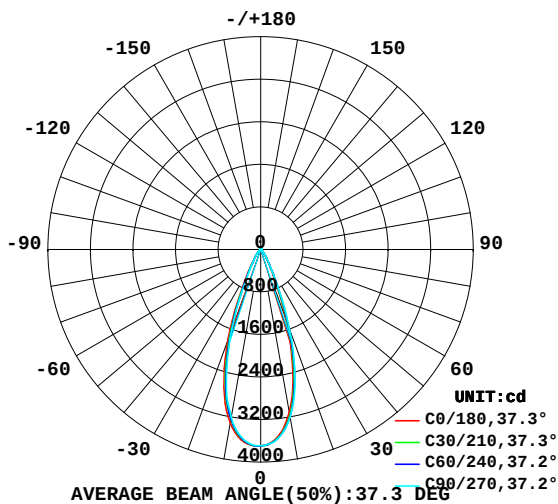


LUMINAIRE PHOTOMETRIC TEST REPORT

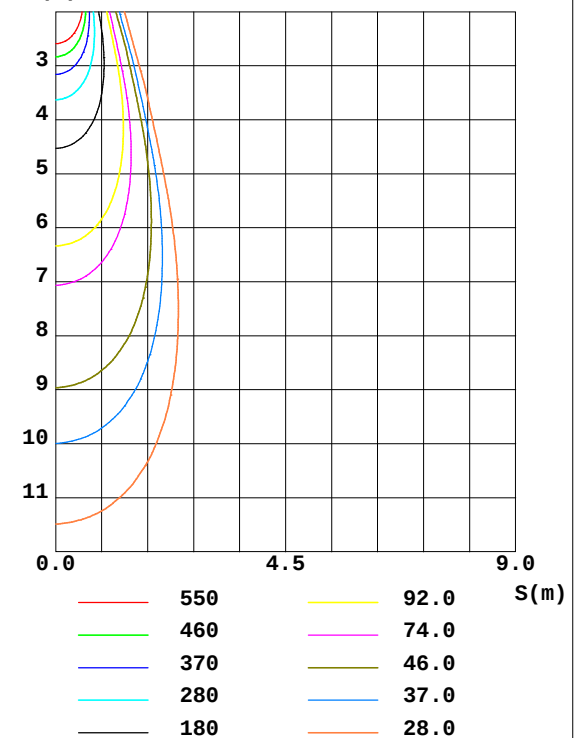
Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm		
NAME: PS-XT-15W-3000K	TYPE: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 114.75 lm/W			
MODEL	PS-XT-15W-3000K	I _{max} (cd)	3698	S/MH(C0/180)	0.56
NOMINAL POWER(W)	15	LOR(%)	100.0	S/MH(C90/270)	0.58
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	1618.0	η UP, DN(C0-180)	1.5, 45.9
NOMINAL FLUX(lm)	1617.96	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.8, 50.7
LAMPS INSIDE	1	η up(%)	3.3	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220.2	η down(%)	96.7	CIBSE SHR MAX	0.60

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT: lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-10-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3113	3176	3202	3133	3313	3241	3201	3284	0- 10	330.8	330.8	20.4,20.4
20	1402	1510	1577	1479	1794	1666	1596	1719	10- 20	675.4	1006	62.2,62.2
30	304.9	331.8	347.8	326.3	419.4	383.2	364.7	401.4	20- 30	372.3	1378	85.2,85.2
40	101.4	108.8	114.2	107.3	135.7	123.9	119.3	130.3	30- 40	129.7	1508	93.2,93.2
50	14.37	16.81	18.59	15.84	26.70	22.62	20.84	24.82	40- 50	45.40	1554	96,96
60	0.9118	0.9205	0.9411	0.7909	2.669	2.262	2.167	2.453	50- 60	6.139	1560	96.4,96.4
70	0.4717	0.4675	0.4633	0.4494	2.151	2.181	2.224	2.203	60- 70	1.305	1561	96.5,96.5
80	0.4112	0.4021	0.4013	0.4032	2.860	2.910	2.934	2.889	70- 80	1.563	1563	96.6,96.6
90	0.5152	0.4935	0.4858	0.5075	3.433	3.463	3.462	3.431	80- 90	1.973	1565	96.7,96.7
100	1.122	1.062	1.042	1.094	3.915	3.944	3.948	3.910	90-100	2.415	1567	96.8,96.8
110	2.582	2.454	2.391	2.514	4.842	4.915	4.938	4.867	100-110	3.192	1570	97,97
120	5.286	5.062	4.948	5.150	6.414	6.528	6.580	6.459	110-120	4.612	1575	97.3,97.3
130	9.209	8.897	8.715	9.005	9.060	9.241	9.344	9.147	120-130	6.556	1581	97.7,97.7
140	13.86	13.51	13.34	13.63	12.90	13.13	13.23	12.98	130-140	8.566	1590	98.3,98.3
150	18.87	18.56	18.30	18.67	17.73	17.96	17.92	17.68	140-150	9.823	1600	98.9,98.9
160	23.00	22.87	22.75	22.90	22.44	22.23	21.80	21.66	150-160	9.425	1609	99.5,99.5
170	24.14	24.26	24.04	23.74	23.89	23.21	22.56	22.53	160-170	6.569	1616	99.9,99.9
180	25.27	24.86	24.02	23.92	25.28	24.88	24.02	23.92	170-180	2.266	1618	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT: lm		

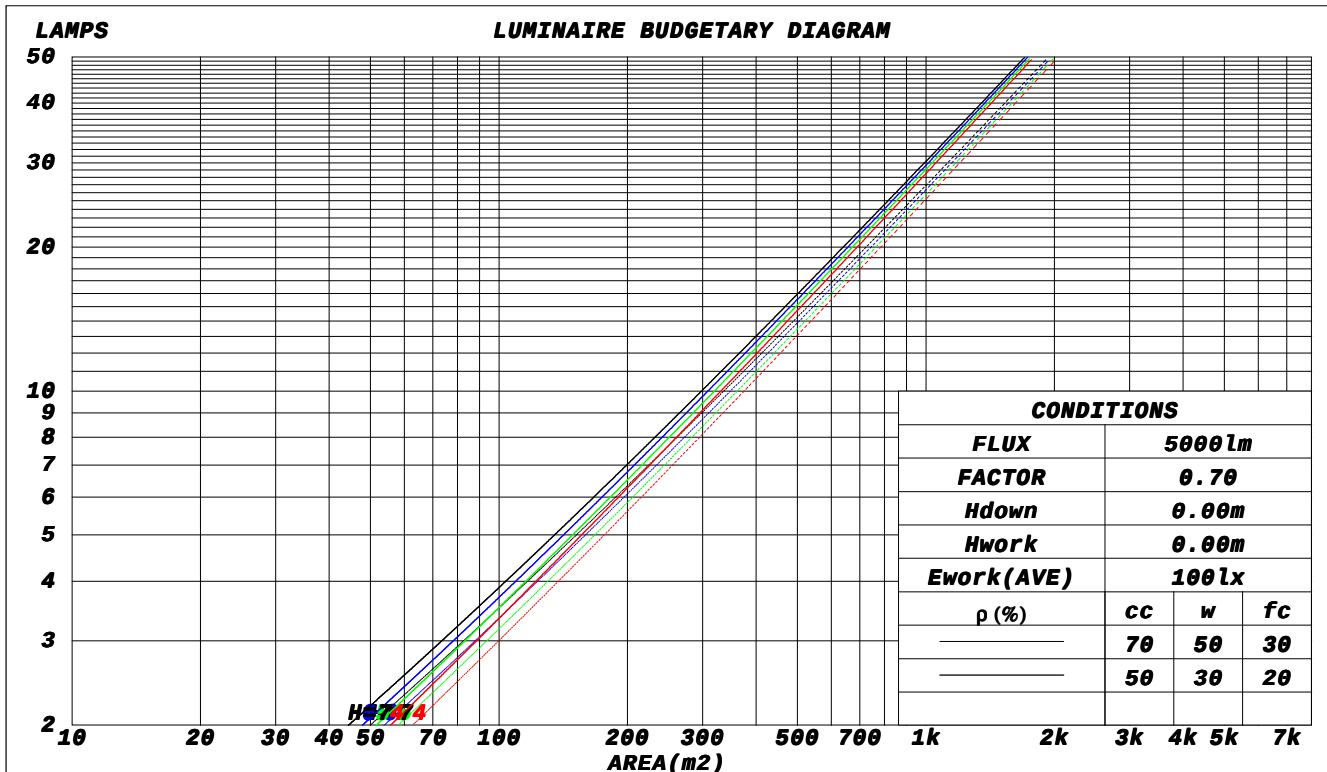
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-10-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7063]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm		
NAME: PS-XT-15W-3000K	TYPE:LED	
MFR.:		

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	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.11	1.09	1.07	1.09	1.07	1.05	1.04	1.02	1.01	.99	.98	.97	.96	.95	.94	.92
2.0	1.05	1.01	.98	1.03	.99	.97	.99	.96	.94	.96	.94	.92	.92	.91	.89	.88
3.0	.99	.95	.91	.97	.93	.90	.94	.91	.89	.92	.89	.87	.89	.87	.85	.84
4.0	.94	.89	.86	.93	.88	.85	.90	.86	.84	.88	.85	.82	.86	.83	.81	.80
5.0	.89	.84	.81	.88	.84	.80	.86	.82	.79	.84	.81	.78	.82	.80	.77	.76
6.0	.85	.80	.77	.84	.80	.76	.83	.79	.75	.81	.77	.75	.79	.76	.74	.73
7.0	.81	.76	.73	.81	.76	.73	.79	.75	.72	.78	.74	.71	.76	.73	.71	.70
8.0	.78	.73	.70	.77	.73	.69	.76	.72	.69	.75	.71	.68	.74	.70	.68	.67
9.0	.75	.70	.67	.74	.70	.66	.73	.69	.66	.72	.68	.66	.71	.68	.65	.64
10.0	.72	.67	.64	.71	.67	.64	.70	.66	.63	.70	.66	.63	.69	.65	.63	.62



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2017-10-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm											
NAME: PS-XT-15W-3000K						TYPE:LED					
MFR.:											

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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.158	.090	.029	.151	.086	.027	.136	.078	.025	.123	.071	.023	.111	.064	.021	
2.0	.148	.081	.025	.142	.078	.024	.130	.072	.022	.118	.066	.021	.108	.061	.019	
3.0	.139	.074	.022	.134	.072	.022	.123	.067	.020	.114	.062	.019	.105	.058	.018	
4.0	.132	.068	.020	.127	.066	.020	.118	.062	.019	.109	.059	.018	.102	.055	.017	
5.0	.125	.064	.018	.121	.062	.018	.113	.059	.017	.105	.056	.017	.099	.053	.016	
6.0	.119	.059	.017	.115	.058	.017	.108	.055	.016	.101	.053	.015	.095	.050	.015	
7.0	.113	.056	.016	.110	.055	.016	.104	.052	.015	.098	.050	.015	.092	.048	.014	
8.0	.108	.053	.015	.105	.052	.015	.099	.050	.014	.094	.048	.014	.089	.046	.013	
9.0	.103	.050	.014	.101	.049	.014	.096	.047	.013	.091	.046	.013	.087	.044	.013	
10.0	.099	.048	.013	.097	.047	.013	.092	.045	.013	.088	.044	.012	.084	.042	.012	

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.216	.216	.216	.184	.184	.184	.126	.126	.126	.072	.072	.072	.023	.023	.023	
1.0	.195	.183	.172	.167	.157	.148	.114	.108	.102	.066	.062	.059	.021	.020	.019	
2.0	.179	.158	.141	.153	.136	.122	.105	.094	.085	.060	.055	.050	.019	.018	.016	
3.0	.165	.139	.118	.141	.120	.103	.097	.083	.072	.056	.049	.042	.018	.016	.014	
4.0	.154	.124	.102	.132	.107	.088	.091	.075	.062	.052	.044	.037	.017	.014	.012	
5.0	.144	.112	.089	.124	.097	.077	.085	.068	.055	.049	.040	.032	.016	.013	.011	
6.0	.136	.103	.079	.117	.089	.069	.081	.062	.049	.047	.037	.029	.015	.012	.010	
7.0	.129	.095	.071	.111	.082	.062	.077	.058	.044	.045	.034	.026	.014	.011	.009	
8.0	.123	.088	.065	.106	.077	.056	.073	.054	.040	.043	.032	.024	.014	.010	.008	
9.0	.118	.083	.060	.101	.072	.052	.070	.051	.037	.041	.030	.022	.013	.010	.007	
10.0	.113	.078	.056	.097	.068	.048	.068	.048	.034	.039	.028	.021	.013	.009	.007	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-10-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

Uncorrected UGR Table

Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm										
NAME: PS-XT-15W-3000K					TYPE: LED					
MFR.:										
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	13.4	14.2	13.7	14.4	14.6	13.9	14.6	14.1	14.8	15.1
3H	13.3	14.0	13.6	14.2	14.5	13.7	14.4	14.0	14.6	14.9
4H	13.2	13.9	13.5	14.1	14.4	13.6	14.3	13.9	14.5	14.8
6H	13.1	13.7	13.4	14.0	14.3	13.5	14.1	13.9	14.4	14.7
8H	13.0	13.6	13.4	14.0	14.3	13.5	14.1	13.8	14.4	14.7
12H	13.0	13.6	13.4	13.9	14.2	13.4	14.0	13.8	14.3	14.7
4H 2H	13.2	13.9	13.5	14.1	14.4	13.6	14.3	13.9	14.5	14.8
3H	13.0	13.6	13.4	13.9	14.2	13.4	14.0	13.8	14.3	14.7
4H	12.9	13.4	13.3	13.8	14.1	13.3	13.8	13.7	14.2	14.6
6H	12.8	13.3	13.2	13.6	14.0	13.2	13.7	13.6	14.1	14.5
8H	12.7	13.2	13.2	13.6	14.0	13.2	13.6	13.6	14.0	14.4
12H	12.7	13.1	13.1	13.5	14.0	13.1	13.5	13.6	13.9	14.4
8H 4H	12.7	13.2	13.2	13.6	14.0	13.2	13.6	13.6	14.0	14.4
6H	12.6	13.0	13.1	13.4	13.9	13.0	13.4	13.5	13.8	14.3
8H	12.6	12.9	13.1	13.4	13.9	13.0	13.3	13.5	13.8	14.3
12H	12.5	12.8	13.0	13.3	13.8	12.9	13.2	13.5	13.7	14.2
12H 4H	12.7	13.1	13.1	13.5	13.9	13.1	13.5	13.6	13.9	14.4
6H	12.6	12.9	13.1	13.3	13.9	13.0	13.3	13.5	13.8	14.3
8H	12.5	12.8	13.0	13.3	13.8	12.9	13.2	13.4	13.7	14.2
Variations with the observer position at spacings:										
S = 1.0H	+ 2.9 / -15.3					+ 3.0 / -15.2				
1.5H	+ 5.0 / -13.1					+ 5.0 / -13.3				
2.0H	+ 7.2 / -10.4					+ 7.4 / -11.5				

CIE Pub.117 Corrected 1618 lm Total Lamp Luminous Flux. (8log(F/F0) = 1.7)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-10-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm		
NAME: PS-XT-15W-3000K	TYPE: LED	
MFR.:		

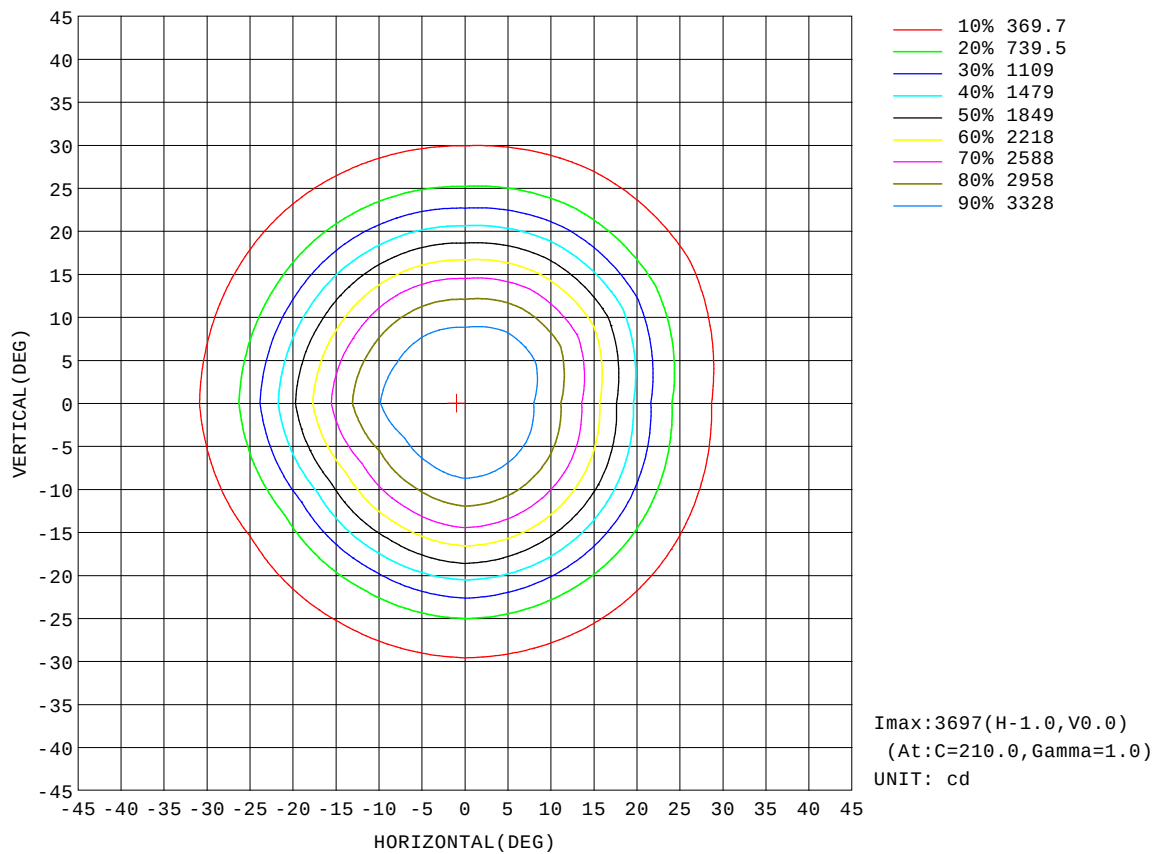
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	78	87	81	77	86	80	77	74
0.80	95	89	85	94	88	85	92	88	85	81
1.00	99	93	90	98	93	89	96	92	89	85
1.25	103	98	94	101	97	94	99	95	93	88
1.50	105	101	97	104	100	97	101	98	95	90
2.00	108	104	101	106	102	100	103	100	98	92
2.50	109	106	103	108	104	102	104	101	99	93
3.00	111	108	105	109	106	104	105	103	101	94
4.00	113	110	108	111	108	106	107	105	103	95
5.00	114	112	110	112	110	108	107	106	105	96
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: 2017-10-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm		
NAME: PS-Xt-15W-3000K	TYPE: LED	
MFR.:		



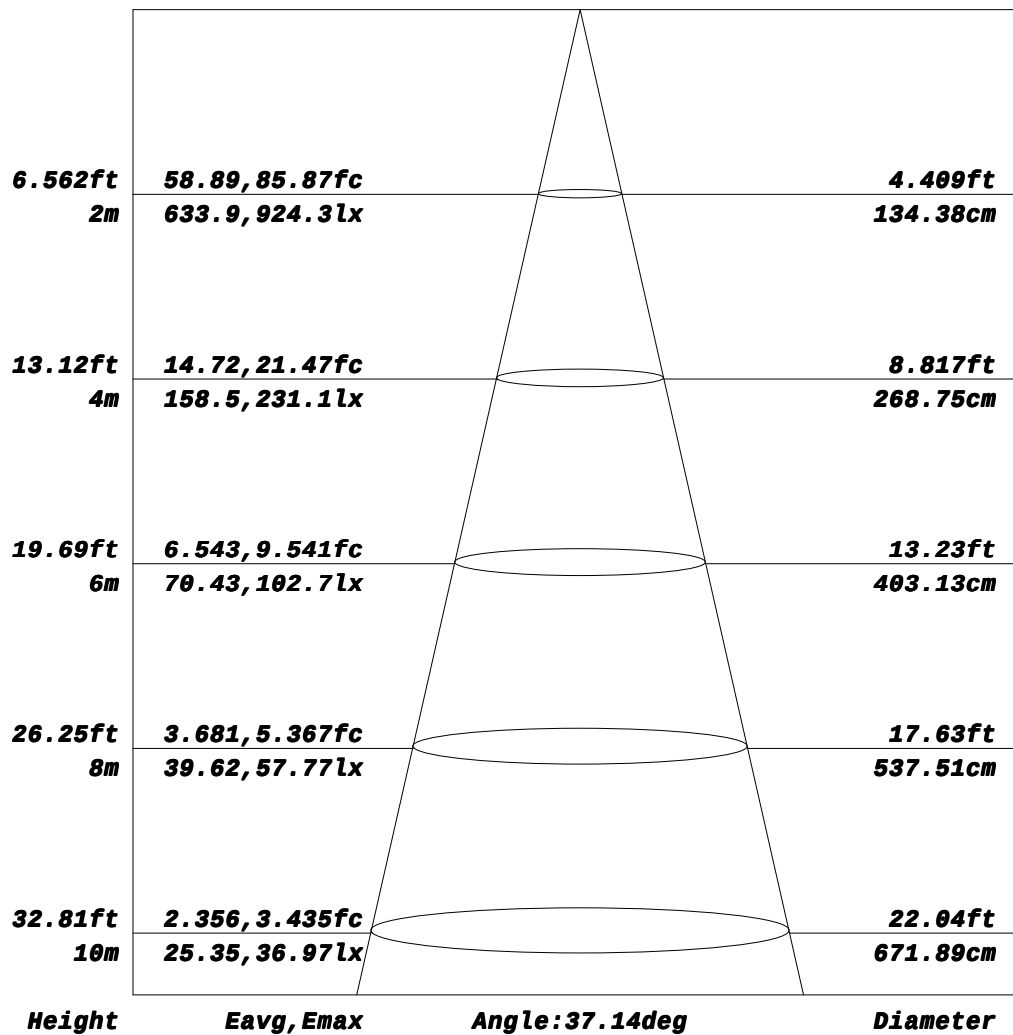
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-10-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm		
NAME: PS-Xt-15W-3000K	TYPE: LED	
MFR.:		

Flux out:944.4 lm



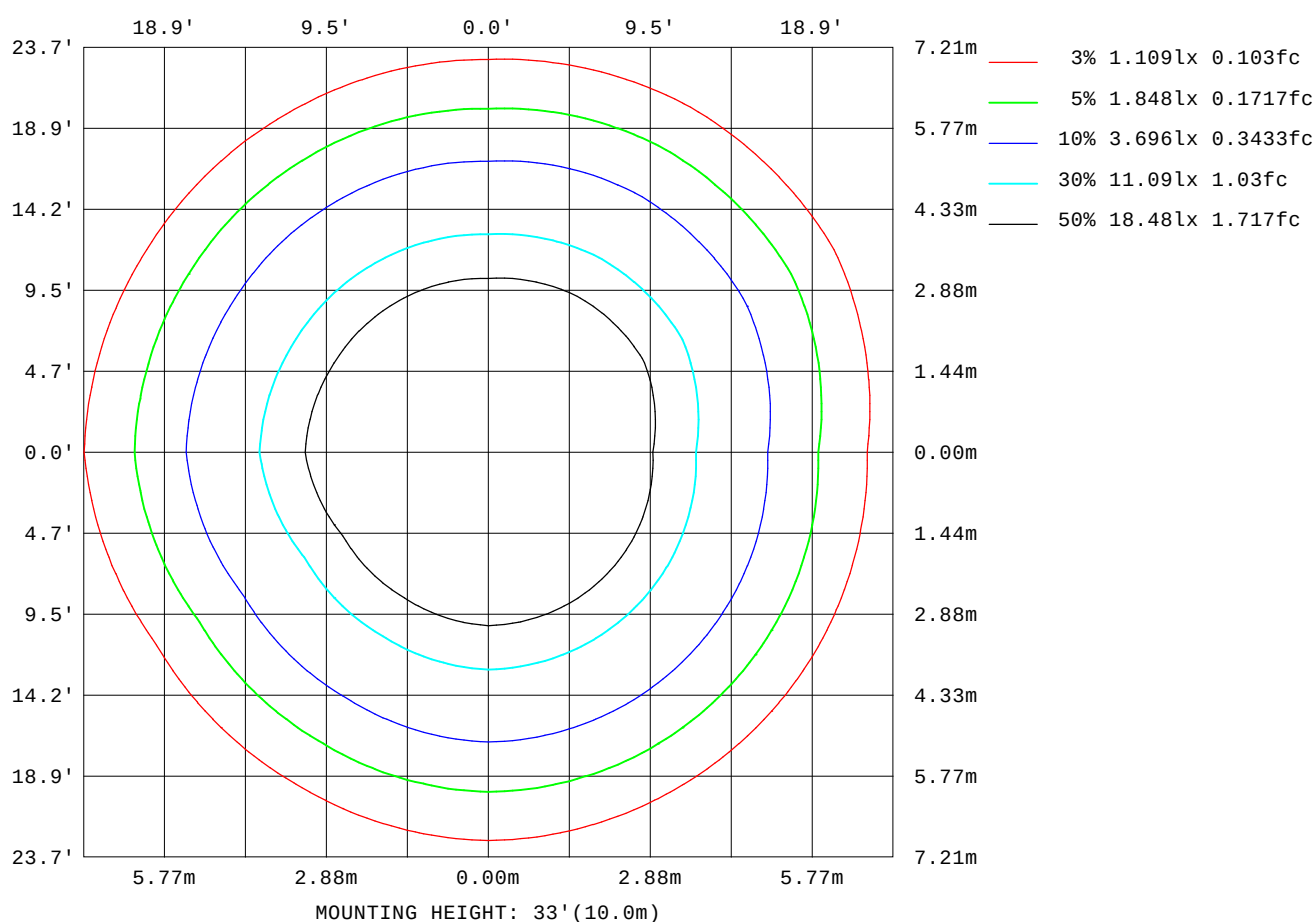
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-10-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOLUX DIAGRAM

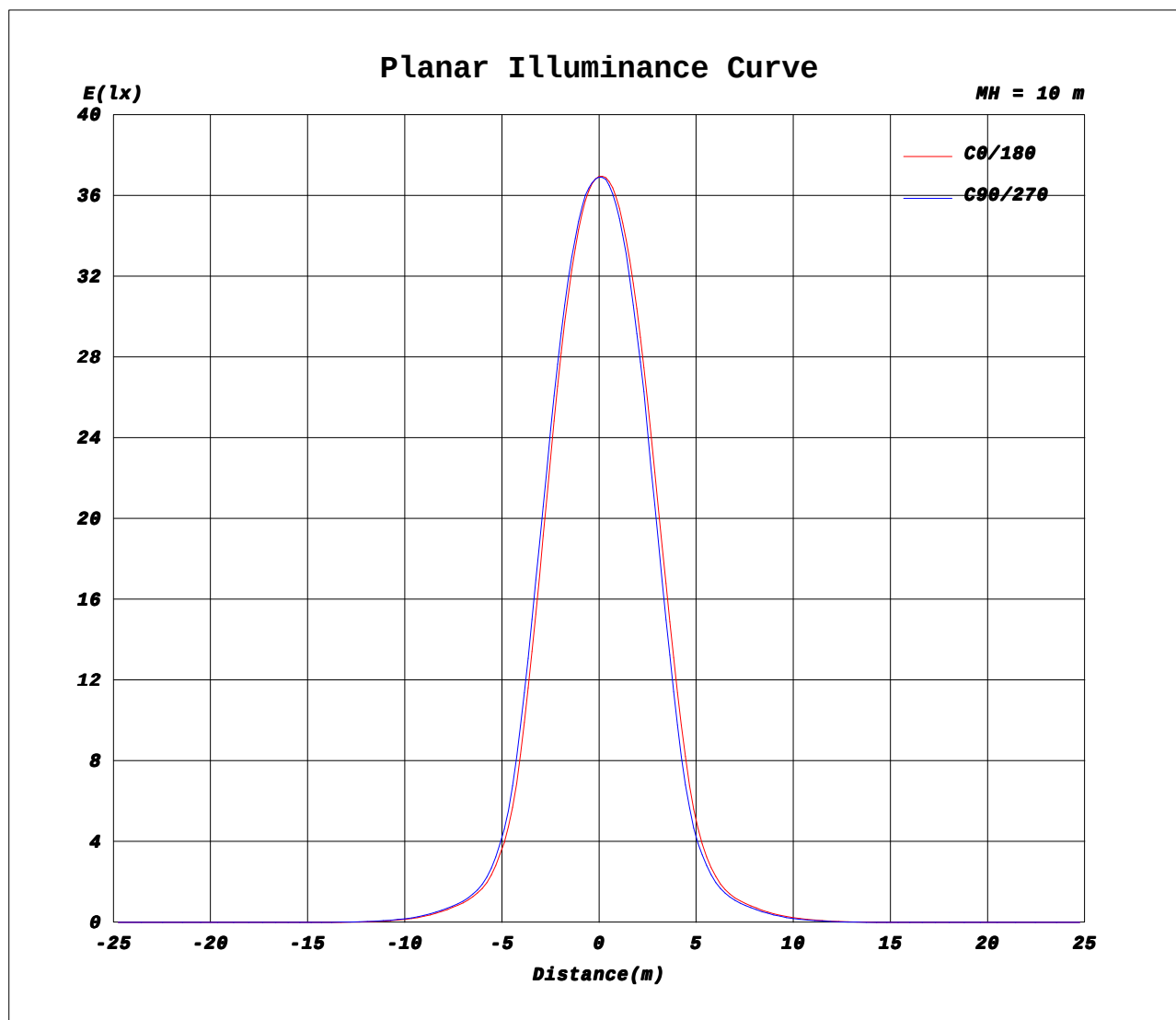
Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm		
NAME: PS-XT-15W-3000K	TYPE: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-10-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-10-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.3V I:0.0650A P:14.10W PF:0.9740 Lamp Flux:1617.96x1 lm																	
NAME: PS-XT-15W-3000K									TYPE: LED								
MFR.:																	

Table--1

UNIT: cd

γ (DEG)	C (DEG)																	
	0	30	60	90	120	150	180	210	240	270	300	330						
0	3695	3697	3693	3691	3687	3687	3695	3697	3693	3691	3687	3687						
5	3552	3573	3582	3584	3553	3552	3636	3615	3606	3597	3623	3626						
10	3113	3162	3190	3202	3137	3128	3313	3246	3237	3201	3288	3280						
15	2341	2419	2466	2496	2396	2392	2683	2585	2554	2498	2626	2626						
20	1402	1477	1543	1577	1486	1472	1794	1697	1635	1596	1709	1729						
25	637	682	713	744	684	679	910	831	788	763	842	851						
30	305	325	339	348	326	327	419	392	374	365	399	404						
35	177	182	187	192	184	184	223	209	203	200	214	216						
40	101	107	111	114	107	107	136	126	122	119	130	131						
45	44.7	48.1	51.2	52.7	48.0	47.9	67.7	60.8	58.1	56.9	63.7	63.9						
50	14.4	16.2	17.5	18.6	15.9	15.8	26.7	23.1	22.2	20.8	25.0	24.6						
55	3.72	4.01	4.26	4.31	3.87	3.85	6.44	5.85	5.62	5.45	6.18	6.44						
60	0.91	0.91	0.93	0.94	0.83	0.75	2.67	2.20	2.33	2.17	2.48	2.43						
65	0.61	0.62	0.59	0.57	0.54	0.52	1.92	1.91	1.93	1.97	2.00	2.02						
70	0.47	0.47	0.46	0.46	0.46	0.44	2.15	2.17	2.20	2.22	2.20	2.20						
75	0.41	0.41	0.41	0.41	0.41	0.40	2.49	2.53	2.54	2.57	2.53	2.53						
80	0.41	0.40	0.40	0.40	0.41	0.40	2.86	2.90	2.92	2.93	2.89	2.89						
85	0.39	0.39	0.40	0.41	0.40	0.40	3.20	3.23	3.24	3.24	3.19	3.20						
90	0.52	0.50	0.49	0.49	0.51	0.51	3.43	3.46	3.47	3.46	3.43	3.43						
95	0.75	0.71	0.70	0.69	0.73	0.73	3.68	3.70	3.69	3.70	3.66	3.68						
100	1.12	1.08	1.05	1.04	1.09	1.10	3.91	3.94	3.94	3.95	3.90	3.92						
105	1.72	1.65	1.60	1.58	1.67	1.68	4.29	4.33	4.34	4.35	4.30	4.30						
110	2.58	2.50	2.41	2.39	2.50	2.53	4.84	4.90	4.93	4.94	4.87	4.87						
115	3.76	3.65	3.54	3.52	3.65	3.69	5.55	5.60	5.64	5.66	5.57	5.57						
120	5.29	5.11	5.01	4.95	5.14	5.16	6.41	6.50	6.56	6.58	6.46	6.45						
125	7.09	6.91	6.78	6.70	6.93	6.95	7.57	7.69	7.76	7.81	7.65	7.64						
130	9.21	8.95	8.84	8.72	9.01	9.00	9.06	9.21	9.27	9.34	9.15	9.14						
135	11.4	11.2	11.0	10.9	11.2	11.2	10.8	11.0	11.1	11.2	10.9	10.9						
140	13.9	13.6	13.4	13.3	13.6	13.7	12.9	13.1	13.2	13.2	13.0	13.0						
145	16.3	16.1	15.9	15.8	16.1	16.2	15.2	15.4	15.5	15.5	15.3	15.3						
150	18.9	18.7	18.4	18.3	18.6	18.8	17.7	17.9	18.0	17.9	17.7	17.7						
155	21.2	21.1	20.8	20.7	20.9	21.2	20.3	20.4	20.3	20.1	19.9	20.0						
160	23.0	23.0	22.8	22.8	22.8	23.0	22.4	22.4	22.1	21.8	21.6	21.8						
165	23.9	23.9	23.9	23.8	23.7	23.7	23.6	23.4	22.9	22.6	22.4	22.6						
170	24.1	24.3	24.2	24.0	23.8	23.7	23.9	23.5	22.9	22.6	22.4	22.6						
175	24.7	24.8	24.6	24.3	23.9	23.8	24.3	23.9	23.4	22.8	22.7	23.0						
180	25.3	25.1	24.6	24.0	23.8	24.1	25.3	25.1	24.6	24.0	23.8	24.1						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-10-25

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks: