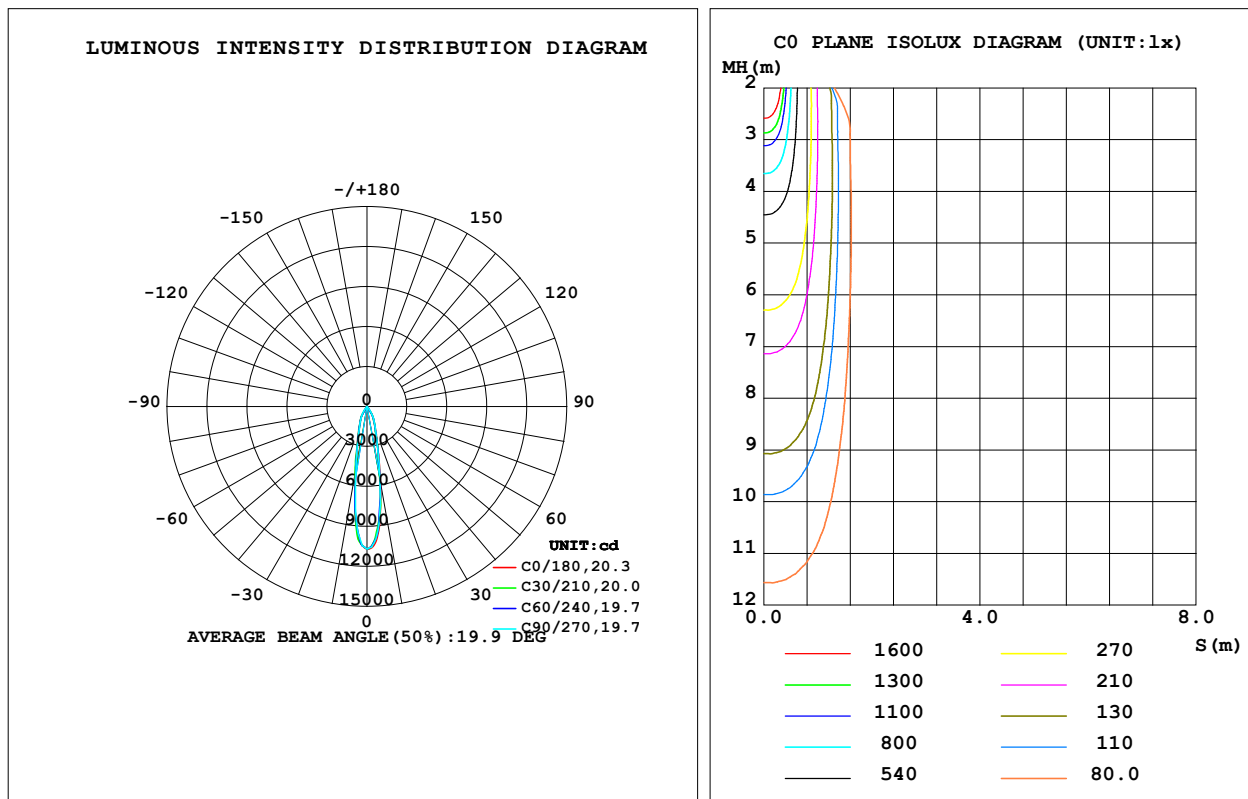


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 67.27 lm/W			
MODEL	CXA 1830 9335 900MA	I <sub>max</sub> (cd)	10701	S/MH(C0/180)	0.33
NOMINAL POWER(W)	36	LOR(%)	85.0	S/MH(C90/270)	0.32
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	2476.7	η UP,DN(C0-180)	0.0,44.4
NOMINAL FLUX(lm)	2915	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,40.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	220	η down(%)	85.0	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:

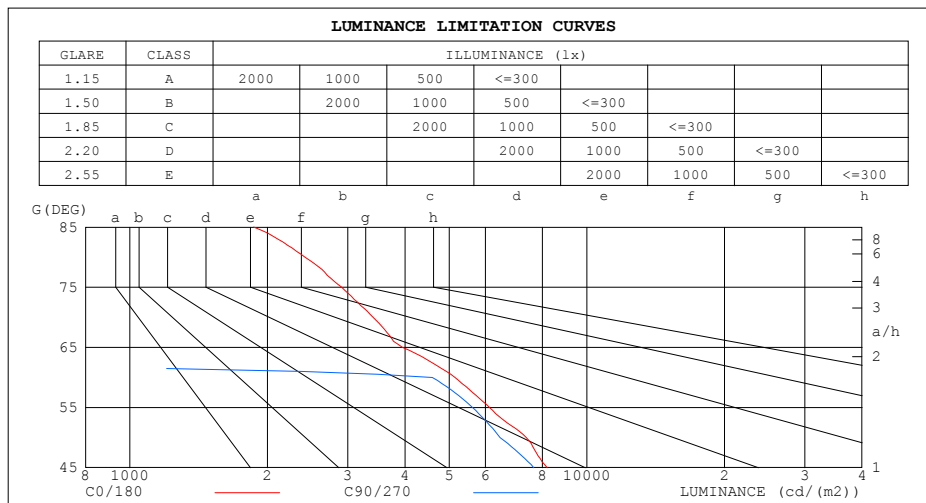
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	584.1	560.8	560.5	569.4	505.8	511.8	479.5	500.8	0~ 10	744.2	744.2	30,25.5
20	190.9	186.5	189.0	194.0	173.6	177.2	166.5	164.1	10~ 20	838.3	1582	63.9,54.3
30	94.53	85.19	92.54	88.17	82.90	76.19	80.24	74.43	20~ 30	574.1	2157	87.1,74
40	9.505	9.362	8.317	8.393	8.224	8.891	7.968	8.277	30~ 40	217.1	2374	95.8,81.4
50	5.912	5.466	5.174	4.951	4.897	4.964	4.845	5.007	40~ 50	52.06	2426	97.9,83.2
60	3.207	2.907	2.862	2.772	2.552	2.574	2.512	2.672	50~ 60	34.49	2460	99.3,84.4
70	1.453	0	0	0	1.173	0	0	0	60~ 70	13.27	2473	99.9,84.9
80	0.5229	0	0	0	0.3848	0	0	0	70~ 80	2.985	2476	100,85
90	0.0120	0	0	0	0.0027	0	0	0	80~ 90	0.2804	2477	100,85
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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1867	0
80	2416	0
75	2906	0
70	3409	0
65	3950	0
60	5147	4593
55	6124	5622
50	7380	6459
45	8188	7660

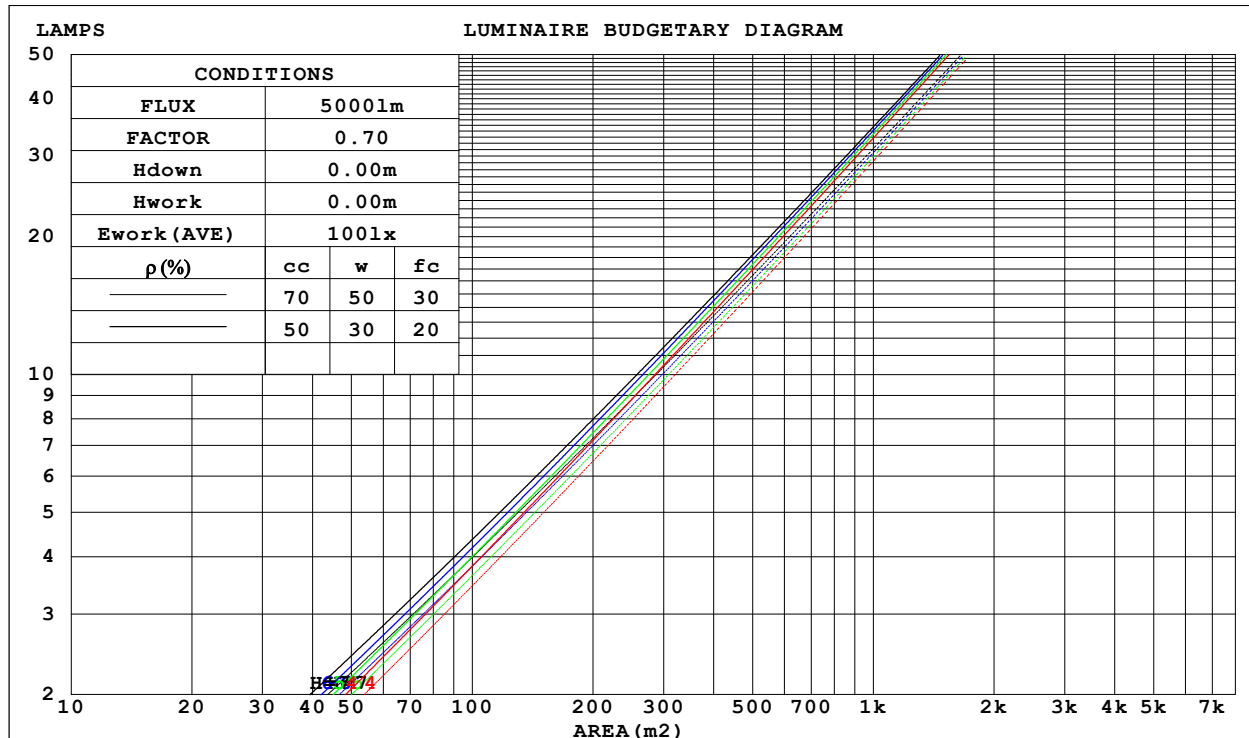
**H( $\beta$ ) Range:** -90 - 90DEG  
**H( $\beta$ ) Interval:** 1.0DEG  
**Test Speed:** HIGH  
**Temperature:** 26DEG  
**Operators:**  
**Test Date:** 2020-10-26

**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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	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	1.01	1.01	1.01	.99	.99	.99	.94	.94	.94	.90	.90	.90	.87	.87	.87	.85
1.0	.95	.93	.92	.93	.92	.90	.90	.89	.88	.87	.86	.85	.84	.83	.83	.81
2.0	.90	.87	.85	.89	.86	.84	.86	.84	.82	.83	.82	.80	.81	.80	.79	.77
3.0	.85	.82	.79	.84	.81	.79	.82	.80	.77	.80	.78	.76	.78	.77	.75	.74
4.0	.81	.78	.75	.80	.77	.74	.79	.76	.73	.77	.75	.73	.76	.74	.72	.71
5.0	.78	.74	.71	.77	.73	.71	.76	.72	.70	.74	.72	.69	.73	.71	.69	.68
6.0	.74	.70	.68	.74	.70	.67	.73	.69	.67	.72	.69	.66	.71	.68	.66	.65
7.0	.72	.67	.65	.71	.67	.64	.70	.67	.64	.69	.66	.64	.68	.66	.64	.63
8.0	.69	.65	.62	.68	.65	.62	.68	.64	.62	.67	.64	.61	.66	.63	.61	.60
9.0	.66	.62	.60	.66	.62	.60	.65	.62	.59	.65	.61	.59	.64	.61	.59	.58
10.0	.64	.60	.58	.64	.60	.58	.63	.60	.57	.63	.59	.57	.62	.59	.57	.56



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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	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	.073	.023	.123	.070	.022	.112	.064	.021	.103	.059	.019	.094	.054	.017	
2.0	.121	.066	.020	.116	.064	.020	.107	.060	.019	.099	.056	.017	.092	.052	.016	
3.0	.114	.061	.018	.110	.059	.018	.102	.055	.017	.096	.052	.016	.089	.049	.015	
4.0	.107	.056	.016	.104	.054	.016	.098	.052	.015	.092	.049	.015	.086	.047	.014	
5.0	.101	.052	.015	.099	.051	.015	.093	.048	.014	.088	.046	.014	.083	.045	.013	
6.0	.096	.048	.014	.094	.047	.014	.089	.046	.013	.085	.044	.013	.081	.042	.013	
7.0	.091	.045	.013	.089	.044	.013	.085	.043	.012	.081	.042	.012	.078	.040	.012	
8.0	.087	.043	.012	.085	.042	.012	.082	.041	.012	.078	.040	.011	.075	.039	.011	
9.0	.083	.040	.011	.082	.040	.011	.078	.039	.011	.075	.038	.011	.073	.037	.011	
10.0	.080	.038	.011	.078	.038	.011	.075	.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	.162	.162	.162	.138	.138	.138	.094	.094	.094	.054	.054	.054	.017	.017	.017	
1.0	.144	.134	.125	.123	.115	.107	.084	.079	.074	.048	.046	.043	.016	.015	.014	
2.0	.129	.113	.099	.111	.097	.085	.076	.067	.059	.044	.039	.035	.014	.013	.011	
3.0	.117	.096	.079	.101	.083	.069	.069	.058	.048	.040	.034	.028	.013	.011	.009	
4.0	.108	.083	.065	.092	.072	.057	.063	.050	.040	.037	.029	.024	.012	.010	.008	
5.0	.099	.073	.054	.085	.063	.047	.059	.044	.033	.034	.026	.020	.011	.008	.006	
6.0	.092	.065	.046	.079	.056	.040	.055	.039	.028	.032	.023	.017	.010	.008	.006	
7.0	.086	.058	.039	.074	.050	.034	.051	.035	.024	.030	.021	.014	.010	.007	.005	
8.0	.080	.053	.033	.069	.046	.029	.048	.032	.021	.028	.019	.012	.009	.006	.004	
9.0	.076	.048	.029	.065	.042	.025	.045	.029	.018	.026	.017	.011	.009	.006	.004	
10.0	.072	.044	.025	.062	.038	.022	.043	.027	.016	.025	.016	.009	.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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm										
NAME: LPA-DR-A074-COI					TYPE:--			SERIAL No.:		
SPEC.:AS05-4					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	13.9	14.6	14.1	14.8	15.0	15.3	16.0	15.5	16.2	16.3
3H	14.1	14.8	14.3	15.0	15.2	15.1	15.8	15.4	16.0	16.2
4H	14.2	14.8	14.4	15.1	15.3	15.0	15.7	15.3	15.9	16.1
6H	14.2	14.8	14.5	15.1	15.3	15.0	15.6	15.2	15.8	16.1
8H	14.2	14.8	14.5	15.1	15.3	14.9	15.5	15.2	15.8	16.0
12H	14.2	14.8	14.5	15.0	15.3	14.9	15.4	15.2	15.7	16.0
4H 2H	13.9	14.5	14.1	14.7	15.0	15.2	15.8	15.4	16.1	16.3
3H	14.2	14.7	14.5	15.0	15.3	15.0	15.6	15.3	15.8	16.1
4H	14.3	14.8	14.6	15.1	15.4	14.9	15.4	15.2	15.7	16.0
6H	14.3	14.8	14.7	15.1	15.5	14.8	15.3	15.2	15.6	15.9
8H	14.3	14.8	14.7	15.1	15.5	14.8	15.2	15.1	15.5	15.9
12H	14.3	14.7	14.7	15.1	15.5	14.7	15.1	15.1	15.5	15.9
8H 4H	14.1	14.6	14.5	14.9	15.3	14.8	15.2	15.2	15.6	15.9
6H	14.2	14.5	14.6	14.9	15.3	14.7	15.0	15.1	15.4	15.8
8H	14.2	14.5	14.6	14.9	15.3	14.6	14.9	15.0	15.3	15.8
12H	14.1	14.4	14.6	14.9	15.3	14.5	14.8	15.0	15.3	15.7
12H 4H	14.1	14.5	14.5	14.8	15.2	14.7	15.1	15.1	15.5	15.9
6H	14.1	14.4	14.6	14.8	15.3	14.6	14.9	15.0	15.3	15.8
8H	14.1	14.4	14.6	14.8	15.3	14.5	14.8	15.0	15.3	15.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.9					+ 3.0 / - 4.7				
1.5H	+ 0.7 / - 0.6					+ 5.2 / - 4.1				
2.0H	+ 1.1 / - 1.4					+ 1.4 / - 1.9				

CIE Pub.117, 2915 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 3.7)  
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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

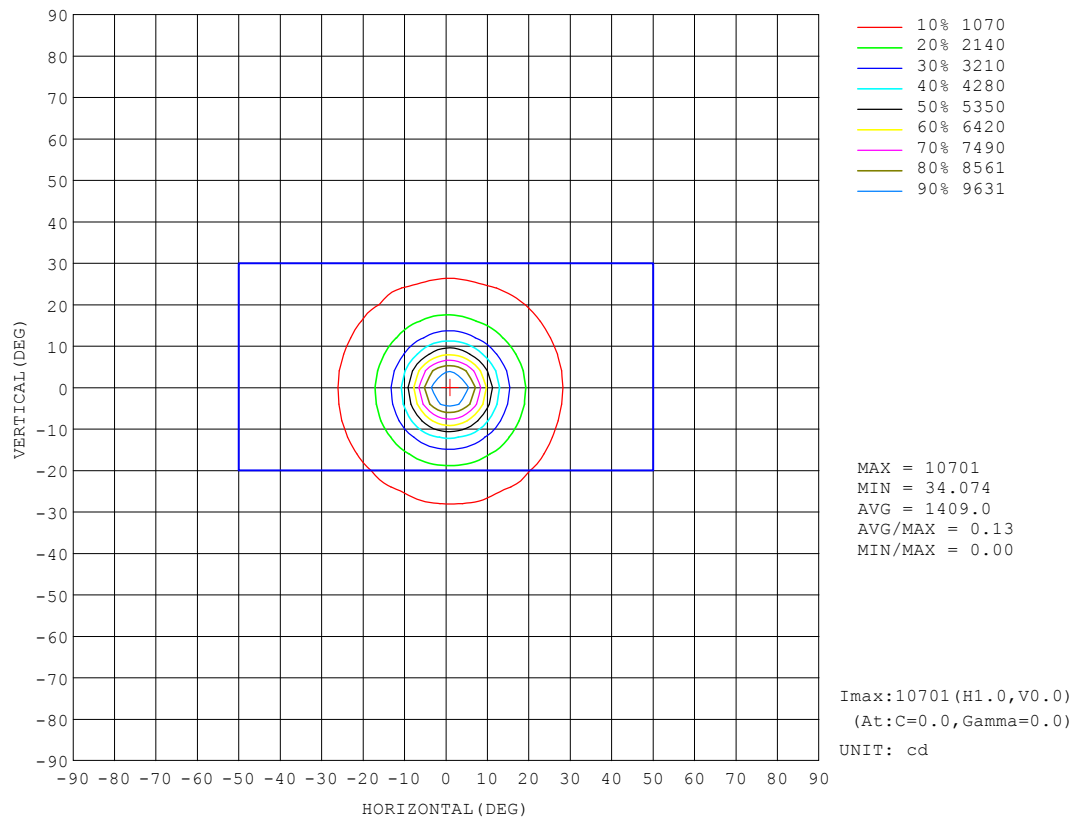
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	76	70	67	75	70	67	74	70	67	64
0.80	82	77	74	81	77	74	80	76	74	71
1.00	85	81	78	84	80	77	83	80	77	74
1.25	88	84	81	88	84	81	86	83	80	77
1.50	91	87	84	90	86	84	88	85	83	79
2.00	93	89	87	92	88	86	89	87	85	80
2.50	94	91	89	93	90	88	90	88	86	81
3.00	95	93	90	94	91	89	91	89	88	82
4.00	97	95	93	95	93	92	92	91	89	84
5.00	98	96	95	96	95	93	93	92	91	84
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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	



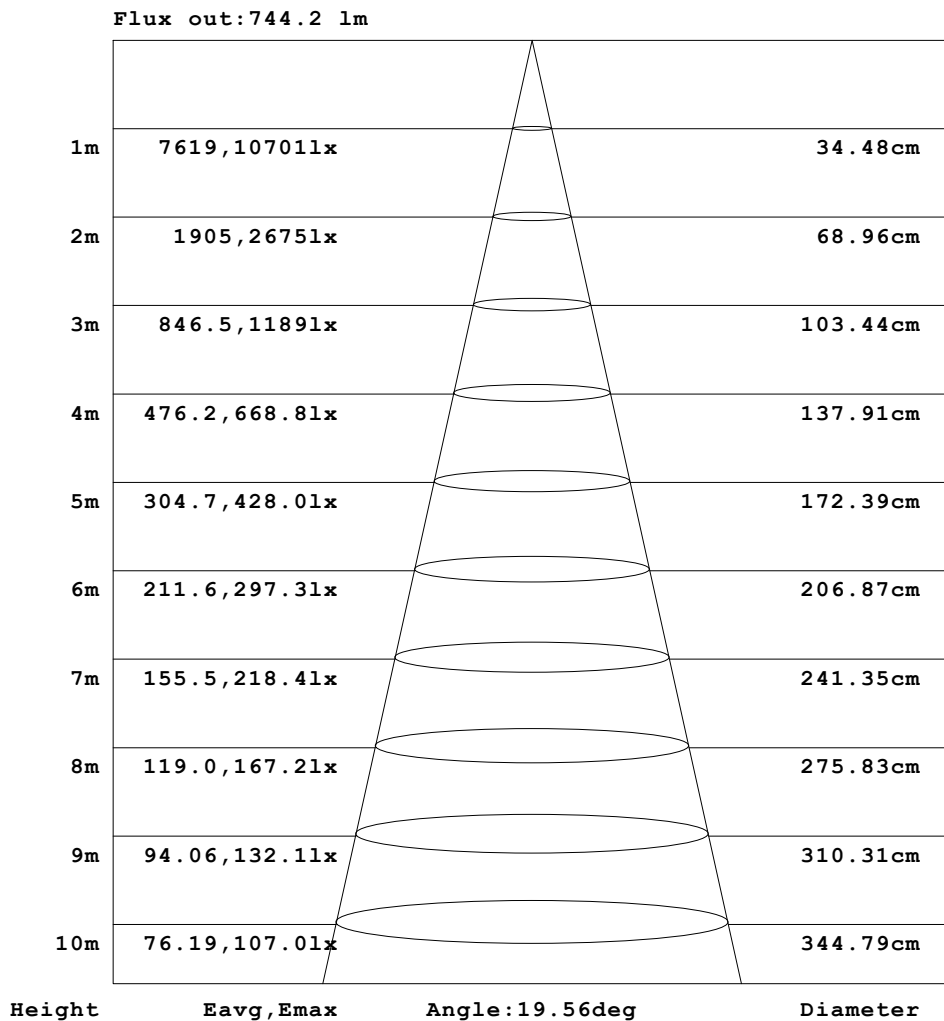
H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:26DEG  
Operators:  
Test Date:2020-10-26

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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	



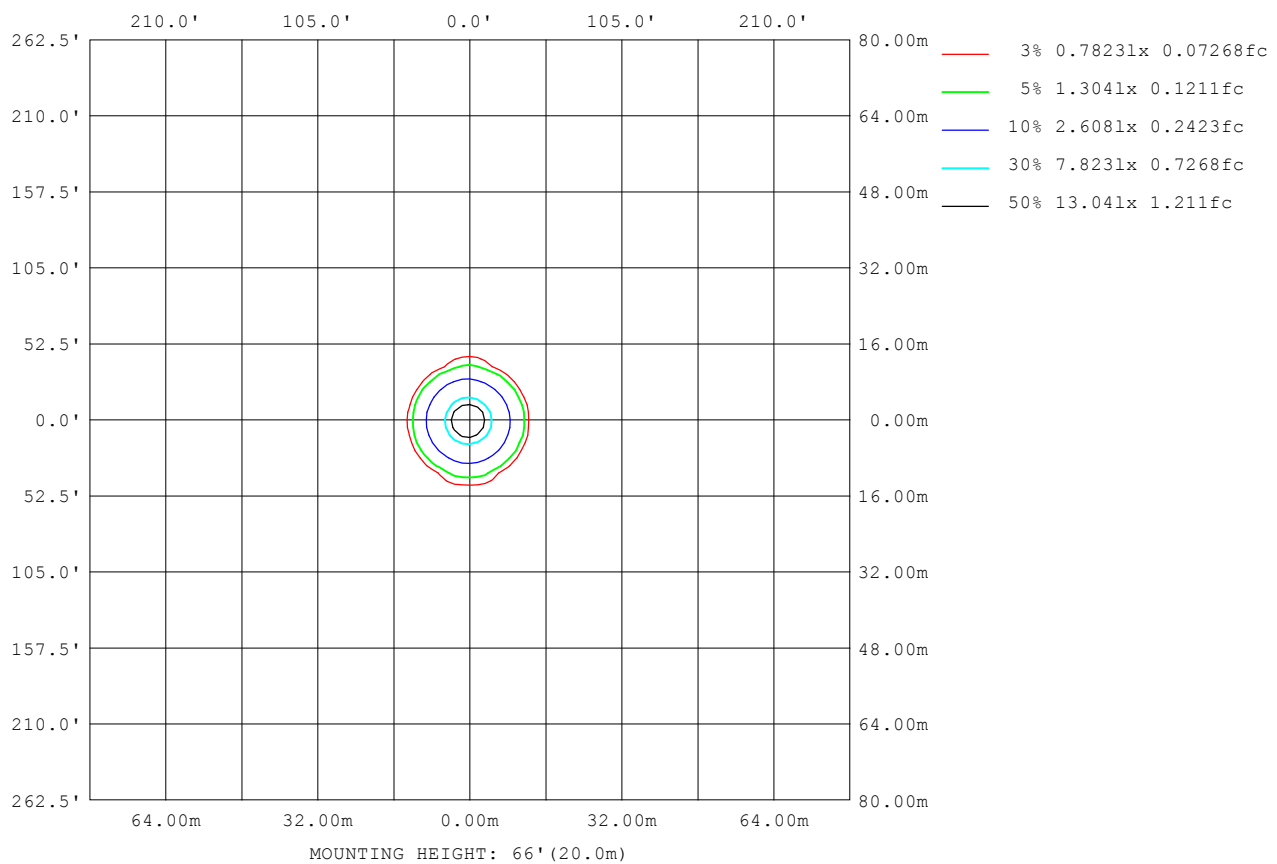
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	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:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

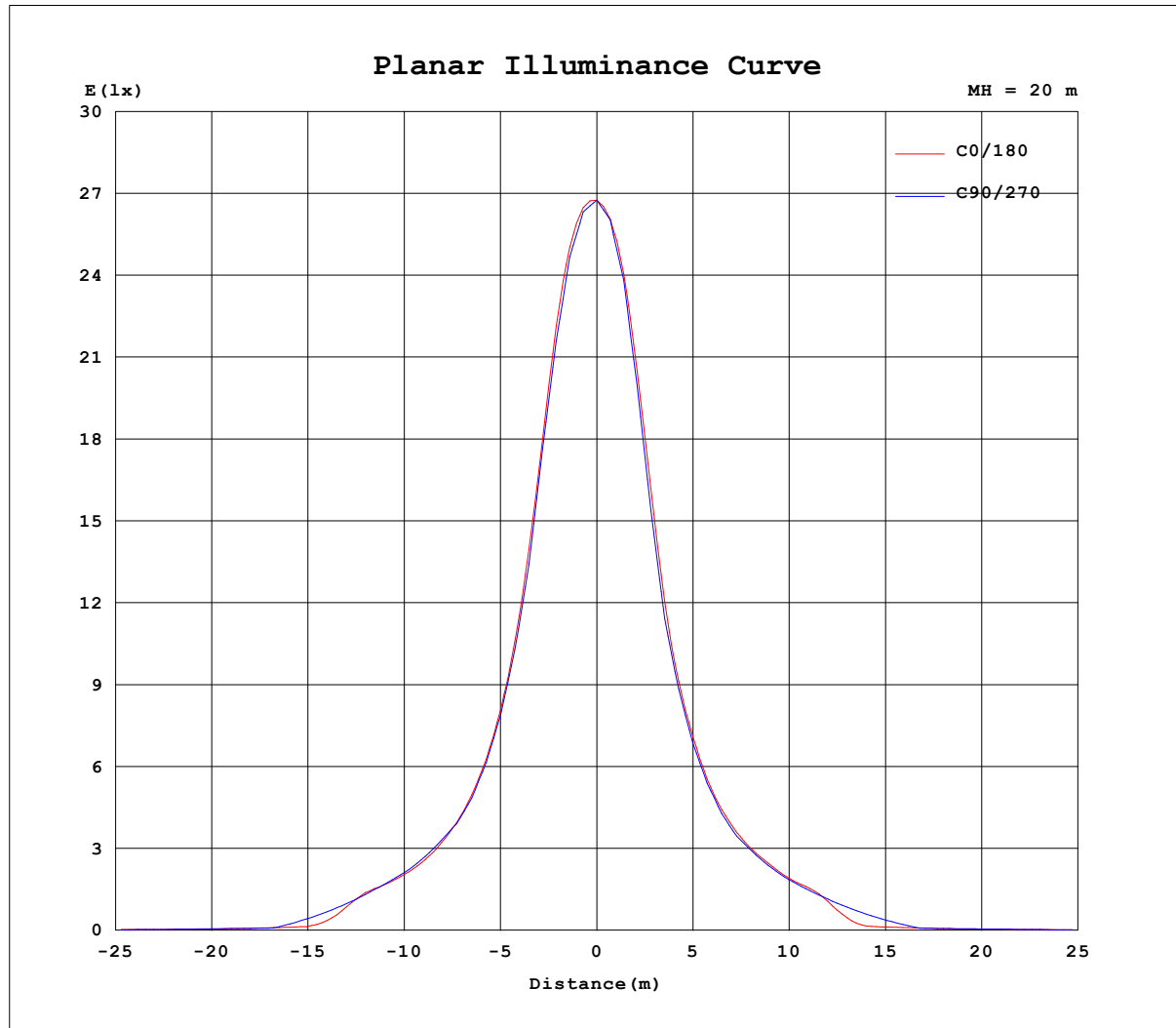
AvgL	cd/m2
L_0~180 (65) av	3572
L_0~180 (75) av	2590
L_0~180 (85) av	1465
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	3576
L_45 (75) av	0
L_45 (85) av	0

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: --

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

Table--1

UNIT:  $\times 10\text{cd}$ [illegible]

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: --
```

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.94V I:0.1733A P:36.818W PF:0.9659 Freq:60.00Hz Lamp Flux:2915x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

Table--2

UNIT:  $\times 10 \text{cd}$ [illegible]

```
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: --
```

```
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: --
```