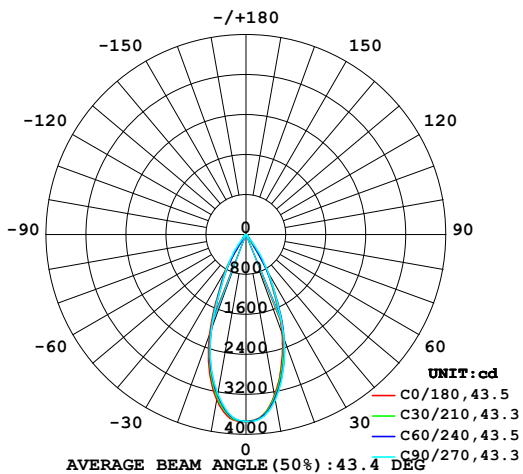


LUMINAIRE PHOTOMETRIC TEST REPORT

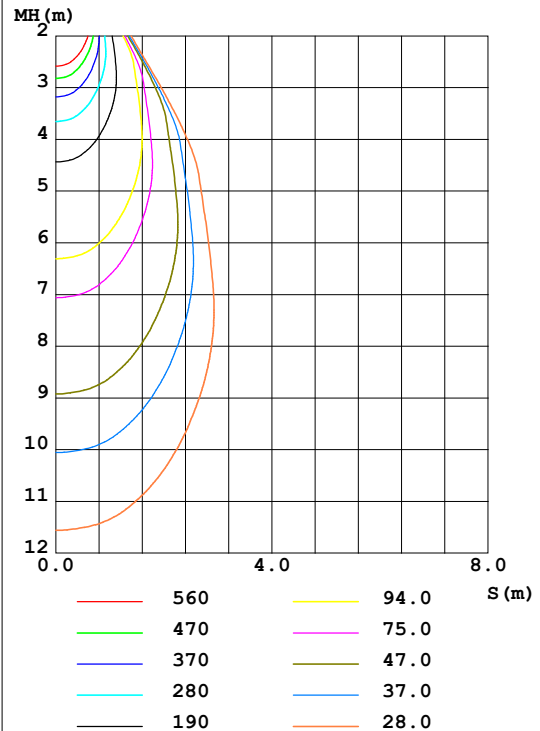
Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 72.39 lm/W			
MODEL	CXA 1830 9335 700MA	I _{max} (cd)	3743	S/MH(C0/180)	0.67
NOMINAL POWER(W)	28	LOR(%)	83.4	S/MH(C90/270)	0.66
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	2021.3	η UP,DN(C0-180)	0.0,43.2
NOMINAL FLUX(lm)	2425	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,40.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220	η down(%)	83.4	CIBSE SHR MAX	0.70

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



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:

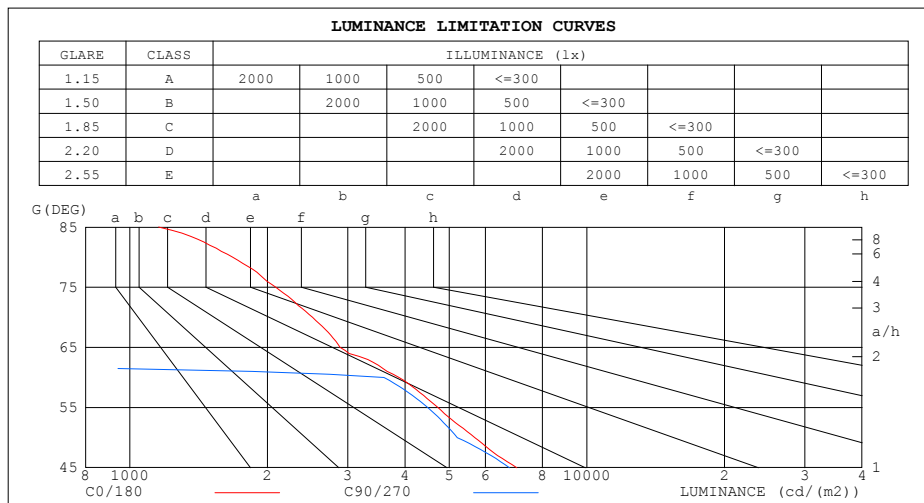
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3280	3320	3370	3380	3364	3281	3246	3243	0- 10	337.6	337.6	16.7,13.9
20	2128	2222	2242	2233	2140	2035	2025	2059	10- 20	765.7	1103	54.6,45.5
30	889.1	859.9	886.3	831.4	841.0	693.6	722.3	730.6	20- 30	631.2	1735	85.8,71.5
40	84.54	81.20	77.57	80.34	81.24	76.30	73.52	76.90	30- 40	200.7	1935	95.7,79.8
50	45.56	42.21	41.69	41.51	41.95	39.70	38.93	40.25	40- 50	45.73	1981	98,81.7
60	24.19	22.49	22.43	22.08	21.38	20.25	19.47	20.84	50- 60	27.69	2009	99.4,82.8
70	10.70	0	0	0	9.430	0	0	0	60- 70	10.21	2019	99.9,83.3
80	3.633	0	0	0	3.269	0	0	0	70- 80	2.251	2021	100,83.3
90	0.0970	0	0	0	0.0255	0	0	0	80- 90	0.2120	2021	100,83.4
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		

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: --

LUMINANCE LIMITATION CURVES

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1157	0
80	1679	0
75	2088	0
70	2511	0
65	2887	0
60	3882	3599
55	4723	4485
50	5688	5205
45	7024	6767

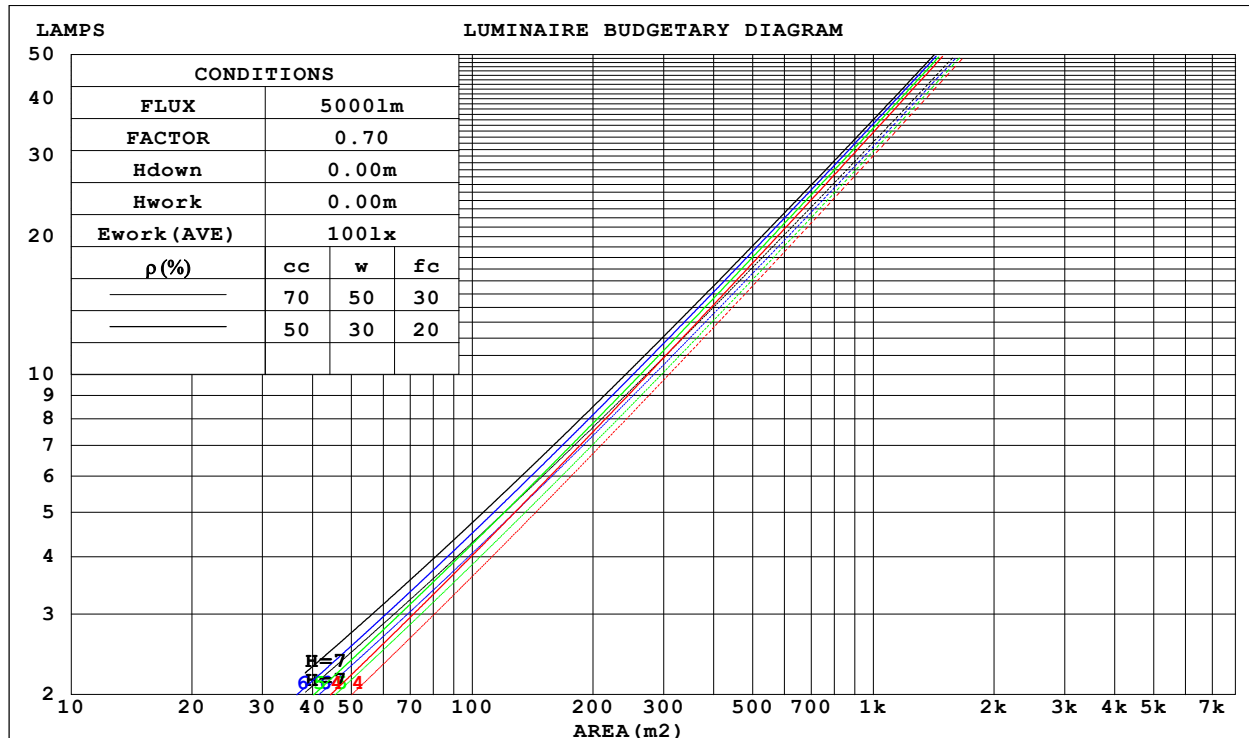
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-26

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: --

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	.99	.99	.99	.97	.97	.97	.93	.93	.93	.89	.89	.89	.85	.85	.85	.83
1.0	.93	.91	.89	.91	.90	.88	.88	.87	.85	.85	.84	.83	.82	.81	.80	.79
2.0	.87	.84	.82	.86	.83	.81	.83	.81	.79	.81	.79	.77	.79	.77	.76	.75
3.0	.82	.79	.76	.81	.78	.75	.79	.76	.74	.77	.75	.73	.75	.73	.72	.70
4.0	.78	.74	.71	.77	.73	.70	.75	.72	.69	.74	.71	.69	.72	.70	.68	.67
5.0	.74	.69	.66	.73	.69	.66	.72	.68	.65	.70	.67	.65	.69	.66	.64	.63
6.0	.70	.66	.63	.69	.65	.62	.68	.65	.62	.67	.64	.62	.66	.63	.61	.60
7.0	.67	.62	.59	.66	.62	.59	.65	.61	.59	.64	.61	.58	.63	.60	.58	.57
8.0	.64	.59	.56	.63	.59	.56	.62	.59	.56	.61	.58	.56	.61	.58	.55	.54
9.0	.61	.56	.54	.60	.56	.53	.60	.56	.53	.59	.56	.53	.58	.55	.53	.52
10.0	.58	.54	.51	.58	.54	.51	.57	.53	.51	.57	.53	.51	.56	.53	.51	.50



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: --

WEC AND CCEC

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	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	.135	.077	.024	.130	.074	.023	.119	.068	.022	.110	.063	.020	.101	.058	.019		
2.0	.128	.070	.022	.123	.068	.021	.115	.064	.020	.107	.060	.019	.099	.056	.018		
3.0	.121	.064	.019	.117	.063	.019	.110	.060	.018	.103	.056	.017	.097	.054	.017		
4.0	.115	.060	.018	.112	.058	.017	.105	.056	.017	.099	.053	.016	.094	.051	.016		
5.0	.109	.056	.016	.106	.055	.016	.101	.052	.015	.096	.051	.015	.091	.049	.015		
6.0	.104	.052	.015	.101	.051	.015	.097	.050	.014	.092	.048	.014	.088	.046	.014		
7.0	.099	.049	.014	.097	.048	.014	.093	.047	.014	.089	.046	.013	.085	.044	.013		
8.0	.095	.046	.013	.093	.046	.013	.089	.045	.013	.086	.043	.013	.083	.042	.012		
9.0	.091	.044	.012	.089	.044	.012	.086	.043	.012	.083	.042	.012	.080	.041	.012		
10.0	.087	.042	.012	.086	.041	.012	.083	.041	.011	.080	.040	.011	.077	.039	.011		

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	.159	.159	.159	.136	.136	.136	.093	.093	.093	.053	.053	.053	.017	.017	.017	
1.0	.142	.131	.122	.121	.113	.105	.083	.077	.072	.048	.045	.042	.015	.014	.014	
2.0	.128	.111	.096	.110	.095	.083	.075	.066	.058	.043	.038	.034	.014	.012	.011	
3.0	.117	.095	.077	.100	.082	.066	.069	.057	.047	.040	.033	.027	.013	.011	.009	
4.0	.108	.082	.062	.093	.071	.054	.064	.049	.038	.037	.029	.023	.012	.009	.007	
5.0	.100	.072	.052	.086	.062	.045	.059	.044	.032	.034	.026	.019	.011	.008	.006	
6.0	.093	.064	.043	.080	.056	.038	.055	.039	.027	.032	.023	.016	.010	.007	.005	
7.0	.088	.058	.037	.076	.050	.032	.052	.035	.023	.030	.021	.014	.010	.007	.004	
8.0	.083	.052	.032	.071	.045	.028	.049	.032	.020	.029	.019	.012	.009	.006	.004	
9.0	.078	.048	.027	.068	.042	.024	.047	.029	.017	.027	.017	.010	.009	.006	.003	
10.0	.075	.044	.024	.064	.038	.021	.045	.027	.015	.026	.016	.009	.008	.005	.003	

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: --

UGR(Unified Glare Rating) Table

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm										
NAME: LPA-DR-A074-COI						TYPE:--			SERIAL No.:	
SPEC.:AS05-5						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	14.7	14.1	14.8	15.0	15.2	16.1	15.5	16.2	16.4
	3H	14.0	14.7	14.2	14.9	15.1	15.1	15.8	15.3	16.0
	4H	14.0	14.7	14.2	14.9	15.1	15.0	15.7	15.3	15.9
	6H	14.0	14.7	14.3	14.9	15.1	14.9	15.6	15.2	15.8
	8H	14.0	14.6	14.3	14.9	15.1	14.9	15.5	15.2	15.8
	12H	13.9	14.6	14.2	14.8	15.1	14.8	15.4	15.1	15.7
4H	2H	13.8	14.5	14.0	14.7	14.9	15.1	15.8	15.4	16.0
	3H	13.9	14.5	14.2	14.8	15.1	14.9	15.5	15.2	15.8
	4H	14.0	14.5	14.3	14.8	15.1	14.8	15.4	15.2	15.7
	6H	14.0	14.5	14.4	14.8	15.2	14.7	15.2	15.1	15.6
	8H	14.0	14.4	14.4	14.8	15.2	14.7	15.1	15.1	15.5
	12H	13.9	14.4	14.4	14.7	15.1	14.6	15.0	15.0	15.4
8H	4H	13.8	14.3	14.2	14.6	15.0	14.7	15.2	15.1	15.5
	6H	13.8	14.2	14.3	14.6	15.0	14.6	15.0	15.0	15.4
	8H	13.8	14.2	14.3	14.6	15.0	14.5	14.9	15.0	15.3
	12H	13.8	14.1	14.2	14.5	15.0	14.5	14.8	14.9	15.2
12H	4H	13.8	14.2	14.2	14.6	15.0	14.6	15.1	15.0	15.4
	6H	13.8	14.1	14.2	14.5	15.0	14.5	14.9	15.0	15.3
	8H	13.8	14.0	14.2	14.5	15.0	14.5	14.8	14.9	15.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.8 / - 1.2					+ 3.5 / - 5.6				
1.5H	+ 1.1 / - 0.7					+ 5.7 / - 4.6				
2.0H	+ 1.5 / - 1.5					+ 1.8 / - 2.3				

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

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: --

UTILIZATION FACTORS TABLE

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	

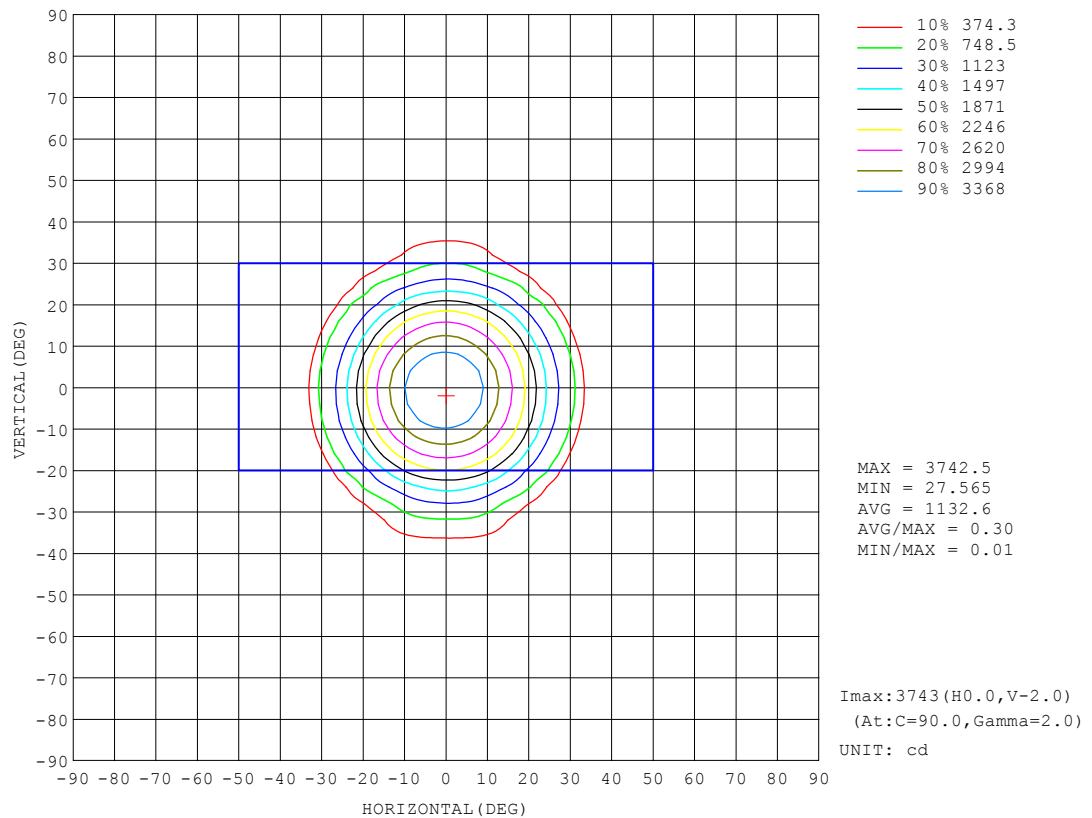
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	74	69	66	74	69	66	73	69	66	63
0.80	80	75	72	80	75	72	79	75	72	69
1.00	84	79	76	83	79	76	82	79	76	72
1.25	87	83	80	86	82	80	84	81	79	76
1.50	89	85	82	88	85	82	86	83	81	78
2.00	91	88	85	90	87	84	88	85	83	79
2.50	92	89	87	91	88	86	88	86	85	80
3.00	93	91	89	92	90	88	89	87	86	81
4.00	95	93	91	93	92	90	90	89	88	82
5.00	96	94	93	94	93	92	91	90	89	83
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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: --

ISOCANDELA DIAGRAM

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	

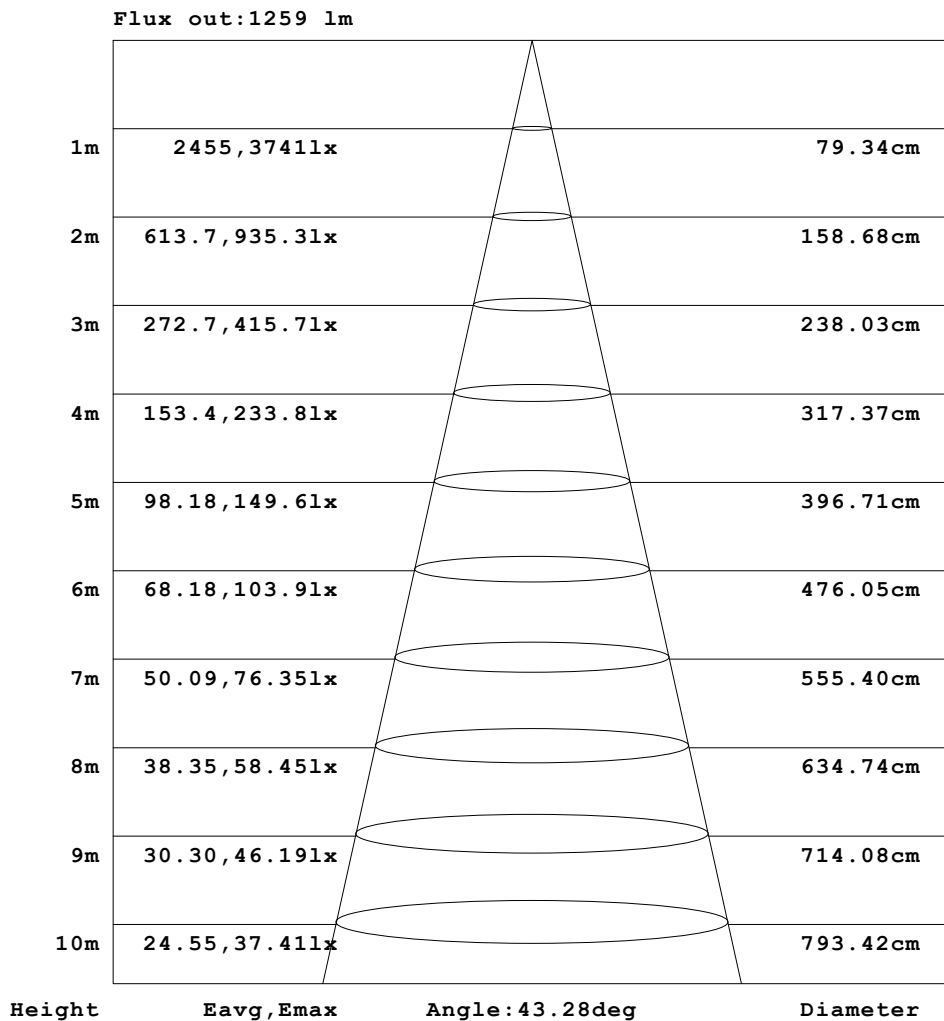


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-26

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: --

AAI Figure

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	



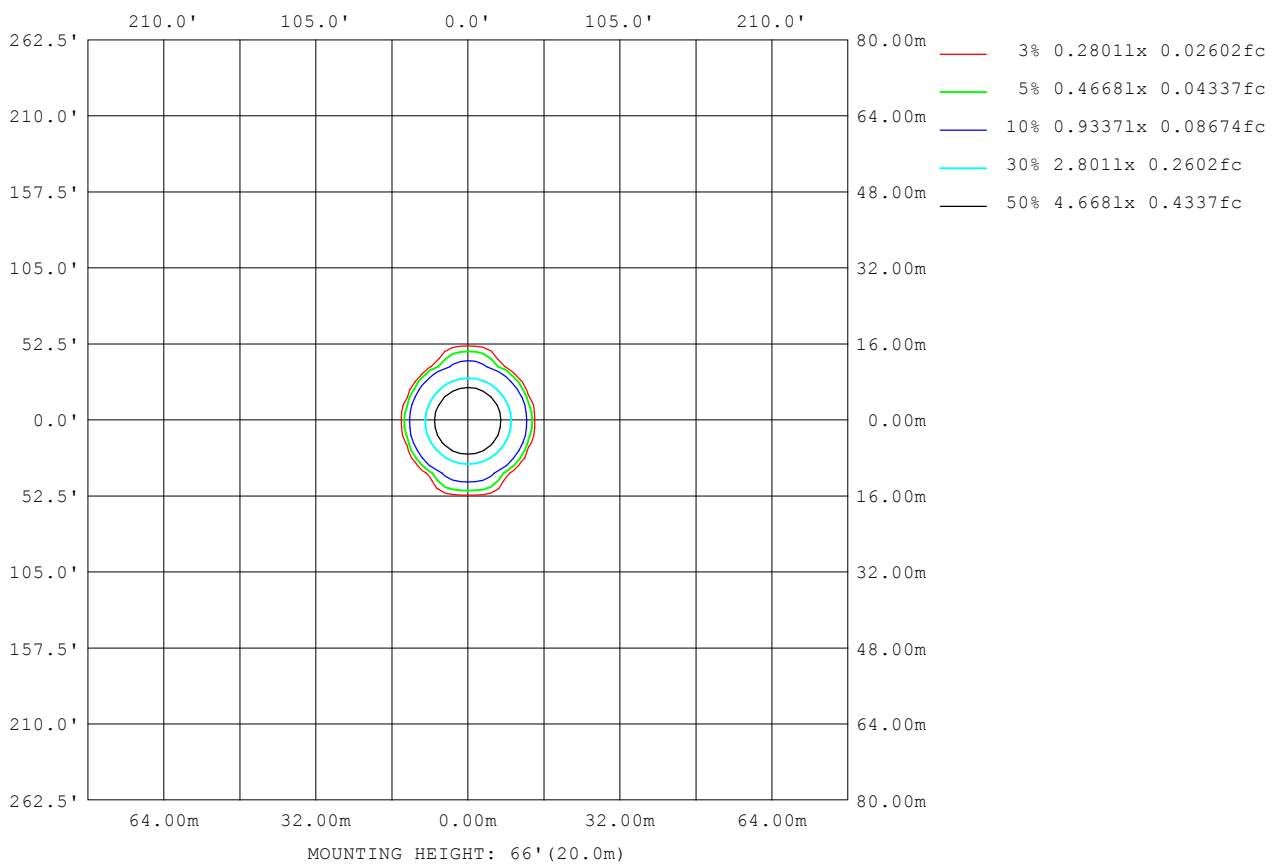
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: --

ISOLUX DIAGRAM

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	



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: --

LED Avg.L Report

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	

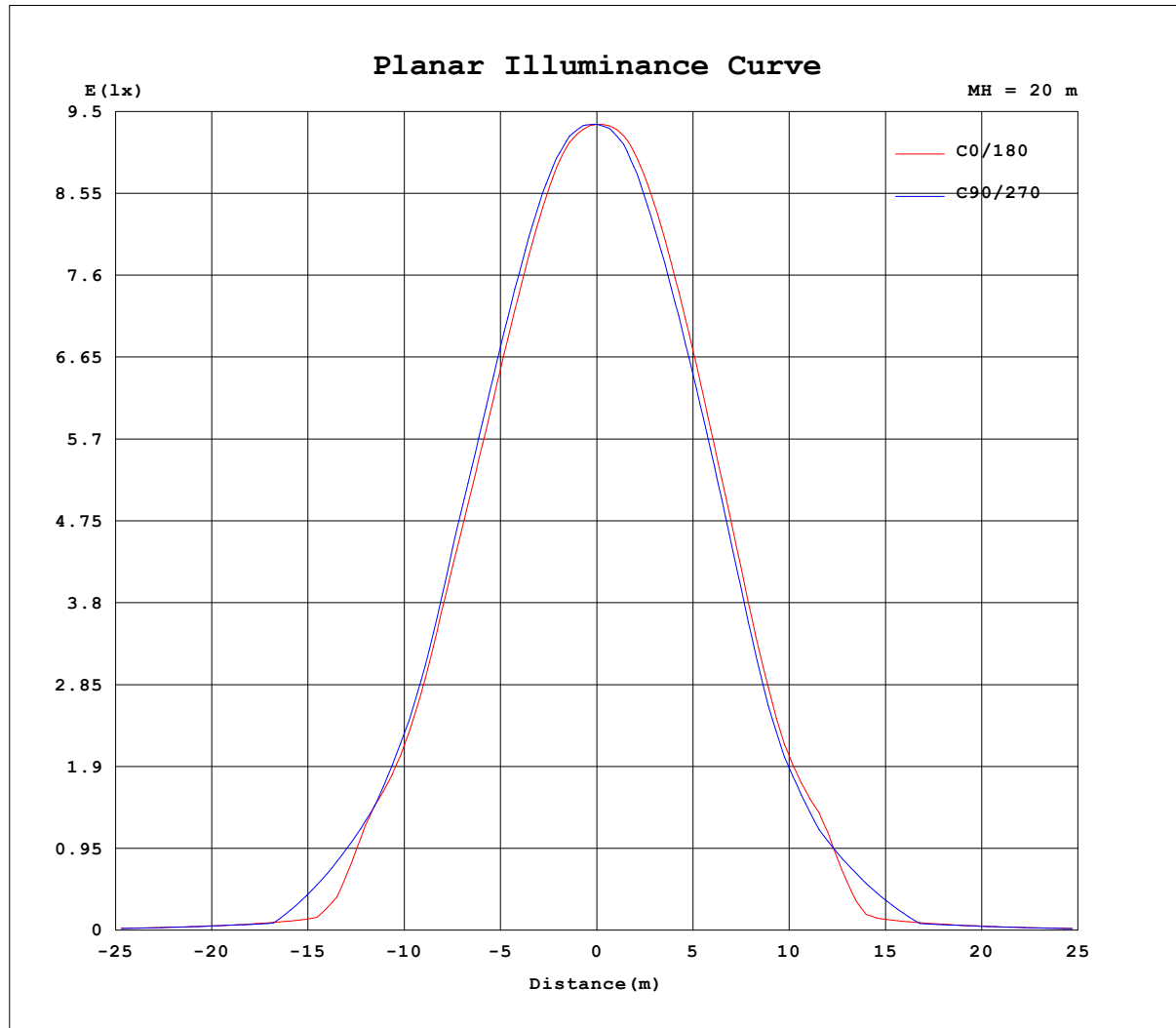
AvgL	cd/m2
L_0~180 (65) av	2711
L_0~180 (75) av	1970
L_0~180 (85) av	1099
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	2729
L_45 (75) av	0
L_45 (85) av	0

Standard: GB/T 29293-2012

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: --

Planar Illuminance Curve



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: --

```
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: --
```

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	

Table--3

UNIT: 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:220.14V I:0.1315A P:27.923W PF:0.9644 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-5	DIM.: --	
MFR.:	SUR.:126	

Table--4

UNIT: 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: --
```