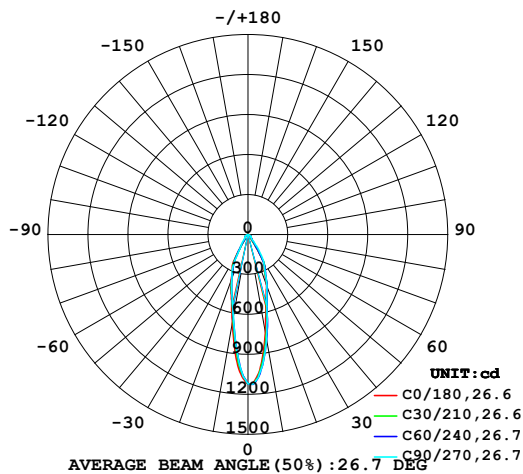


LUMINAIRE PHOTOMETRIC TEST REPORT

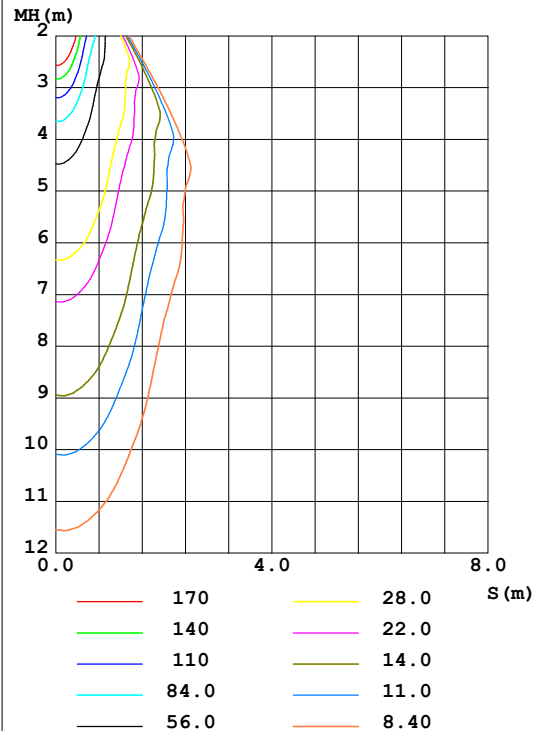
Test:U:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 57.01 lm/W			
MODEL	CXA 1507 9335 200MA	I _{max} (cd)	1125	S/MH(C0/180)	0.42
NOMINAL POWER(W)	8	LOR(%)	64.2	S/MH(C90/270)	0.39
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	472.49	η UP,DN(C0-180)	0.0,34.3
NOMINAL FLUX(lm)	736	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,29.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220	η down(%)	64.2	CIBSE SHR MAX	0.55

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:2020-10-24

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:

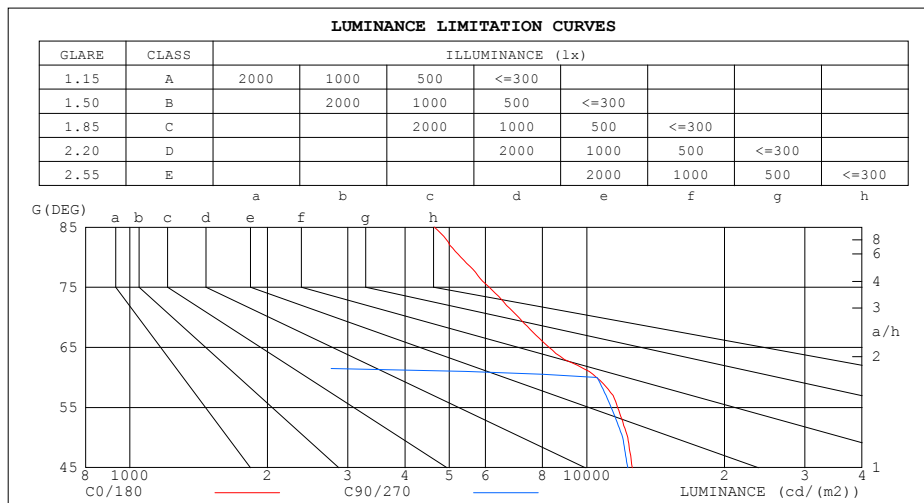
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	757.2	798.2	802.1	740.1	681.2	642.4	635.6	674.2	0~ 10	84.55	84.55	17.9,11.5
20	407.6	421.9	417.6	400.7	375.6	360.4	356.0	379.4	10~ 20	143.8	228.4	48.3,31
30	222.1	220.6	237.5	197.1	152.1	126.7	117.9	170.5	20~ 30	131.1	359.5	76.1,48.8
40	41.09	40.99	40.46	39.83	39.24	38.68	38.51	39.45	30~ 40	49.57	409.0	86.6,55.6
50	33.06	32.70	32.24	31.23	30.49	30.02	30.12	30.96	40~ 50	27.57	436.6	92.4,59.3
60	21.95	22.40	22.03	20.85	19.71	18.74	18.25	19.93	50~ 60	23.28	459.9	97.3,62.5
70	10.14	0	0	0	9.372	0	0	0	60~ 70	10.03	469.9	99.5,63.8
80	3.850	0	0	0	3.322	0	0	0	70~ 80	2.323	472.3	99.9,64.2
90	0.0587	0	0	0	0.0255	0	0	0	80~ 90	0.2424	472.5	100,64.2
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:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	4637	0
80	5301	0
75	6117	0
70	7090	0
65	8273	0
60	10493	10532
55	11686	11308
50	12293	11988
45	12568	12287

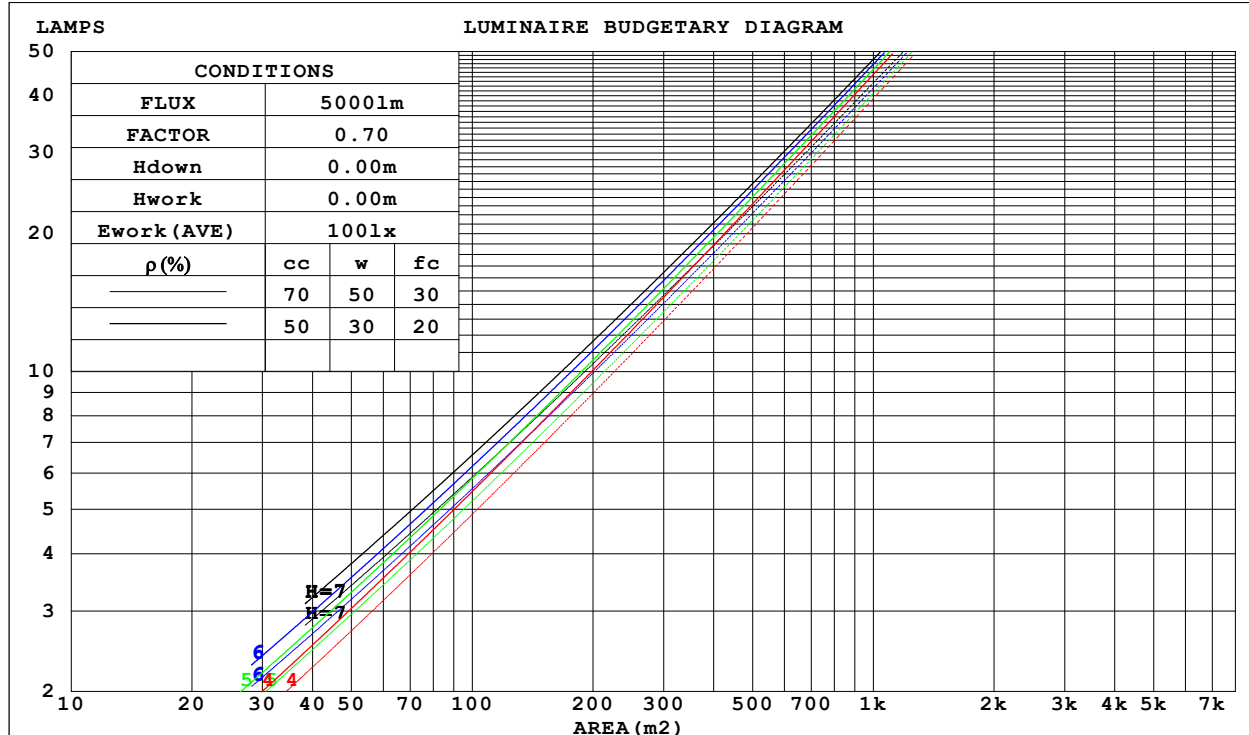
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

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	.76	.76	.76	.75	.75	.75	.71	.71	.71	.68	.68	.68	.66	.66	.66	.64
1.0	.71	.69	.68	.70	.68	.67	.67	.66	.65	.65	.64	.63	.62	.62	.61	.60
2.0	.66	.64	.61	.65	.63	.61	.63	.61	.59	.61	.59	.58	.59	.58	.57	.56
3.0	.62	.59	.56	.61	.58	.56	.59	.57	.55	.58	.56	.54	.56	.55	.53	.52
4.0	.58	.54	.52	.57	.54	.51	.56	.53	.51	.55	.52	.50	.53	.51	.50	.49
5.0	.55	.51	.48	.54	.51	.48	.53	.50	.48	.52	.49	.47	.51	.49	.47	.46
6.0	.52	.48	.45	.51	.48	.45	.50	.47	.45	.49	.46	.44	.48	.46	.44	.43
7.0	.49	.45	.43	.48	.45	.42	.48	.44	.42	.47	.44	.42	.46	.44	.42	.41
8.0	.46	.43	.40	.46	.43	.40	.45	.42	.40	.45	.42	.40	.44	.42	.40	.39
9.0	.44	.41	.38	.44	.40	.38	.43	.40	.38	.43	.40	.38	.42	.40	.38	.37
10.0	.42	.39	.36	.42	.39	.36	.41	.38	.36	.41	.38	.36	.41	.38	.36	.35



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

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	.115	.065	.021	.110	.063	.020	.102	.059	.019	.095	.055	.018	.088	.051	.016				
2.0	.110	.060	.018	.106	.058	.018	.099	.055	.017	.093	.052	.016	.087	.049	.016				
3.0	.104	.055	.017	.101	.054	.016	.095	.051	.016	.090	.049	.015	.085	.047	.014				
4.0	.098	.051	.015	.095	.050	.015	.090	.048	.014	.086	.046	.014	.082	.044	.013				
5.0	.093	.047	.014	.091	.046	.014	.086	.045	.013	.082	.043	.013	.078	.042	.013				
6.0	.088	.044	.013	.086	.043	.012	.082	.042	.012	.079	.041	.012	.075	.040	.012				
7.0	.083	.041	.012	.082	.041	.012	.078	.040	.011	.075	.039	.011	.072	.038	.011				
8.0	.079	.039	.011	.078	.038	.011	.075	.037	.011	.072	.036	.011	.069	.036	.010				
9.0	.076	.037	.010	.074	.036	.010	.072	.035	.010	.069	.035	.010	.067	.034	.010				
10.0	.072	.035	.010	.071	.034	.010	.069	.034	.009	.066	.033	.009	.064	.032	.009				

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	.122	.122	.122	.105	.105	.105	.071	.071	.071	.041	.041	.041	.013	.013	.013	
1.0	.110	.101	.093	.094	.087	.080	.064	.060	.055	.037	.035	.032	.012	.011	.010	
2.0	.100	.085	.072	.086	.073	.063	.059	.051	.044	.034	.029	.026	.011	.010	.008	
3.0	.092	.073	.058	.079	.063	.050	.054	.044	.035	.031	.026	.021	.010	.008	.007	
4.0	.085	.063	.047	.073	.055	.041	.050	.038	.029	.029	.022	.017	.009	.007	.006	
5.0	.080	.056	.038	.068	.048	.033	.047	.034	.024	.027	.020	.014	.009	.006	.005	
6.0	.075	.050	.032	.064	.043	.028	.044	.030	.020	.026	.018	.012	.008	.006	.004	
7.0	.070	.045	.027	.060	.039	.024	.042	.027	.017	.024	.016	.010	.008	.005	.003	
8.0	.066	.041	.024	.057	.036	.020	.040	.025	.015	.023	.015	.009	.007	.005	.003	
9.0	.063	.038	.020	.054	.033	.018	.038	.023	.013	.022	.014	.008	.007	.004	.003	
10.0	.060	.035	.018	.052	.030	.016	.036	.021	.011	.021	.013	.007	.007	.004	.002	

H(β) Range:-90 - 90DEG
 H(β) Interval: 1.0DEG
 Test Speed: HIGH
 Temperature:26DEG
 Operators:
 Test Date:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm										
NAME: LPA-LED-QP01-COI					TYPE:--			SERIAL No.:		
SPEC.:2121-A-58.8					DIM.: --					
MFR.:					SUR.:73					
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	17.8	18.7	18.0	18.9	19.0	18.0	18.9	18.2	19.0	19.2
3H	18.6	19.4	18.8	19.6	19.8	17.8	18.6	18.0	18.8	19.0
4H	18.9	19.7	19.1	19.9	20.1	17.7	18.5	18.0	18.7	19.0
6H	19.0	19.8	19.3	20.1	20.3	17.6	18.4	17.9	18.6	18.9
8H	19.1	19.8	19.4	20.1	20.4	17.6	18.3	17.9	18.6	18.8
12H	19.1	19.8	19.5	20.1	20.4	17.5	18.2	17.8	18.5	18.8
4H 2H	18.1	18.9	18.4	19.2	19.4	18.2	19.0	18.5	19.3	19.5
3H	19.0	19.7	19.4	20.0	20.3	18.0	18.7	18.4	19.0	19.3
4H	19.4	20.0	19.7	20.3	20.6	17.9	18.6	18.3	18.9	19.2
6H	19.7	20.2	20.0	20.6	20.9	17.8	18.4	18.2	18.7	19.1
8H	19.7	20.3	20.1	20.6	21.0	17.8	18.3	18.2	18.7	19.0
12H	19.8	20.3	20.2	20.6	21.0	17.7	18.2	18.2	18.6	19.0
8H 4H	19.3	19.8	19.6	20.1	20.5	17.9	18.4	18.3	18.7	19.1
6H	19.5	19.9	19.9	20.3	20.7	17.8	18.2	18.2	18.6	19.0
8H	19.6	20.0	20.0	20.4	20.8	17.7	18.1	18.2	18.5	19.0
12H	19.6	20.0	20.1	20.4	20.9	17.7	18.0	18.1	18.4	18.9
12H 4H	19.2	19.7	19.6	20.1	20.4	17.8	18.3	18.2	18.7	19.1
6H	19.4	19.8	19.9	20.2	20.7	17.7	18.1	18.2	18.5	19.0
8H	19.5	19.9	20.0	20.3	20.8	17.7	18.0	18.1	18.4	18.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.6					+ 1.5 / - 1.4				
1.5H	+ 0.3 / - 0.4					+ 2.6 / - 2.4				
2.0H	+ 0.5 / - 1.0					+ 0.8 / - 1.1				

CIE Pub.117, 736.0 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -1.1)
Area: 0.00418326 m2

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

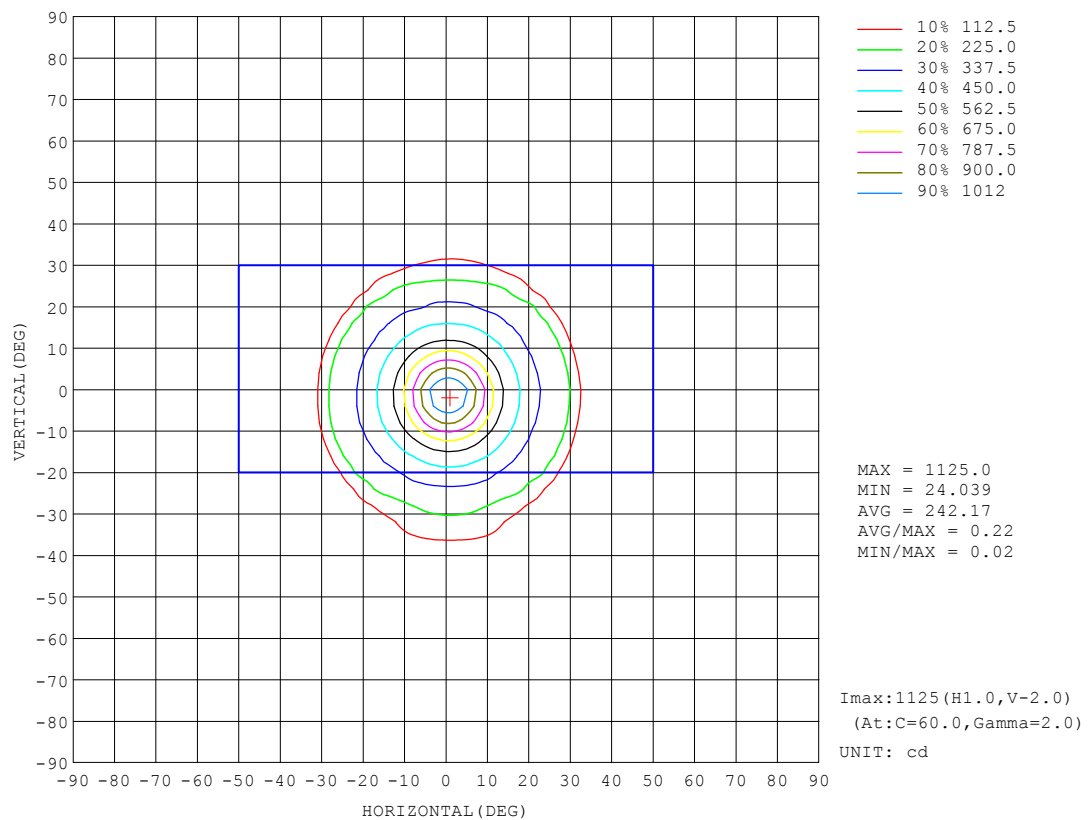
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	53	49	46	53	49	46	52	48	46	43
0.80	58	54	51	58	54	51	57	53	51	48
1.00	62	58	55	61	57	55	60	57	55	52
1.25	65	61	58	64	60	58	63	60	58	55
1.50	67	63	61	66	63	60	64	62	60	57
2.00	69	66	63	68	65	63	66	64	62	58
2.50	70	67	65	69	66	64	67	65	63	59
3.00	71	69	67	70	68	66	68	66	65	60
4.00	73	71	69	71	69	68	69	67	66	62
5.00	73	72	70	72	71	69	69	68	67	62
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:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

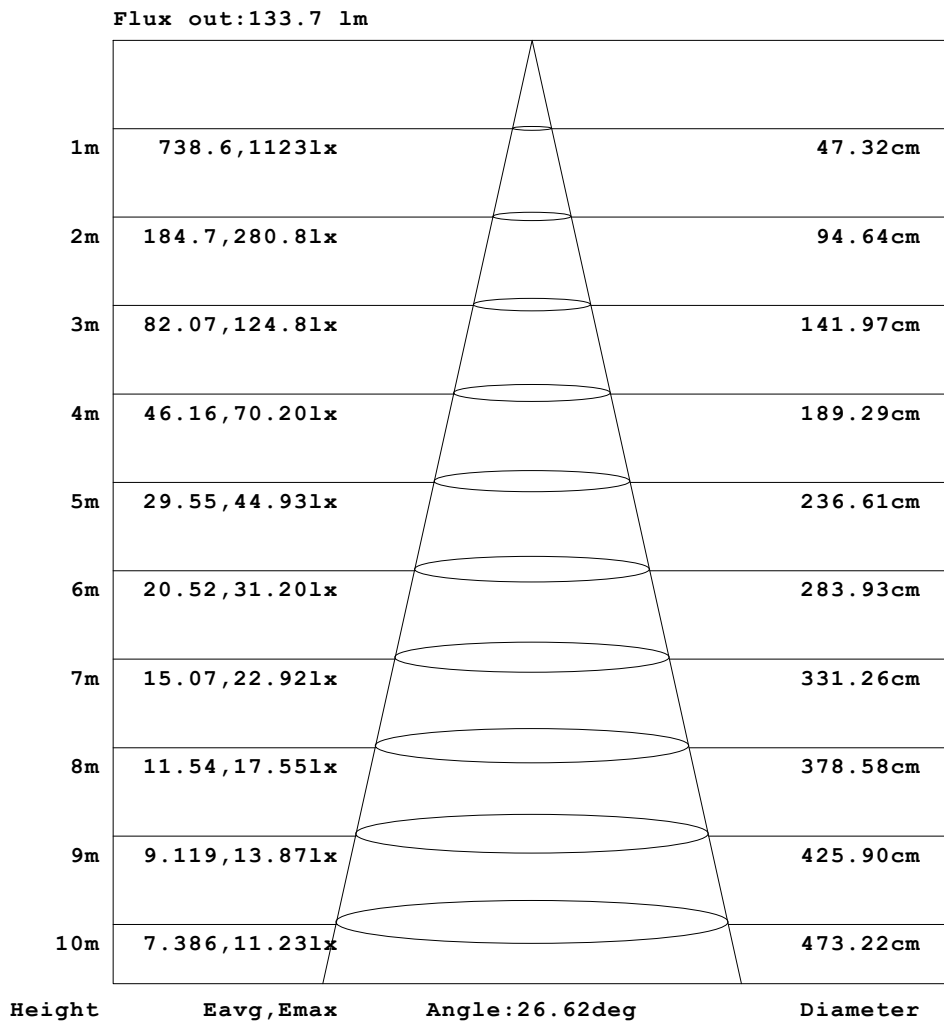


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	



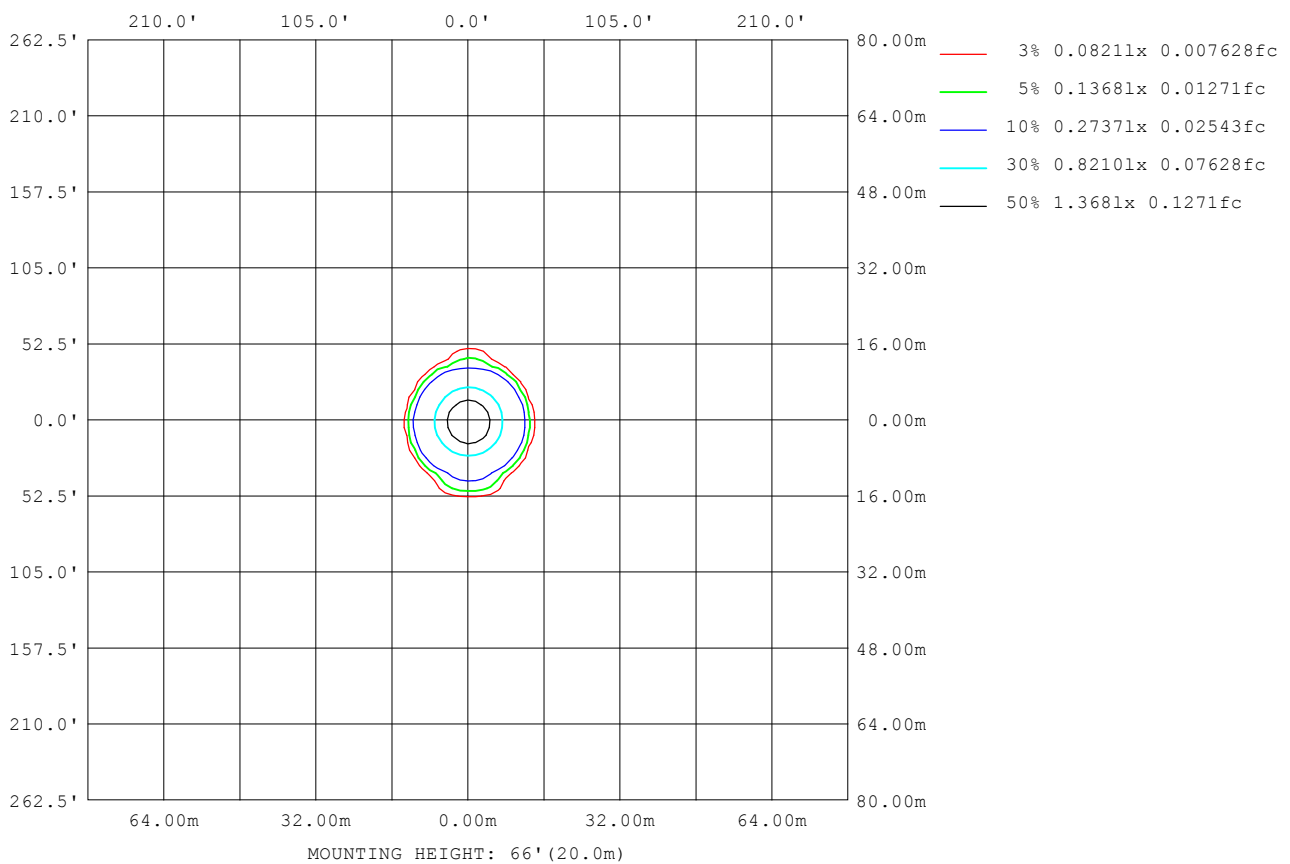
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	



H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

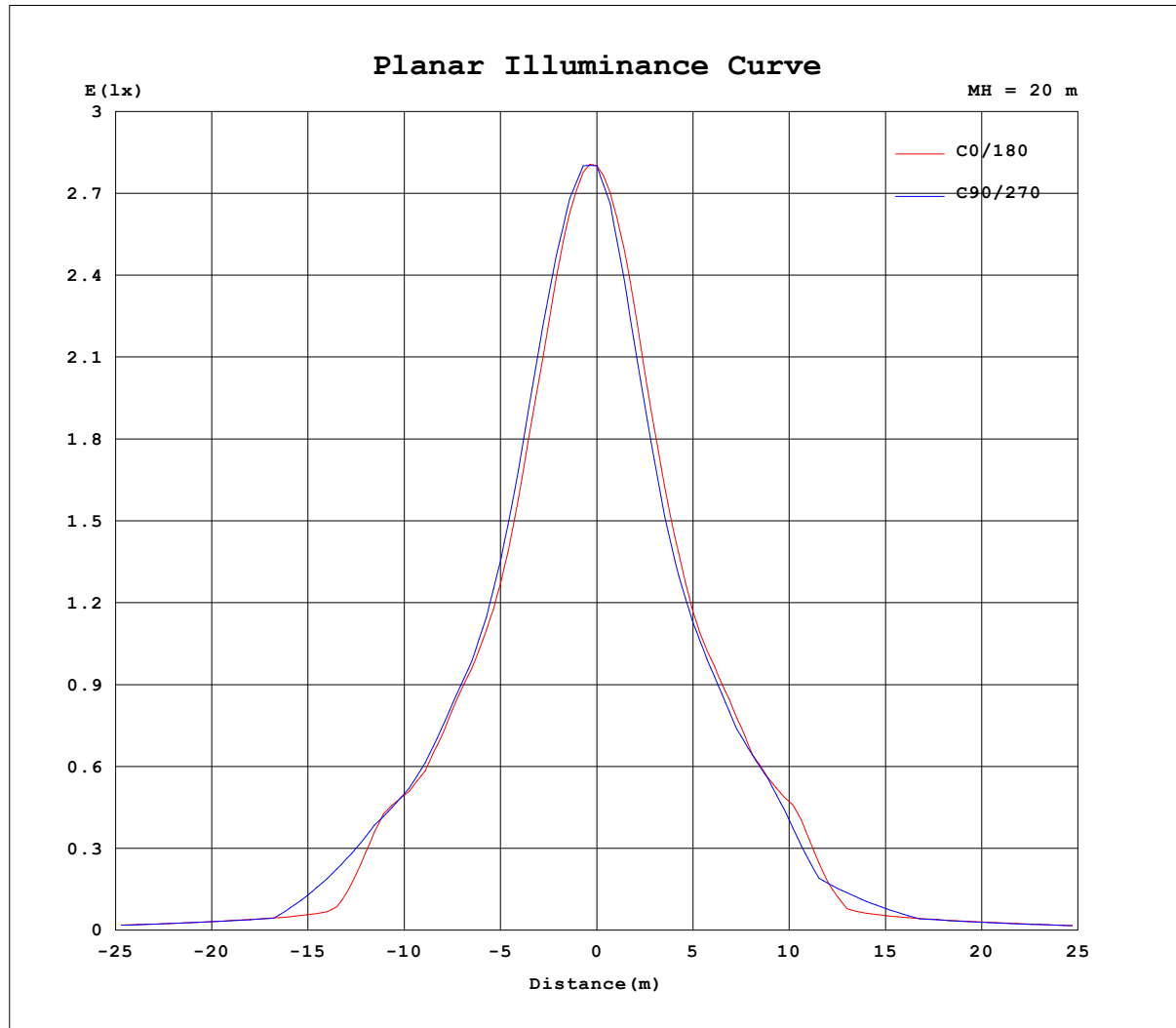
AvgL	cd/m2
L_0~180 (65) av	7975
L_0~180 (75) av	5812
L_0~180 (85) av	4072
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	8161
L_45 (75) av	0
L_45 (85) av	0

Standard: GB/T 29293-2012

H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:2020-10-24

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:220.11V I:0.0718A P:8.2886W PF:0.5242 Freq:60.00Hz Lamp Flux:736x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

Table--1

UNIT: cd

[illegible]

```
H( $\beta$ ) Range:-90 - 90DEG
H( $\beta$ ) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24
```

```
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: --
```

```
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: --
```