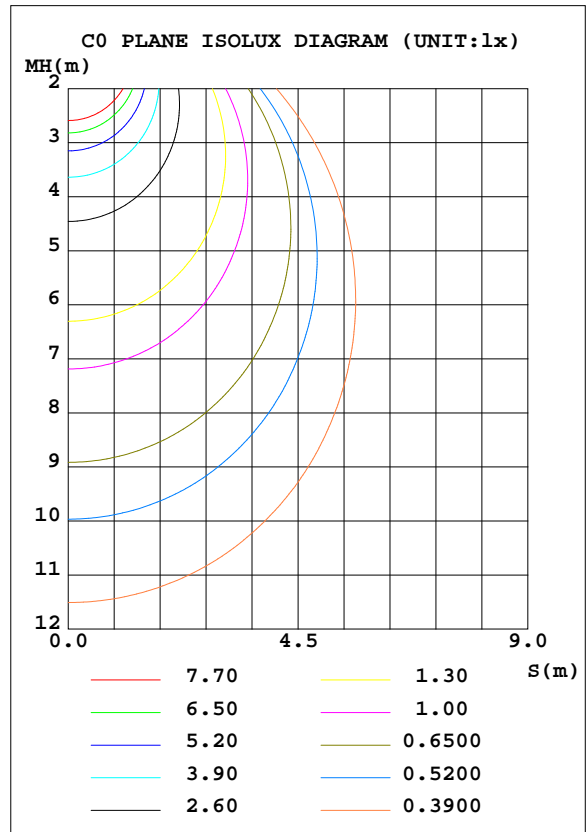
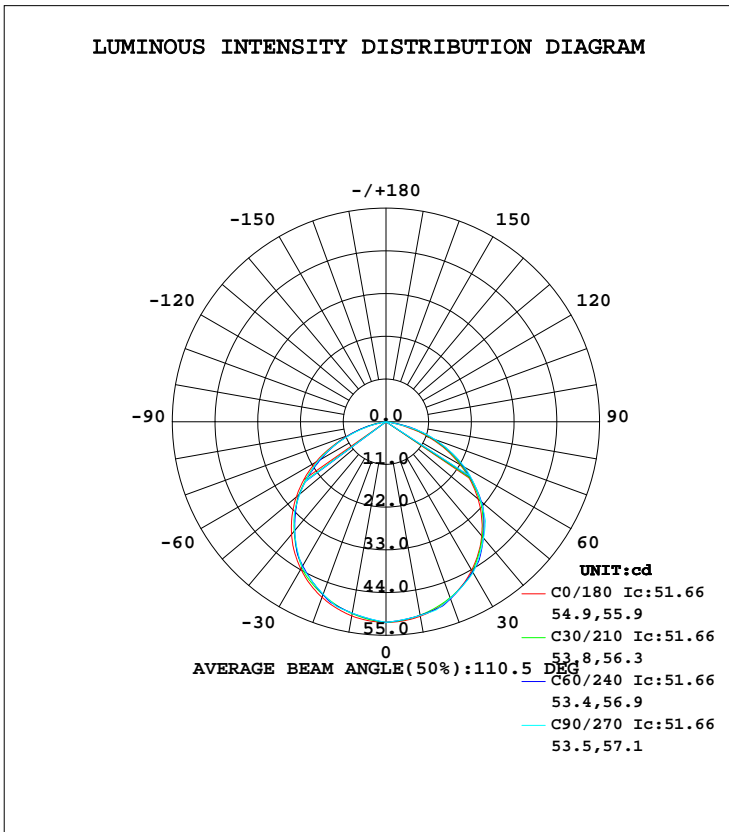


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm		
NAME: QUATTRO	TYPE:QUATTRO	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.61 lm/W			
MODEL	QUATTRO	I _{max} (cd)	51.66	S/MH(C0/180)	1.26
NOMINAL POWER(W)	2	LOR(%)	92.3	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	12	TOTAL FLUX(lm)	138.40	η UP, DN(C0-180)	0.0,47.7
NOMINAL FLUX(lm)	150	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,44.6
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	12	η down(%)	92.3	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:20DEG
 Operators:Y
 Test Date:2026-01-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.291
 Humidity:65.0%
 Test Distance:8.750m [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
5	51.47	51.20	51.16	51.17	51.44	50.97	50.86	51.00	0- 5	1.227	1.227	0.89,0.82
10	50.84	50.57	50.65	50.46	50.77	50.07	50.05	50.17	5- 10	3.631	4.858	3.51,3.24
15	49.85	49.70	50.15	49.52	49.64	48.96	49.25	49.14	10- 15	5.922	10.78	7.79,7.19
20	48.35	48.64	48.40	48.38	48.13	47.63	47.23	47.85	15- 20	8.028	18.81	13.6,12.5
25	46.48	46.66	46.65	46.31	46.20	45.37	45.21	45.56	20- 25	9.845	28.65	20.7,19.1
30	44.15	44.36	44.90	43.94	43.83	42.76	43.19	43.02	25- 30	11.35	40.00	28.9,26.7
35	41.43	41.90	42.00	41.43	41.08	39.96	39.92	40.34	30- 35	12.48	52.48	37.9,35
40	38.35	39.17	39.09	38.65	37.82	36.84	36.64	37.34	35- 40	13.15	65.63	47.4,43.8
45	34.83	35.43	36.19	34.95	34.21	32.87	33.37	33.43	40- 45	13.36	78.99	57.1,52.7
50	30.93	31.53	31.92	31.17	30.17	28.88	28.96	29.41	45- 50	13.09	92.09	66.5,61.4
55	26.64	27.54	27.65	27.22	25.74	24.79	24.54	25.32	50- 55	12.26	104.3	75.4,69.6
60	22.03	22.69	23.39	22.18	20.95	19.75	20.13	20.27	55- 60	10.95	115.3	83.3,76.9
65	17.14	17.98	18.43	17.48	15.59	14.84	14.87	15.37	60- 65	9.191	124.5	90,83
70	11.92	13.11	13.46	12.77	10.44	9.990	9.616	10.48	65- 70	7.009	131.5	95,87.7
75	6.002	8.201	8.503	7.785	5.032	5.548	4.358	5.843	70- 75	4.617	136.1	98.4,90.7
80	1.442	3.242	0	2.986	0.9656	1.585	0	1.633	75- 80	2.047	138.2	99.8,92.1
85	0	0	0	0	0	0	0	0	80- 85	0.2328	138.4	100,92.3
90	0.0027	0	0	0	0	0	0	0	85- 90	0.0010	138.4	100,92.3
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

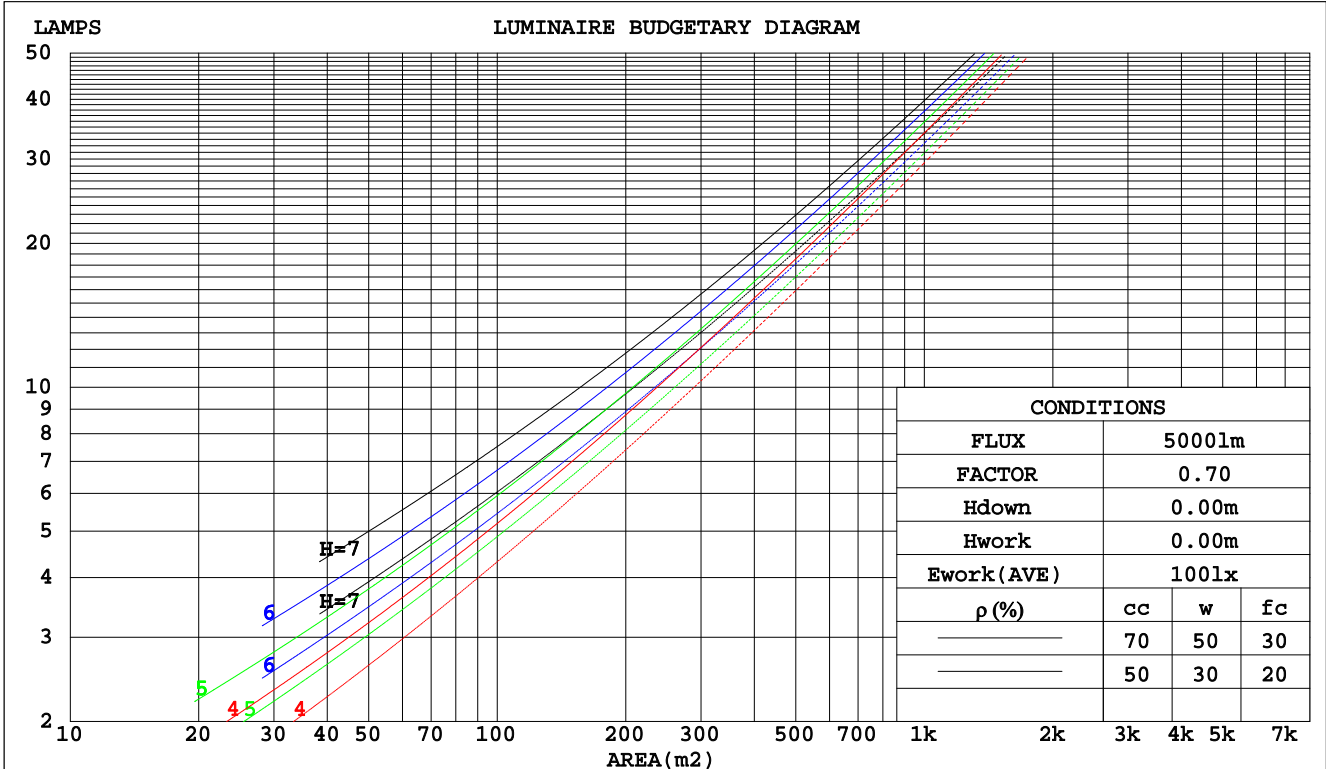
C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:Y
Test Date:2026-01-13

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.291
Humidity:65.0%
Test Distance:8.750m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm		
NAME: QUATTRO	TYPE:QUATTRO	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0		
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0		
pw	0																	
pfc	20%			20%			20%			20%			20%			0		
RCR	RCR:Room Cavity Ratio Coefficients of Utilization(CU)																	
0.0	1.10	1.10	1.10	1.07	1.07	1.07	1.03	1.03	1.03	.98	.98	.98	.94	.94	.94	.92		
1.0	.97	.94	.90	.95	.92	.89	.91	.89	.86	.88	.86	.84	.84	.83	.81	.79		
2.0	.85	.79	.74	.84	.78	.74	.80	.76	.72	.77	.74	.70	.75	.71	.69	.67		
3.0	.75	.68	.62	.74	.67	.62	.71	.65	.61	.68	.64	.60	.66	.62	.59	.57		
4.0	.67	.59	.53	.65	.58	.53	.63	.57	.52	.61	.56	.51	.59	.54	.50	.48		
5.0	.60	.52	.46	.59	.51	.45	.57	.50	.45	.55	.49	.44	.53	.48	.44	.42		
6.0	.54	.46	.40	.53	.45	.40	.51	.44	.39	.50	.44	.39	.48	.43	.39	.37		
7.0	.49	.41	.35	.48	.40	.35	.47	.40	.35	.45	.39	.35	.44	.38	.34	.32		
8.0	.44	.37	.31	.44	.36	.31	.43	.36	.31	.41	.35	.31	.40	.35	.31	.29		
9.0	.41	.33	.28	.40	.33	.28	.39	.33	.28	.38	.32	.28	.37	.32	.28	.26		
10.0	.38	.30	.26	.37	.30	.26	.36	.30	.25	.35	.29	.25	.35	.29	.25	.24		



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 20DEG
 Operators: Y
 Test Date: 2026-01-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.291
 Humidity: 65.0%
 Test Distance: 8.750m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm														
NAME: QUATTRO					TYPE:QUATTRO					WEIGHT:				
SPEC.:					DIM.:					SERIAL No.:				
MFR.:					SUR.:					PROTECTION 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	.258	.147	.046	.252	.143	.046	.239	.137	.044	.228	.132	.042	.218	.126	.041	
2.0	.251	.138	.042	.246	.135	.042	.235	.131	.041	.225	.126	.040	.216	.122	.039	
3.0	.237	.126	.038	.232	.124	.037	.222	.120	.037	.214	.117	.036	.205	.114	.035	
4.0	.221	.115	.034	.216	.113	.033	.208	.110	.033	.200	.108	.032	.193	.105	.032	
5.0	.206	.105	.030	.202	.104	.030	.194	.101	.030	.188	.099	.029	.181	.097	.029	
6.0	.192	.096	.028	.188	.095	.027	.182	.093	.027	.176	.091	.027	.170	.089	.027	
7.0	.179	.089	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025	.160	.083	.024	
8.0	.168	.082	.023	.165	.081	.023	.160	.080	.023	.155	.079	.023	.150	.077	.022	
9.0	.158	.076	.021	.155	.076	.021	.151	.074	.021	.146	.073	.021	.142	.072	.021	
10.0	.149	.071	.020	.147	.071	.020	.142	.070	.020	.138	.069	.020	.134	.068	.019	

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	.176	.176	.176	.150	.150	.150	.103	.103	.103	.059	.059	.059	.019	.019	.019	
1.0	.164	.144	.126	.141	.124	.109	.096	.085	.075	.055	.049	.044	.018	.016	.014	
2.0	.157	.122	.093	.134	.105	.080	.092	.073	.056	.053	.042	.033	.017	.014	.011	
3.0	.149	.105	.070	.128	.091	.061	.088	.063	.043	.051	.037	.025	.016	.012	.008	
4.0	.142	.093	.055	.122	.080	.048	.084	.056	.034	.049	.033	.020	.016	.011	.007	
5.0	.136	.083	.045	.117	.072	.039	.080	.050	.027	.047	.030	.016	.015	.010	.005	
6.0	.129	.076	.037	.111	.065	.032	.077	.046	.023	.045	.027	.013	.014	.009	.004	
7.0	.123	.069	.031	.106	.060	.027	.073	.042	.019	.043	.025	.011	.014	.008	.004	
8.0	.118	.064	.027	.101	.055	.023	.070	.039	.017	.041	.023	.010	.013	.008	.003	
9.0	.112	.059	.024	.097	.051	.021	.067	.036	.015	.039	.021	.009	.013	.007	.003	
10.0	.107	.055	.021	.092	.048	.018	.064	.034	.013	.037	.020	.008	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:Y
Test Date:2026-01-13

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.291
Humidity:65.0%
Test Distance:8.750m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm										
NAME: QUATTRO					TYPE:QUATTRO			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:			PROTECTION 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	8.0	9.5	8.3	9.7	9.9	8.2	9.7	8.5	9.9	10.1
3H	9.2	10.6	9.5	10.8	11.0	9.6	11.0	9.9	11.2	11.4
4H	9.5	10.8	9.8	11.1	11.3	10.1	11.3	10.4	11.6	11.8
6H	9.5	10.7	9.9	11.0	11.3	10.1	11.3	10.4	11.6	11.8
8H	9.5	10.7	9.8	10.9	11.2	10.0	11.2	10.4	11.5	11.8
12H	9.4	10.6	9.8	10.9	11.2	10.0	11.1	10.3	11.4	11.7
4H 2H	8.6	9.9	8.9	10.1	10.4	8.8	10.1	9.1	10.3	10.6
3H	10.0	11.1	10.3	11.4	11.7	10.3	11.4	10.7	11.7	12.0
4H	10.4	11.4	10.7	11.7	12.0	10.9	11.9	11.2	12.2	12.5
6H	10.4	11.3	10.8	11.7	12.0	10.9	11.8	11.3	12.2	12.5
8H	10.4	11.2	10.8	11.6	12.0	10.9	11.7	11.3	12.1	12.5
12H	10.3	11.1	10.8	11.5	11.9	10.8	11.6	11.3	12.0	12.4
8H 4H	10.5	11.4	11.0	11.7	12.1	11.0	11.8	11.4	12.2	12.6
6H	10.7	11.4	11.1	11.8	12.2	11.1	11.8	11.5	12.2	12.6
8H	10.7	11.3	11.1	11.7	12.1	11.1	11.7	11.5	12.1	12.5
12H	10.6	11.1	11.1	11.6	12.1	11.0	11.5	11.5	12.0	12.5
12H 4H	10.5	11.3	10.9	11.7	12.1	11.0	11.7	11.4	12.1	12.5
6H	10.7	11.3	11.1	11.7	12.1	11.1	11.7	11.5	12.1	12.6
8H	10.6	11.2	11.1	11.6	12.1	11.1	11.6	11.5	12.0	12.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.4				
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 150.0 lm Total Lamp Luminous Flux. (8log(F/F0) = -6.6)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:Y
Test Date:2026-01-13

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.291
Humidity:65.0%
Test Distance:8.750m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm		
NAME: QUATTRO	TYPE:QUATTRO	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

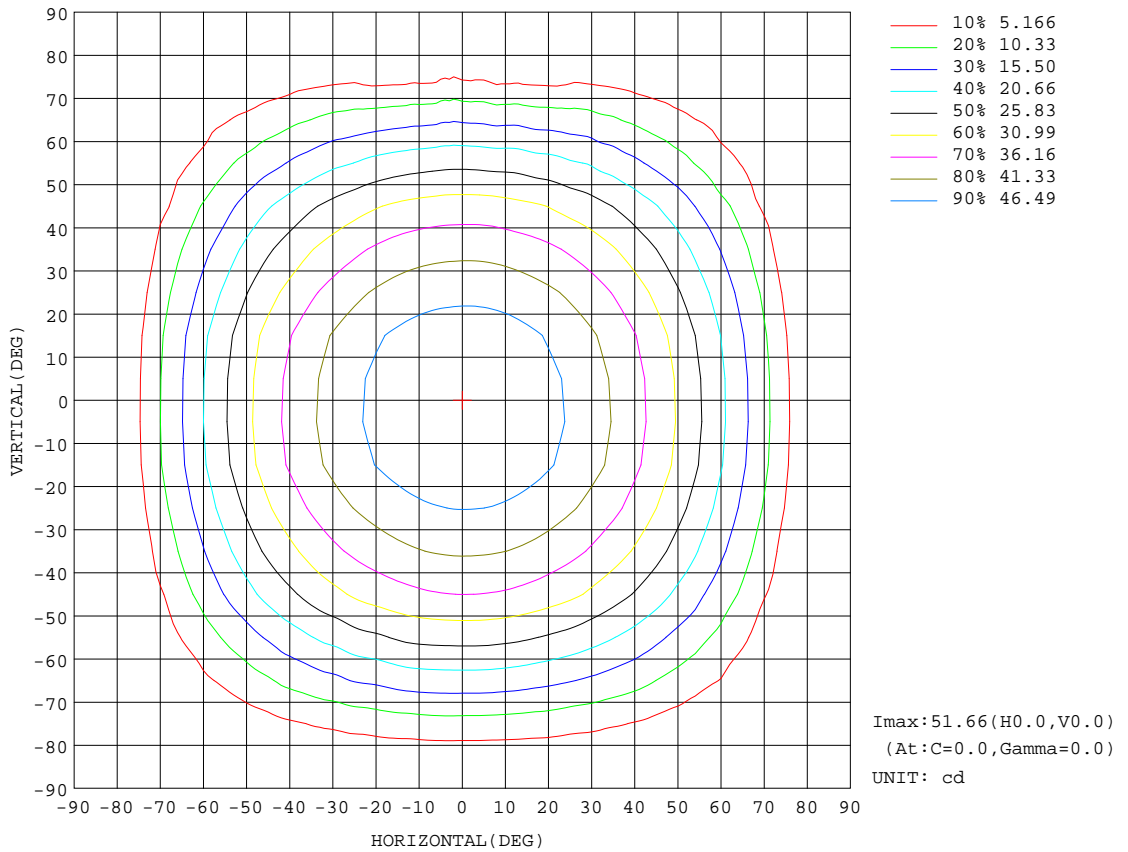
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	54	44	37	54	44	37	53	43	37	31
0.80	64	53	47	63	53	47	61	52	46	40
1.00	72	62	56	71	61	55	69	63	55	48
1.25	78	69	63	77	69	63	75	67	62	55
1.50	83	74	68	82	74	68	79	72	67	60
2.00	89	82	76	88	81	76	85	79	74	67
2.50	93	86	81	91	85	80	87	82	78	71
3.00	96	90	85	94	89	84	90	86	82	75
4.00	99	94	91	97	93	89	93	90	87	79
5.00	101	97	94	99	96	92	95	92	90	81
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:20DEG
 Operators:Y
 Test Date:2026-01-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.291
 Humidity:65.0%
 Test Distance:8.750m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm		
NAME: QUATTRO	TYPE:QUATTRO	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

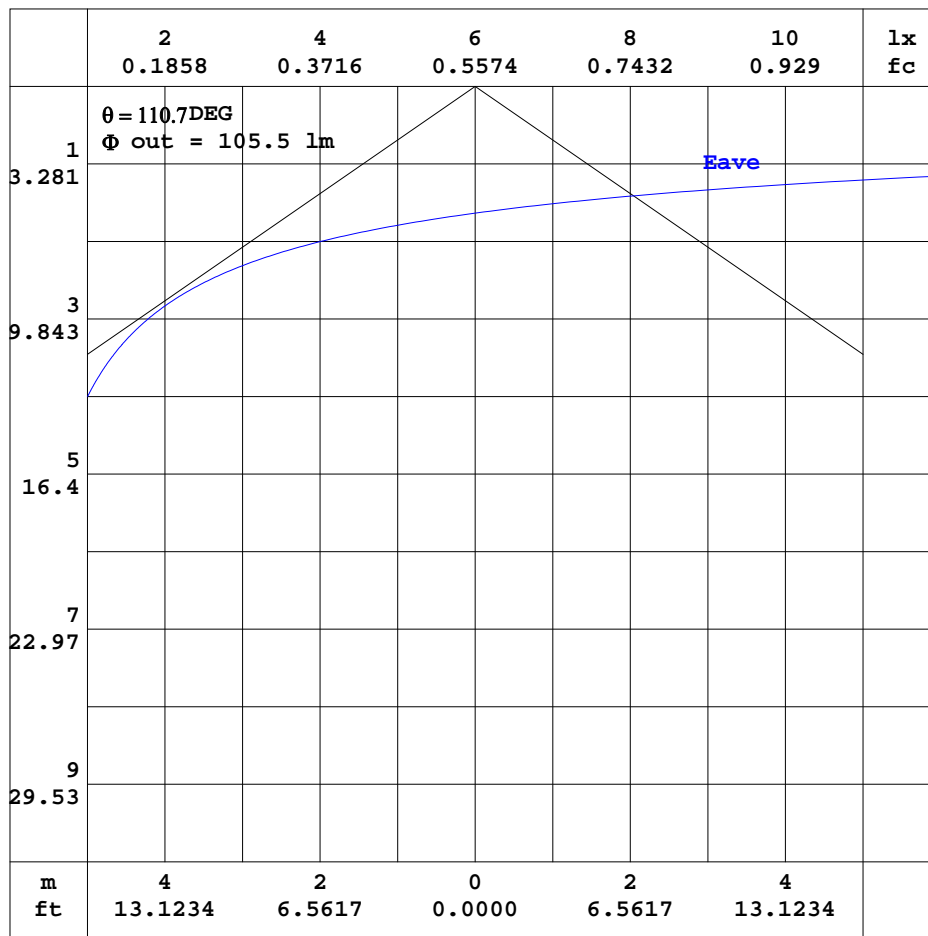


C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 20DEG
 Operators: Y
 Test Date: 2026-01-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.291
 Humidity: 65.0%
 Test Distance: 8.750m [K=1.0000]
 Remarks:

AAI CURVES

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm		
NAME: QUATTRO	TYPE:QUATTRO	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



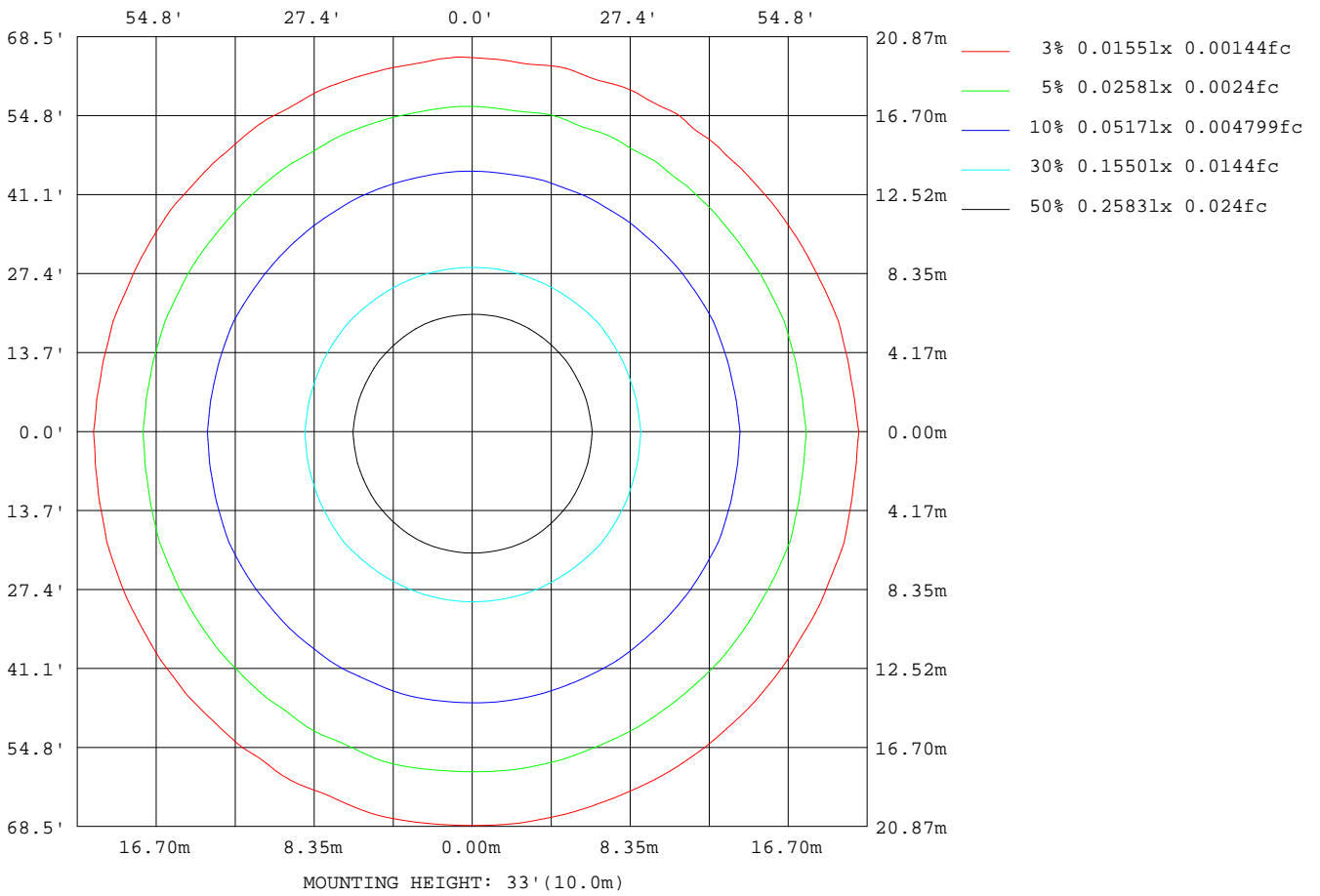
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 20DEG
 Operators: Y
 Test Date: 2026-01-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.291
 Humidity: 65.0%
 Test Distance: 8.750m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm		
NAME: QUATTRO	TYPE:QUATTRO	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:20DEG
 Operators:Y
 Test Date:2026-01-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.291
 Humidity:65.0%
 Test Distance:8.750m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:11.91V I:0.2858A P:2.113W PF:0.6210 Lamp Flux:235x1 lm		
NAME: QUATTRO	TYPE:QUATTRO	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	PROTECTION ANGLE:

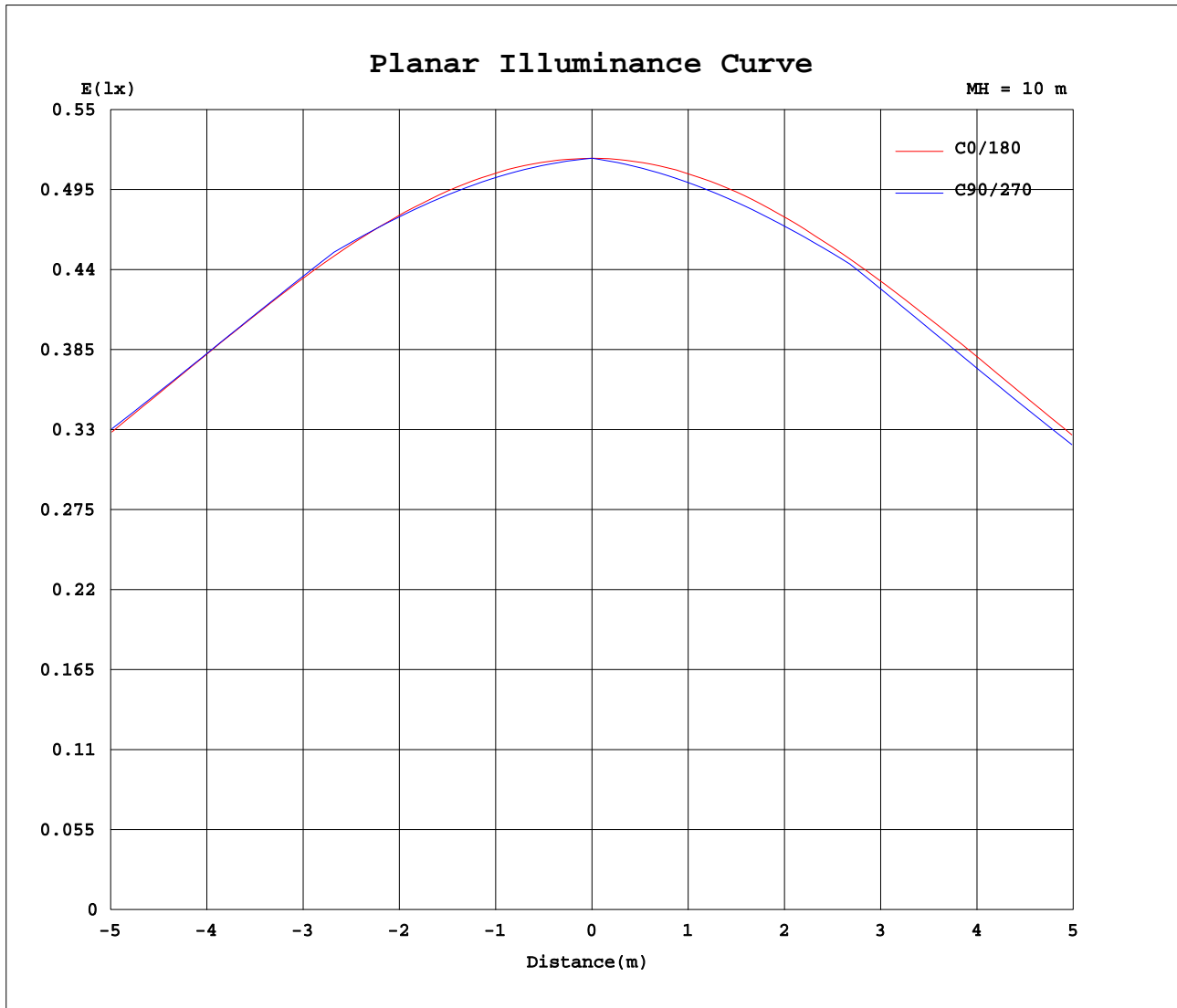
AvgL	cd/m2
L_0~180(65)av	194
L_0~180(75)av	107
L_0~180(85)av	0
L_90~270(65)av	197
L_90~270(75)av	124
L_90~270(85)av	0
L_45(65)av	194
L_45(75)av	132
L_45(85)av	0

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:20DEG
Operators:Y
Test Date:2026-01-13

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.291
Humidity:65.0%
Test Distance:8.750m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature: 20DEG
 Operators: Y
 Test Date: 2026-01-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.291
 Humidity: 65.0%
 Test Distance: 8.750m [K=1.0000]
 Remarks:

