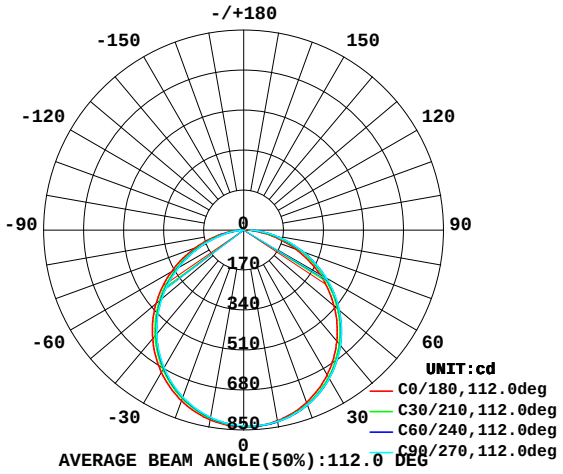
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

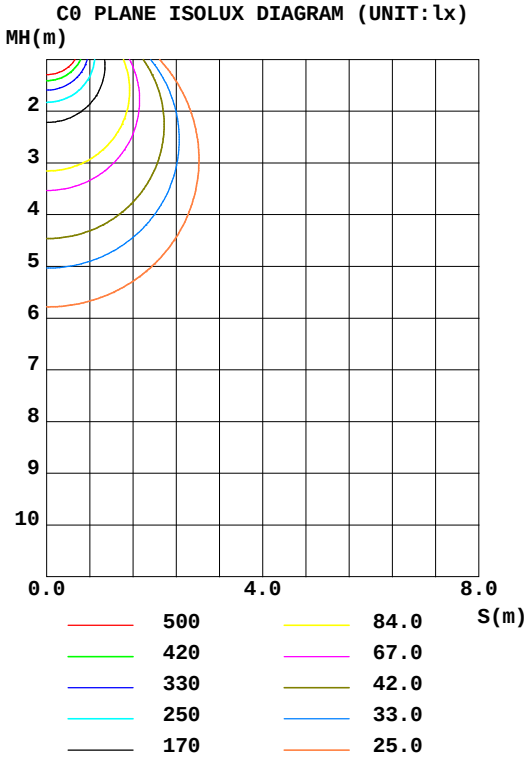
DATA OF LAMP		PHOTOMETRIC DATA Eff: 92.53 lm/W			
MODEUP-AL28-12-25W-5700K-D		Imax(cd)	836.3	S/MH(C0/180)	1.26
NOMINAL POWER(W)	26	LOR(%)	100.0	S/MH(C90/270)	1.30
RATED VOLTAGE(V)	232	TOTAL FLUX(lm)	2378.1	η UP,DN(C0-180)	0.0,52.8
NOMINAL FLUX(lm)	2378.14	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,47.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	231.1	η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):112.0 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:2017-05-11

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	822.8	827.0	827.1	821.3	819.2	811.6	808.5	812.6	0- 10	78.86	78.86	3.32,3.32
20	780.2	789.7	791.2	781.2	772.4	759.8	755.8	764.0	10- 20	225.7	304.6	12.8,12.8
30	710.4	725.2	727.8	713.9	699.2	682.1	677.2	689.2	20- 30	341.8	646.4	27.2,27.2
40	616.5	635.8	639.6	622.4	602.8	581.8	575.5	591.2	30- 40	411.7	1058	44.5,44.5
50	502.4	525.0	530.4	510.9	486.9	462.6	455.7	474.1	40- 50	426.4	1484	62.4,62.4
60	372.3	398.4	404.7	383.2	354.8	328.8	321.8	341.3	50- 60	384.0	1869	78.6,78.6
70	234.1	260.3	266.9	245.7	216.8	190.5	182.6	202.8	60- 70	291.0	2159	90.8,90.8
80	101.5	124.8	131.5	112.2	87.45	66.08	60.61	75.60	70- 80	166.7	2326	97.8,97.8
90	13.59	24.78	27.45	20.26	8.561	2.251	2.115	5.249	80- 90	51.96	2378	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		

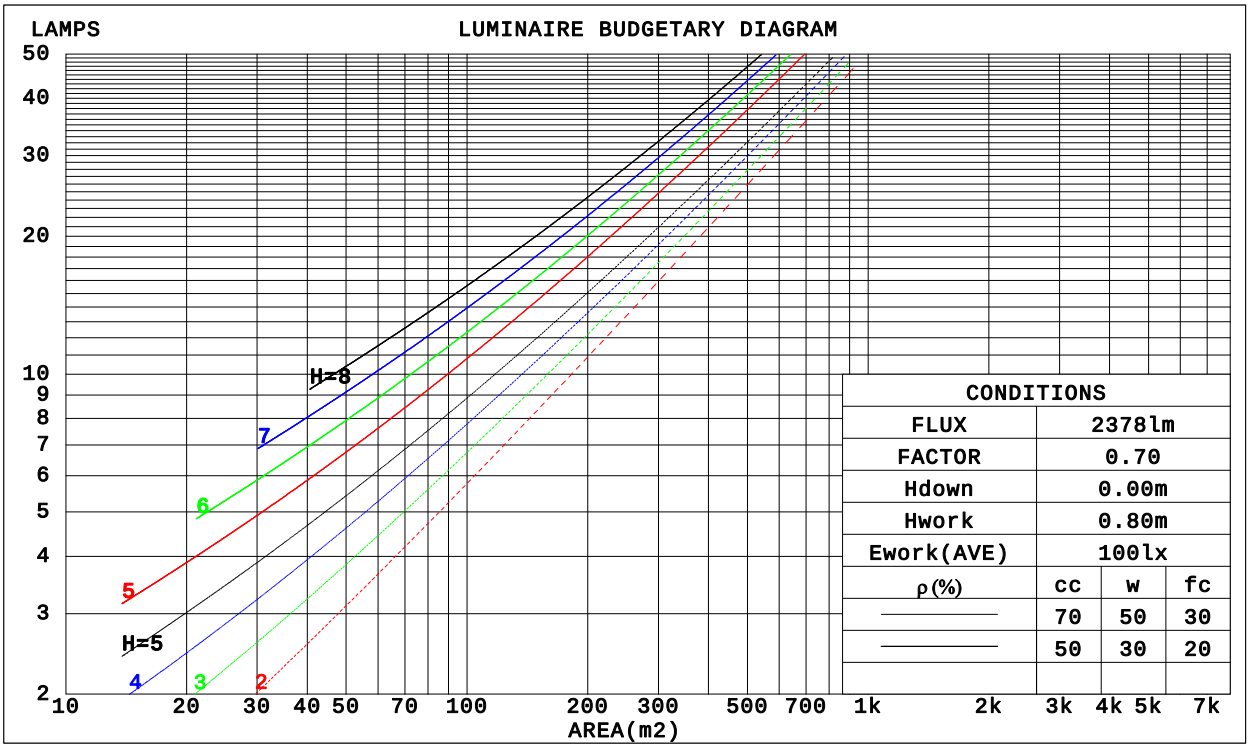
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-11

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:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	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	1.00
1.0	1.04	.99	.95	1.01	.97	.94	.97	.94	.91	.93	.91	.88	.90	.88	.85	.83
2.0	.90	.83	.78	.88	.82	.77	.85	.79	.75	.82	.77	.73	.78	.75	.71	.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	.40	.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	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-11

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:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	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	.313	.178	.056	.306	.174	.055	.292	.168	.054	.280	.162	.052	.269	.156	.050	
2.0	.293	.161	.049	.287	.158	.049	.275	.153	.048	.264	.148	.046	.254	.144	.045	
3.0	.271	.144	.043	.265	.142	.043	.255	.138	.042	.245	.134	.041	.236	.131	.041	
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	.079	.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	.181	.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	.136	.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:2017-05-11

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:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	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	22.2	23.7	22.5	23.9	24.2	22.5	24.0	22.8	24.2	24.4
3H	23.8	25.2	24.1	25.4	25.6	24.2	25.6	24.5	25.8	26.1
4H	24.4	25.7	24.7	26.0	26.2	24.9	26.3	25.2	26.5	26.8
6H	24.8	26.1	25.2	26.4	26.7	25.5	26.8	25.8	27.0	27.3
8H	25.0	26.2	25.3	26.5	26.8	25.7	27.0	26.1	27.2	27.5
12H	25.1	26.3	25.4	26.6	26.9	25.9	27.1	26.3	27.4	27.7
4H 2H	22.9	24.3	23.2	24.5	24.8	23.1	24.5	23.5	24.7	25.0
3H	24.7	25.8	25.0	26.1	26.4	25.0	26.2	25.4	26.5	26.8
4H	25.4	26.5	25.8	26.8	27.2	25.9	27.0	26.3	27.3	27.6
6H	26.0	27.0	26.4	27.3	27.7	26.6	27.6	27.0	27.9	28.3
8H	26.2	27.1	26.7	27.5	27.9	26.9	27.8	27.3	28.2	28.6
12H	26.4	27.2	26.8	27.6	28.0	27.2	28.0	27.6	28.4	28.8
8H 4H	25.8	26.7	26.2	27.1	27.4	26.2	27.1	26.6	27.5	27.8
6H	26.6	27.3	27.0	27.7	28.2	27.1	27.9	27.6	28.3	28.7
8H	26.9	27.6	27.4	28.0	28.4	27.5	28.2	28.0	28.6	29.1
12H	27.2	27.7	27.6	28.2	28.6	27.9	28.5	28.4	28.9	29.4
12H 4H	25.8	26.7	26.3	27.0	27.4	26.2	27.0	26.6	27.4	27.8
6H	26.7	27.3	27.1	27.8	28.2	27.2	27.9	27.7	28.3	28.7
8H	27.1	27.6	27.5	28.1	28.6	27.7	28.2	28.2	28.7	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	+ 0.2 / - 0.4					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 2378 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:2017-05-11

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:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	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	67	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	89	83	77	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
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Test Speed: HIGH
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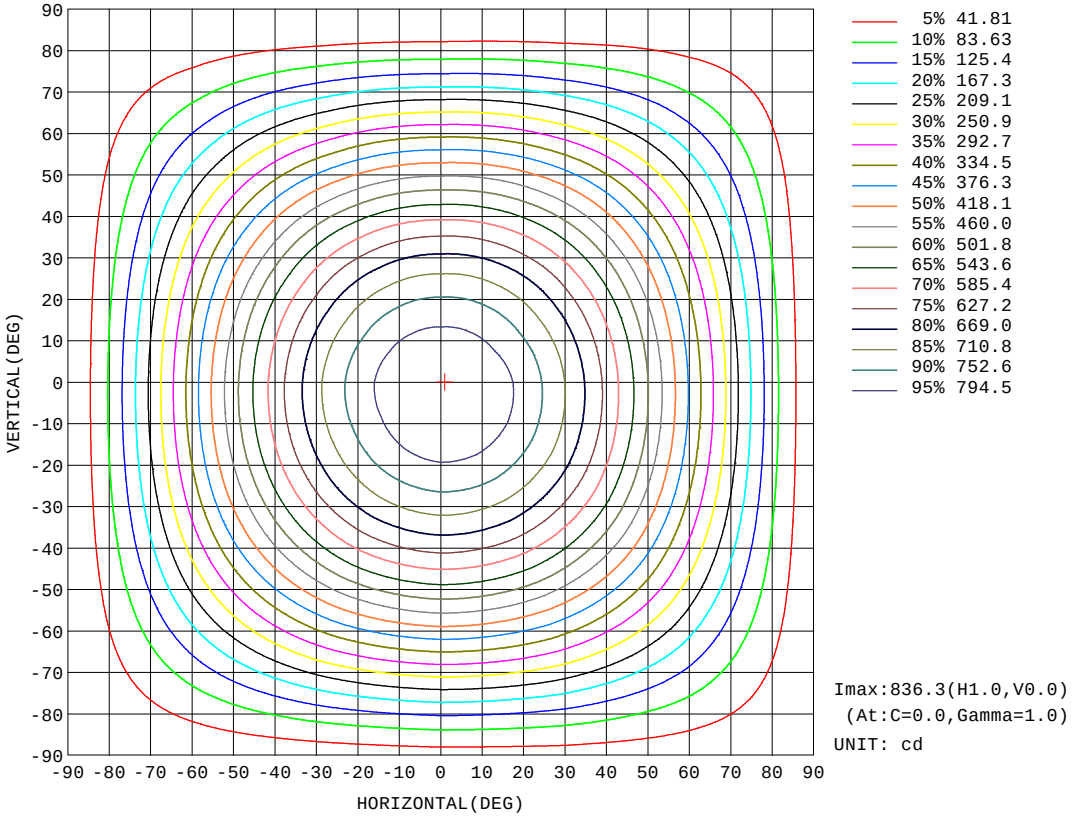
Operators:DAMIN
Test Date:2017-05-11

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:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:



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Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
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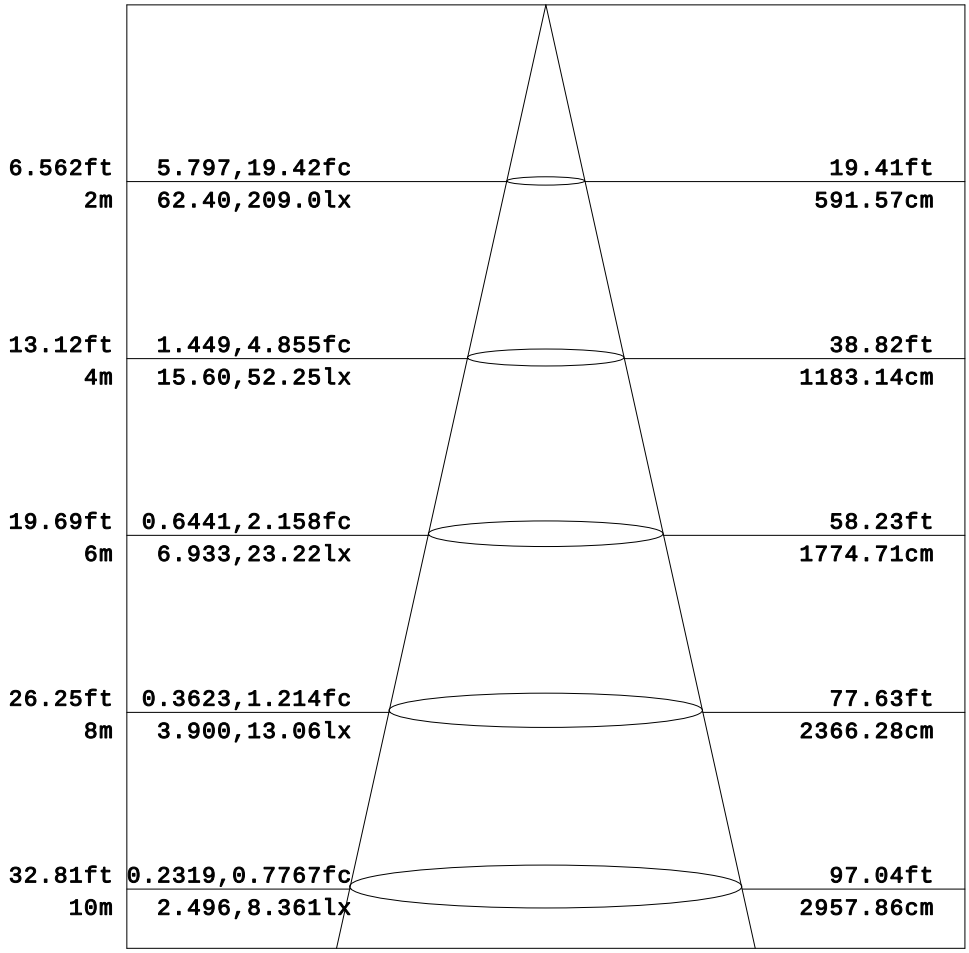
Remarks:

AAI Figure

Test:U:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:

Flux out:1723 lm



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

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Operators:DAMIN
Test Date:2017-05-11

γ Range: 0 - 90DEG
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Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
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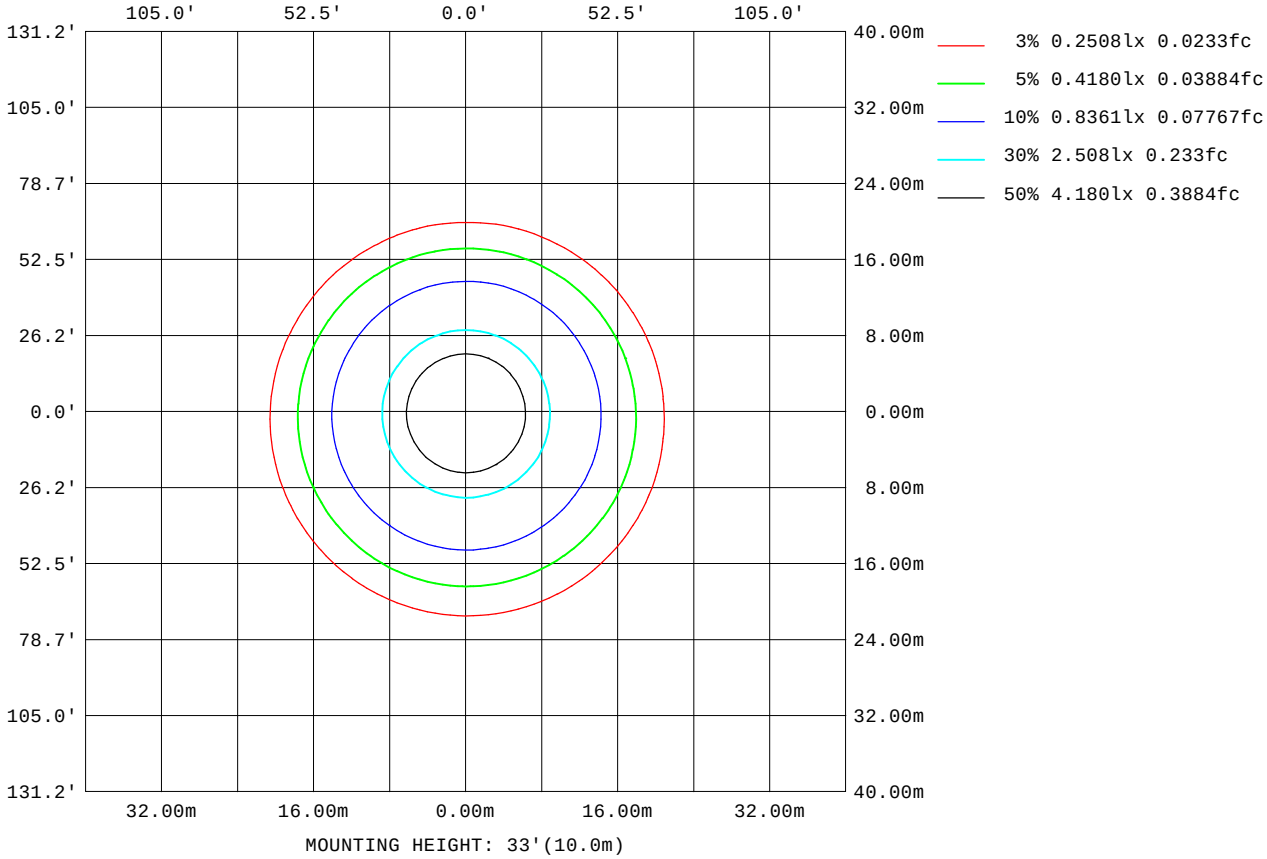
Remarks:

ISOLUX DIAGRAM

Test:U:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.05596	PROTECTION ANGLE:



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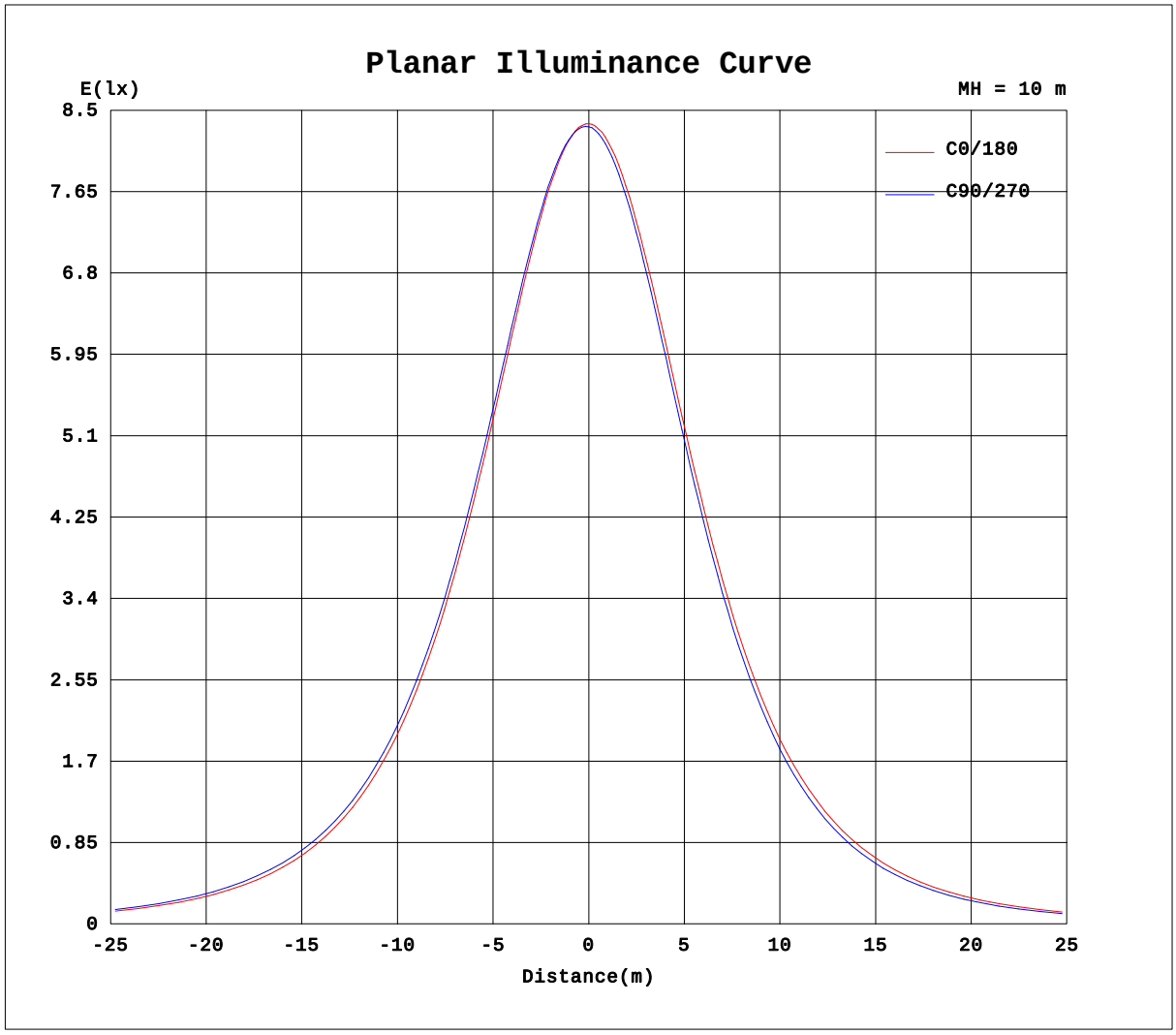
γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

Planar Illuminance Curve



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Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:231.1V I:0.1180A P:25.70W PF:0.9420 Lamp Flux:2378.14x1 lm		
NAME: UP-AL28-12-25W-5700K-D	TYPE:25W	WEIGHT:
DIM.:	SPEC.:5700K	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	836	835	834	833	832	832	836	835	834	833	832	832
5	833	834	835	834	832	829	832	828	826	825	825	827
10	823	826	828	827	824	819	819	813	810	808	811	814
15	805	811	813	813	808	802	799	791	787	786	789	794
20	780	788	792	791	785	777	772	762	757	756	760	768
25	748	759	763	763	756	746	739	727	721	719	725	734
30	710	722	728	728	720	708	699	686	678	677	684	694
35	666	680	686	687	678	664	654	638	631	629	637	649
40	616	632	640	640	630	615	603	586	577	576	585	598
45	562	579	587	588	577	561	547	529	520	518	528	542
50	502	521	529	530	519	502	487	468	458	456	467	482
55	439	459	468	469	458	440	423	403	392	390	402	418
60	372	393	404	405	393	374	355	335	323	322	332	350
65	304	324	336	336	325	305	286	265	253	252	263	281
70	234	254	266	267	255	236	217	196	185	183	193	212
75	165	185	197	198	185	168	149	129	119	117	127	144
80	101	120	130	131	120	104	87.4	70.1	62.1	60.6	68.2	83.0
85	47.8	61.4	70.3	71.5	62.0	50.1	38.0	28.0	21.7	21.0	27.8	35.4
90	13.6	22.7	26.8	27.4	24.4	16.1	8.56	2.56	1.94	2.11	2.58	7.92

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-11

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: