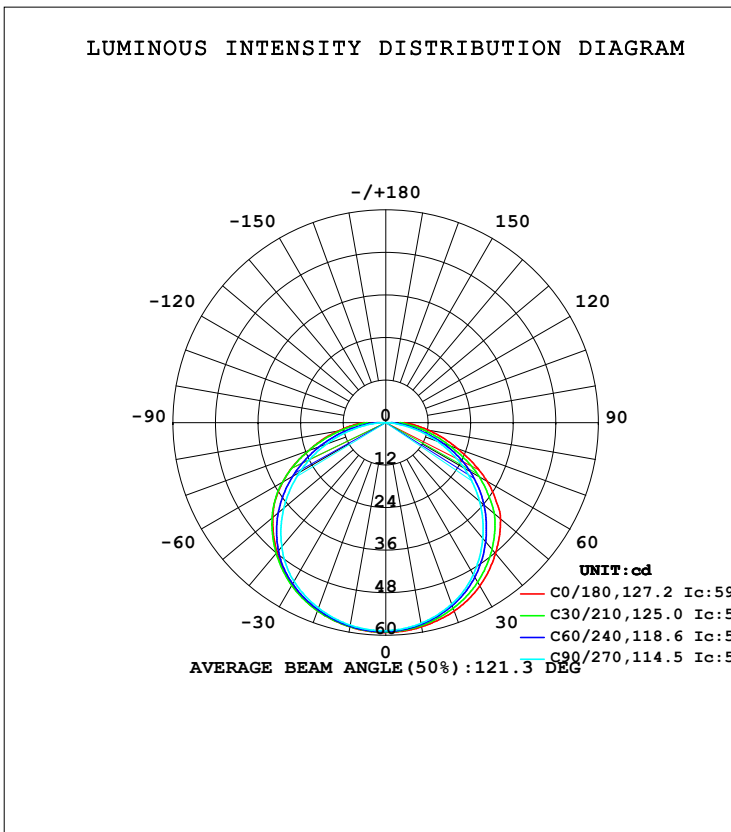


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--

DATA OF LAMP		PHOTOMETRIC DATA Eff: 13.49 lm/W			
MODEL	HF7222-AB-WHT	I _{max} (cd)	59.20	S/MH (C0/180)	1.33
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.31
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	189.03	η UP, DN (C0-180)	0.0, 48.6
NOMINAL FLUX (lm)	189.027	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 51.4
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	120.407	η down (%)	100.0	CIBSE SHR MAX	1.50



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators: Dingmin Zhang
 Test Date: 2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 9.480m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

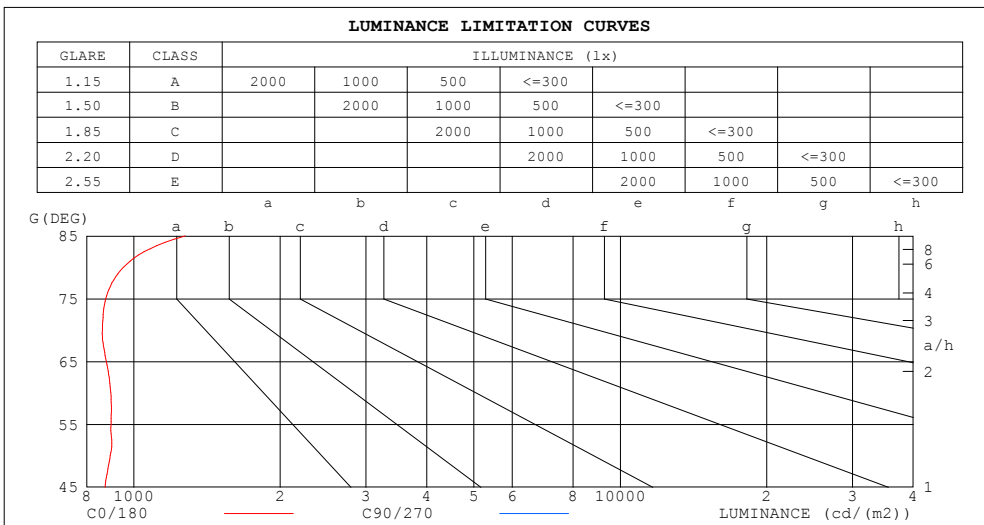
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	58.45	57.86	57.47	57.66	58.48	58.29	57.98	57.85	0- 10	5.576	5.576	2.95,2.95
20	56.55	55.20	54.47	55.11	56.41	56.22	55.62	55.67	10- 20	16.10	21.68	11.5,11.5
30	53.15	51.06	49.46	51.11	52.90	52.77	51.75	52.10	20- 30	24.87	46.54	24.6,24.6
40	48.17	45.17	42.59	45.50	47.79	47.79	45.65	46.98	30- 40	30.78	77.32	40.9,40.9
50	42.27	37.96	34.55	38.39	41.61	40.84	37.56	40.35	40- 50	33.06	110.4	58.4,58.4
60	32.97	28.84	25.42	29.95	33.60	31.98	28.12	31.82	50- 60	31.31	141.7	75,75
70	21.68	18.14	15.56	19.42	23.25	21.74	17.84	21.51	60- 70	24.99	166.7	88.2,88.2
80	12.14	8.427	5.664	9.617	13.64	11.32	7.736	10.98	70- 80	15.68	182.4	96.5,96.5
90	5.189	2.704	0.1381	2.940	6.008	3.540	0.2942	3.220	80- 90	6.648	189.0	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1275	287
80	952	444
75	876	555
70	862	619
65	878	662
60	897	692
55	898	714
50	895	731
45	872	745

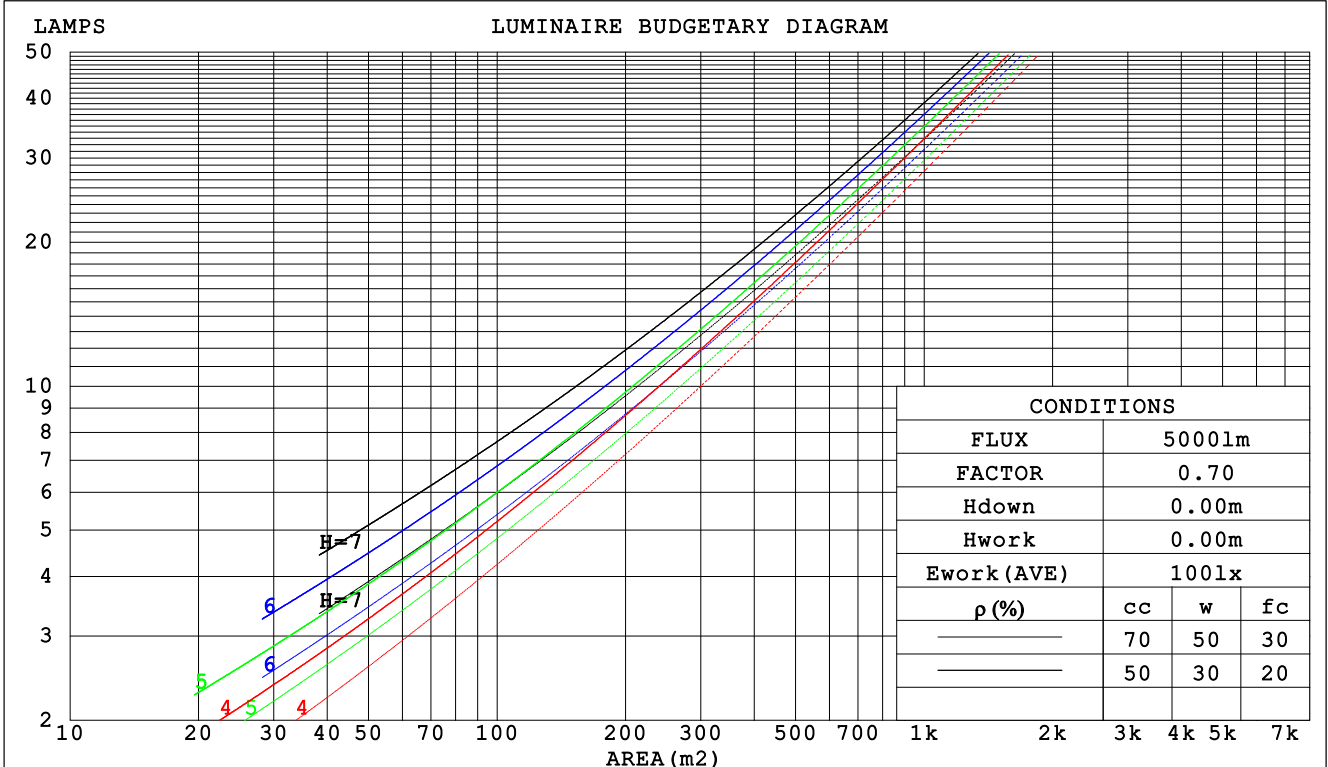
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators: Dingmin Zhang
 Test Date: 2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 9.480m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	.00
1.0	1.02	.98	.94	1.00	.96	.92	.96	.92	.89	.92	.89	.86	.88	.86	.84	.82
2.0	.89	.81	.75	.87	.80	.74	.83	.77	.72	.80	.75	.71	.77	.73	.69	.67
3.0	.77	.69	.62	.76	.68	.61	.73	.66	.60	.70	.64	.59	.67	.62	.58	.56
4.0	.68	.59	.52	.67	.58	.52	.64	.57	.51	.62	.55	.50	.60	.54	.49	.47
5.0	.61	.51	.44	.59	.51	.44	.57	.50	.44	.55	.48	.43	.53	.47	.43	.40
6.0	.54	.45	.38	.53	.45	.38	.52	.44	.38	.50	.43	.38	.48	.42	.37	.35
7.0	.49	.40	.34	.48	.40	.34	.47	.39	.33	.45	.38	.33	.44	.38	.33	.31
8.0	.45	.36	.30	.44	.36	.30	.43	.35	.30	.41	.35	.30	.40	.34	.29	.27
9.0	.41	.33	.27	.40	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.26	.25
10.0	.38	.30	.24	.37	.30	.24	.36	.29	.24	.35	.29	.24	.34	.28	.24	.22



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.337	.192	.061	.330	.188	.060	.317	.182	.058	.304	.176	.056	.293	.170	.055	
2.0	.310	.170	.052	.304	.167	.052	.292	.162	.050	.281	.157	.049	.271	.153	.048	
3.0	.283	.151	.045	.278	.149	.045	.267	.145	.044	.257	.141	.043	.248	.138	.043	
4.0	.259	.135	.040	.254	.133	.039	.245	.130	.039	.236	.127	.038	.228	.124	.038	
5.0	.238	.122	.035	.234	.120	.035	.226	.118	.035	.218	.115	.034	.211	.113	.034	
6.0	.220	.110	.032	.216	.109	.031	.209	.107	.031	.202	.105	.031	.196	.103	.031	
7.0	.204	.101	.029	.201	.100	.029	.194	.098	.028	.188	.096	.028	.182	.095	.028	
8.0	.190	.093	.026	.187	.092	.026	.181	.091	.026	.176	.089	.026	.171	.088	.025	
9.0	.178	.086	.024	.175	.085	.024	.170	.084	.024	.165	.083	.024	.160	.081	.024	
10.0	.167	.080	.022	.164	.079	.022	.160	.078	.022	.155	.077	.022	.151	.076	.022	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.182	.156	.132	.156	.134	.114	.107	.092	.079	.061	.053	.046	.020	.017	.015	
2.0	.175	.132	.096	.150	.113	.083	.103	.079	.058	.059	.046	.034	.019	.015	.011	
3.0	.167	.114	.072	.143	.099	.063	.098	.069	.044	.057	.040	.026	.018	.013	.009	
4.0	.159	.101	.057	.137	.087	.049	.094	.061	.035	.054	.036	.021	.018	.012	.007	
5.0	.152	.091	.046	.130	.079	.040	.090	.055	.028	.052	.032	.017	.017	.011	.006	
6.0	.144	.083	.038	.124	.072	.033	.086	.050	.024	.050	.029	.014	.016	.010	.005	
7.0	.137	.076	.032	.118	.066	.028	.082	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.131	.070	.028	.113	.061	.025	.078	.043	.017	.045	.025	.010	.015	.008	.003	
9.0	.125	.065	.025	.107	.056	.022	.074	.040	.015	.043	.023	.009	.014	.008	.003	
10.0	.119	.061	.022	.102	.053	.019	.071	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm										
NAME:					TYPE:			WEIGHT:--		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:			Shielding Angle:--		
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	12.6	14.1	12.8	14.3	14.6	11.5	13.1	11.8	13.3	13.5
3H	14.3	15.8	14.6	16.0	16.2	13.0	14.4	13.3	14.7	14.9
4H	15.1	16.5	15.4	16.7	17.0	13.5	14.9	13.8	15.1	15.4
6H	15.8	17.1	16.2	17.4	17.7	13.8	15.1	14.2	15.4	15.7
8H	16.2	17.4	16.5	17.7	18.0	13.9	15.2	14.2	15.5	15.8
12H	16.5	17.7	16.9	18.0	18.4	13.9	15.1	14.3	15.4	15.7
4H 2H	13.1	14.5	13.4	14.7	15.0	12.3	13.7	12.6	13.9	14.2
3H	15.0	16.2	15.3	16.5	16.8	13.9	15.1	14.3	15.4	15.7
4H	15.9	17.0	16.3	17.4	17.7	14.6	15.7	14.9	16.0	16.3
6H	16.8	17.8	17.2	18.2	18.6	15.0	16.0	15.4	16.3	16.7
8H	17.3	18.2	17.7	18.6	19.0	15.1	16.0	15.5	16.4	16.8
12H	17.7	18.6	18.2	19.0	19.4	15.2	16.0	15.6	16.4	16.8
8H 4H	16.1	17.1	16.6	17.4	17.8	14.9	15.9	15.3	16.2	16.6
6H	17.2	18.0	17.7	18.4	18.9	15.5	16.3	16.0	16.7	17.1
8H	17.8	18.5	18.3	18.9	19.4	15.7	16.4	16.2	16.8	17.3
12H	18.5	19.1	18.9	19.5	20.0	15.8	16.4	16.3	16.9	17.4
12H 4H	16.1	17.0	16.6	17.4	17.8	15.0	15.8	15.4	16.2	16.6
6H	17.3	18.0	17.7	18.4	18.9	15.7	16.4	16.1	16.8	17.2
8H	17.9	18.5	18.4	19.0	19.4	15.9	16.5	16.4	17.0	17.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117, 189.0 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -5.8)

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--

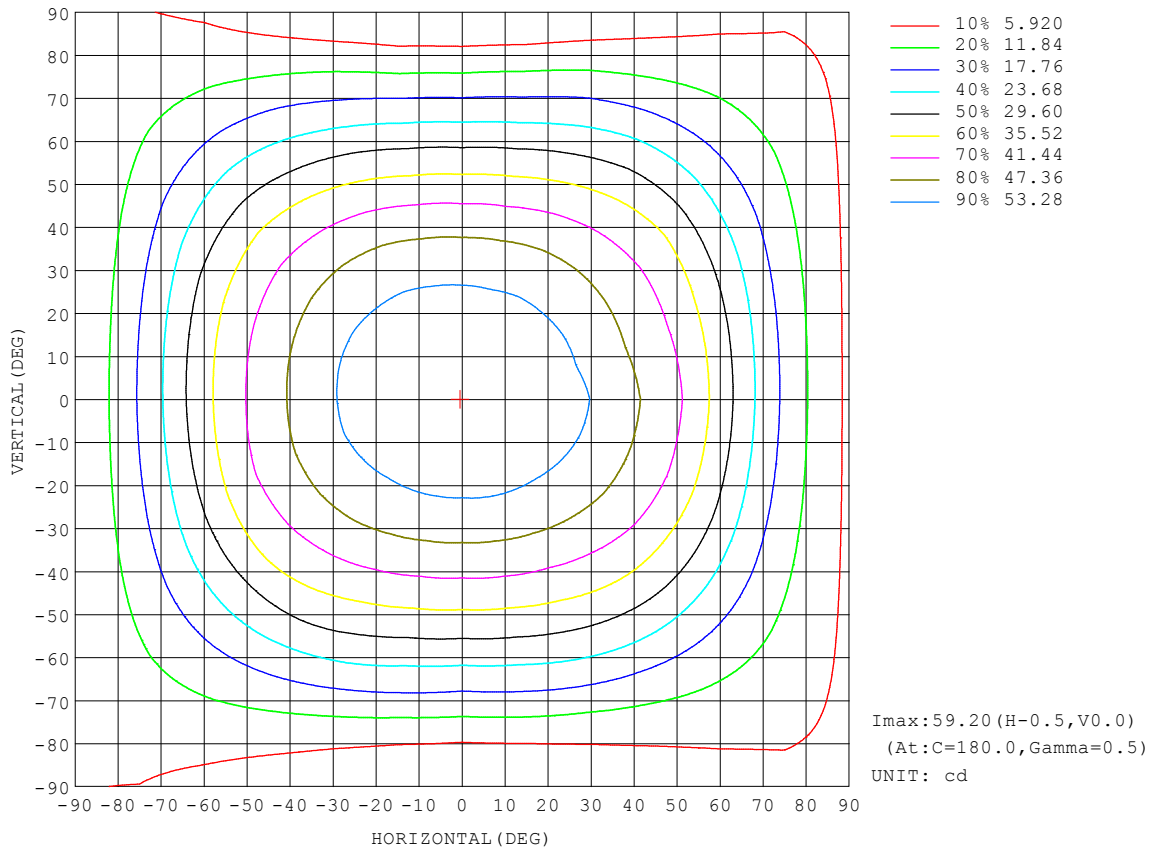
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	55	43	36	55	43	36	53	43	36	29
0.80	65	53	46	64	53	45	63	52	45	38
1.00	74	62	54	73	62	54	70	63	54	46
1.25	81	70	62	79	69	62	77	68	61	53
1.50	86	76	68	84	75	68	81	73	67	59
2.00	93	84	77	91	83	76	88	81	75	67
2.50	97	89	82	95	88	82	91	85	80	71
3.00	101	93	87	99	92	86	94	89	84	75
4.00	105	99	94	103	97	92	98	94	90	81
5.00	108	102	98	105	100	96	100	97	93	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
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 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--

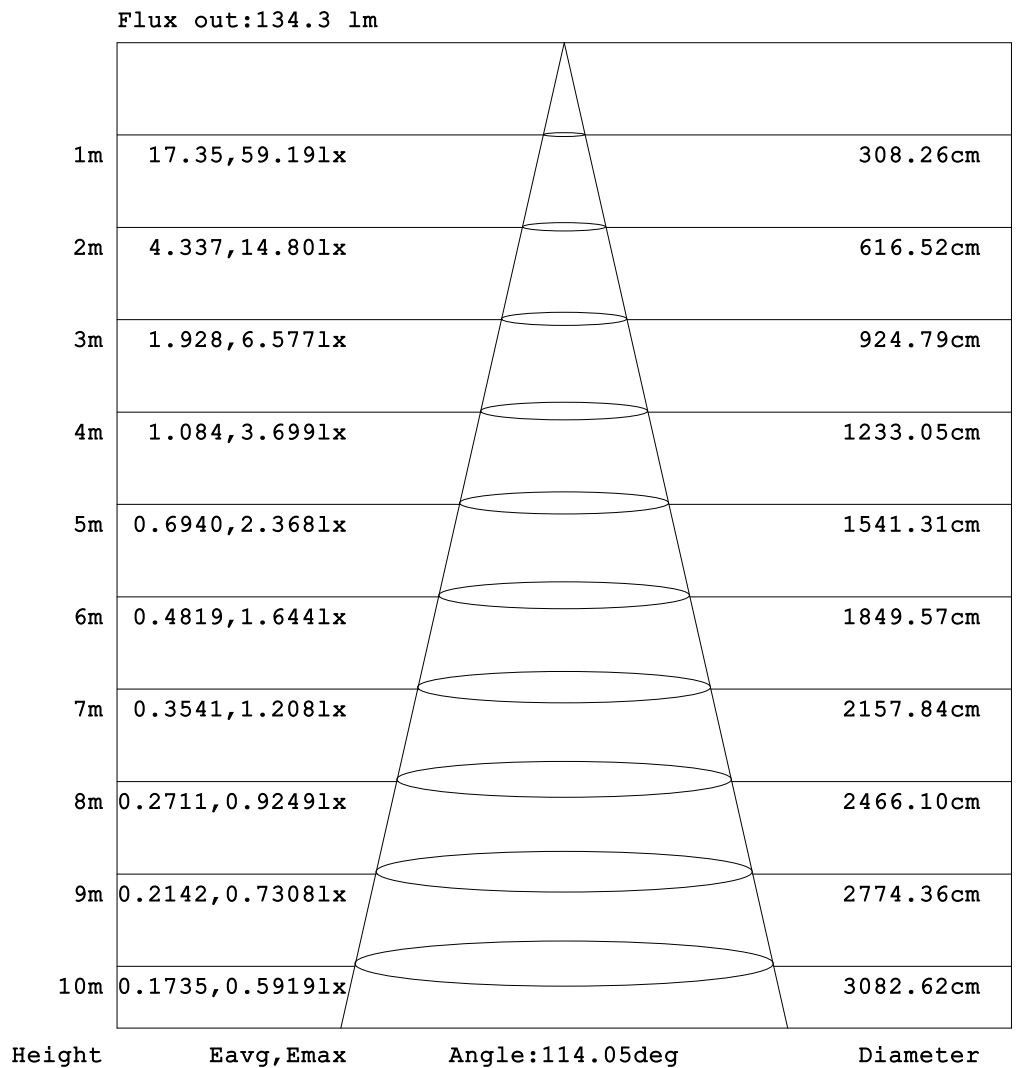


C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

AAI Figure

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--



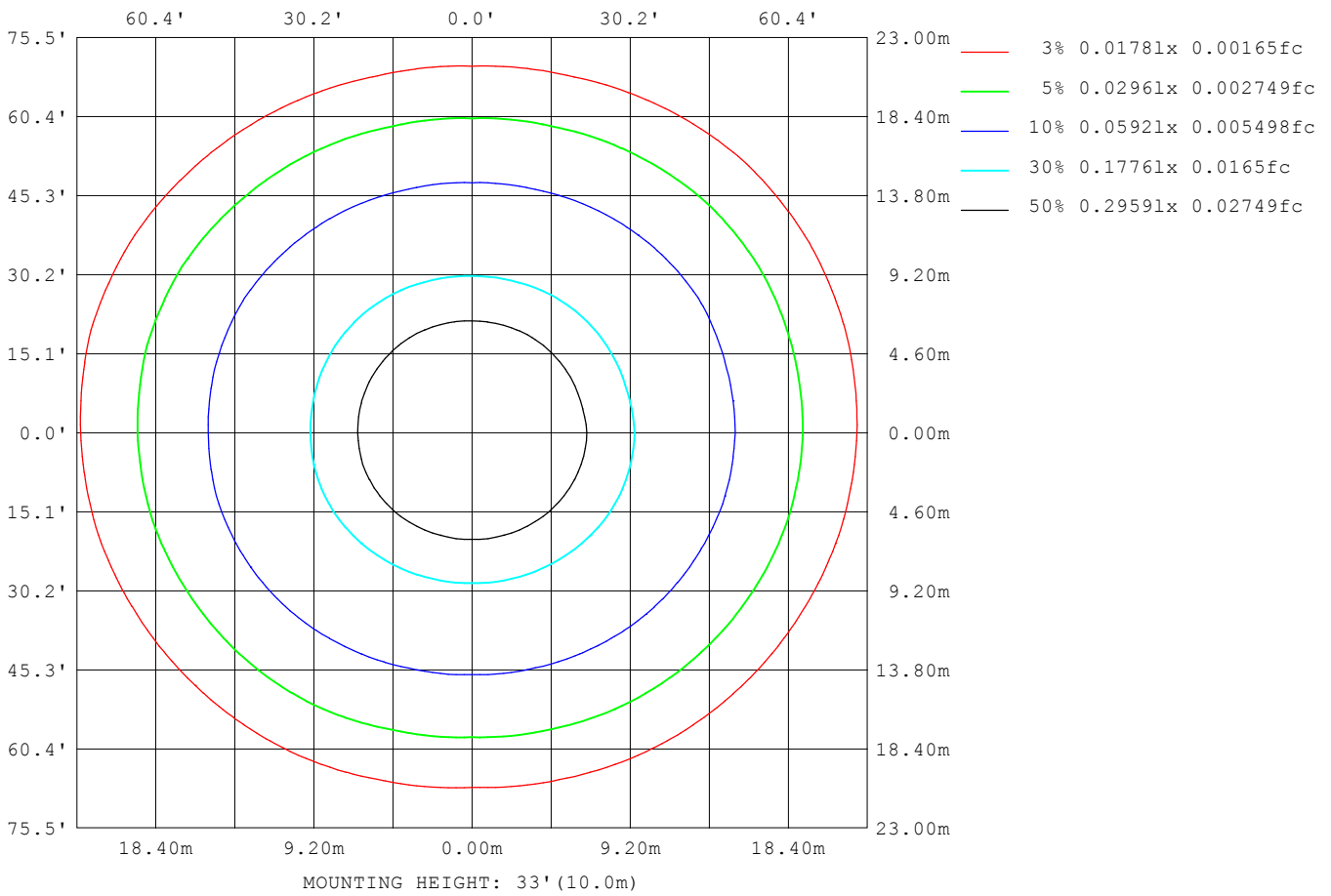
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:Dingmin Zhang
 Test Date:2025-12-04

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:120.39V I:0.1179A P:14.011W PF:0.9873 Freq:59.98Hz Lamp Flux:189.027x1 lm		
NAME:	TYPE:	WEIGHT:--
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:--

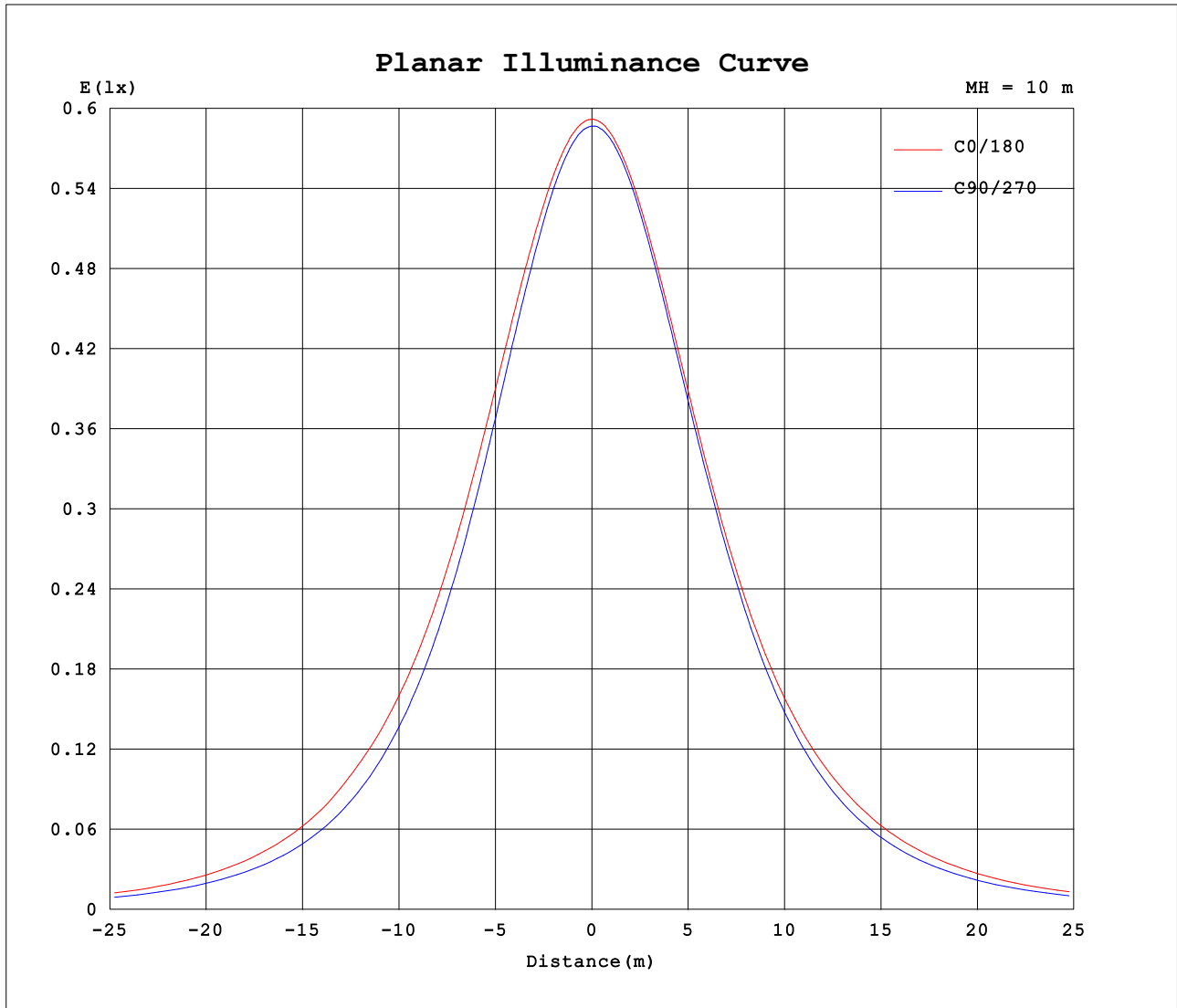
AvgL	cd/m2
L_0~180 (65) av	901
L_0~180 (75) av	921
L_0~180 (85) av	1378
L_90~270 (65) av	702
L_90~270 (75) av	610
L_90~270 (85) av	413
L_45 (65) av	823
L_45 (75) av	785
L_45 (85) av	934

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:24.5DEG
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γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity:60%
 Test Distance:9.480m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 24.5DEG
 Operators: Dingmin Zhang
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γ Range: 0 - 90DEG
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 Test System: EVERFINE GO-2000 SYSTEM V2.0.366
 Humidity: 60%
 Test Distance: 9.480m [K=1.0000]
 Remarks:

