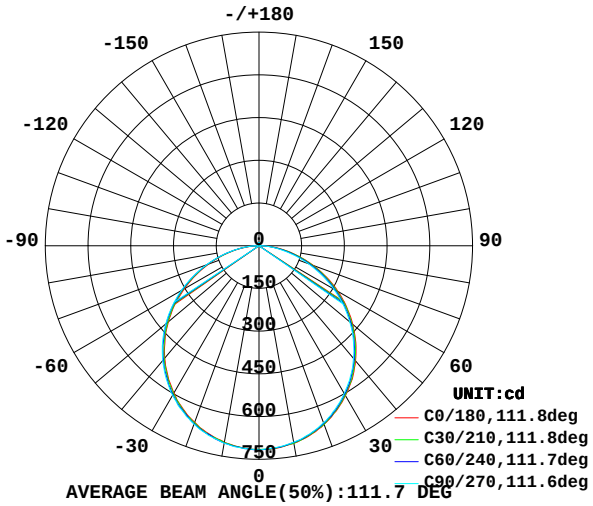
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	PROTECTION ANGLE:

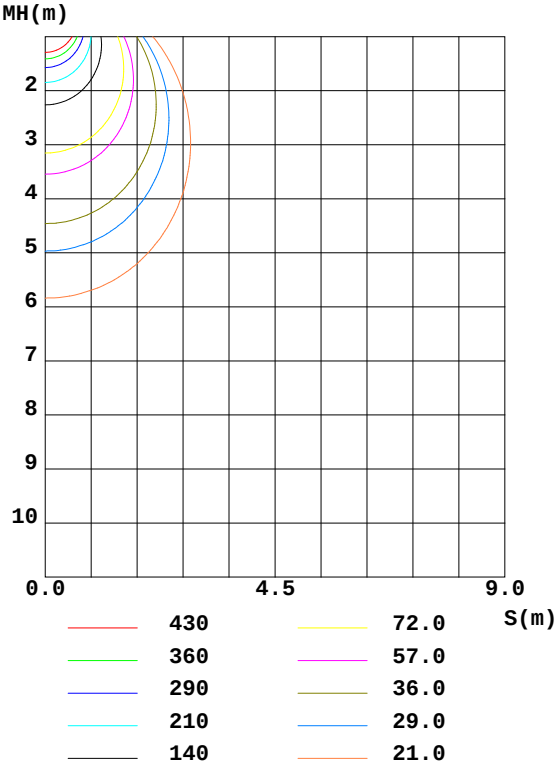
DATA OF LAMP		PHOTOMETRIC DATA Eff: 107.26 lm/W			
MODEL	AL12B-12-18W-P3	Imax(cd)	716.6	S/MH(C0/180)	1.26
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	2080.8	η UP,DN(C0-180)	0.9,48.8
NOMINAL FLUX(lm)	2080.75	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.9,49.4
LAMPS INSIDE	1	η up(%)	1.8	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.5	η down(%)	98.2	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):111.7 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:2019-09-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [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	704.1	702.9	700.4	699.3	700.7	702.7	704.0	704.6	0- 10	67.66	67.66	3.25,3.25
20	667.7	665.7	661.4	660.3	659.9	663.4	667.0	669.1	10- 20	193.7	261.4	12.6,12.6
30	607.2	604.0	598.8	596.2	596.9	602.2	606.4	609.1	20- 30	293.2	554.6	26.7,26.7
40	527.2	522.8	516.4	513.1	514.9	520.2	525.4	529.2	30- 40	352.9	907.5	43.6,43.6
50	430.2	423.2	416.4	413.9	415.6	421.8	427.3	431.3	40- 50	365.3	1273	61.2,61.2
60	319.5	311.4	302.2	301.4	303.0	310.1	315.9	320.1	50- 60	328.6	1601	77,77
70	203.9	195.6	183.7	185.2	188.0	193.1	196.3	204.2	60- 70	249.7	1851	89,89
80	92.37	86.44	76.06	77.92	80.34	84.38	85.81	93.61	70- 80	145.6	1997	96,96
90	9.786	11.87	10.09	8.834	7.251	10.64	12.26	13.49	80- 90	46.22	2043	98.2,98.2
100	3.698	2.710	2.298	2.824	3.848	3.435	3.351	3.396	90-100	5.315	2048	98.4,98.4
110	3.722	3.582	3.519	3.803	4.495	4.210	4.103	3.980	100-110	3.642	2052	98.6,98.6
120	4.930	4.915	4.956	5.075	5.577	5.418	5.336	5.253	110-120	4.494	2056	98.8,98.8
130	6.264	6.304	6.361	6.450	6.863	6.738	6.646	6.595	120-130	5.234	2062	99.1,99.1
140	7.593	7.652	7.714	7.785	8.126	8.033	7.938	7.904	130-140	5.558	2067	99.3,99.3
150	8.771	8.837	8.905	8.960	9.215	9.149	9.063	9.041	140-150	5.282	2072	99.6,99.6
160	9.830	9.882	9.939	9.965	10.14	10.09	10.03	9.996	150-160	4.383	2077	99.8,99.8
170	10.74	10.77	10.79	10.80	10.87	10.86	10.85	10.81	160-170	2.939	2080	99.9,99.9
180	11.18	11.18	11.18	11.18	11.17	11.19	11.18	11.18	170-180	1.049	2081	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

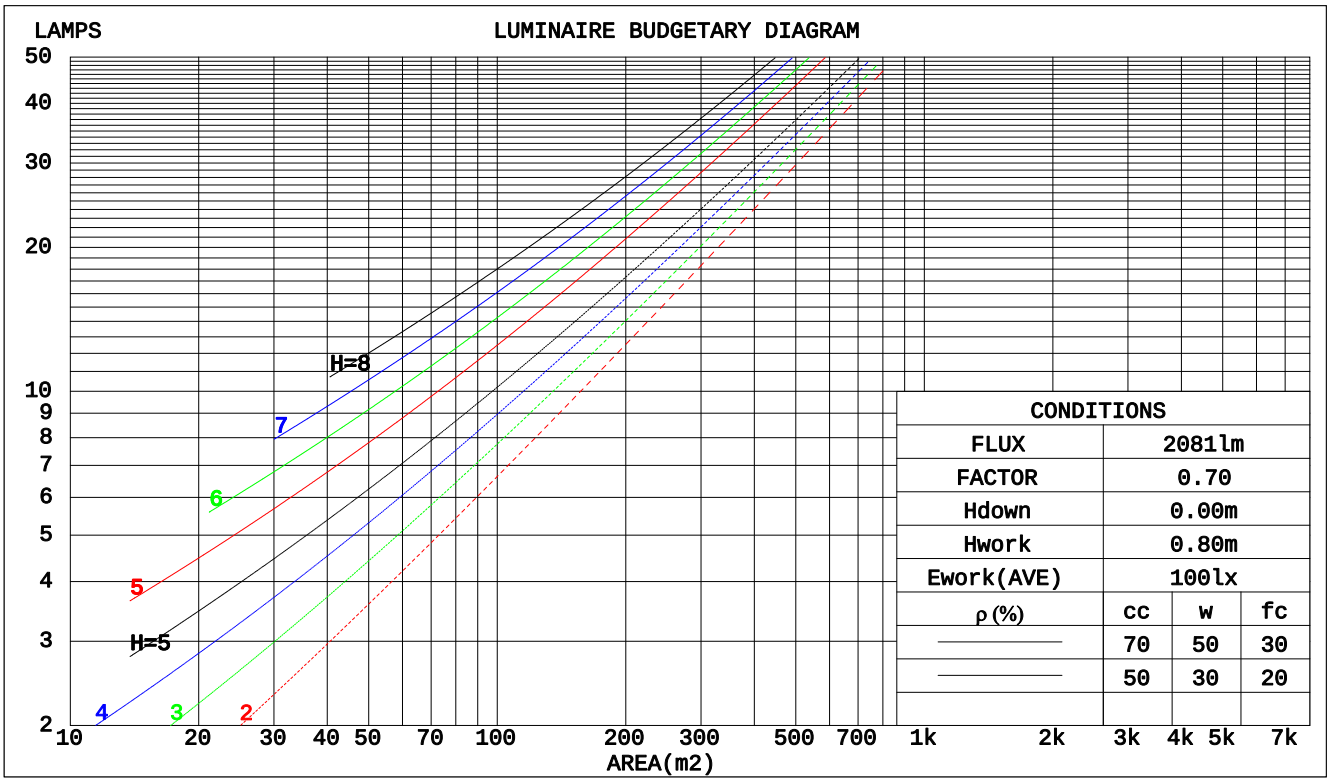
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-09-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	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	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	.98
1.0	1.03	.99	.95	1.01	.97	.93	.96	.93	.90	.92	.89	.87	.88	.86	.84	.82
2.0	.90	.83	.77	.88	.81	.76	.84	.79	.74	.80	.76	.72	.77	.73	.70	.68
3.0	.79	.71	.64	.77	.70	.63	.74	.67	.62	.71	.65	.61	.68	.63	.59	.57
4.0	.70	.61	.54	.68	.60	.54	.66	.58	.53	.63	.57	.52	.61	.55	.51	.49
5.0	.62	.53	.47	.61	.53	.46	.59	.51	.46	.57	.50	.45	.55	.49	.44	.42
6.0	.56	.47	.41	.55	.47	.40	.53	.45	.40	.51	.44	.39	.49	.44	.39	.37
7.0	.51	.42	.36	.50	.42	.36	.48	.41	.35	.47	.40	.35	.45	.39	.34	.32
8.0	.46	.38	.32	.46	.37	.32	.44	.37	.31	.43	.36	.31	.41	.35	.31	.29
9.0	.43	.34	.29	.42	.34	.29	.41	.33	.28	.39	.33	.28	.38	.32	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.36	.30	.26	.35	.30	.25	.24



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-09-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	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	.305	.174	.055	.291	.167	.053	.278	.160	.051	.266	.154	.050	
2.0	.293	.161	.049	.286	.158	.049	.273	.152	.047	.262	.147	.046	.251	.142	.045	
3.0	.270	.144	.043	.264	.142	.043	.253	.137	.042	.243	.133	.041	.233	.129	.040	
4.0	.249	.130	.038	.244	.128	.038	.234	.124	.037	.225	.121	.036	.216	.117	.036	
5.0	.230	.117	.034	.226	.116	.034	.217	.113	.033	.208	.110	.033	.201	.107	.032	
6.0	.213	.107	.031	.209	.106	.030	.201	.103	.030	.194	.101	.030	.187	.098	.029	
7.0	.199	.098	.028	.195	.097	.028	.188	.095	.027	.181	.093	.027	.175	.091	.027	
8.0	.185	.091	.025	.182	.090	.025	.176	.088	.025	.170	.086	.025	.164	.084	.025	
9.0	.174	.084	.023	.171	.083	.023	.165	.082	.023	.159	.080	.023	.154	.078	.023	
10.0	.163	.078	.022	.161	.078	.022	.155	.076	.021	.150	.075	.021	.146	.073	.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	.204	.204	.204	.175	.175	.175	.119	.119	.119	.068	.068	.068	.022	.022	.022	
1.0	.195	.170	.148	.166	.146	.127	.114	.100	.088	.066	.058	.051	.021	.019	.017	
2.0	.186	.146	.112	.160	.126	.097	.109	.087	.068	.063	.051	.040	.020	.016	.013	
3.0	.179	.128	.088	.153	.111	.077	.105	.077	.054	.061	.045	.032	.020	.015	.010	
4.0	.171	.115	.073	.147	.100	.063	.101	.069	.044	.058	.041	.026	.019	.013	.009	
5.0	.164	.105	.061	.141	.091	.053	.097	.063	.038	.056	.037	.022	.018	.012	.007	
6.0	.156	.097	.053	.135	.084	.047	.093	.059	.033	.054	.034	.020	.017	.011	.006	
7.0	.150	.090	.048	.129	.078	.041	.089	.054	.029	.052	.032	.017	.017	.011	.006	
8.0	.143	.084	.043	.123	.073	.038	.085	.051	.027	.050	.030	.016	.016	.010	.005	
9.0	.137	.079	.040	.118	.069	.035	.082	.048	.025	.048	.028	.015	.015	.009	.005	
10.0	.131	.075	.037	.113	.065	.032	.079	.046	.023	.046	.027	.014	.015	.009	.005	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-09-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	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	23.5	25.0	23.8	25.2	25.5	23.3	24.8	23.6	25.0	25.3
3H	25.1	26.5	25.4	26.7	27.0	24.8	26.1	25.1	26.4	26.7
4H	25.7	27.0	26.1	27.3	27.6	25.3	26.6	25.7	26.9	27.2
6H	26.2	27.5	26.6	27.8	28.1	25.7	27.0	26.1	27.3	27.6
8H	26.4	27.6	26.8	27.9	28.2	25.8	27.0	26.2	27.4	27.7
12H	26.5	27.7	26.9	28.0	28.3	25.9	27.1	26.3	27.4	27.7
4H 2H	24.1	25.4	24.4	25.7	26.0	23.9	25.2	24.3	25.5	25.8
3H	25.8	27.0	26.2	27.3	27.7	25.6	26.7	26.0	27.1	27.4
4H	26.6	27.7	27.0	28.0	28.4	26.3	27.3	26.7	27.7	28.0
6H	27.2	28.2	27.7	28.6	29.0	26.8	27.7	27.2	28.1	28.5
8H	27.5	28.4	27.9	28.8	29.2	27.0	27.8	27.4	28.2	28.7
12H	27.7	28.5	28.1	28.9	29.3	27.1	27.9	27.5	28.3	28.8
8H 4H	26.9	27.7	27.3	28.1	28.6	26.6	27.4	27.0	27.8	28.3
6H	27.7	28.4	28.1	28.8	29.3	27.2	28.0	27.7	28.4	28.9
8H	28.0	28.6	28.5	29.1	29.6	27.5	28.2	28.0	28.6	29.1
12H	28.3	28.8	28.8	29.3	29.8	27.7	28.3	28.2	28.8	29.3
12H 4H	26.9	27.7	27.3	28.1	28.5	26.6	27.4	27.0	27.8	28.2
6H	27.7	28.4	28.2	28.8	29.3	27.3	28.0	27.8	28.4	28.9
8H	28.1	28.7	28.6	29.1	29.6	27.6	28.2	28.1	28.7	29.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 2081 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.5)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-09-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	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	45	38	56	45	38	55	44	38	31
0.80	67	55	48	66	55	48	64	54	47	40
1.00	75	64	57	74	63	56	72	65	56	48
1.25	82	72	65	81	71	64	78	69	63	56
1.50	87	77	70	86	76	70	82	74	68	61
2.00	94	86	79	92	84	78	88	82	76	68
2.50	98	90	84	96	89	83	92	86	81	72
3.00	102	95	89	99	93	88	95	90	85	76
4.00	106	100	95	103	98	93	98	94	91	81
5.00	108	103	99	105	101	97	101	97	94	84
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

C Range: 0 - 360DEG
C Interval: 30.0DEG
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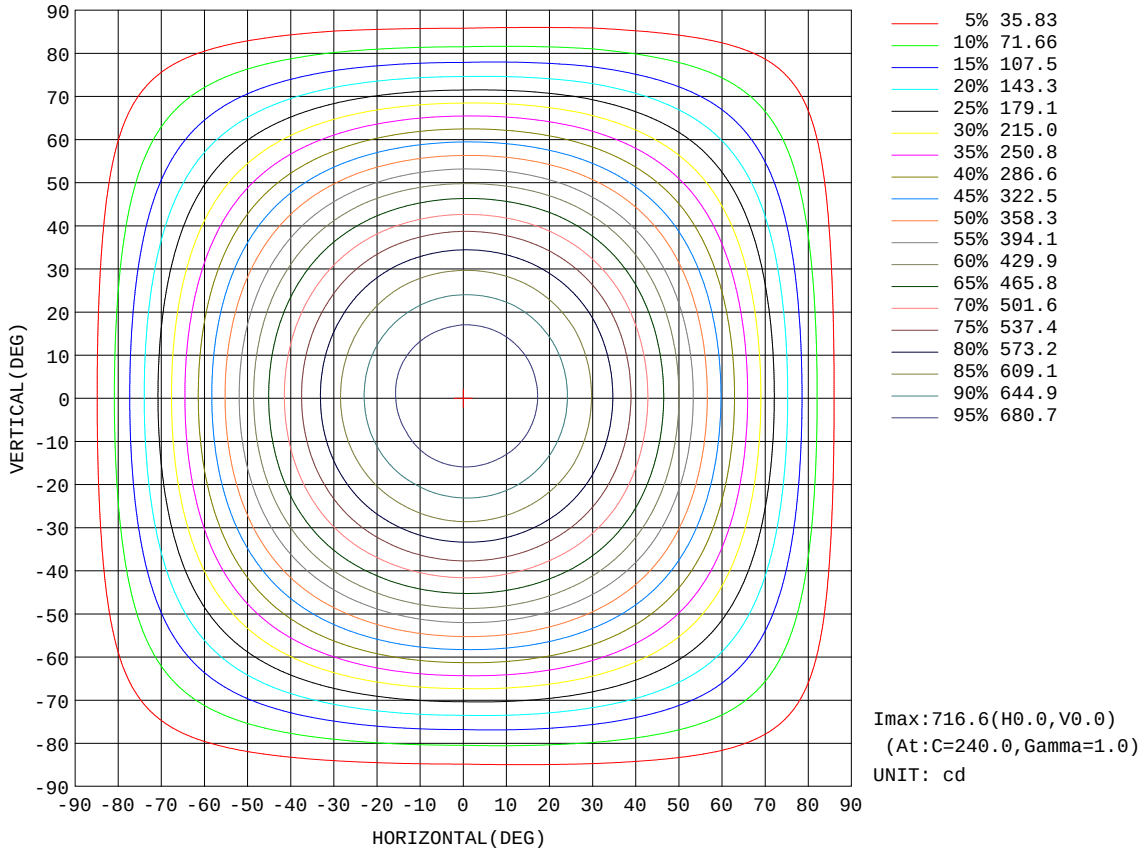
γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	PROTECTION ANGLE:



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

AAI Figure

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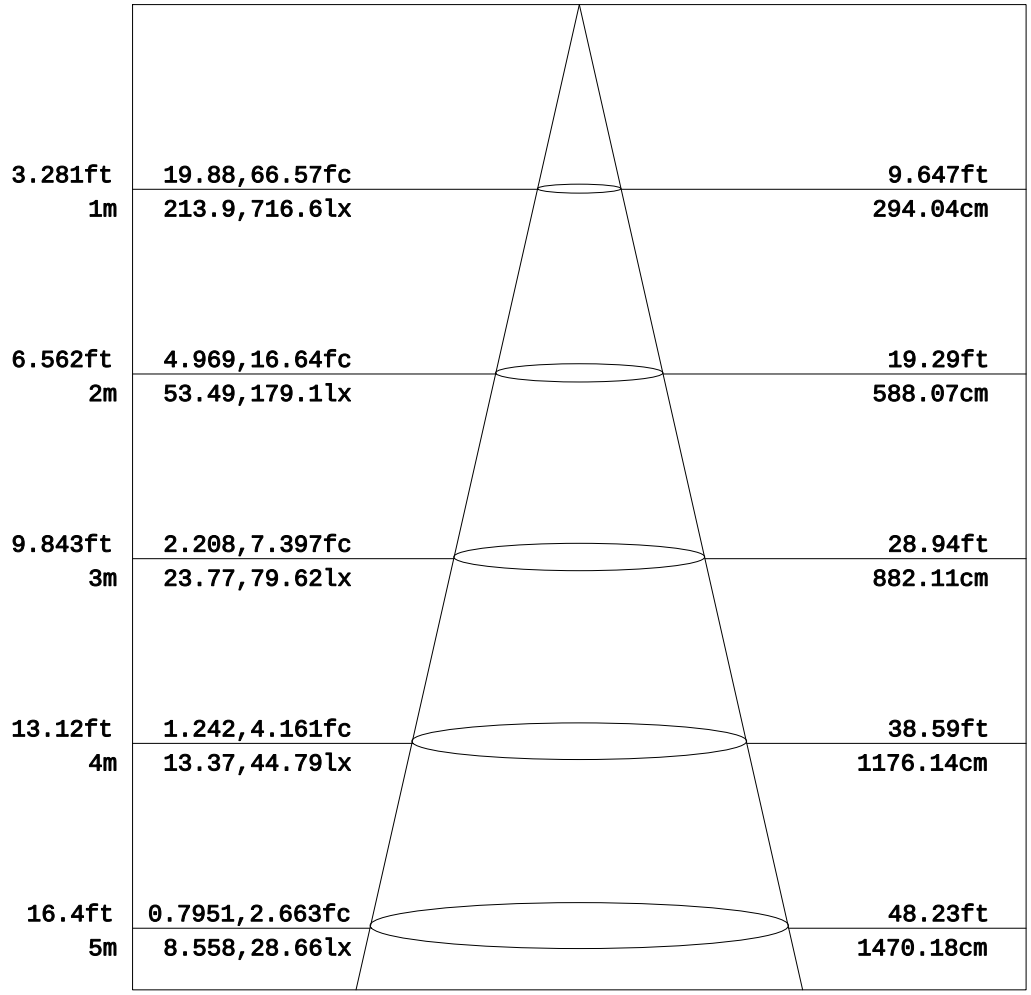
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	PROTECTION ANGLE:

Flux out:1477 lm



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

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C Interval: 30.0DEG
Test Speed: HIGH
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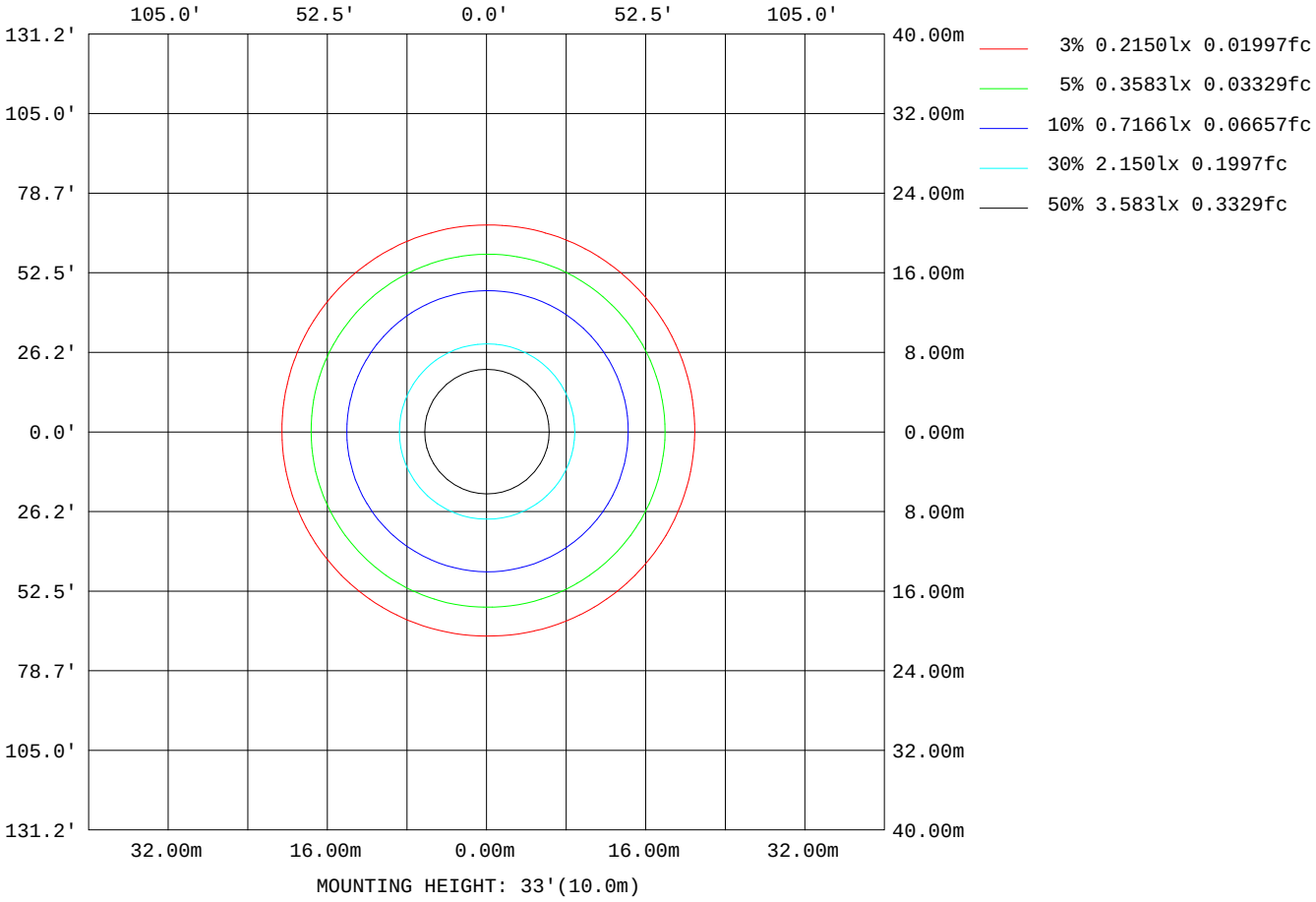
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	PROTECTION ANGLE:



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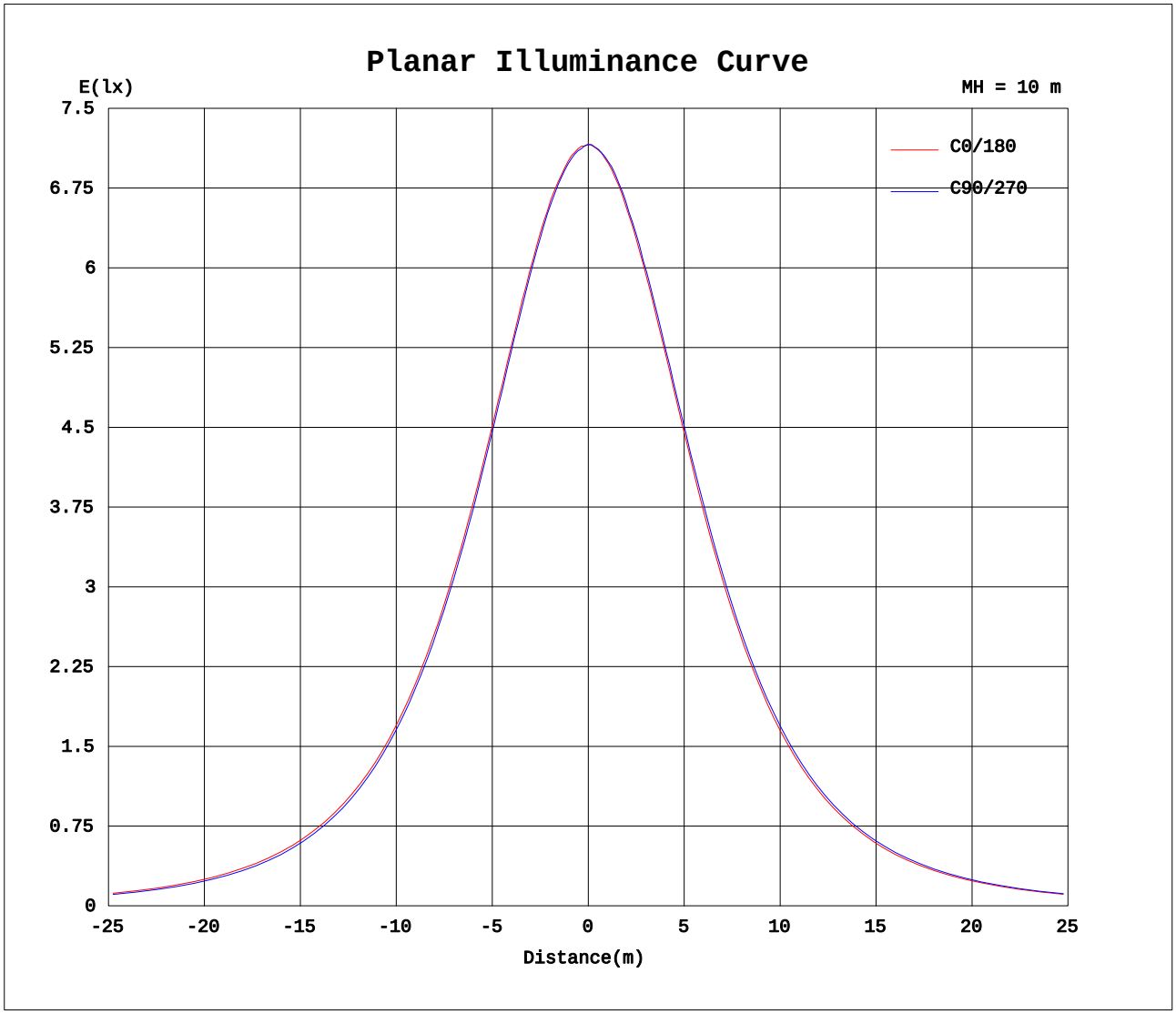
Remarks:

Planar Illuminance Curve



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γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.5V I:0.0870A P:19.40W PF:0.9280 Lamp Flux:2080.75x1 lm		
NAME: AL12B-12-18W-P3	TYPE:18W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.03	PROTECTION ANGLE:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	30	60	90	120	150	180	210	240	270	300	330
0	717	715	716	716	715	716	717	715	716	716	715	716
5	713	713	712	711	711	711	711	712	712	713	713	713
10	704	705	701	700	698	700	701	702	703	704	705	704
15	690	688	686	685	684	682	683	685	686	689	689	690
20	668	667	664	661	661	660	660	661	665	667	670	669
25	641	639	636	633	631	630	632	634	636	639	641	641
30	607	606	602	599	596	596	597	600	604	606	609	609
35	571	568	563	560	558	557	558	561	565	569	570	572
40	527	525	521	516	513	513	515	518	522	525	530	529
45	481	478	472	469	466	466	467	469	475	479	482	482
50	430	426	420	416	414	414	416	419	425	427	431	431
55	376	372	366	362	359	359	361	365	371	373	378	378
60	320	315	308	302	301	301	303	308	312	316	319	321
65	262	257	250	243	243	244	245	250	253	256	261	264
70	204	199	192	184	184	186	188	192	195	196	203	205
75	146	143	135	127	128	130	132	135	138	138	146	148
80	92.4	89.7	83.2	76.1	76.9	78.9	80.3	83.0	85.8	85.8	93.4	93.9
85	44.3	42.5	39.0	34.7	34.7	34.4	34.7	37.7	41.6	41.6	46.7	45.9
90	9.79	11.9	11.8	10.1	9.76	7.90	7.25	9.25	12.0	12.3	14.4	12.6
95	4.96	4.18	3.61	3.65	3.19	3.37	4.30	3.88	3.45	3.64	3.94	4.80
100	3.70	3.06	2.36	2.30	2.50	3.15	3.85	3.57	3.30	3.35	3.15	3.64
105	3.37	3.12	2.89	2.85	3.02	3.48	4.09	3.86	3.57	3.58	3.47	3.51
110	3.72	3.63	3.54	3.52	3.63	3.98	4.50	4.31	4.11	4.10	3.99	3.97
115	4.30	4.27	4.21	4.24	4.33	4.51	5.01	4.86	4.72	4.71	4.63	4.59
120	4.93	4.93	4.90	4.96	5.02	5.13	5.58	5.47	5.37	5.34	5.25	5.25
125	5.59	5.61	5.62	5.64	5.73	5.79	6.21	6.11	6.03	5.99	5.94	5.93
130	6.26	6.28	6.32	6.36	6.41	6.49	6.86	6.78	6.70	6.65	6.60	6.59
135	6.93	6.97	7.00	7.04	7.11	7.15	7.51	7.46	7.36	7.31	7.26	7.28
140	7.59	7.63	7.68	7.71	7.77	7.80	8.13	8.09	7.98	7.94	7.89	7.92
145	8.20	8.23	8.29	8.32	8.39	8.41	8.71	8.66	8.57	8.51	8.49	8.53
150	8.77	8.81	8.87	8.90	8.95	8.97	9.21	9.18	9.11	9.06	9.04	9.05
155	9.32	9.35	9.41	9.44	9.50	9.50	9.71	9.64	9.61	9.55	9.54	9.52
160	9.83	9.86	9.91	9.94	9.96	9.97	10.1	10.1	10.1	10.0	10.00	9.99
165	10.3	10.3	10.4	10.4	10.4	10.4	10.5	10.5	10.5	10.5	10.5	10.4
170	10.7	10.7	10.8	10.8	10.8	10.8	10.9	10.9	10.9	10.8	10.8	10.8
175	11.0	11.0	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
180	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-09-10

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.443m [K=1.0000]
Remarks: