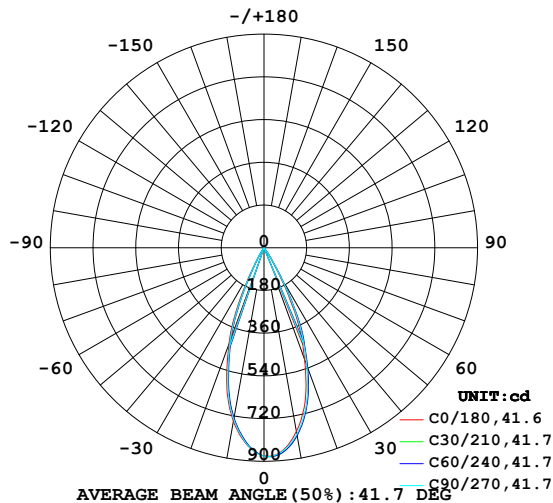


## LUMINAIRE PHOTOMETRIC TEST REPORT

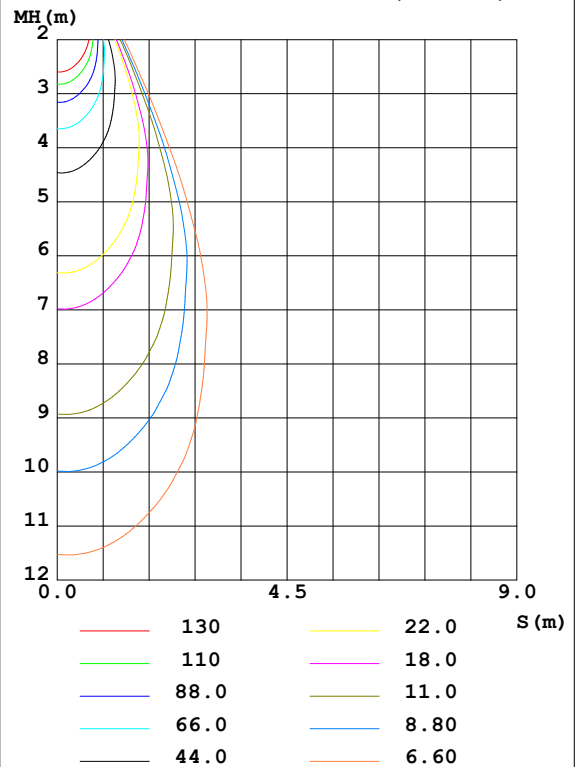
Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 83.34 lm/W			
MODEL		I <sub>max</sub> (cd)	881.0	S/MH (C0/180)	0.63
NOMINAL POWER (W)	5	LOR (%)	100.0	S/MH (C90/270)	0.61
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	394.41	η UP,DN (C0-180)	0.0,55.2
NOMINAL FLUX (lm)	394.41	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,44.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	230.4	η down (%)	100.0	CIBSE SHR MAX	0.65

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	786.3	806.4	797.3	776.1	743.2	722.9	735.1	753.5	0- 10	78.20	78.20	19.8, 19.8
20	500.2	542.9	528.0	489.6	431.5	403.0	415.9	446.8	10- 20	174.0	252.2	63.9, 63.9
30	114.4	157.2	144.6	108.3	67.13	50.83	52.78	68.52	20- 30	124.0	376.2	95.4, 95.4
40	2.062	5.744	5.858	3.722	0	0	0	0	30- 40	18.05	394.3	100, 100
50	0	0	0	0	0	0	0	0	40- 50	0.1593	394.4	100, 100
60	0	0	0	0	0	0	0	0	50- 60	0	394.4	100, 100
70	0	0	0	0	0	0	0	0	60- 70	0	394.4	100, 100
80	0	0	0	0	0	0	0	0	70- 80	0	394.4	100, 100
90	0	0	0	0	0	0	0	0	80- 90	0	394.4	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		

Conical surface Flux(90deg): 394.41 lm

%lum = 100.0%

%lamp = 100.0%

Conical surface Flux(120deg): 394.41 lm

%lum = 100.0%

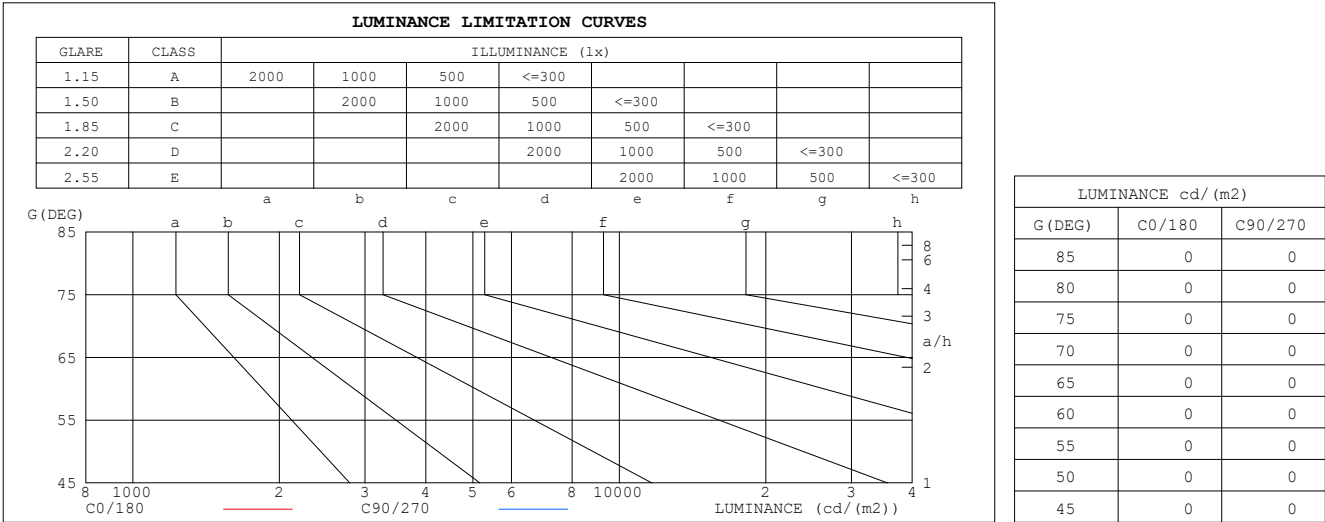
%lamp = 100.0%

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Bob  
 Test Date:2023-09-11

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
 Humidity:65.0%  
 Test Distance:7.030m [K=1.0000]  
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



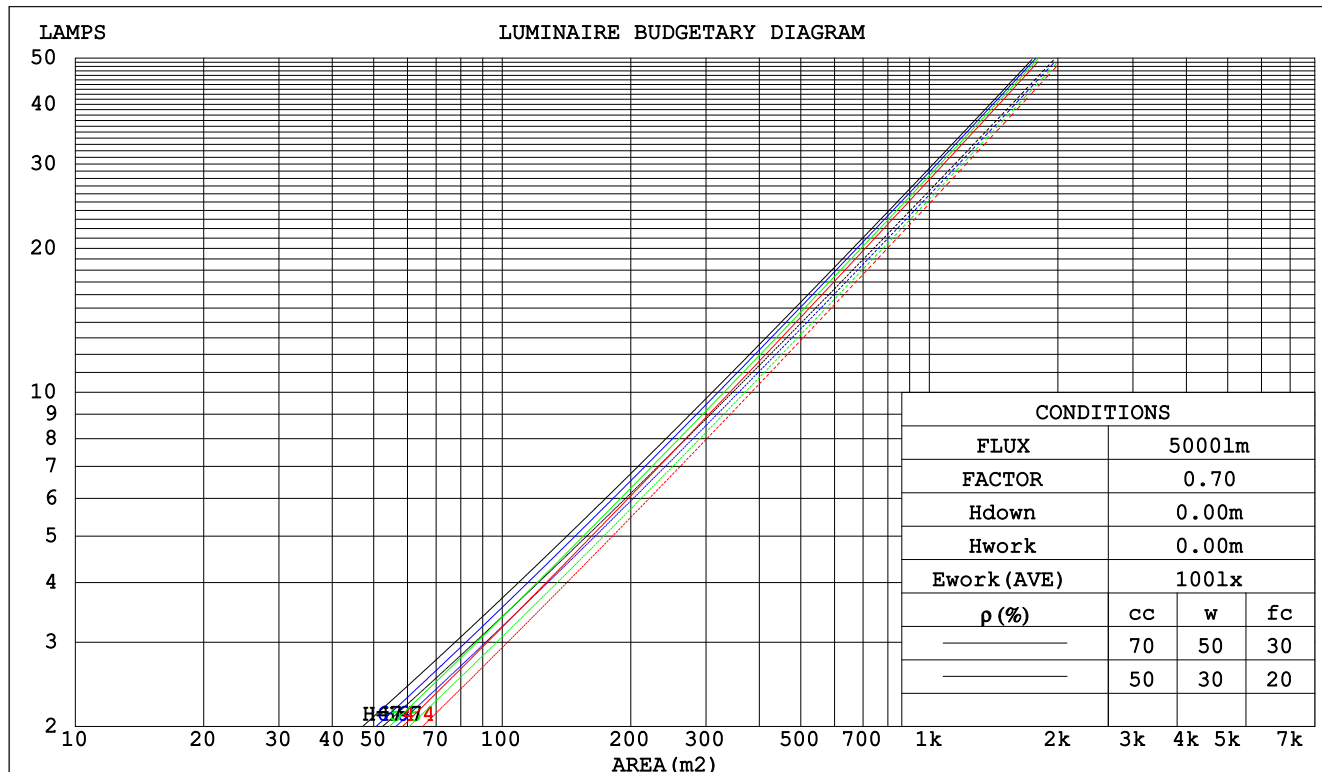
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	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	1.00
1.0	1.12	1.10	1.08	1.10	1.08	1.07	1.06	1.05	1.03	1.02	1.01	1.00	.99	.98	.97	.96
2.0	1.06	1.03	1.00	1.05	1.02	.99	1.01	.99	.97	.99	.97	.95	.96	.94	.93	.91
3.0	1.01	.97	.94	.90	.96	.93	.97	.94	.92	.95	.92	.90	.93	.91	.89	.87
4.0	.96	.92	.88	.95	.91	.88	.93	.90	.87	.91	.88	.86	.89	.87	.85	.84
5.0	.92	.87	.84	.91	.87	.83	.89	.85	.83	.88	.84	.82	.86	.83	.81	.80
6.0	.88	.83	.80	.87	.83	.79	.86	.82	.79	.84	.81	.78	.83	.80	.78	.77
7.0	.84	.79	.76	.83	.79	.76	.82	.78	.75	.81	.78	.75	.80	.77	.75	.74
8.0	.81	.76	.73	.80	.76	.73	.79	.75	.72	.78	.75	.72	.77	.74	.72	.71
9.0	.78	.73	.70	.77	.73	.70	.76	.72	.69	.75	.72	.69	.75	.71	.69	.68
10.0	.75	.70	.67	.74	.70	.67	.73	.69	.67	.73	.69	.66	.72	.69	.66	.65



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

### WEC AND CCEC

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm					
NAME: LYRA BLACK			TYPE:3000K		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:		Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients (WEC)									
0.0																
1.0	.149	.085	.027	.143	.081	.026	.130	.075	.024	.119	.069	.022	.108	.063	.020	
2.0	.140	.077	.024	.134	.074	.023	.124	.069	.021	.115	.064	.020	.106	.060	.019	
3.0	.132	.070	.021	.127	.068	.020	.118	.064	.020	.110	.061	.019	.103	.057	.018	
4.0	.125	.065	.019	.121	.063	.019	.113	.060	.018	.106	.057	.017	.100	.054	.017	
5.0	.118	.060	.017	.115	.059	.017	.109	.057	.017	.103	.054	.016	.097	.052	.016	
6.0	.113	.057	.016	.110	.056	.016	.104	.053	.016	.099	.052	.015	.094	.050	.015	
7.0	.108	.053	.015	.105	.052	.015	.100	.051	.015	.096	.049	.014	.092	.048	.014	
8.0	.103	.051	.014	.101	.050	.014	.097	.048	.014	.093	.047	.014	.089	.046	.013	
9.0	.099	.048	.013	.097	.047	.013	.093	.046	.013	.090	.045	.013	.087	.044	.013	
10.0	.096	.046	.013	.094	.045	.013	.090	.044	.012	.087	.043	.012	.084	.042	.012	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	.169	.158	.147	.145	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.016	
2.0	.152	.133	.116	.130	.114	.101	.089	.079	.070	.051	.046	.041	.017	.015	.013	
3.0	.138	.113	.094	.118	.098	.081	.081	.068	.057	.047	.040	.034	.015	.013	.011	
4.0	.126	.098	.077	.108	.085	.067	.074	.059	.047	.043	.035	.028	.014	.011	.009	
5.0	.116	.086	.064	.100	.075	.056	.069	.052	.039	.040	.031	.023	.013	.010	.008	
6.0	.108	.076	.054	.093	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.006	
7.0	.101	.068	.046	.087	.059	.040	.060	.042	.028	.035	.025	.017	.011	.008	.006	
8.0	.095	.062	.039	.082	.054	.034	.057	.038	.024	.033	.022	.014	.011	.007	.005	
9.0	.090	.056	.034	.077	.049	.030	.054	.034	.021	.031	.020	.013	.010	.007	.004	
10.0	.085	.052	.030	.073	.045	.026	.051	.032	.018	.030	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

### UGR(Unified Glare Rating) Table

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm											
NAME: LYRA BLACK						TYPE:3000K			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	2H	16.5	17.2	16.7	17.4	17.5	17.7	18.5	17.9	18.6	18.8
	3H	16.3	17.0	16.6	17.2	17.4	17.6	18.2	17.8	18.4	18.6
	4H	16.2	16.9	16.5	17.1	17.3	17.5	18.1	17.7	18.3	18.6
	6H	16.2	16.8	16.4	17.0	17.3	17.4	18.0	17.7	18.2	18.5
	8H	16.1	16.7	16.4	17.0	17.2	17.3	17.9	17.6	18.2	18.4
	12H	16.1	16.6	16.4	16.9	17.2	17.3	17.9	17.6	18.1	18.4
4H	2H	16.2	16.9	16.5	17.1	17.3	17.5	18.1	17.7	18.3	18.6
	3H	16.1	16.6	16.4	16.9	17.2	17.3	17.9	17.6	18.1	18.4
	4H	16.0	16.5	16.3	16.8	17.1	17.2	17.7	17.5	18.0	18.3
	6H	15.9	16.3	16.2	16.7	17.0	17.1	17.6	17.5	17.9	18.2
	8H	15.8	16.3	16.2	16.6	17.0	17.1	17.5	17.4	17.8	18.2
	12H	15.8	16.2	16.2	16.5	16.9	17.0	17.4	17.4	17.8	18.1
8H	4H	15.8	16.3	16.2	16.6	17.0	17.1	17.5	17.4	17.8	18.2
	6H	15.7	16.1	16.1	16.5	16.9	16.9	17.3	17.4	17.7	18.1
	8H	15.7	16.0	16.1	16.4	16.8	16.9	17.2	17.3	17.6	18.0
	12H	15.6	15.9	16.1	16.3	16.8	16.8	17.1	17.3	17.5	18.0
12H	4H	15.8	16.2	16.2	16.5	16.9	17.0	17.4	17.4	17.8	18.1
	6H	15.7	16.0	16.1	16.4	16.8	16.9	17.2	17.3	17.6	18.0
	8H	15.6	15.9	16.1	16.3	16.8	16.8	17.1	17.3	17.5	18.0
Variations with the observer position at spacings:											
S = 1.0H		+ 4.2 / - 1.\$					+ 5.1 / - 1.\$				
1.5H		+ 7.0 / - 1.\$					+ 8.0 / - 1.\$				
2.0H		+ 0.0 / - 0.0					+ 0.0 / - 0.0				

CIE Pub.117, 394.4 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -3.2)  
Area: 0.00080384 m2

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

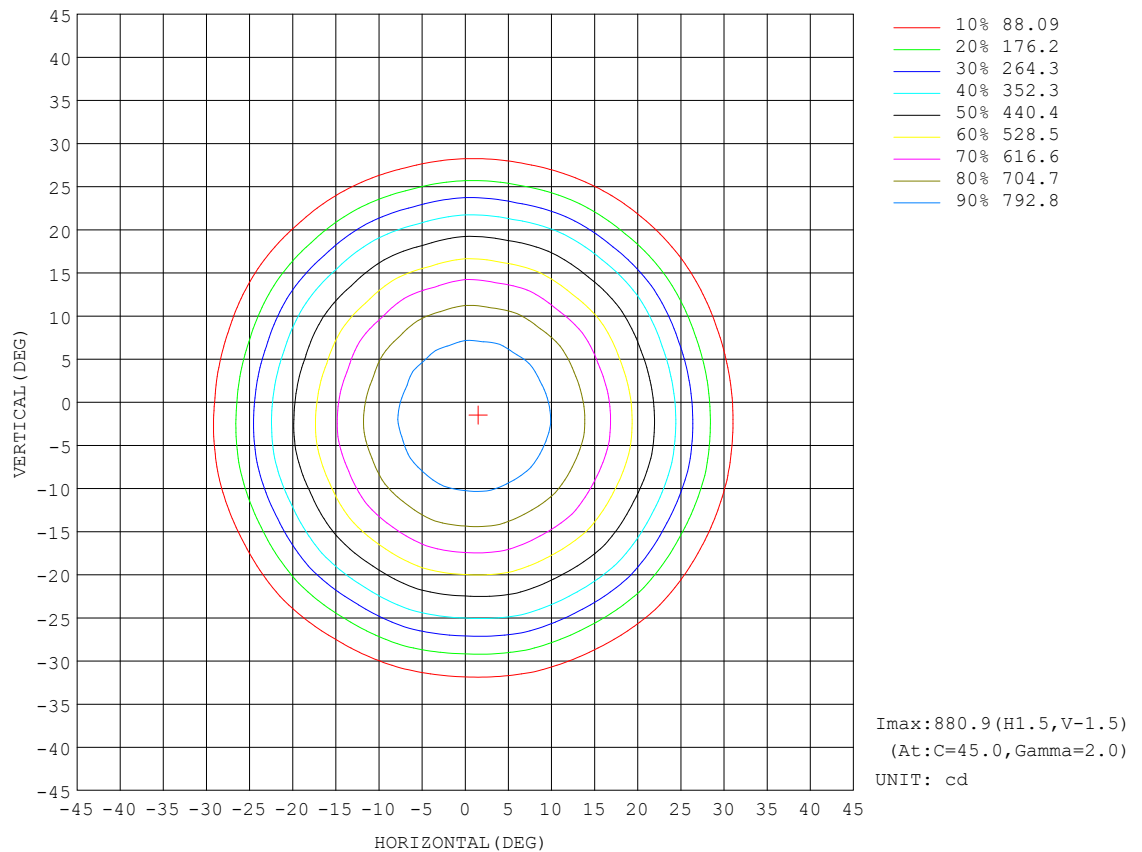
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	92	86	83	91	86	83	90	85	82	79
0.80	98	93	90	98	93	90	97	92	90	86
1.00	102	97	94	101	97	94	100	96	93	90
1.25	106	101	98	105	100	98	103	99	97	93
1.50	108	104	101	107	103	100	105	102	99	95
2.00	110	106	103	109	105	103	106	103	101	96
2.50	111	108	105	110	107	105	107	105	103	97
3.00	113	110	107	111	108	106	108	106	104	98
4.00	115	112	110	113	111	109	109	107	106	99
5.00	116	114	112	114	112	111	110	109	108	100
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  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

### ISOCANDELA DIAGRAM

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



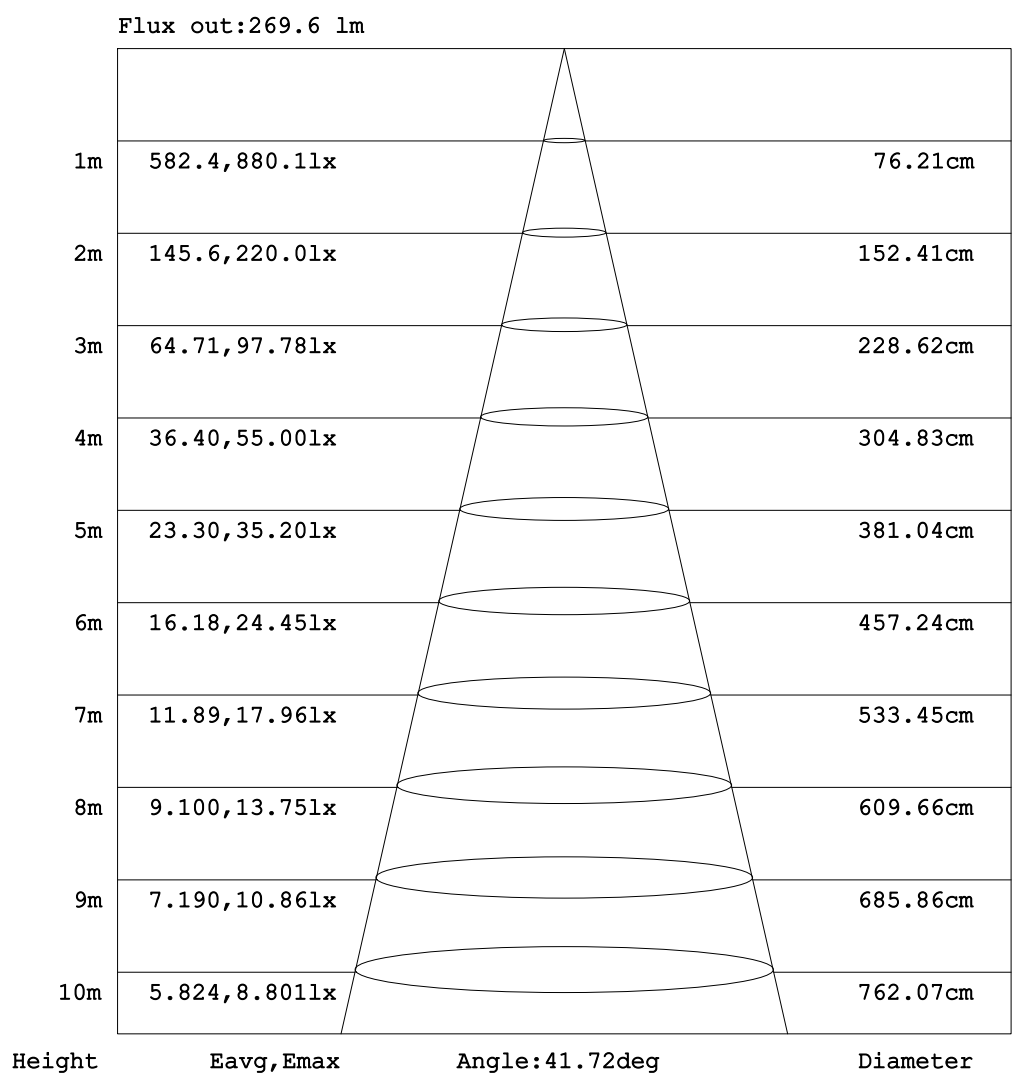
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:



### AAI Figure

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



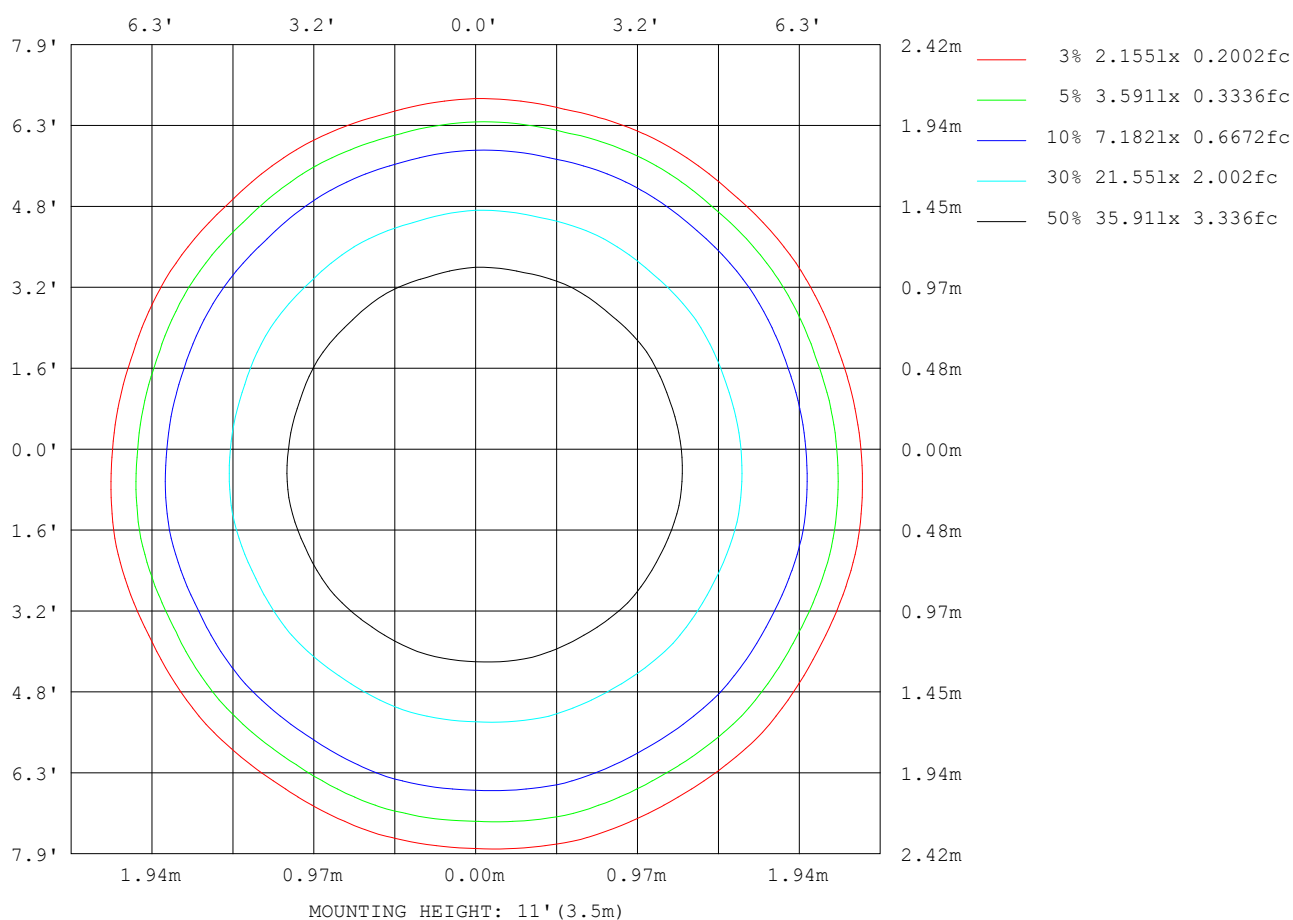
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

## ISOLUX DIAGRAM

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

### LED Avg.L Report

Test:U:230.39V I:0.0235A P:4.7328W PF:0.8759 Freq:50.00Hz Lamp Flux:394.41x1 lm		
NAME: LYRA BLACK	TYPE:3000K	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

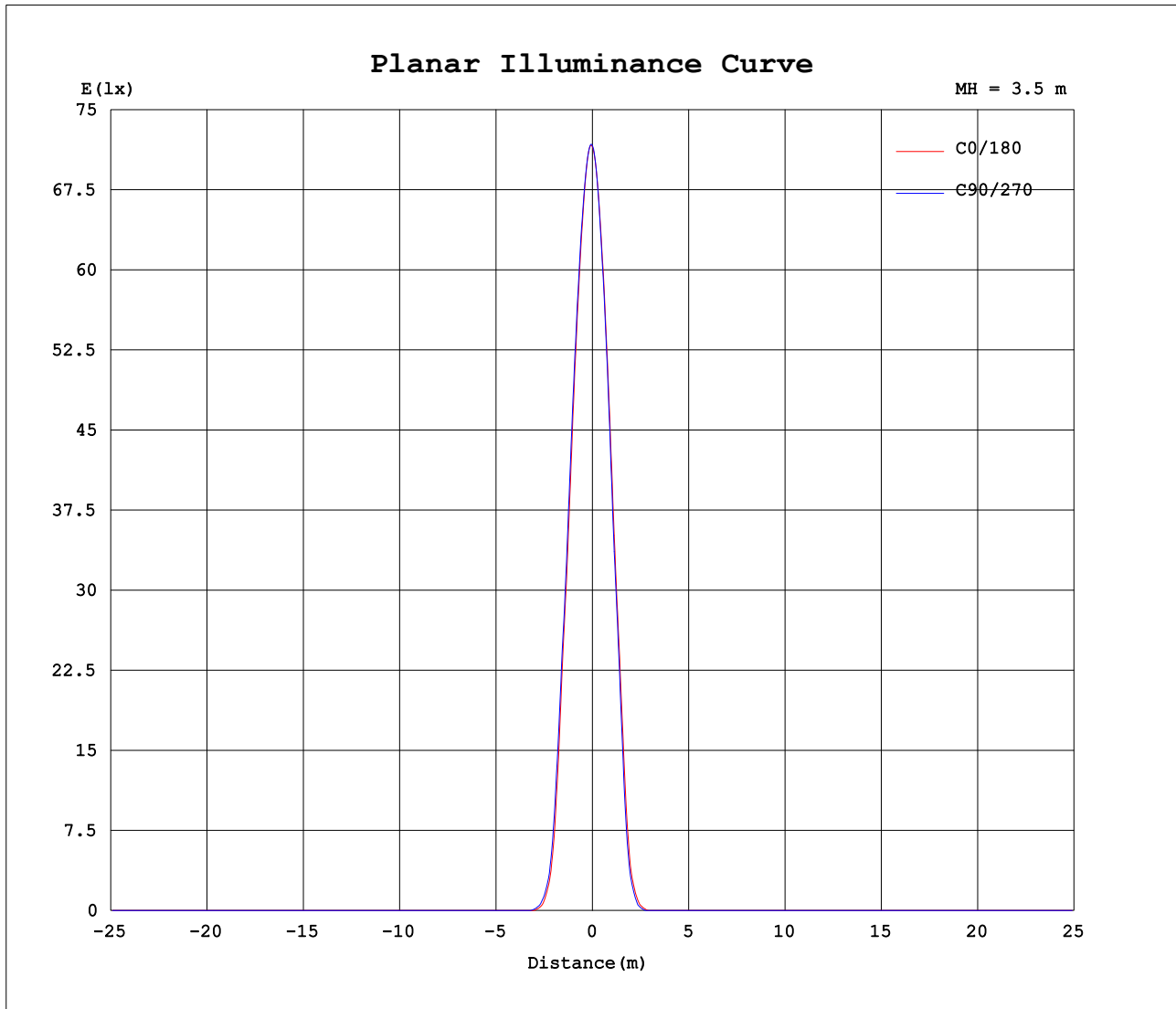
AvgL	cd/m2
L_0~180 (65) av	0
L_0~180 (75) av	0
L_0~180 (85) av	0
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	0
L_45 (75) av	0
L_45 (85) av	0

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Bob  
Test Date:2023-09-11

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
Humidity:65.0%  
Test Distance:7.030m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Bob  
 Test Date: 2023-09-11

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.270  
 Humidity: 65.0%  
 Test Distance: 7.030m [K=1.0000]  
 Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
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