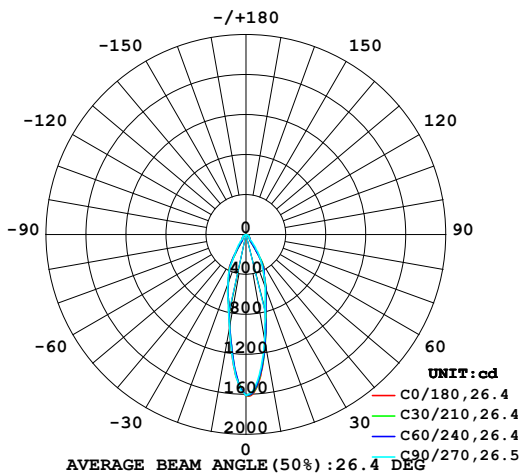


LUMINAIRE PHOTOMETRIC TEST REPORT

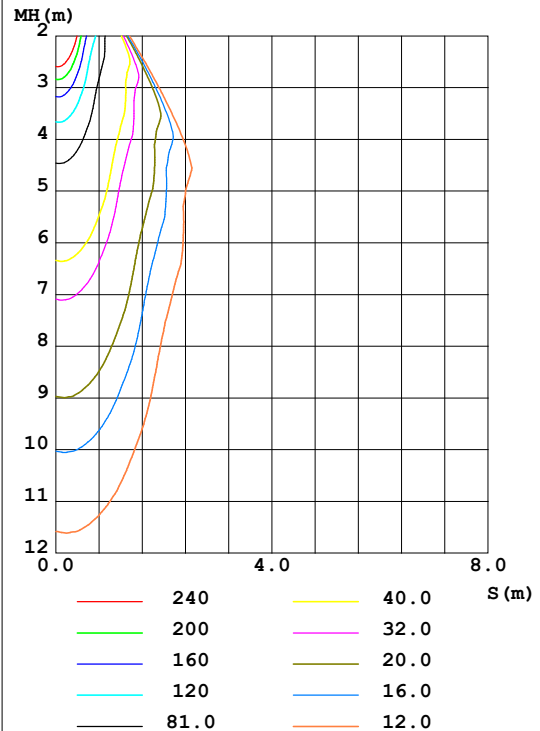
Test:U:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 46.09 lm/W			
MODEL	CXA 1512 9335 350MA	I _{max} (cd)	1618	S/MH(C0/180)	0.41
NOMINAL POWER(W)	14	LOR(%)	63.0	S/MH(C90/270)	0.41
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	673.73	η UP,DN(C0-180)	0.0,32.5
NOMINAL FLUX(lm)	1070	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,30.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220	η down(%)	63.0	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:

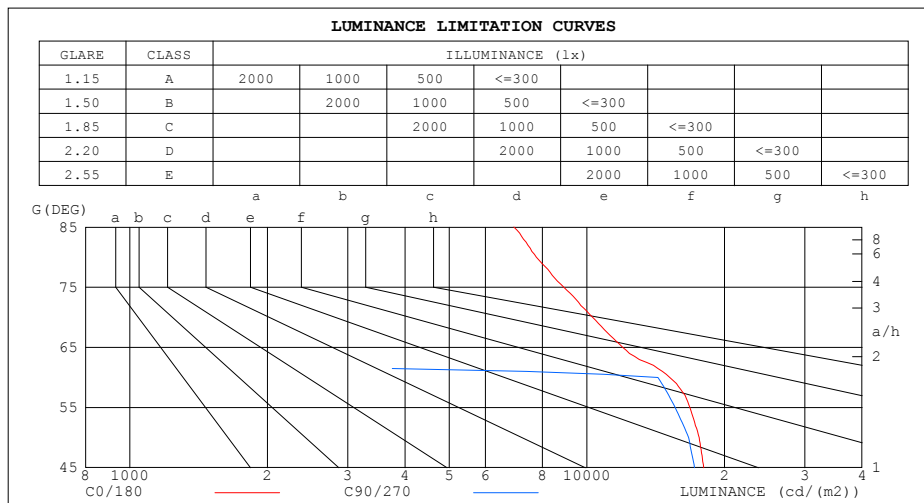
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1110	1111	1074	1001	956.1	935.0	952.9	1018	0~ 10	120.9	120.9	17.9,11.3
20	588.6	588.8	569.0	557.0	528.5	526.8	532.2	562.1	10~ 20	204.6	325.5	48.3,30.4
30	329.2	299.7	299.7	253.4	202.1	198.2	217.0	272.3	20~ 30	187.3	512.8	76.1,47.9
40	58.68	58.00	56.90	55.57	55.90	56.26	56.39	57.88	30~ 40	70.09	582.9	86.5,54.5
50	47.37	46.01	44.92	43.56	43.35	43.85	44.45	45.55	40~ 50	39.42	622.3	92.4,58.2
60	31.75	31.14	29.94	28.64	27.65	27.97	28.48	30.11	50~ 60	33.37	655.7	97.3,61.3
70	14.74	0	0	0	13.19	0	0	0	60~ 70	14.39	670.0	99.5,62.6
80	5.636	0	0	0	4.649	0	0	0	70~ 80	3.326	673.4	99.9,62.9
90	0.0868	0	0	0	0.0306	0	0	0	80~ 90	0.3504	673.7	100,63
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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 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	6930	0
80	7758	0
75	8906	0
70	10303	0
65	11988	0
60	15180	14316
55	16801	15600
50	17615	16704
45	18020	17210

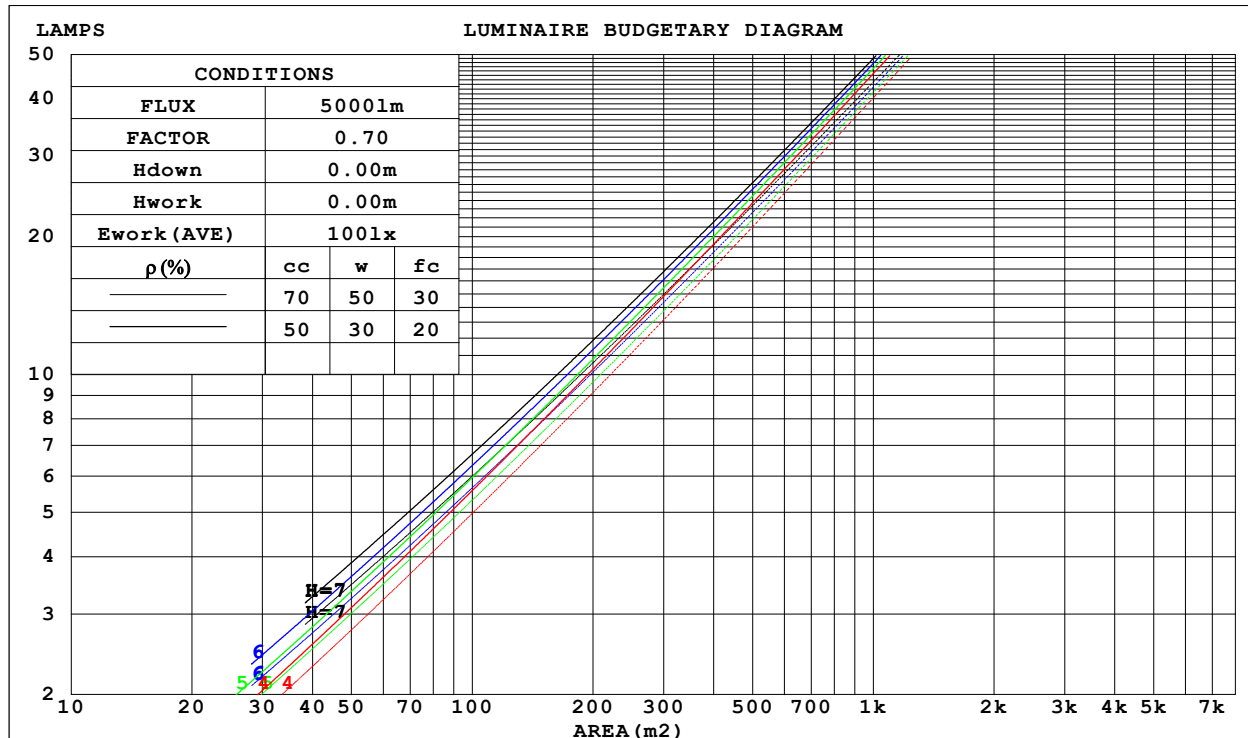
H(β) Range: -90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature: 26DEG
Operators:
Test Date: 2020-10-24

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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 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	.75	.75	.75	.73	.73	.73	.70	.70	.70	.67	.67	.67	.64	.64	.64	.63
1.0	.70	.68	.67	.68	.67	.66	.66	.65	.64	.63	.63	.62	.61	.61	.60	.59
2.0	.65	.62	.60	.64	.61	.60	.62	.60	.58	.60	.58	.57	.58	.57	.56	.55
3.0	.61	.57	.55	.60	.57	.55	.58	.56	.54	.57	.55	.53	.55	.53	.52	.51
4.0	.57	.53	.51	.56	.53	.51	.55	.52	.50	.54	.51	.49	.52	.50	.49	.48
5.0	.54	.50	.47	.53	.50	.47	.52	.49	.47	.51	.48	.46	.50	.48	.46	.45
6.0	.51	.47	.44	.50	.47	.44	.49	.46	.44	.48	.46	.44	.47	.45	.43	.42
7.0	.48	.44	.42	.47	.44	.42	.47	.44	.41	.46	.43	.41	.45	.43	.41	.40
8.0	.46	.42	.39	.45	.42	.39	.44	.41	.39	.44	.41	.39	.43	.41	.39	.38
9.0	.43	.40	.37	.43	.40	.37	.42	.39	.37	.42	.39	.37	.41	.39	.37	.36
10.0	.41	.38	.36	.41	.38	.36	.41	.38	.36	.40	.37	.35	.40	.37	.35	.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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 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	.113	.064	.020	.108	.062	.020	.100	.058	.018	.093	.054	.017	.086	.050	.016	
2.0	.108	.059	.018	.104	.057	.018	.097	.054	.017	.091	.051	.016	.086	.048	.015	
3.0	.102	.054	.016	.099	.053	.016	.093	.050	.015	.088	.048	.015	.083	.046	.014	
4.0	.096	.050	.015	.094	.049	.014	.089	.047	.014	.084	.045	.014	.080	.043	.013	
5.0	.091	.046	.013	.089	.046	.013	.085	.044	.013	.081	.043	.013	.077	.041	.012	
6.0	.086	.043	.012	.084	.043	.012	.081	.041	.012	.077	.040	.012	.074	.039	.012	
7.0	.082	.040	.011	.080	.040	.011	.077	.039	.011	.074	.038	.011	.071	.037	.011	
8.0	.078	.038	.011	.076	.038	.011	.073	.037	.010	.071	.036	.010	.068	.035	.010	
9.0	.074	.036	.010	.073	.036	.010	.070	.035	.010	.068	.034	.010	.065	.033	.010	
10.0	.071	.034	.009	.070	.034	.009	.067	.033	.009	.065	.032	.009	.063	.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	.120	.120	.120	.103	.103	.103	.070	.070	.070	.040	.040	.040	.013	.013	.013	
1.0	.108	.099	.091	.092	.085	.078	.063	.058	.054	.036	.034	.032	.012	.011	.010	
2.0	.098	.083	.071	.084	.072	.061	.058	.050	.043	.033	.029	.025	.011	.009	.008	
3.0	.090	.072	.056	.078	.062	.049	.053	.043	.034	.031	.025	.020	.010	.008	.007	
4.0	.084	.062	.046	.072	.054	.040	.049	.037	.028	.029	.022	.017	.009	.007	.005	
5.0	.078	.055	.038	.067	.047	.033	.046	.033	.023	.027	.019	.014	.009	.006	.005	
6.0	.073	.049	.032	.063	.042	.028	.043	.030	.019	.025	.017	.012	.008	.006	.004	
7.0	.069	.044	.027	.059	.038	.023	.041	.027	.017	.024	.016	.010	.008	.005	.003	
8.0	.065	.040	.023	.056	.035	.020	.039	.024	.014	.023	.014	.008	.007	.005	.003	
9.0	.062	.037	.020	.053	.032	.017	.037	.022	.012	.021	.013	.007	.007	.004	.002	
10.0	.059	.034	.018	.051	.030	.015	.035	.021	.011	.020	.012	.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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 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	19.0	19.9	19.2	20.1	20.3	18.8	19.7	19.0	19.8	20.0	
	3H	19.8	20.7	20.1	20.8	21.1	18.6	19.4	18.8	19.6	19.8
	4H	20.1	20.9	20.4	21.1	21.3	18.5	19.3	18.8	19.5	19.7
	6H	20.3	21.1	20.6	21.3	21.5	18.4	19.2	18.7	19.4	19.7
	8H	20.4	21.1	20.7	21.3	21.6	18.4	19.1	18.7	19.3	19.6
	12H	20.4	21.1	20.7	21.4	21.6	18.3	19.0	18.6	19.3	19.6
4H	2H	19.3	20.1	19.6	20.4	20.6	19.1	19.9	19.3	20.1	20.3
	3H	20.2	21.0	20.6	21.2	21.5	18.9	19.6	19.2	19.8	20.1
	4H	20.6	21.3	21.0	21.6	21.9	18.8	19.4	19.1	19.7	20.0
	6H	20.9	21.4	21.2	21.8	22.1	18.7	19.2	19.1	19.6	19.9
	8H	21.0	21.5	21.4	21.8	22.2	18.6	19.2	19.0	19.5	19.9
	12H	21.0	21.5	21.4	21.9	22.3	18.6	19.1	19.0	19.4	19.8
8H	4H	20.5	21.0	20.9	21.3	21.7	18.7	19.2	19.1	19.6	20.0
	6H	20.7	21.2	21.1	21.5	22.0	18.6	19.0	19.0	19.4	19.8
	8H	20.8	21.2	21.3	21.6	22.0	18.6	18.9	19.0	19.4	19.8
	12H	20.9	21.2	21.3	21.6	22.1	18.5	18.8	19.0	19.3	19.7
12H	4H	20.4	20.9	20.8	21.3	21.7	18.7	19.1	19.1	19.5	19.9
	6H	20.7	21.0	21.1	21.5	21.9	18.6	18.9	19.0	19.4	19.8
	8H	20.8	21.1	21.2	21.5	22.0	18.5	18.8	19.0	19.3	19.7
Variations with the observer position at spacings:											
S = 1.0H	+ 0.4 / - 0.5					+ 1.4 / - 1.3					
1.5H	+ 0.3 / - 0.4					+ 2.3 / - 2.2					
2.0H	+ 0.5 / - 0.9					+ 0.8 / - 1.3					

CIE Pub.117, 1070 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 0.2$)
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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

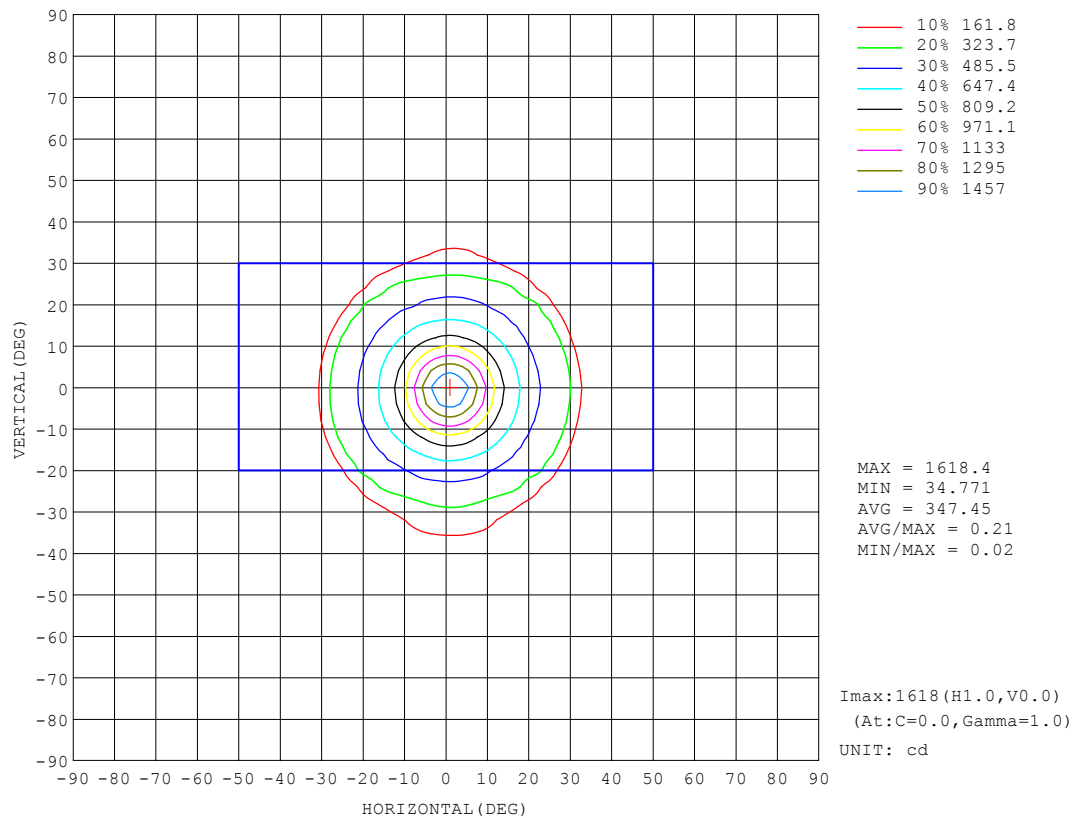
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	52	48	45	52	48	45	51	47	45	42
0.80	57	53	50	57	53	50	56	52	50	47
1.00	61	57	54	60	56	54	59	56	53	51
1.25	63	60	57	63	59	57	61	59	56	54
1.50	65	62	60	64	61	59	63	60	59	55
2.00	67	64	62	66	64	62	65	62	61	57
2.50	69	66	64	68	65	63	66	64	62	58
3.00	70	67	65	69	66	65	66	65	63	59
4.00	71	69	68	70	68	67	67	66	65	60
5.00	72	70	69	71	69	68	68	67	66	61
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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

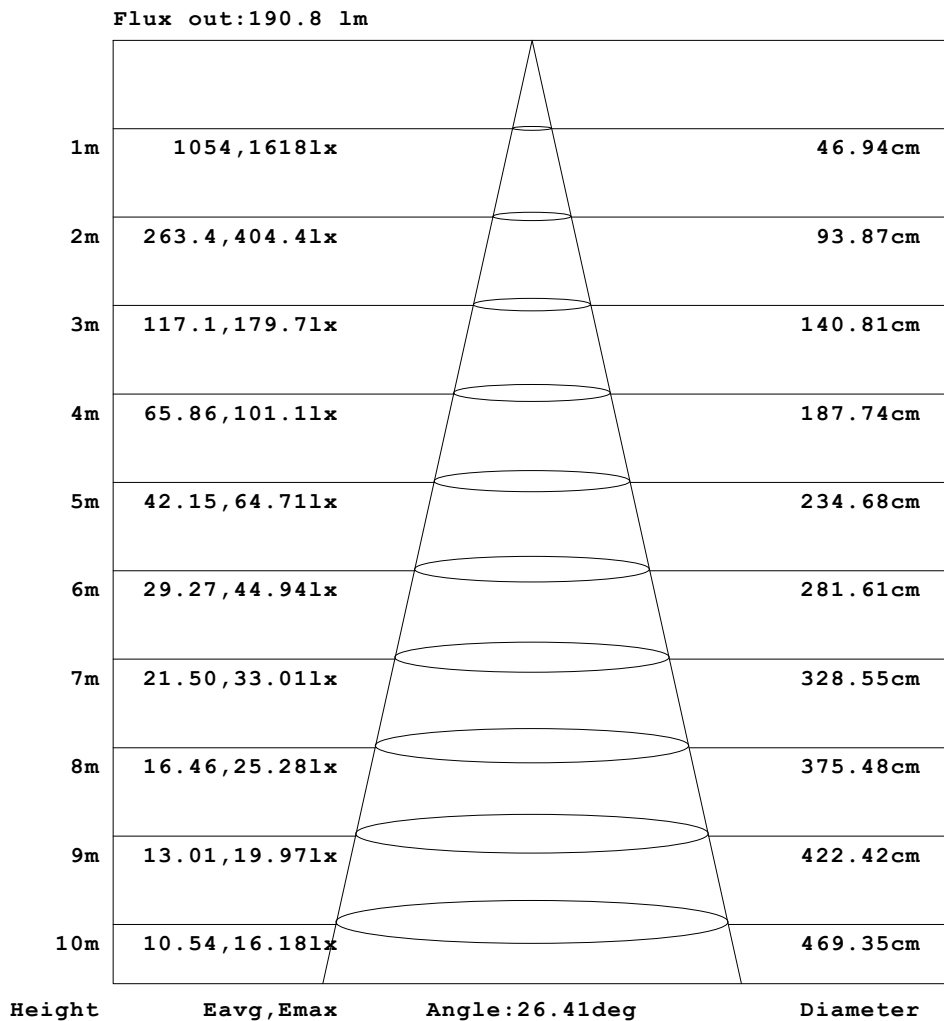


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-24

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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	



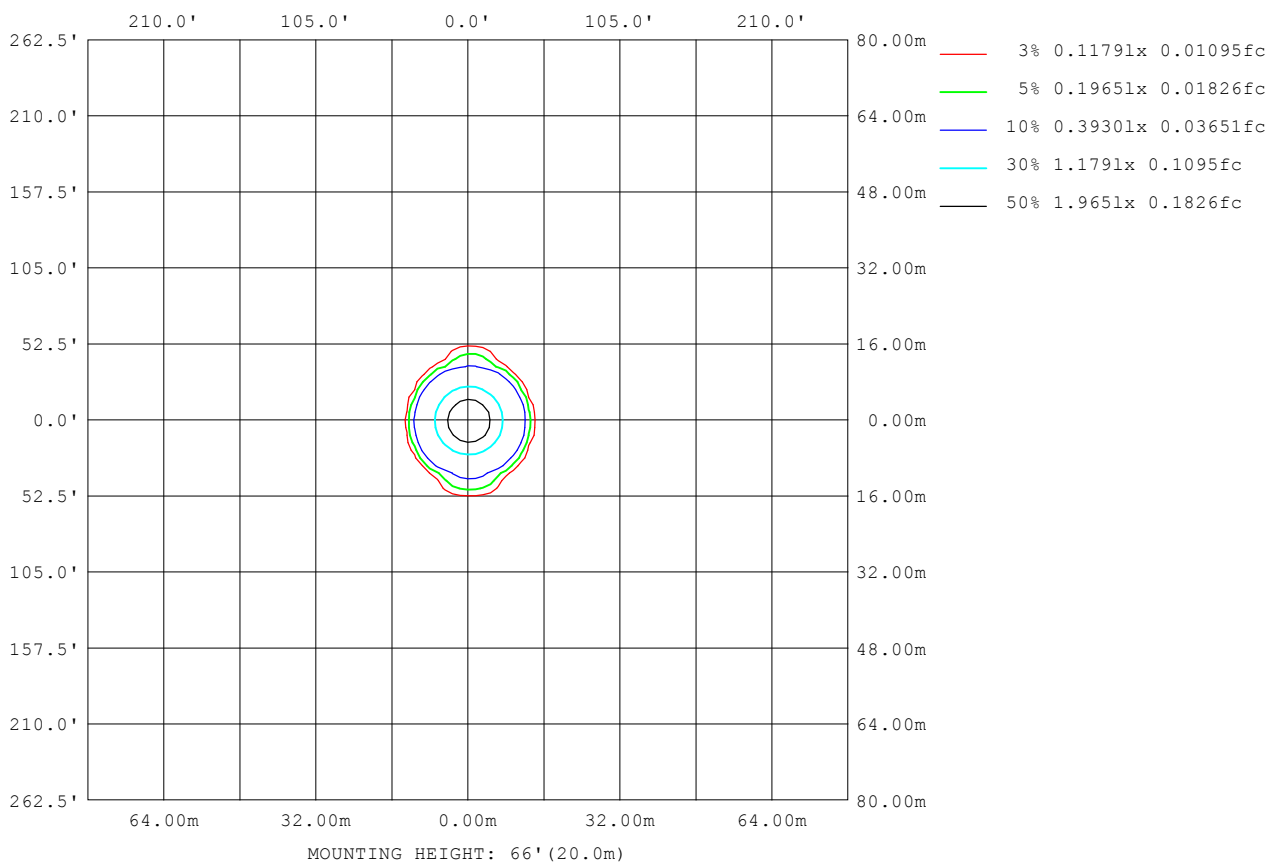
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 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:220.15V I:0.0710A P:14.618W PF:0.9356 Freq:60.00Hz Lamp Flux:1070x1 lm		
NAME: LPA-LED-QP01-COI	TYPE:--	SERIAL No.:
SPEC.:2121-A-58.8	DIM.: --	
MFR.:	SUR.:73	

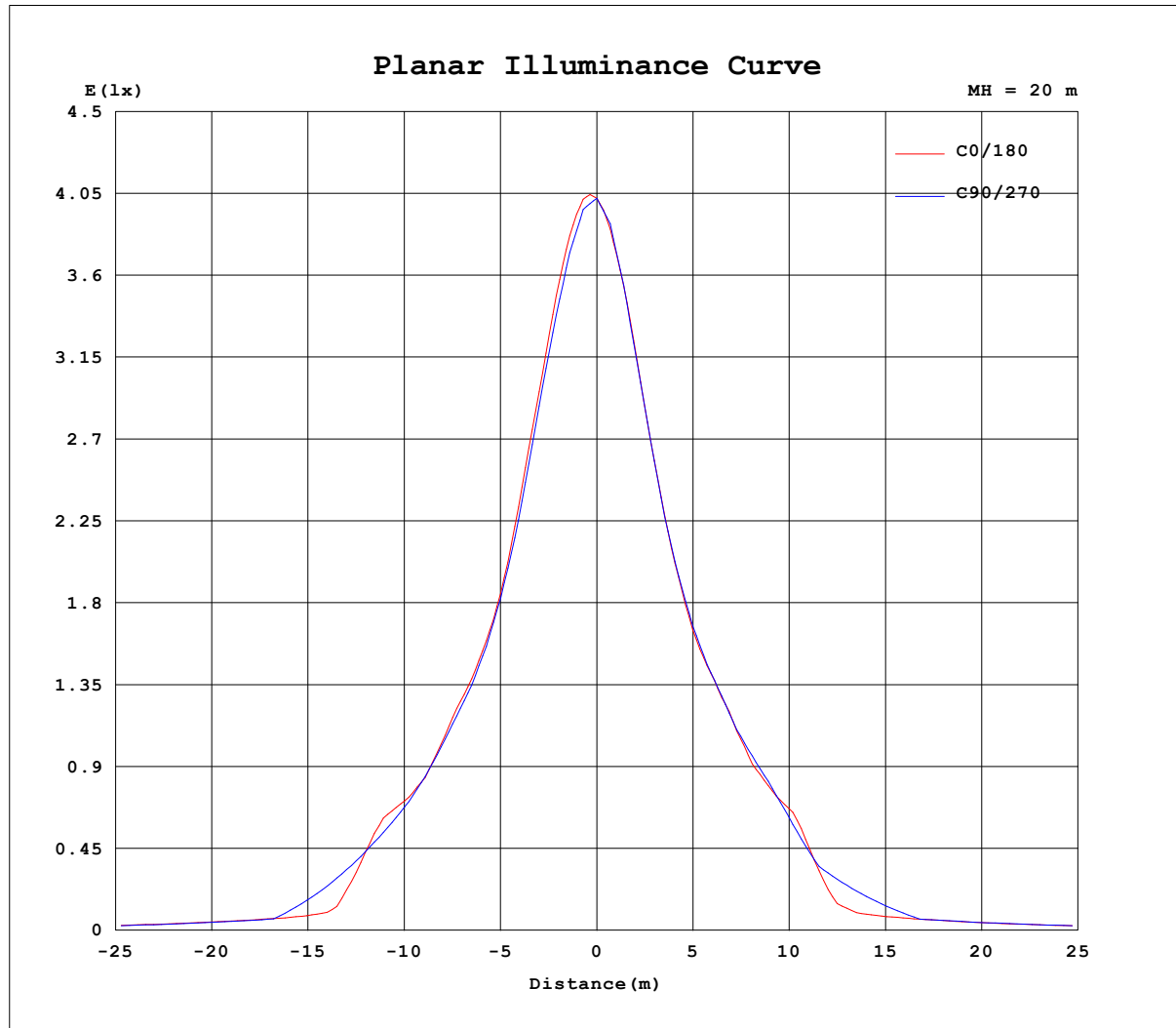
AvgL	cd/m2
L_0~180 (65) av	11411
L_0~180 (75) av	8332
L_0~180 (85) av	5861
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	11741
L_45 (75) av	0
L_45 (85) av	0

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: --

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