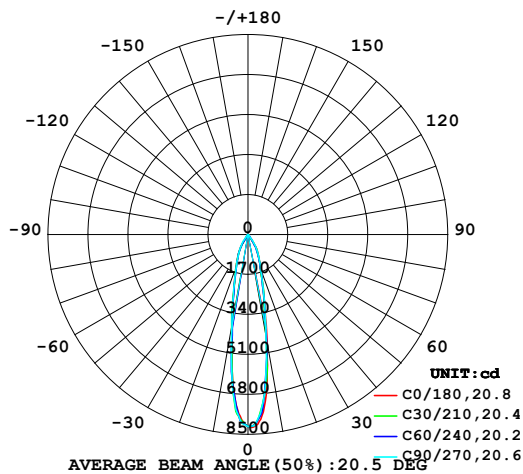


LUMINAIRE PHOTOMETRIC TEST REPORT

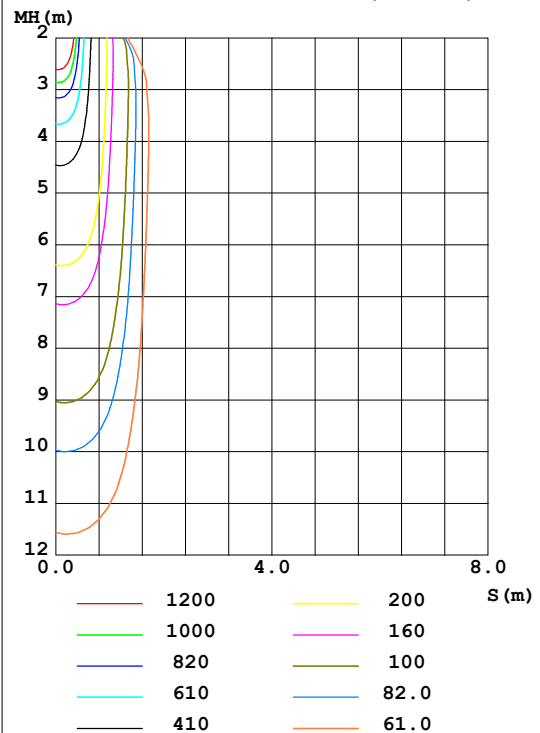
Test:U:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 72.52 lm/W			
MODEL	CXA 1830 9335 700MA	I _{max} (cd)	8204	S/MH(C0/180)	0.33
NOMINAL POWER(W)	28	LOR(%)	83.5	S/MH(C90/270)	0.34
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	2025.6	η UP,DN(C0-180)	0.0,43.4
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	0.00
TEST VOLTAGE(V)	220	η down(%)	83.5	CIBSE SHR MAX	1.00

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:

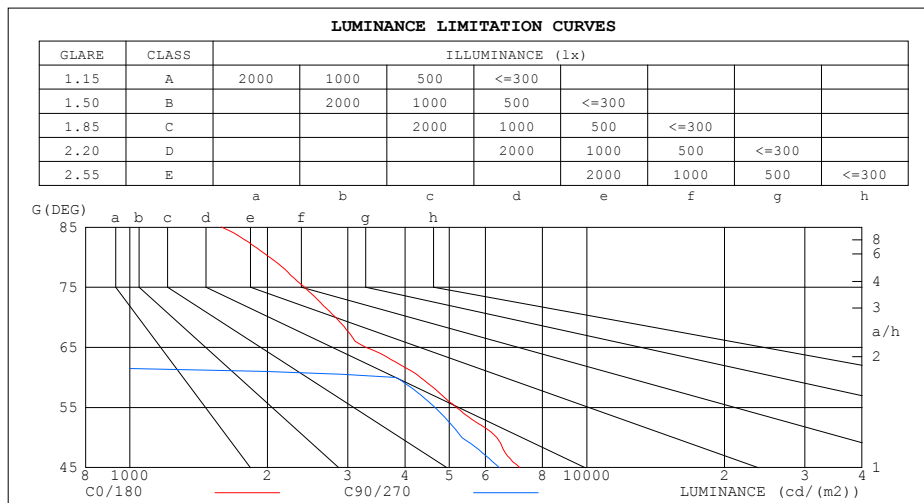
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	4702	4490	4437	4375	3925	3984	3980	4171	0- 10	579.3	579.3	28.6,23.9
20	1619	1577	1612	1647	1503	1501	1458	1450	10- 20	694.3	1274	62.9,52.5
30	795.4	715.5	761.8	718.9	663.0	605.8	657.7	633.3	20- 30	487.9	1762	87,72.6
40	86.14	73.28	70.98	72.64	70.34	63.93	62.56	70.70	30- 40	179.2	1941	95.8,80
50	50.96	44.55	42.70	41.42	41.48	38.72	39.02	41.99	40- 50	42.70	1983	97.9,81.8
60	26.96	24.09	23.83	23.27	21.11	20.94	20.44	22.25	50- 60	28.44	2012	99.3,83
70	12.02	0	0	0	9.838	0	0	0	60- 70	10.98	2023	99.9,83.4
80	4.375	0	0	0	3.181	0	0	0	70- 80	2.477	2025	100,83.5
90	0.1237	0	0	0	0.0236	0	0	0	80- 90	0.2331	2026	100,83.5
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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 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	1586	0
80	2022	0
75	2411	0
70	2820	0
65	3286	0
60	4326	3824
55	5192	4655
50	6362	5331
45	7139	6439

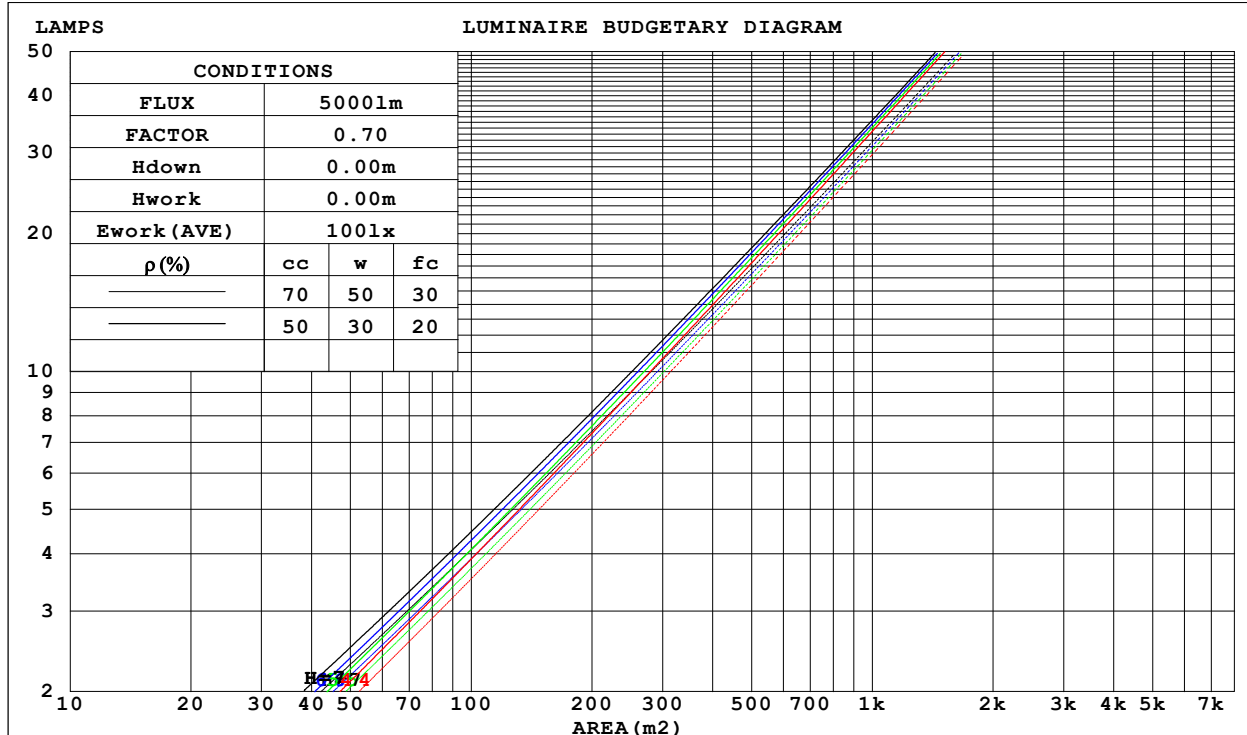
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-26

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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	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	.84
1.0	.94	.92	.90	.92	.90	.89	.88	.87	.86	.85	.84	.84	.83	.82	.81	.80
2.0	.88	.86	.83	.87	.84	.82	.84	.82	.81	.82	.80	.79	.80	.78	.77	.76
3.0	.84	.80	.78	.83	.80	.77	.81	.78	.76	.79	.77	.75	.77	.75	.74	.72
4.0	.80	.76	.73	.79	.75	.73	.77	.74	.72	.76	.73	.71	.74	.72	.70	.69
5.0	.76	.72	.69	.75	.72	.69	.74	.71	.68	.73	.70	.68	.72	.69	.67	.66
6.0	.73	.69	.66	.72	.69	.66	.71	.68	.65	.70	.67	.65	.69	.66	.65	.64
7.0	.70	.66	.63	.69	.66	.63	.68	.65	.63	.68	.65	.62	.67	.64	.62	.61
8.0	.67	.63	.60	.67	.63	.60	.66	.63	.60	.65	.62	.60	.64	.62	.60	.59
9.0	.65	.61	.58	.64	.61	.58	.64	.60	.58	.63	.60	.58	.62	.60	.58	.57
10.0	.62	.59	.56	.62	.58	.56	.62	.58	.56	.61	.58	.56	.60	.58	.56	.55



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: --

GONIOPHOTOMETERS SYSTEM TEST REPORT

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WEC AND CCEC

Test:U:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 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	.127	.072	.023	.122	.070	.022	.111	.064	.020	.102	.059	.019	.093	.054	.017				
2.0	.120	.066	.020	.115	.064	.020	.107	.059	.018	.099	.055	.017	.091	.052	.016				
3.0	.113	.060	.018	.109	.058	.018	.102	.055	.017	.095	.052	.016	.089	.049	.015				
4.0	.106	.055	.016	.103	.054	.016	.097	.051	.015	.091	.049	.015	.086	.047	.014				
5.0	.101	.051	.015	.098	.050	.015	.093	.048	.014	.088	.046	.014	.083	.044	.013				
6.0	.096	.048	.014	.093	.047	.014	.089	.045	.013	.084	.044	.013	.080	.042	.013				
7.0	.091	.045	.013	.089	.044	.013	.085	.043	.012	.081	.042	.012	.077	.040	.012				
8.0	.087	.042	.012	.085	.042	.012	.081	.041	.012	.078	.039	.011	.075	.038	.011				
9.0	.083	.040	.011	.081	.040	.011	.078	.039	.011	.075	.038	.011	.072	.037	.011				
10.0	.079	.038	.011	.078	.038	.011	.075	.037	.010	.072	.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	.159	.159	.159	.136	.136	.136	.093	.093	.093	.053	.053	.053	.017	.017	.017		
1.0	.142	.132	.123	.121	.113	.106	.083	.078	.073	.048	.045	.042	.015	.014	.014		
2.0	.127	.111	.097	.109	.095	.084	.075	.066	.058	.043	.038	.034	.014	.012	.011		
3.0	.116	.095	.078	.099	.082	.068	.068	.057	.047	.039	.033	.028	.013	.011	.009		
4.0	.106	.082	.064	.091	.071	.055	.063	.049	.039	.036	.029	.023	.012	.009	.008		
5.0	.098	.072	.053	.084	.062	.046	.058	.044	.033	.034	.026	.019	.011	.008	.006		
6.0	.091	.064	.045	.078	.055	.039	.054	.039	.027	.031	.023	.016	.010	.007	.005		
7.0	.085	.057	.038	.073	.050	.033	.050	.035	.023	.029	.020	.014	.009	.007	.005		
8.0	.080	.052	.033	.068	.045	.029	.047	.032	.020	.028	.019	.012	.009	.006	.004		
9.0	.075	.047	.028	.065	.041	.025	.045	.029	.018	.026	.017	.010	.008	.006	.003		
10.0	.071	.043	.025	.061	.038	.022	.042	.026	.015	.025	.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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 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	13.6	14.3	13.8	14.5	14.6	14.6	15.4	14.8	15.5	15.7
3H	13.7	14.4	14.0	14.6	14.8	14.4	15.1	14.7	15.3	15.5
4H	13.8	14.5	14.1	14.7	14.9	14.4	15.0	14.6	15.2	15.5
6H	13.8	14.5	14.1	14.7	14.9	14.3	14.9	14.6	15.1	15.4
8H	13.8	14.4	14.1	14.7	14.9	14.2	14.8	14.5	15.1	15.3
12H	13.8	14.4	14.1	14.7	14.9	14.2	14.8	14.5	15.0	15.3
4H 2H	13.5	14.2	13.8	14.4	14.6	14.5	15.2	14.8	15.4	15.6
3H	13.8	14.4	14.1	14.6	14.9	14.3	14.9	14.6	15.2	15.4
4H	13.9	14.4	14.2	14.7	15.0	14.2	14.8	14.6	15.0	15.4
6H	13.9	14.4	14.3	14.7	15.1	14.1	14.6	14.5	14.9	15.3
8H	13.9	14.4	14.3	14.7	15.1	14.1	14.5	14.5	14.9	15.2
12H	13.9	14.3	14.3	14.7	15.1	14.0	14.4	14.4	14.8	15.2
8H 4H	13.7	14.2	14.1	14.5	14.9	14.1	14.5	14.5	14.9	15.2
6H	13.8	14.1	14.2	14.5	14.9	14.0	14.3	14.4	14.7	15.1
8H	13.8	14.1	14.2	14.5	14.9	13.9	14.2	14.4	14.7	15.1
12H	13.7	14.0	14.2	14.5	14.9	13.9	14.1	14.3	14.6	15.0
12H 4H	13.7	14.1	14.1	14.4	14.8	14.0	14.4	14.4	14.8	15.2
6H	13.7	14.0	14.2	14.4	14.9	13.9	14.2	14.4	14.7	15.1
8H	13.7	14.0	14.2	14.4	14.9	13.9	14.1	14.3	14.6	15.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.9					+ 3.1 / - 4.7				
1.5H	+ 1.1 / - 0.8					+ 5.3 / - 4.3				
2.0H	+ 1.1 / - 1.4					+ 1.2 / - 1.9				

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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

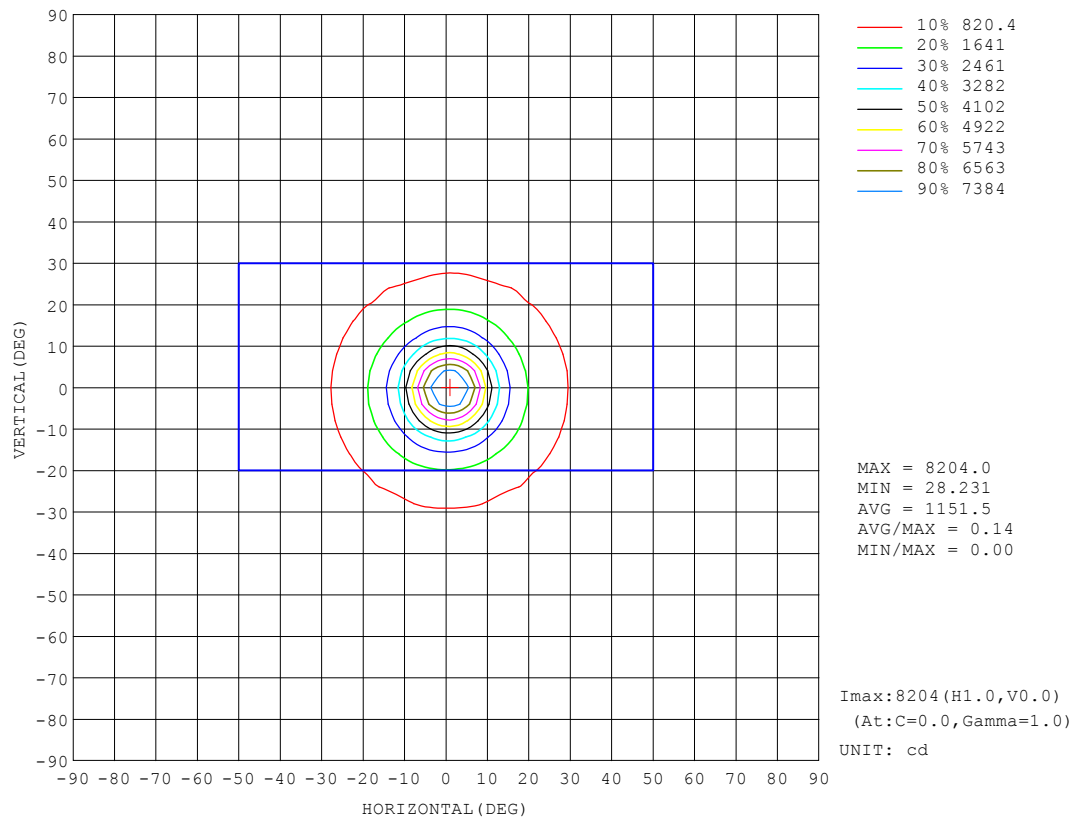
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	74	69	66	74	69	66	73	69	66	63
0.80	80	76	73	80	75	73	79	75	72	69
1.00	84	79	76	83	79	76	82	79	76	73
1.25	87	83	80	86	82	80	84	81	79	76
1.50	89	85	83	88	85	82	86	83	81	78
2.00	91	88	85	90	87	85	88	85	83	79
2.50	92	89	87	91	88	86	89	86	85	80
3.00	94	91	89	92	90	88	89	88	86	81
4.00	95	93	91	94	92	90	91	89	88	82
5.00	96	95	93	95	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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

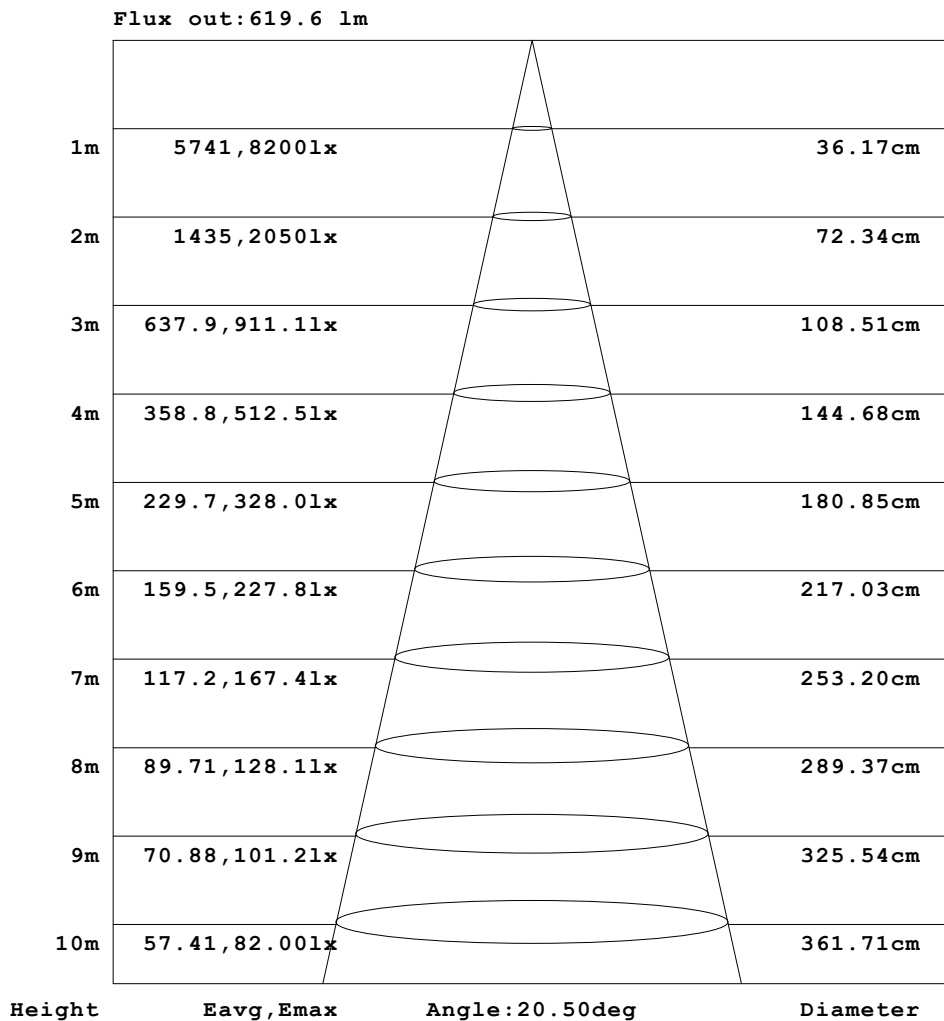


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:26DEG
Operators:
Test Date:2020-10-26

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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	



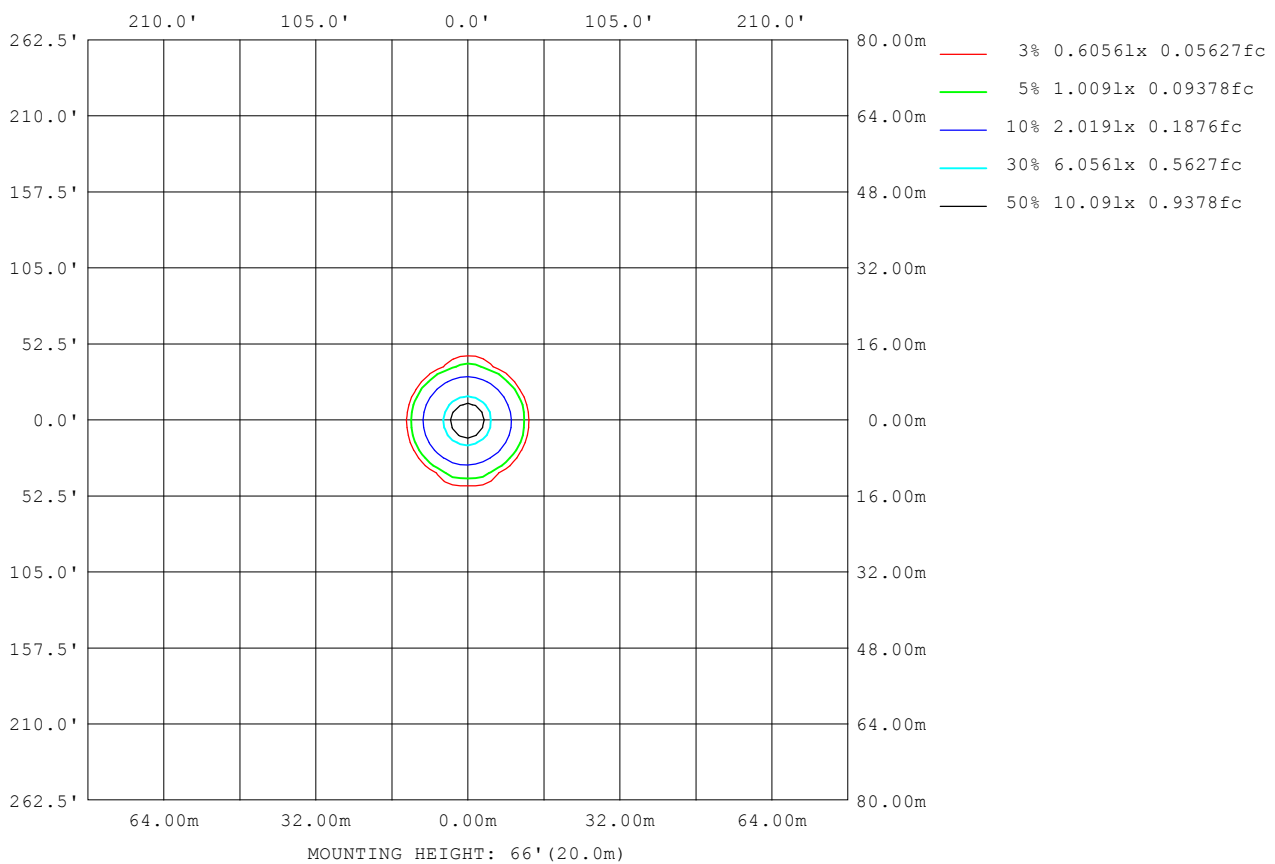
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H(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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	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:220.13V I:0.1315A P:27.930W PF:0.9645 Freq:60.00Hz Lamp Flux:2425x1 lm		
NAME: LPA-DR-A074-COI	TYPE:--	SERIAL No.:
SPEC.:AS05-4	DIM.: --	
MFR.:	SUR.:126	

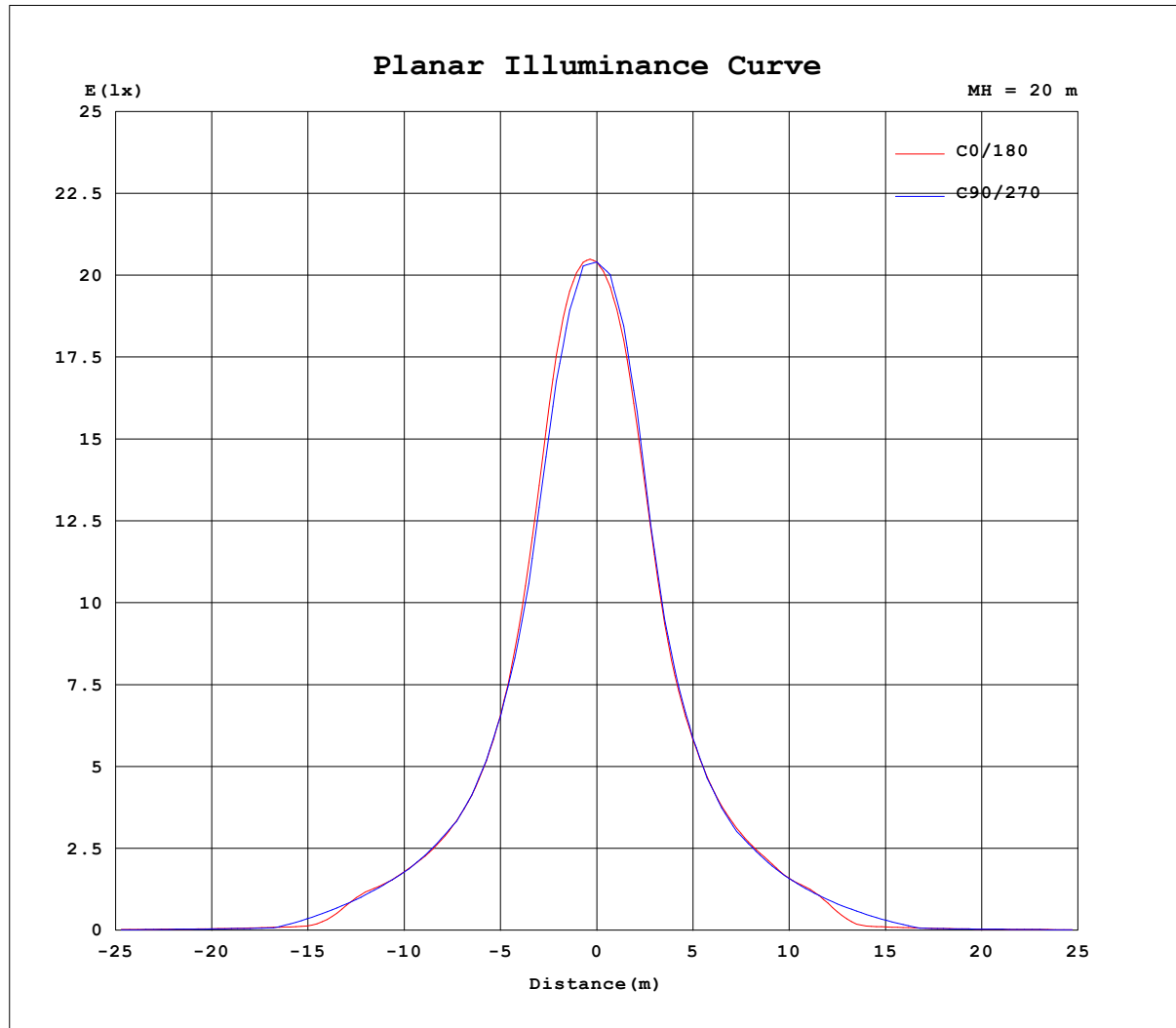
AvgL	cd/m2
L_0~180 (65) av	2986
L_0~180 (75) av	2154
L_0~180 (85) av	1220
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	2956
L_45 (75) av	0
L_45 (85) av	0

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: --
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