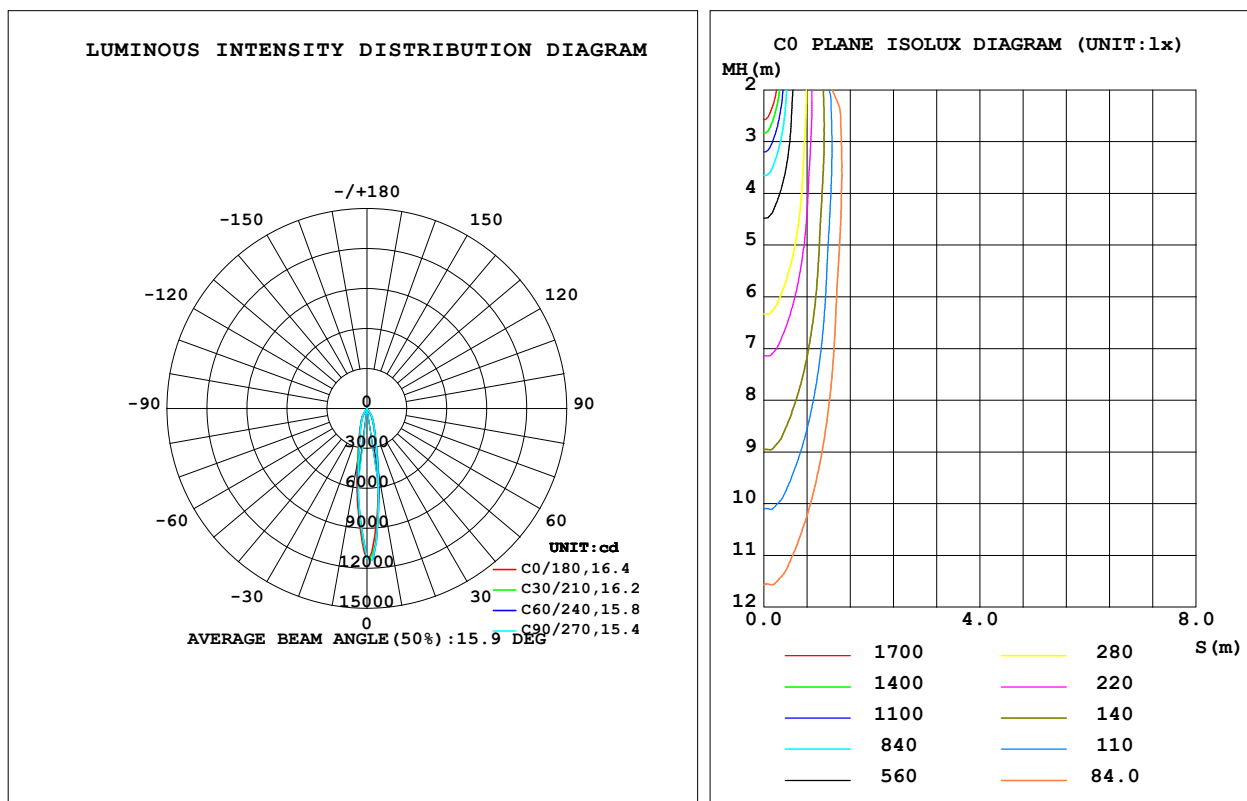


## LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 74.27 lm/W			
MODEL	CXA 1830 9335 700MA	I <sub>max</sub> (cd)	11422	S/MH(C0/180)	0.27
NOMINAL POWER(W)	28	LOR(%)	85.7	S/MH(C90/270)	0.23
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	2077.4	η UP,DN(C0-180)	0.0,45.8
NOMINAL FLUX(lm)	2425	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,39.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	220	η down(%)	85.7	CIBSE SHR MAX	1.00



H(β) Range:-90 - 90DEG  
H(β) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

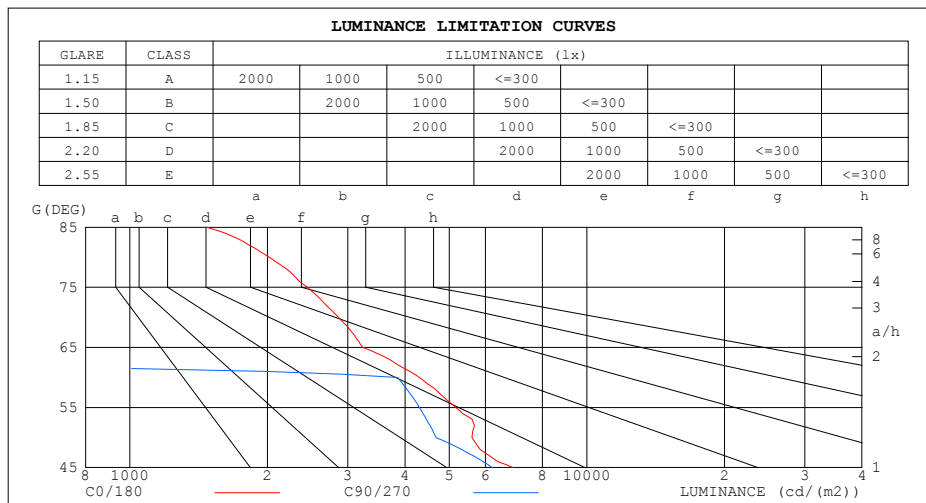
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	464.9	499.7	476.5	459.7	418.5	378.2	346.5	399.2	0~ 10	641.1	641.1	30.9,26.4
20	157.9	164.1	160.8	157.3	149.5	139.8	135.4	144.4	10~ 20	683.3	1324	63.8,54.6
30	78.63	75.08	77.48	71.18	73.54	60.76	66.22	65.93	20~ 30	485.2	1810	87.1,74.6
40	8.676	8.202	7.209	7.170	7.532	7.157	7.021	7.019	30~ 40	182.2	1992	95.9,82.1
50	4.494	3.907	3.750	3.763	3.982	3.871	3.831	3.982	40~ 50	42.77	2035	97.9,83.9
60	2.680	2.479	2.402	2.328	2.260	2.245	2.226	2.359	50~ 60	28.51	2063	99.3,85.1
70	1.220	0	0	0	1.041	0	0	0	60~ 70	11.43	2075	99.9,85.5
80	0.4365	0	0	0	0.3555	0	0	0	70~ 80	2.616	2077	100,85.7
90	0.0100	0	0	0	0.0031	0	0	0	80~ 90	0.2452	2077	100,85.7
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:×10cd									UNIT:lm		

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

## LUMINANCE LIMITATION CURVES

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	



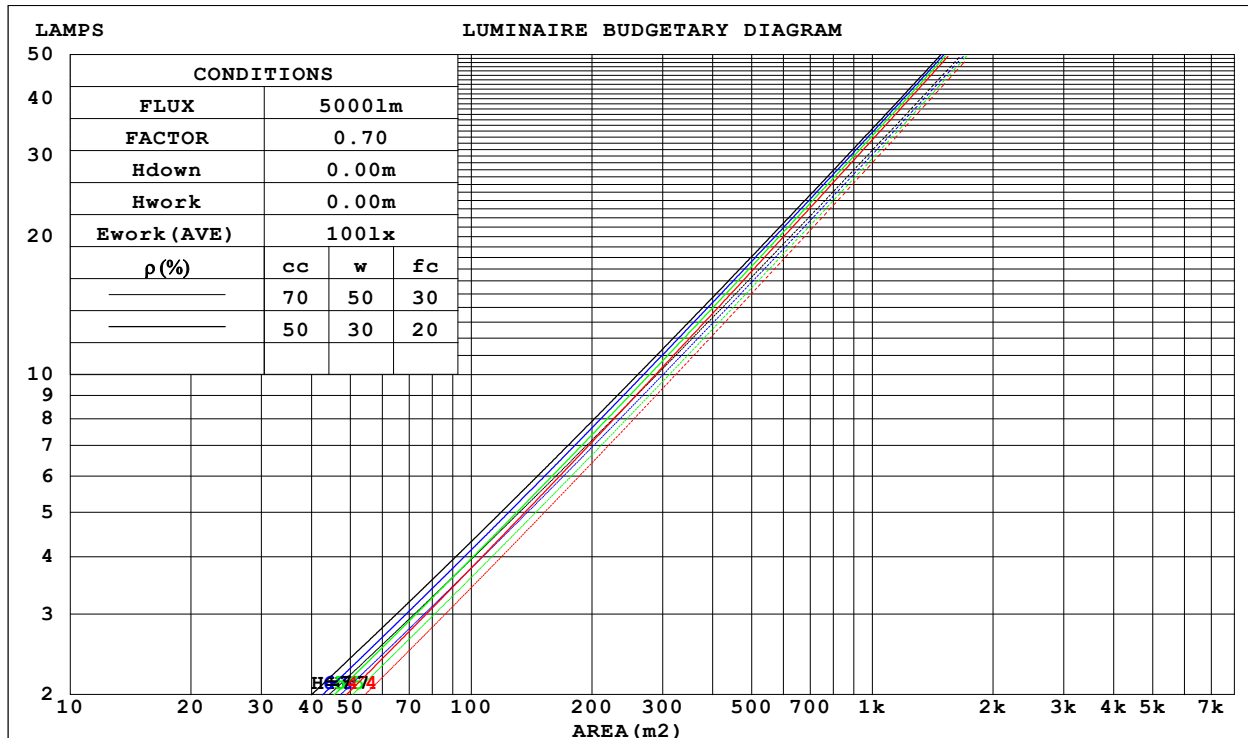
**H( $\beta$ ) Range:**-90 - 90DEG  
**H( $\beta$ ) Interval:** 1.0DEG  
**Test Speed:** HIGH  
**Temperature:**26DEG  
**Operators:**  
**Test Date:**2020-10-26

**V(B) Range:**-60 - 60DEG  
**V(B) Interval:** 2.0DEG  
**Test System:**EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
**Humidity:**65.0%  
**Test Distance:**8.660m [K=1.0000]  
**Remarks:** --

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.02	1.02	1.02	.00	.00	.00	.95	.95	.95	.91	.91	.91	.87	.87	.87	.86
1.0	.96	.94	.93	.94	.93	.91	.91	.90	.88	.88	.87	.86	.85	.84	.83	.82
2.0	.91	.88	.86	.89	.87	.85	.87	.85	.83	.84	.83	.81	.82	.81	.79	.78
3.0	.86	.83	.80	.85	.82	.79	.83	.80	.78	.81	.79	.77	.79	.77	.76	.75
4.0	.82	.78	.75	.81	.78	.75	.79	.76	.74	.78	.75	.73	.76	.74	.72	.71
5.0	.78	.74	.72	.78	.74	.71	.76	.73	.71	.75	.72	.70	.74	.71	.69	.68
6.0	.75	.71	.68	.75	.71	.68	.73	.70	.68	.72	.69	.67	.71	.69	.67	.66
7.0	.72	.68	.65	.72	.68	.65	.71	.67	.65	.70	.67	.64	.69	.66	.64	.63
8.0	.70	.65	.63	.69	.65	.63	.68	.65	.62	.67	.64	.62	.67	.64	.62	.61
9.0	.67	.63	.60	.67	.63	.60	.66	.63	.60	.65	.62	.60	.65	.62	.60	.59
10.0	.65	.61	.58	.64	.61	.58	.64	.60	.58	.63	.60	.58	.63	.60	.58	.57



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

## WEC AND CCEC

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	

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 Coefficients (WEC)									
0.0																
1.0	.129	.074	.023	.124	.071	.022	.113	.065	.021	.103	.059	.019	.094	.055	.018	
2.0	.122	.067	.020	.117	.064	.020	.108	.060	.019	.100	.056	.018	.092	.052	.016	
3.0	.114	.061	.018	.110	.059	.018	.103	.056	.017	.096	.053	.016	.090	.050	.015	
4.0	.108	.056	.016	.104	.055	.016	.098	.052	.016	.092	.049	.015	.087	.047	.014	
5.0	.102	.052	.015	.099	.051	.015	.094	.049	.014	.088	.047	.014	.084	.045	.013	
6.0	.097	.048	.014	.094	.048	.014	.089	.046	.013	.085	.044	.013	.081	.043	.013	
7.0	.092	.045	.013	.090	.045	.013	.086	.043	.012	.082	.042	.012	.078	.041	.012	
8.0	.088	.043	.012	.086	.042	.012	.082	.041	.012	.079	.040	.011	.075	.039	.011	
9.0	.084	.040	.011	.082	.040	.011	.079	.039	.011	.076	.038	.011	.073	.037	.011	
10.0	.080	.038	.011	.079	.038	.011	.076	.037	.010	.073	.036	.010	.070	.035	.010	

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	.163	.163	.163	.139	.139	.139	.095	.095	.095	.055	.055	.055	.017	.017	.017		
1.0	.145	.135	.126	.124	.116	.108	.085	.080	.075	.049	.046	.044	.016	.015	.014		
2.0	.130	.114	.099	.112	.098	.086	.077	.068	.060	.044	.039	.035	.014	.013	.011		
3.0	.118	.097	.080	.101	.084	.070	.070	.058	.049	.040	.034	.029	.013	.011	.009		
4.0	.108	.084	.066	.093	.073	.057	.064	.051	.040	.037	.030	.024	.012	.010	.008		
5.0	.100	.074	.055	.086	.064	.048	.059	.045	.034	.034	.026	.020	.011	.009	.007		
6.0	.093	.065	.046	.080	.057	.040	.055	.040	.028	.032	.023	.017	.010	.008	.006		
7.0	.086	.059	.039	.074	.051	.034	.051	.036	.024	.030	.021	.014	.010	.007	.005		
8.0	.081	.053	.034	.070	.046	.029	.048	.032	.021	.028	.019	.012	.009	.006	.004		
9.0	.076	.048	.029	.066	.042	.026	.046	.029	.018	.027	.017	.011	.009	.006	.004		
10.0	.072	.044	.026	.062	.038	.022	.043	.027	.016	.025	.016	.010	.008	.005	.003		

H( $\beta$ ) Range:-90 - 90DEG  
 H( $\beta$ ) Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature:26DEG  
 Operators:  
 Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
 V(B) Interval: 2.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
 Humidity:65.0%  
 Test Distance:8.660m [K=1.0000]  
 Remarks: --

## UGR(Unified Glare Rating) Table

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm											
NAME: LPA-DR-A074-COI					TYPE:--			SERIAL No.:			
SPEC.:AS05-6					DIM.: --						
MFR.:					SUR.:126						
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	13.8	14.6	14.1	14.7	14.9	14.6	15.3	14.8	15.5	15.6	
	3H	14.0	14.7	14.3	14.9	15.1	14.4	15.1	14.6	15.3	15.5
	4H	14.1	14.7	14.3	15.0	15.2	14.3	15.0	14.6	15.2	15.4
	6H	14.1	14.7	14.4	15.0	15.2	14.2	14.9	14.5	15.1	15.3
	8H	14.1	14.7	14.4	15.0	15.2	14.2	14.8	14.5	15.0	15.3
	12H	14.1	14.7	14.4	14.9	15.2	14.1	14.7	14.5	15.0	15.2
4H	2H	13.8	14.5	14.1	14.7	14.9	14.5	15.1	14.7	15.3	15.5
	3H	14.0	14.6	14.4	14.9	15.2	14.3	14.9	14.6	15.1	15.4
	4H	14.1	14.7	14.5	15.0	15.3	14.2	14.7	14.5	15.0	15.3
	6H	14.2	14.7	14.6	15.0	15.3	14.1	14.6	14.5	14.9	15.2
	8H	14.2	14.6	14.6	15.0	15.4	14.0	14.5	14.4	14.8	15.2
	12H	14.2	14.6	14.6	15.0	15.3	14.0	14.4	14.4	14.7	15.1
8H	4H	14.0	14.4	14.4	14.8	15.1	14.1	14.5	14.4	14.8	15.2
	6H	14.0	14.4	14.5	14.8	15.2	13.9	14.3	14.4	14.7	15.1
	8H	14.0	14.4	14.5	14.8	15.2	13.9	14.2	14.3	14.6	15.1
	12H	14.0	14.3	14.5	14.7	15.2	13.8	14.1	14.3	14.5	15.0
12H	4H	13.9	14.3	14.3	14.7	15.1	14.0	14.4	14.4	14.8	15.2
	6H	14.0	14.3	14.4	14.7	15.2	13.9	14.2	14.3	14.6	15.1
	8H	14.0	14.3	14.4	14.7	15.2	13.8	14.1	14.3	14.5	15.0
Variations with the observer position at spacings:											
S = 1.0H	+ 0.6 / - 1.0					+ 3.1 / - 4.9					
1.5H	+ 0.9 / - 0.8					+ 5.4 / - 4.6					
2.0H	+ 1.0 / - 1.0					+ 1.4 / - 1.6					

CIE Pub.117, 2425 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 3.1)  
Area: 0.0124627 m2

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

## UTILIZATION FACTORS TABLE

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	

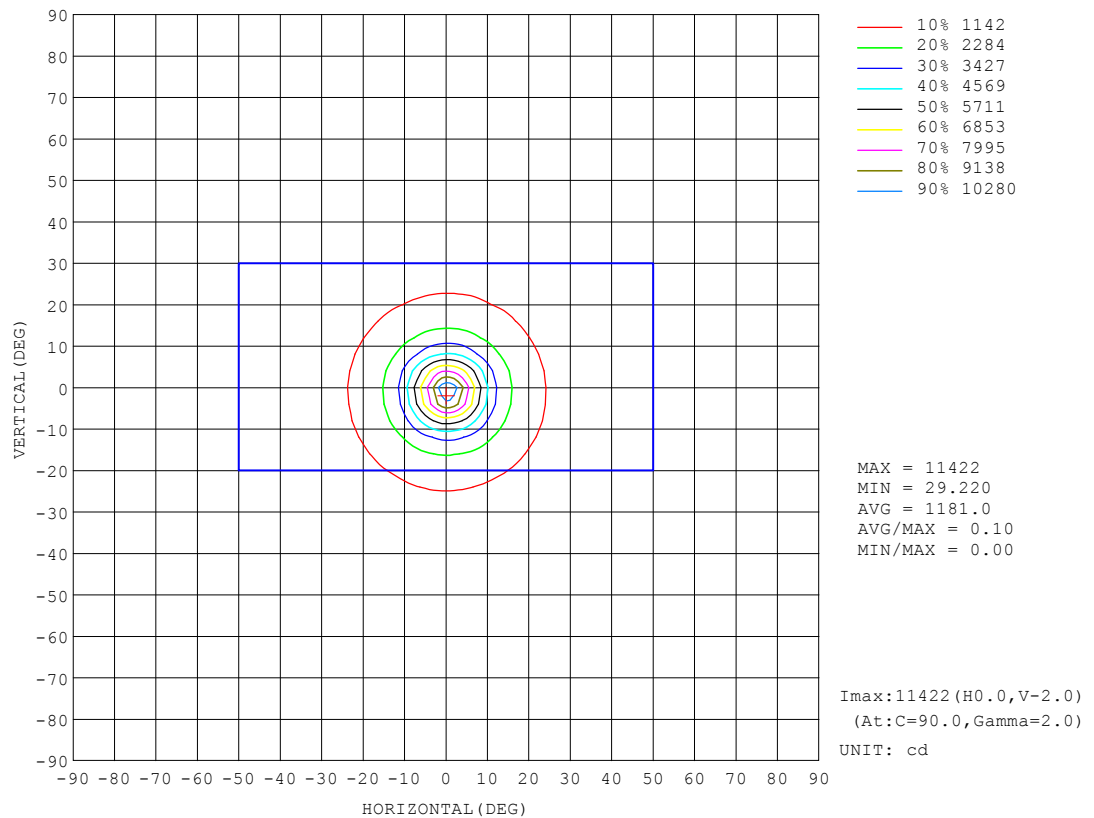
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	76	71	68	76	71	68	75	71	68	65
0.80	82	78	75	82	77	74	81	77	74	71
1.00	86	81	78	85	81	78	84	81	78	74
1.25	89	85	82	88	84	82	87	83	81	78
1.50	91	88	85	90	87	84	88	86	83	80
2.00	93	90	87	92	89	87	90	87	86	81
2.50	95	92	89	93	91	89	91	89	87	82
3.00	96	93	91	95	92	90	92	90	88	83
4.00	98	96	94	96	94	93	93	91	90	84
5.00	99	97	96	97	95	94	94	93	91	85
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

**H( $\beta$ ) Range:** -90 - 90DEG  
**H( $\beta$ ) Interval:** 1.0DEG  
**Test Speed:** HIGH  
**Temperature:** 26DEG  
**Operators:**  
**Test Date:** 2020-10-26

**V(B) Range:** -60 - 60DEG  
**V(B) Interval:** 2.0DEG  
**Test System:** EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
**Humidity:** 65.0%  
**Test Distance:** 8.660m [K=1.0000]  
**Remarks:** --

ISOCANDELA DIAGRAM

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	



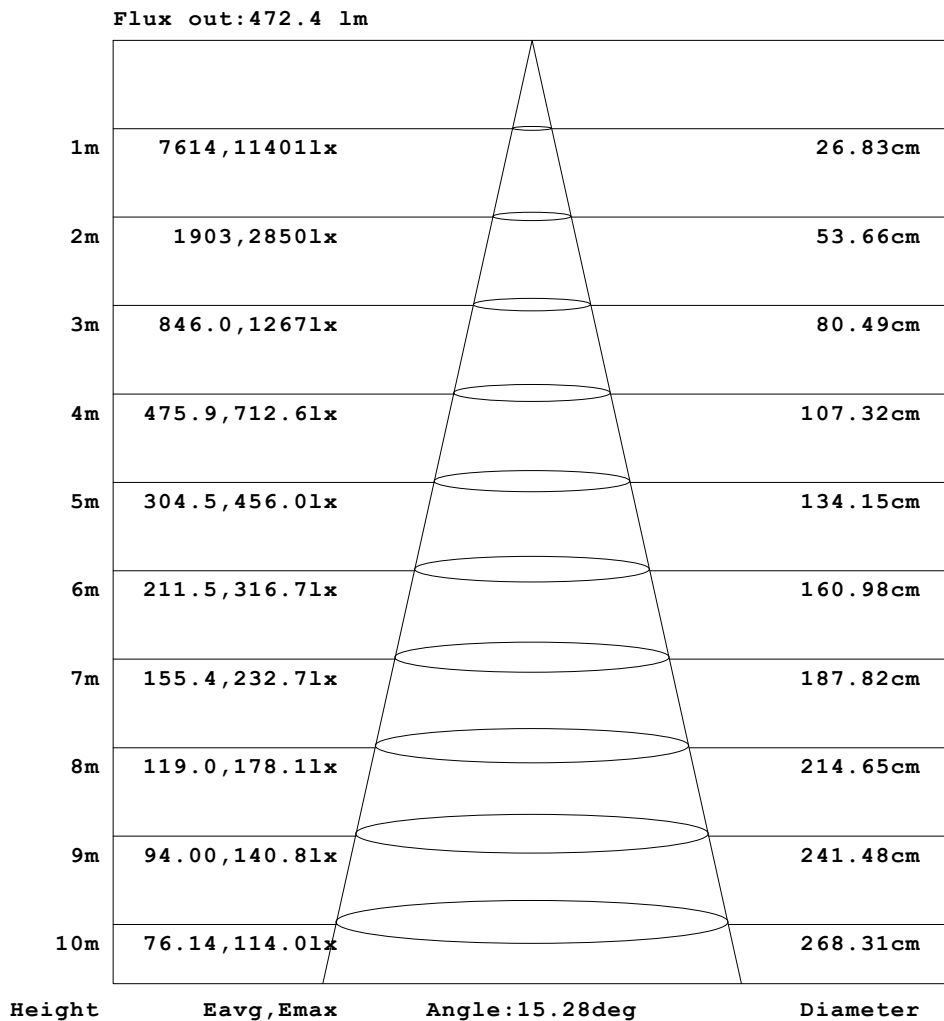
H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --



AAI Figure

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	



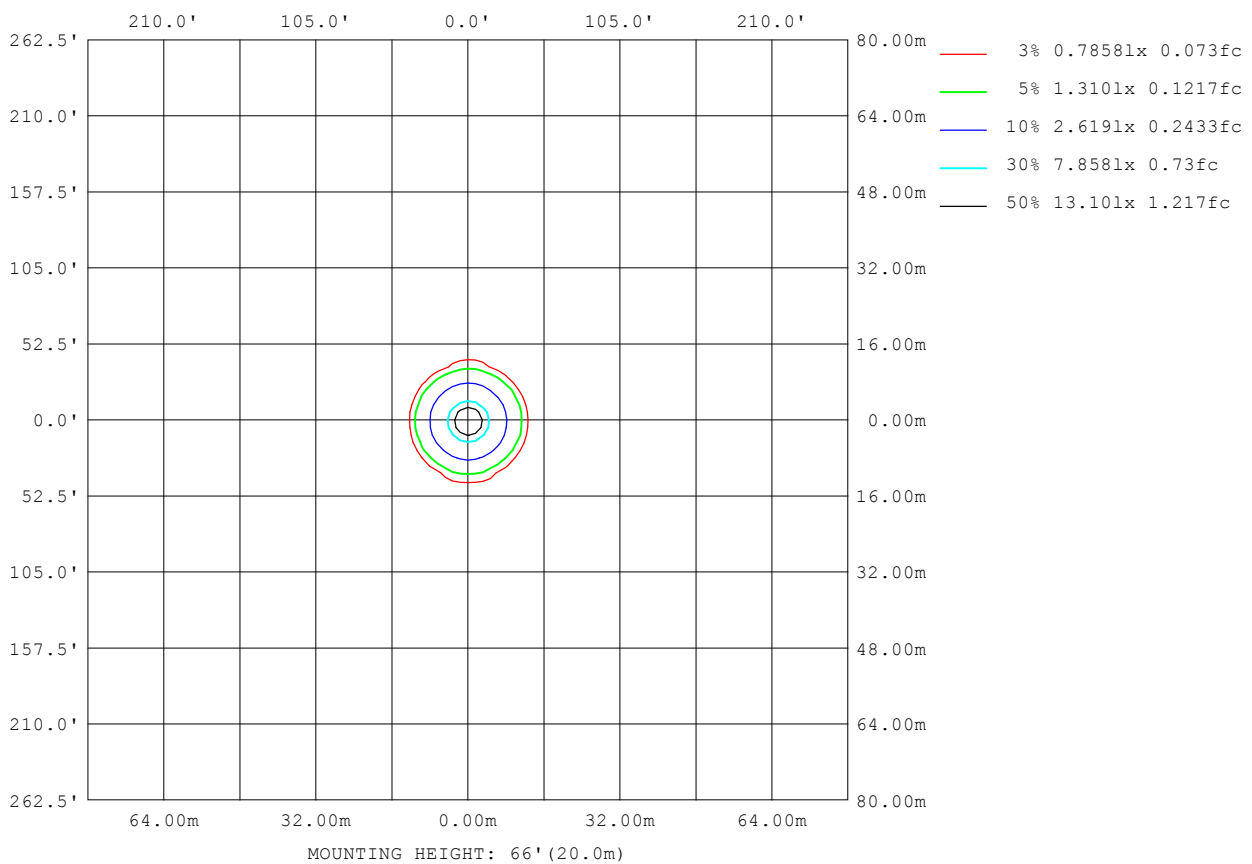
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

ISOLUX DIAGRAM

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

### LED Avg.L Report

Test:U:220.01V I:0.1318A P:27.972W PF:0.9646 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-6	DIM.: --	
MFR.:	SUR.:126	

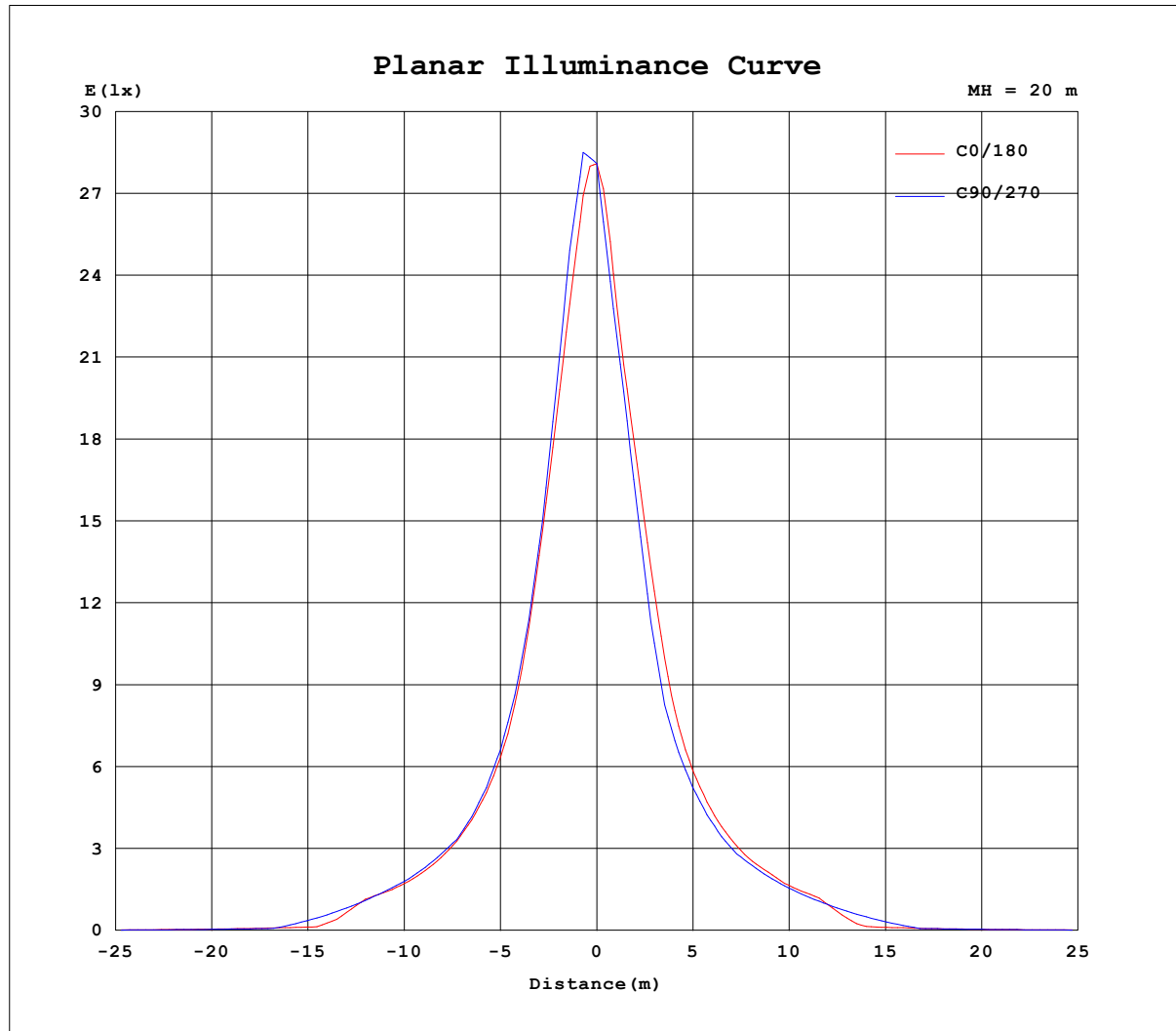
AvgL	cd/m2
L_0~180 (65) av	3010
L_0~180 (75) av	2254
L_0~180 (85) av	1250
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	3098
L_45 (75) av	0
L_45 (85) av	0

Standard: GB/T 29293-2012

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

## Planar Illuminance Curve



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

V(B) Range:-60 - 60DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.421  
Humidity:65.0%  
Test Distance:8.660m [K=1.0000]  
Remarks: --

```
V(B) Range:-60 - 60DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.421
Humidity:65.0%
Test Distance:8.660m [K=1.0000]
Remarks: --
```

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