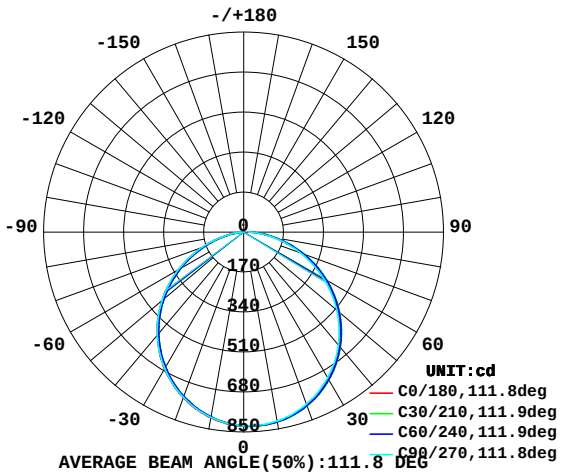
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

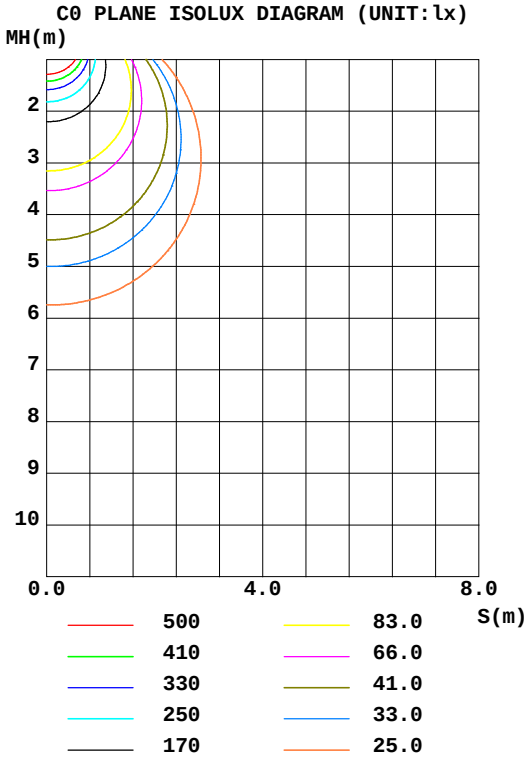
DATA OF LAMP		PHOTOMETRIC DATA Eff: 91.94 lm/W			
MODEUP-AL28-12-25W-3000K-D		Imax(cd)	826.4	S/MH(C0/180)	1.29
NOMINAL POWER(W)	26	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	2344.5	η UP,DN(C0-180)	0.0,52.9
NOMINAL FLUX(lm)	2344.5	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,47.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230.6	η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):111.8 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [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	818.8	820.1	815.9	806.2	802.1	797.8	799.7	808.2	0- 10	77.88	77.88	3.32,3.32
20	782.4	786.2	778.9	761.4	749.8	743.5	748.1	764.8	10- 20	222.9	300.8	12.8,12.8
30	718.2	724.9	714.8	689.8	672.5	663.6	671.2	694.9	20- 30	337.4	638.2	27.2,27.2
40	630.2	638.7	626.5	595.3	572.2	562.3	571.8	602.1	30- 40	406.2	1044	44.5,44.5
50	521.2	531.7	517.3	481.7	453.8	442.5	453.9	489.2	40- 50	420.5	1465	62.5,62.5
60	395.7	407.5	392.0	352.2	320.8	309.2	322.7	360.7	50- 60	378.4	1843	78.6,78.6
70	259.5	271.2	255.3	216.1	184.2	172.2	186.4	224.9	60- 70	286.4	2130	90.8,90.8
80	125.2	135.9	122.6	87.64	61.63	52.42	63.80	95.58	70- 80	163.8	2293	97.8,97.8
90	24.72	31.19	22.28	9.034	2.355	1.316	3.169	12.44	80- 90	51.15	2345	100,100
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		

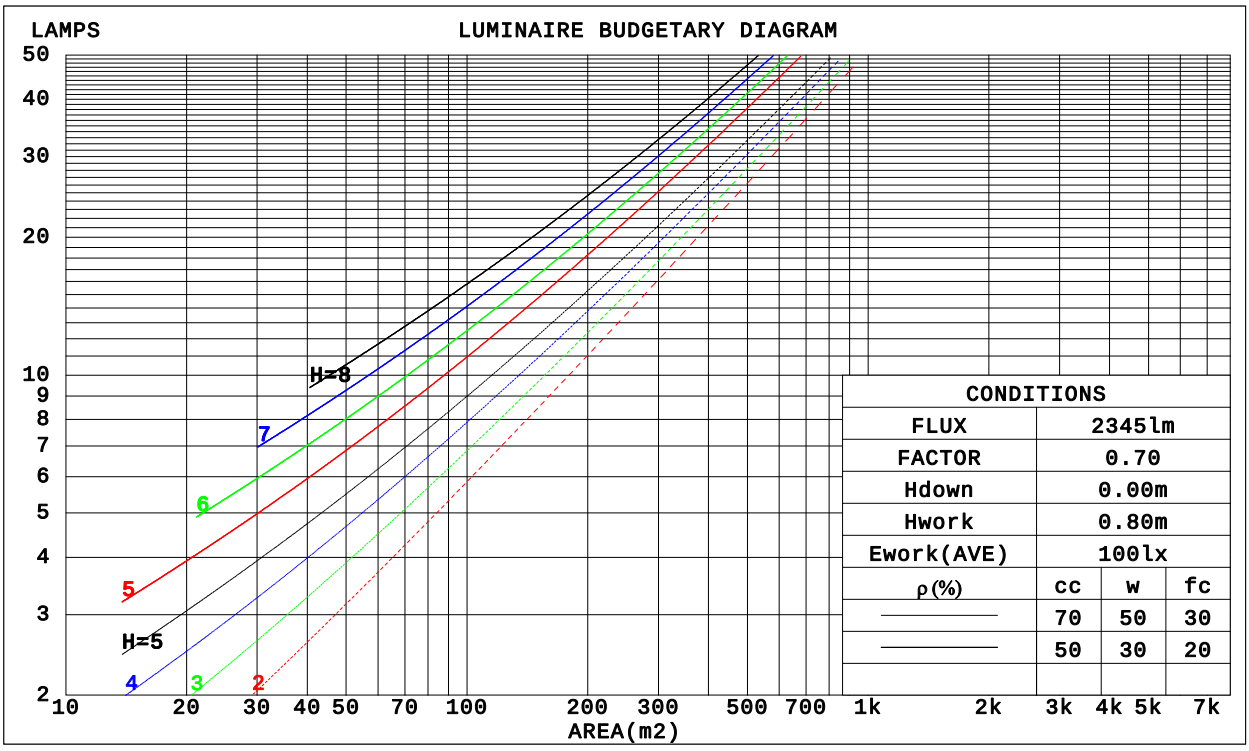
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	.00
1.0	1.04	.99	.95	1.01	.97	.94	.97	.94	.91	.93	.91	.88	.90	.88	.86	.83
2.0	.90	.83	.78	.88	.82	.77	.85	.80	.75	.82	.77	.73	.79	.75	.72	.69
3.0	.79	.71	.64	.78	.70	.64	.75	.68	.63	.72	.66	.62	.69	.65	.61	.58
4.0	.70	.61	.55	.69	.61	.54	.66	.59	.53	.64	.58	.53	.62	.56	.52	.50
5.0	.63	.54	.47	.62	.53	.47	.59	.52	.46	.57	.51	.46	.56	.50	.45	.43
6.0	.56	.47	.41	.55	.47	.41	.54	.46	.40	.52	.45	.40	.50	.44	.40	.38
7.0	.51	.42	.36	.50	.42	.36	.49	.41	.36	.47	.41	.35	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.45	.37	.32	.43	.37	.32	.42	.36	.31	.30
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.29	.39	.33	.28	.27
10.0	.39	.32	.26	.39	.31	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients(WEC)									
0.0																
1.0	.312	.178	.056	.305	.174	.055	.292	.168	.054	.280	.161	.052	.269	.156	.050	
2.0	.293	.161	.049	.287	.158	.049	.275	.153	.047	.264	.148	.046	.254	.144	.045	
3.0	.271	.144	.043	.265	.142	.043	.255	.138	.042	.245	.134	.041	.236	.131	.040	
4.0	.250	.130	.038	.245	.128	.038	.236	.125	.037	.227	.122	.037	.219	.119	.036	
5.0	.231	.118	.034	.226	.116	.034	.218	.114	.033	.211	.111	.033	.204	.109	.033	
6.0	.214	.107	.031	.210	.106	.031	.203	.104	.030	.196	.102	.030	.190	.100	.030	
7.0	.199	.098	.028	.196	.097	.028	.189	.096	.028	.183	.094	.027	.177	.092	.027	
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.172	.087	.025	.166	.085	.025	
9.0	.174	.084	.024	.171	.084	.023	.166	.082	.023	.161	.081	.023	.157	.080	.023	
10.0	.164	.078	.022	.161	.078	.022	.157	.077	.022	.152	.076	.021	.148	.074	.021	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.180	.156	.134	.154	.134	.115	.106	.092	.080	.061	.053	.046	.019	.017	.015	
2.0	.172	.132	.098	.148	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.165	.114	.074	.141	.099	.064	.097	.069	.045	.056	.040	.027	.018	.013	.009	
4.0	.157	.101	.058	.135	.087	.051	.093	.061	.036	.054	.036	.021	.017	.012	.007	
5.0	.150	.091	.047	.128	.078	.041	.088	.055	.029	.051	.032	.017	.017	.010	.006	
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.075	.033	.117	.065	.029	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.003	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

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	22.5	24.1	22.8	24.3	24.5	22.5	24.0	22.8	24.2	24.4
	3H	24.2	25.6	24.5	25.8	26.1	24.1	25.6	24.4	25.8	26.0
	4H	24.9	26.3	25.2	26.5	26.8	24.8	26.2	25.2	26.4	26.7
	6H	25.5	26.7	25.8	27.0	27.3	25.4	26.7	25.7	26.9	27.2
	8H	25.7	26.9	26.0	27.2	27.5	25.6	26.8	26.0	27.1	27.4
	12H	25.9	27.1	26.2	27.4	27.7	25.8	27.0	26.1	27.3	27.6
4H	2H	23.2	24.6	23.5	24.8	25.1	23.2	24.5	23.5	24.8	25.0
	3H	25.1	26.3	25.4	26.6	26.9	25.0	26.2	25.4	26.5	26.8
	4H	26.0	27.0	26.3	27.4	27.7	25.9	27.0	26.3	27.3	27.6
	6H	26.7	27.6	27.1	28.0	28.4	26.6	27.6	27.0	27.9	28.3
	8H	27.0	27.9	27.4	28.2	28.6	26.9	27.8	27.3	28.1	28.5
	12H	27.2	28.0	27.6	28.4	28.8	27.1	27.9	27.5	28.3	28.7
8H	4H	26.3	27.2	26.7	27.6	28.0	26.3	27.1	26.7	27.5	27.9
	6H	27.2	28.0	27.7	28.4	28.8	27.2	27.9	27.6	28.3	28.7
	8H	27.6	28.3	28.1	28.7	29.2	27.6	28.2	28.0	28.7	29.1
	12H	28.0	28.6	28.5	29.0	29.5	27.9	28.5	28.4	28.9	29.4
12H	4H	26.3	27.2	26.8	27.6	28.0	26.3	27.1	26.7	27.5	27.9
	6H	27.3	28.0	27.8	28.4	28.9	27.3	27.9	27.7	28.4	28.8
	8H	27.8	28.4	28.3	28.8	29.3	27.7	28.3	28.2	28.8	29.2

Variations with the observer position at spacings:		
S = 1.0H	+ 0.1 / - 0.2	+ 0.1 / - 0.2
1.5H	+ 0.2 / - 0.3	+ 0.2 / - 0.3
2.0H	+ 0.1 / - 0.4	+ 0.1 / - 0.4

CIE Pub.117 Corrected 2345 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.0)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

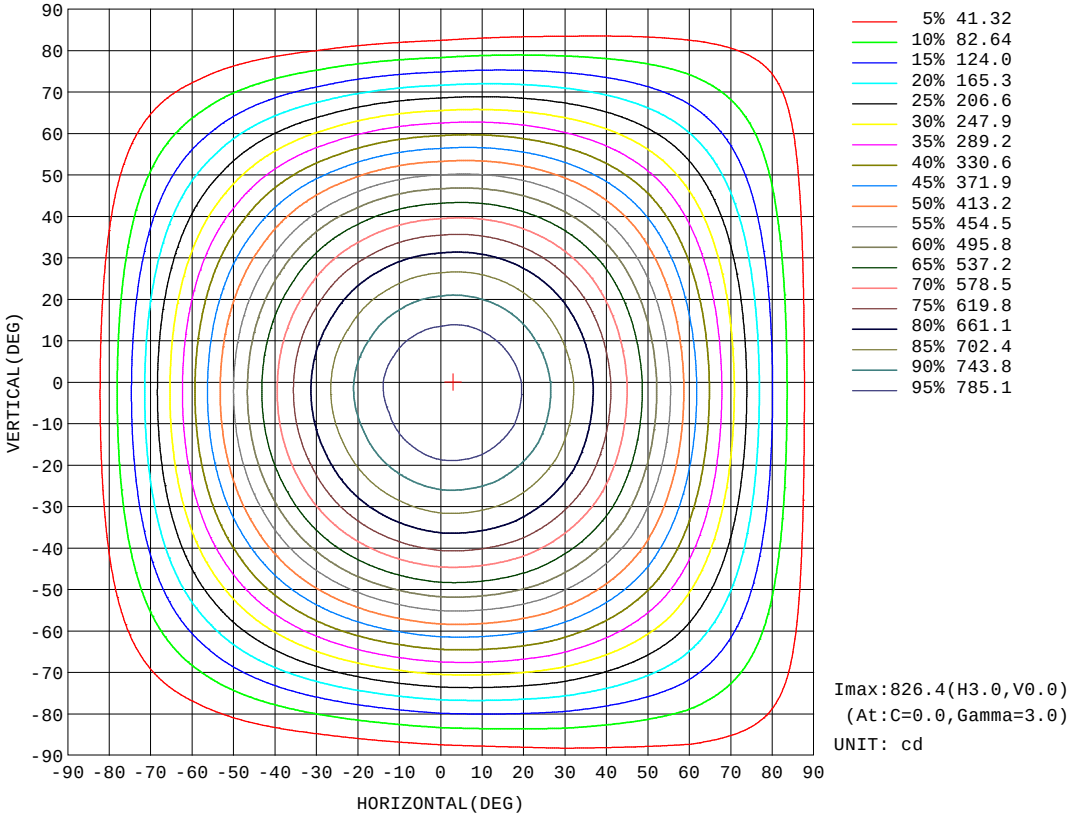
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	57	46	39	57	46	39	56	45	39	32
0.80	68	56	48	66	55	48	65	55	48	41
1.00	76	65	57	75	64	57	72	66	57	49
1.25	83	72	65	82	72	65	79	70	64	57
1.50	88	78	71	86	77	71	83	75	69	62
2.00	95	86	80	93	85	79	90	83	78	70
2.50	99	91	85	97	90	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	86	78
4.00	106	100	96	104	99	94	99	95	92	83
5.00	109	104	100	106	102	98	102	98	95	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:



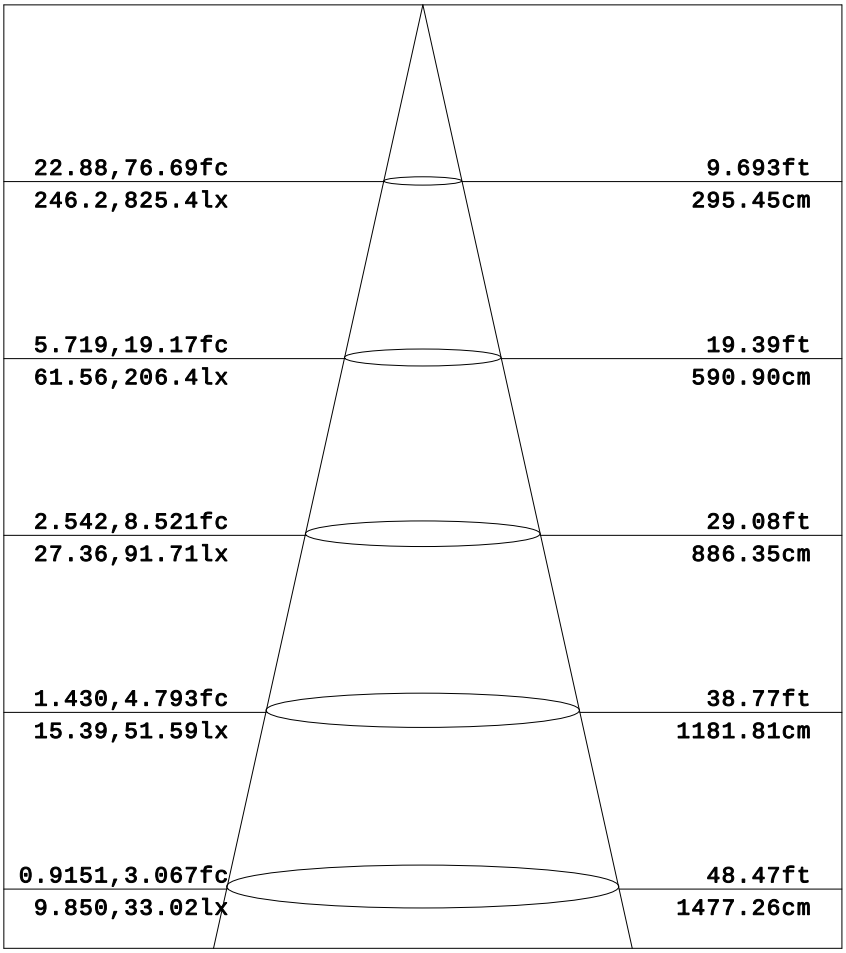
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

Flux out:1700 lm



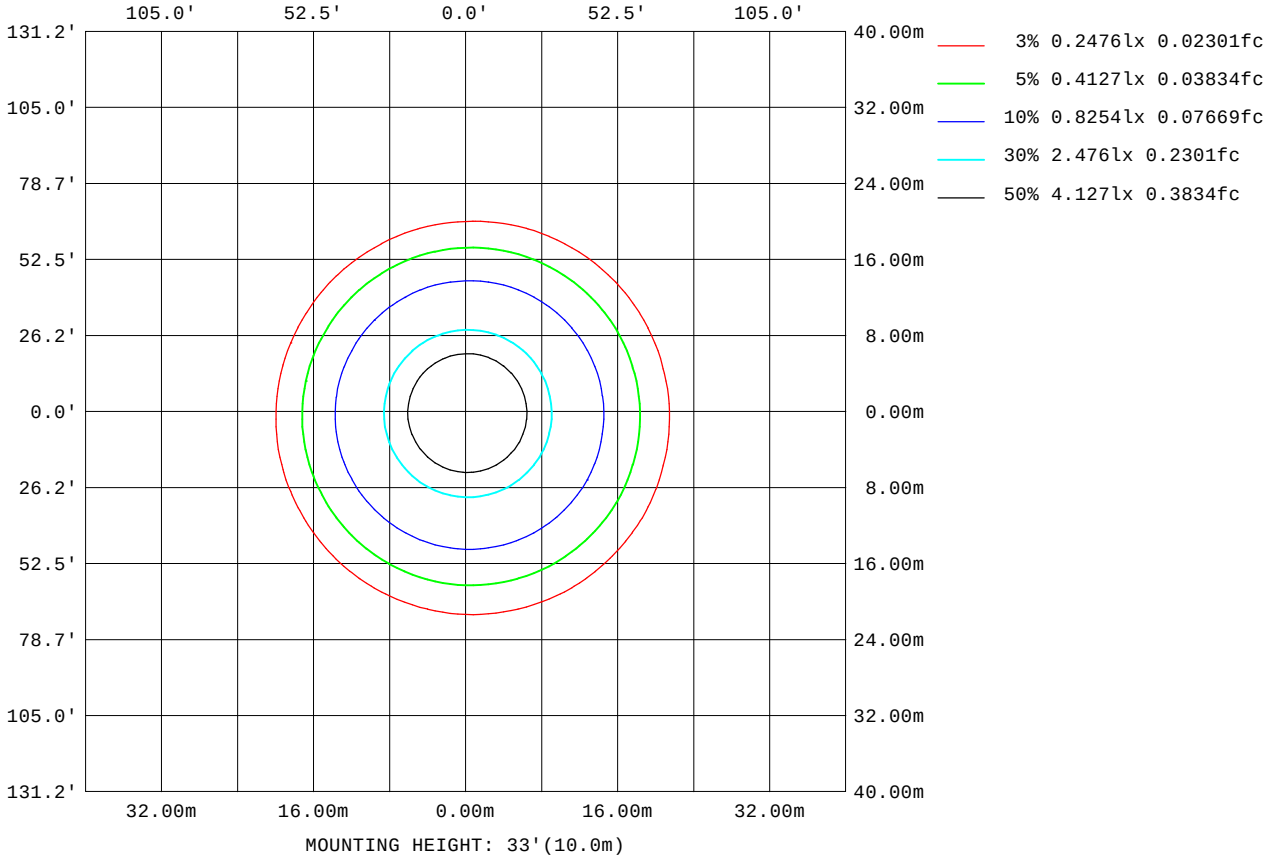
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

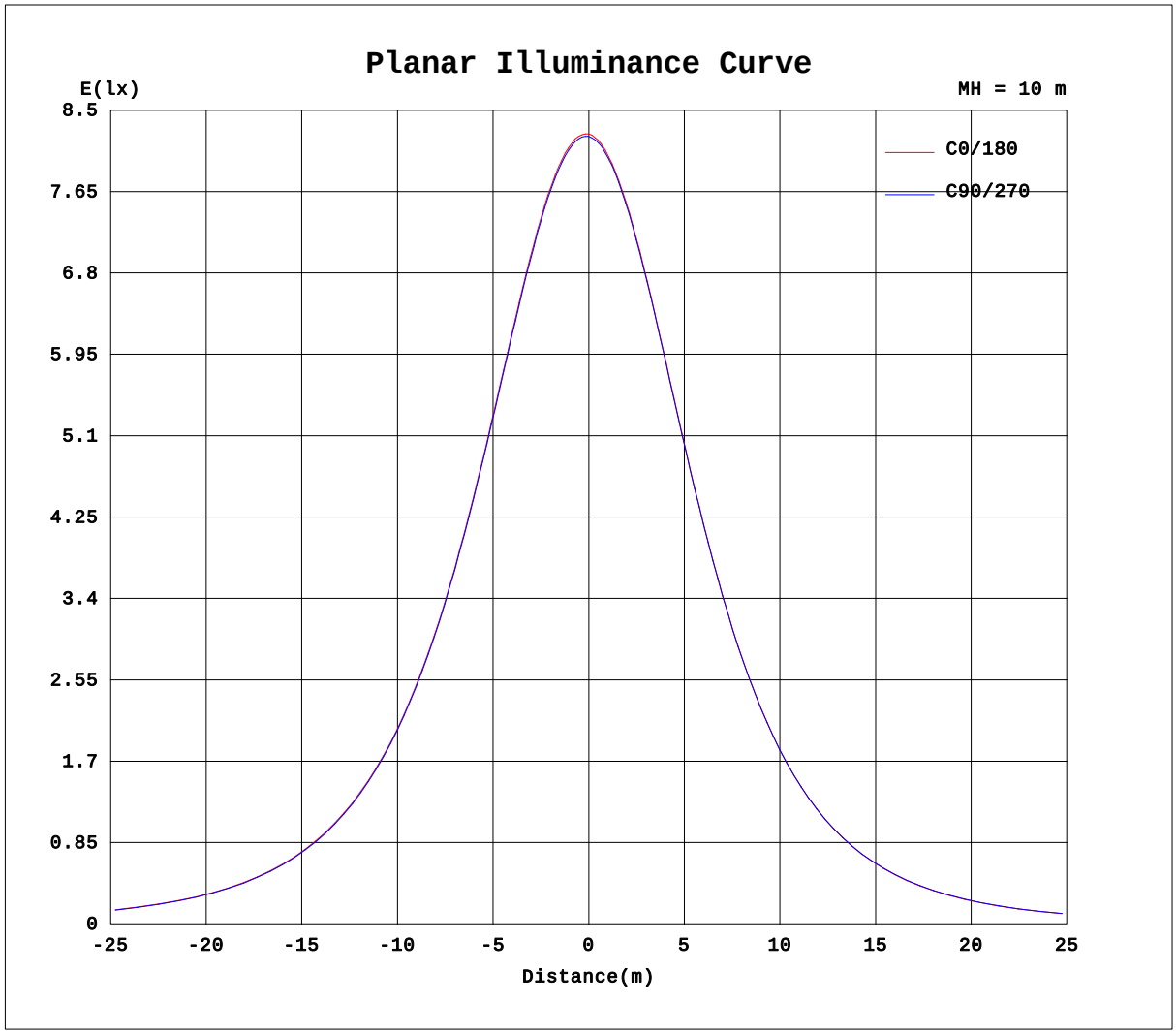
Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.6V I:0.1170A P:25.50W PF:0.9460 Lamp Flux:2344.5x1 lm		
NAME: UP-AL28-12-25W-3000K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	30	60	90	120	150	180	210	240	270	300	330
0	825	825	823	823	822	822	825	825	823	823	822	822
5	826	826	825	823	820	816	818	815	815	815	817	820
10	819	821	819	816	810	803	802	798	798	800	805	811
15	804	808	806	801	792	783	780	774	774	777	786	794
20	782	787	785	779	767	755	750	743	744	748	759	770
25	754	760	758	750	736	721	714	706	707	713	726	740
30	718	726	724	715	698	681	672	663	664	671	687	703
35	677	686	684	673	655	636	625	615	616	624	642	660
40	630	640	638	627	606	585	572	562	563	572	592	613
45	578	589	586	574	552	529	515	504	505	515	537	559
50	521	533	530	517	494	469	454	442	443	454	477	501
55	460	473	470	456	431	406	389	376	378	390	414	440
60	396	409	406	392	366	338	321	309	310	323	347	375
65	328	341	339	324	298	270	252	240	241	254	279	307
70	260	272	270	255	230	203	184	171	173	186	211	239
75	191	203	202	187	162	136	119	107	109	121	145	170
80	125	137	135	123	98.9	76.4	61.6	51.8	53.1	63.8	84.2	107
85	67.3	77.0	75.6	64.9	45.6	30.2	21.2	16.8	16.9	22.5	35.4	52.2
90	24.7	31.7	30.7	22.3	13.6	4.51	2.35	1.29	1.34	3.17	7.54	17.3

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks: