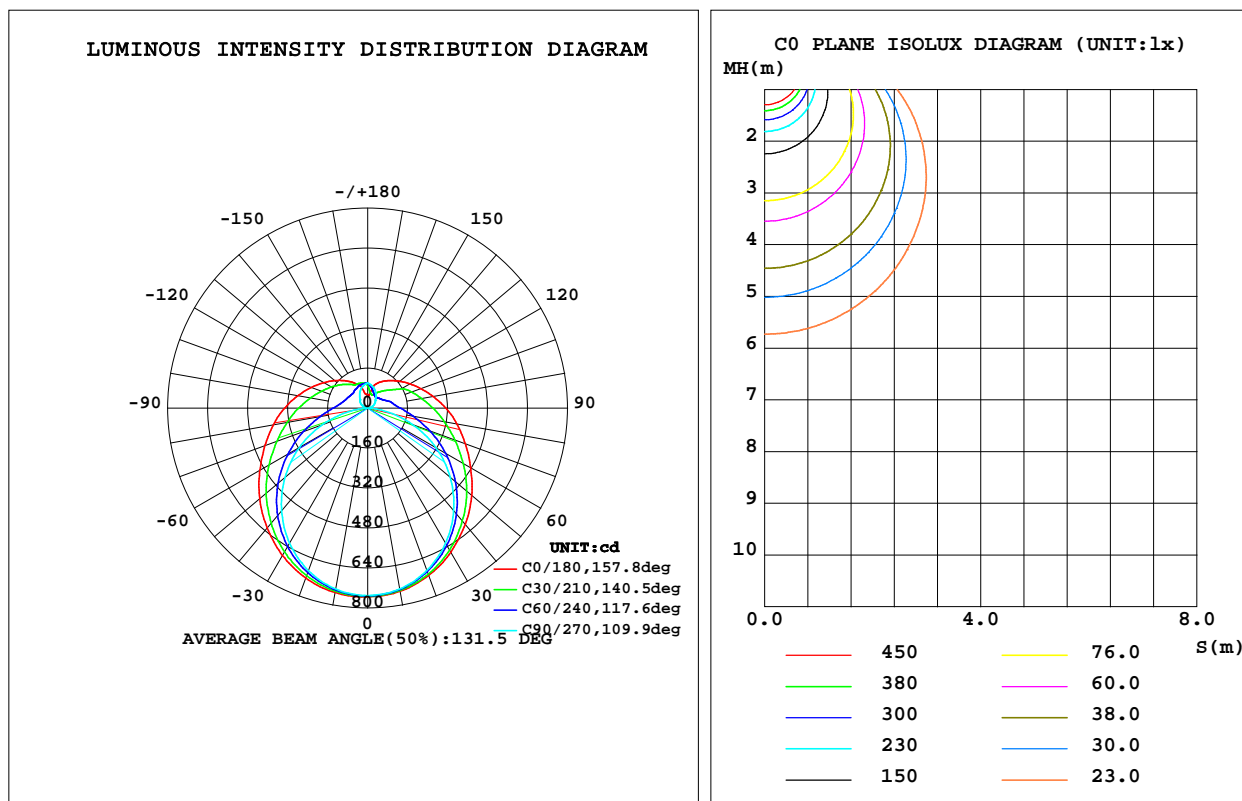


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 114.77 lm/W			
MODEL	UP-DB18-30W-4000K	I _{max} (cd)	756.5	S/MH(C0/180)	1.31
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	232	TOTAL FLUX(lm)	3443.0	η UP,DN(C0-180)	11.1,38.6
NOMINAL FLUX(lm)	3443.03	CIE CLASS	SEMI-D.	η UP,DN(C180-360)	11.3,39.0
LAMPS INSIDE	1	η up(%)	22.4	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	231.0	η down(%)	77.6	CIBSE SHR MAX	1.50



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.580m [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	744.5	739.4	735.4	736.8	749.6	741.7	735.5	735.9	0- 10	71.15	71.15	2.07,2.07
20	713.3	702.5	691.8	702.4	724.3	708.0	692.7	700.5	10- 20	204.5	275.7	8.01,8.01
30	665.7	644.9	623.6	647.3	681.8	653.1	625.0	643.3	20- 30	312.7	588.4	17.1,17.1
40	607.4	571.0	535.1	575.7	626.1	581.0	536.7	570.7	30- 40	383.8	972.3	28.2,28.2
50	543.1	488.0	431.6	494.9	564.4	499.3	431.9	488.4	40- 50	413.2	1385	40.2,40.2
60	476.3	400.5	315.0	409.1	498.3	412.7	315.7	401.2	50- 60	401.7	1787	51.9,51.9
70	415.8	317.3	188.8	327.0	437.3	329.5	189.5	318.0	60- 70	357.3	2144	62.3,62.3
80	362.6	247.5	67.24	257.5	382.9	259.2	66.96	248.9	70- 80	294.5	2439	70.8,70.8
90	312.7	196.4	1.858	206.1	332.5	207.5	1.995	197.9	80- 90	232.3	2671	77.6,77.6
100	267.1	162.4	7.320	170.6	284.9	171.8	7.026	160.6	90-100	188.2	2860	83.1,83.1
110	227.9	136.9	18.98	145.9	241.8	147.1	18.42	131.0	100-110	155.4	3015	87.6,87.6
120	195.5	111.4	30.95	128.3	204.4	129.3	30.02	110.3	110-120	126.3	3141	91.2,91.2
130	168.0	87.32	41.10	114.8	172.2	115.4	40.03	89.65	120-130	98.92	3240	94.1,94.1
140	144.5	72.26	50.50	105.4	143.8	106.0	49.08	74.90	130-140	75.23	3315	96.3,96.3
150	124.4	64.31	66.72	98.67	119.0	98.93	65.70	66.26	140-150	55.89	3371	97.9,97.9
160	104.7	62.58	81.49	102.0	97.36	101.4	81.40	63.25	150-160	39.55	3411	99.1,99.1
170	64.12	74.12	92.95	101.7	59.22	100.8	93.28	75.28	160-170	24.08	3435	99.8,99.8
180	53.78	95.62	100.4	96.35	53.97	95.55	100.2	96.32	170-180	8.190	3443	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

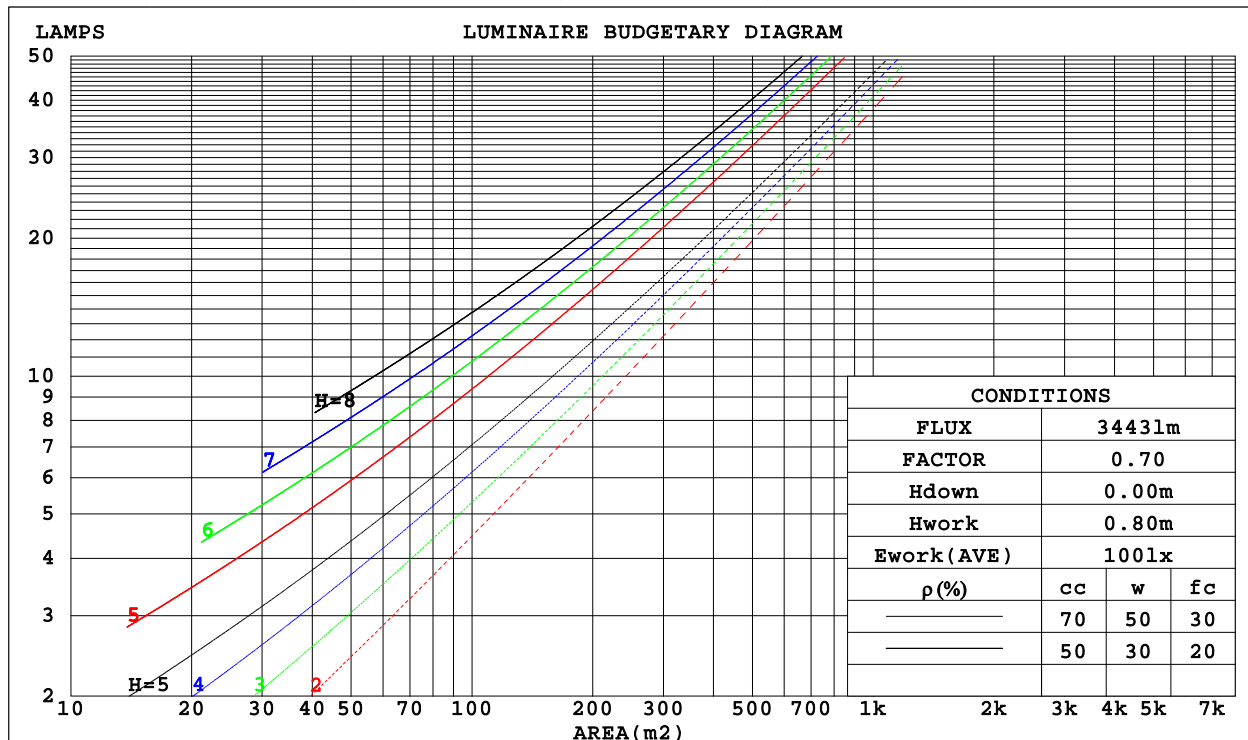
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.580m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:

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	1.14	1.14	1.14	1.08	1.08	1.08	.99	.99	.99	.90	.90	.90	.81	.81	.81	.78
1.0	.95	.90	.85	.91	.86	.82	.82	.79	.75	.75	.72	.69	.67	.65	.63	.59
2.0	.82	.74	.68	.78	.71	.65	.71	.65	.60	.64	.60	.56	.58	.54	.51	.48
3.0	.71	.62	.55	.68	.60	.53	.62	.55	.50	.56	.50	.46	.50	.46	.42	.39
4.0	.63	.53	.46	.60	.51	.45	.54	.47	.42	.49	.43	.39	.45	.40	.36	.33
5.0	.56	.46	.39	.53	.44	.38	.48	.41	.36	.44	.38	.33	.40	.35	.31	.28
6.0	.50	.41	.34	.48	.39	.33	.44	.36	.31	.40	.34	.29	.36	.31	.27	.24
7.0	.45	.36	.30	.43	.35	.29	.39	.32	.27	.36	.30	.25	.33	.28	.24	.21
8.0	.41	.32	.26	.39	.31	.26	.36	.29	.24	.33	.27	.23	.30	.25	.21	.19
9.0	.37	.29	.23	.36	.28	.23	.33	.26	.22	.30	.24	.20	.28	.23	.19	.17
10.0	.34	.26	.21	.33	.26	.21	.30	.24	.19	.28	.22	.18	.26	.21	.17	.15



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.580m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:

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	.371	.211	.067	.357	.204	.065	.331	.190	.061	.307	.177	.057	.285	.165	.053	
2.0	.323	.177	.054	.311	.171	.053	.287	.159	.050	.265	.149	.047	.245	.138	.044	
3.0	.288	.153	.046	.277	.148	.045	.255	.138	.042	.235	.129	.040	.217	.120	.037	
4.0	.260	.135	.040	.250	.131	.039	.230	.122	.036	.212	.114	.034	.195	.106	.032	
5.0	.237	.121	.035	.228	.117	.034	.210	.109	.032	.193	.102	.030	.178	.095	.029	
6.0	.218	.109	.031	.209	.106	.030	.193	.099	.029	.177	.092	.027	.163	.086	.026	
7.0	.201	.099	.028	.193	.096	.027	.178	.090	.026	.164	.084	.024	.151	.078	.023	
8.0	.187	.091	.026	.179	.088	.025	.166	.083	.024	.153	.077	.022	.140	.072	.021	
9.0	.174	.084	.024	.167	.082	.023	.155	.076	.022	.143	.072	.020	.131	.067	.019	
10.0	.163	.078	.022	.157	.076	.021	.145	.071	.020	.134	.067	.019	.123	.062	.018	

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	.361	.361	.361	.309	.309	.309	.211	.211	.211	.121	.121	.121	.039	.039	.039	
1.0	.357	.328	.302	.305	.281	.260	.209	.194	.180	.120	.112	.104	.038	.036	.034	
2.0	.350	.305	.268	.300	.263	.231	.205	.182	.161	.118	.106	.095	.038	.034	.031	
3.0	.342	.289	.246	.293	.249	.213	.201	.173	.150	.116	.101	.088	.037	.033	.029	
4.0	.335	.276	.232	.287	.239	.201	.197	.166	.142	.114	.097	.084	.037	.032	.028	
5.0	.327	.267	.222	.281	.231	.193	.193	.161	.136	.112	.095	.081	.036	.031	.027	
6.0	.320	.259	.215	.275	.224	.187	.190	.157	.132	.110	.092	.079	.035	.030	.026	
7.0	.313	.252	.210	.269	.219	.183	.186	.153	.129	.108	.090	.077	.035	.030	.025	
8.0	.306	.247	.206	.264	.214	.179	.182	.150	.127	.106	.089	.076	.034	.029	.025	
9.0	.300	.242	.202	.259	.210	.177	.179	.148	.125	.104	.087	.075	.034	.029	.025	
10.0	.294	.238	.200	.254	.206	.175	.176	.145	.124	.103	.086	.074	.033	.028	.025	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.580m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm											
NAME: UP-DB18-30W-4000K					TYPE:30			WEIGHT:			
DIM.:					SPEC.:4000K			SERIAL No.:			
MFR.:					SUR.:0.07458			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	20.3	21.6	20.9	22.2	22.8	18.7	20.0	19.2	20.5	21.2	
	3H	22.9	24.1	23.5	24.7	25.4	20.2	21.4	20.8	22.0	22.6
	4H	24.3	25.5	25.0	26.1	26.8	20.7	21.9	21.4	22.5	23.2
	6H	26.0	27.1	26.6	27.7	28.4	21.1	22.2	21.8	22.8	23.6
	8H	26.9	28.0	27.6	28.6	29.3	21.2	22.3	21.9	22.9	23.6
	12H	28.0	29.0	28.7	29.6	30.4	21.2	22.2	21.9	22.9	23.7
4H	2H	20.9	22.0	21.5	22.6	23.3	19.6	20.8	20.2	21.4	22.1
	3H	23.7	24.7	24.3	25.3	26.1	21.4	22.4	22.0	23.0	23.8
	4H	25.3	26.2	26.0	26.9	27.7	22.2	23.1	22.8	23.7	24.5
	6H	27.2	28.0	27.9	28.7	29.5	22.8	23.6	23.5	24.3	25.1
	8H	28.2	29.0	28.9	29.7	30.5	22.9	23.7	23.7	24.4	25.3
	12H	29.5	30.2	30.2	30.9	31.7	23.1	23.8	23.8	24.5	25.3
8H	4H	25.6	26.4	26.4	27.1	27.9	23.1	23.8	23.8	24.6	25.4
	6H	27.8	28.5	28.6	29.2	30.1	24.1	24.7	24.8	25.4	26.3
	8H	29.1	29.7	29.8	30.4	31.3	24.5	25.1	25.2	25.8	26.7
	12H	30.6	31.1	31.3	31.8	32.8	24.8	25.3	25.6	26.1	27.0
12H	4H	25.7	26.4	26.4	27.1	27.9	23.4	24.1	24.1	24.8	25.7
	6H	27.9	28.5	28.7	29.3	30.1	24.6	25.2	25.4	25.9	26.8
	8H	29.3	29.8	30.1	30.6	31.5	25.2	25.7	26.0	26.5	27.4
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4					

CIE Pub.117 Corrected 3443 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.3)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.580m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:

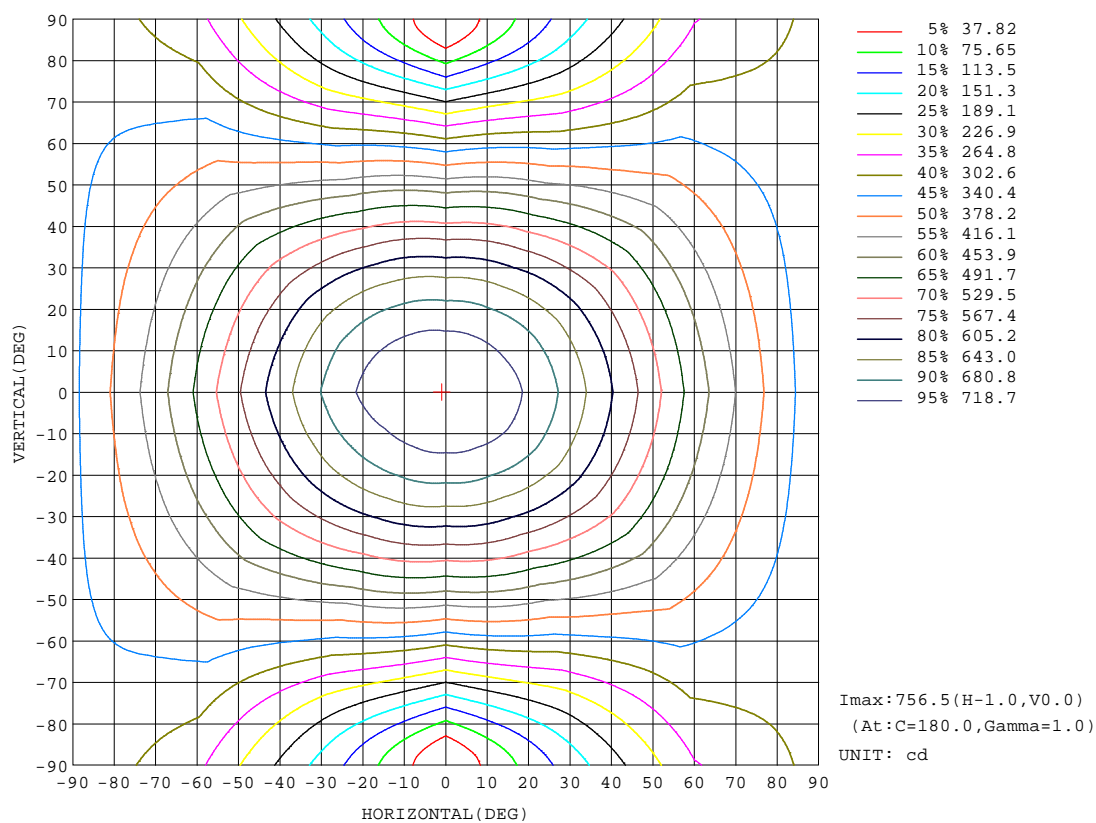
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	47	35	28	46	35	28	44	34	27	20
0.80	57	44	36	55	43	35	52	41	34	26
1.00	64	52	43	62	50	43	58	50	41	32
1.25	71	59	50	69	57	49	64	54	47	37
1.50	76	64	56	73	62	55	68	59	52	41
2.00	83	73	64	80	70	63	74	66	59	47
2.50	88	78	70	84	75	68	77	70	64	50
3.00	92	82	75	88	79	73	80	74	68	54
4.00	96	88	82	92	85	79	84	79	74	58
5.00	99	92	87	95	89	84	86	82	77	61
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:2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.580m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:

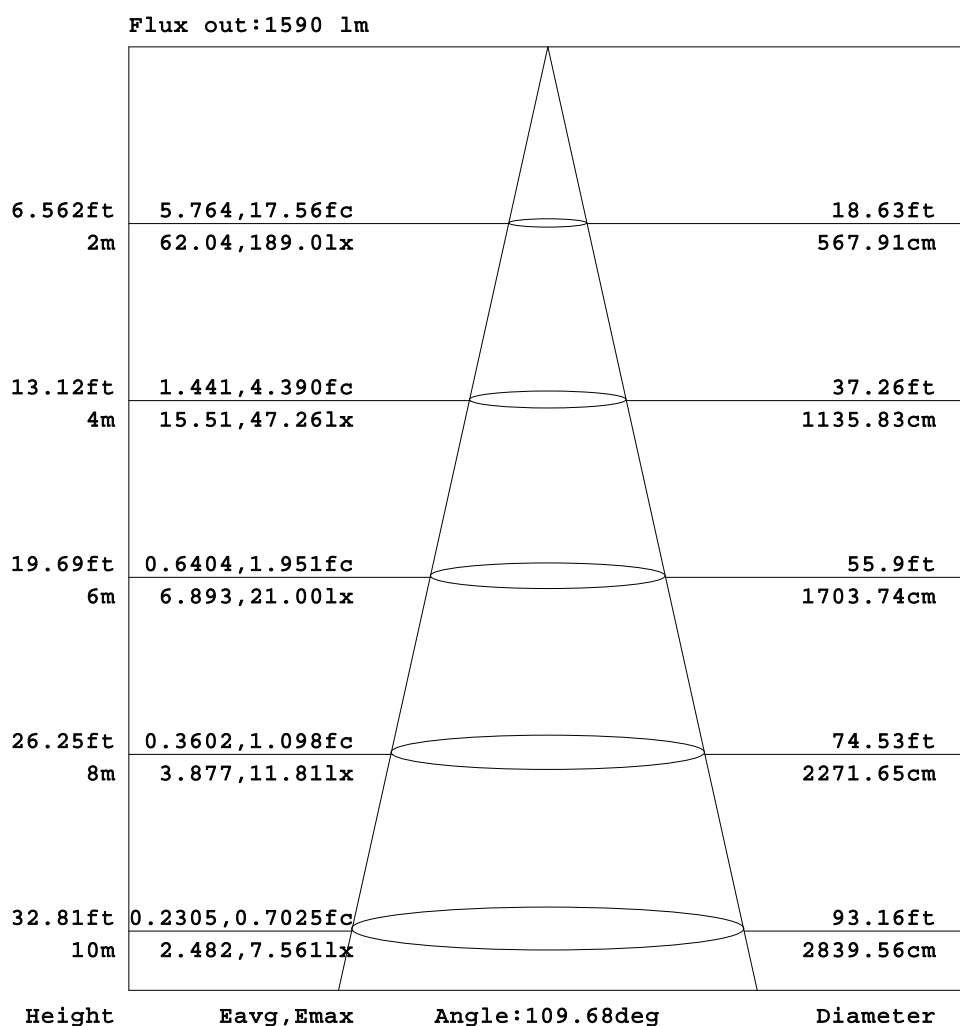


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.580m [K=1.0000]
Remarks:

AAI Figure

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:



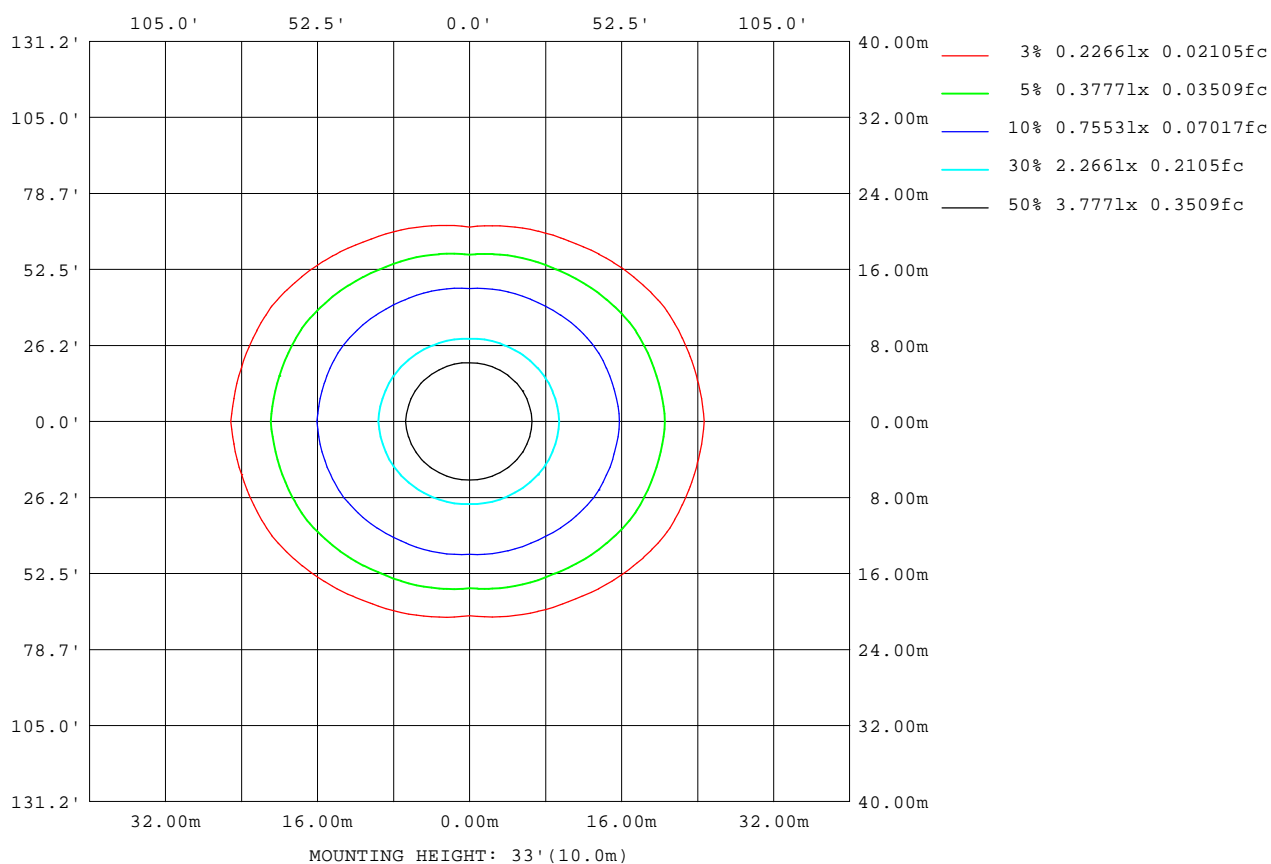
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-02-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 9.580m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

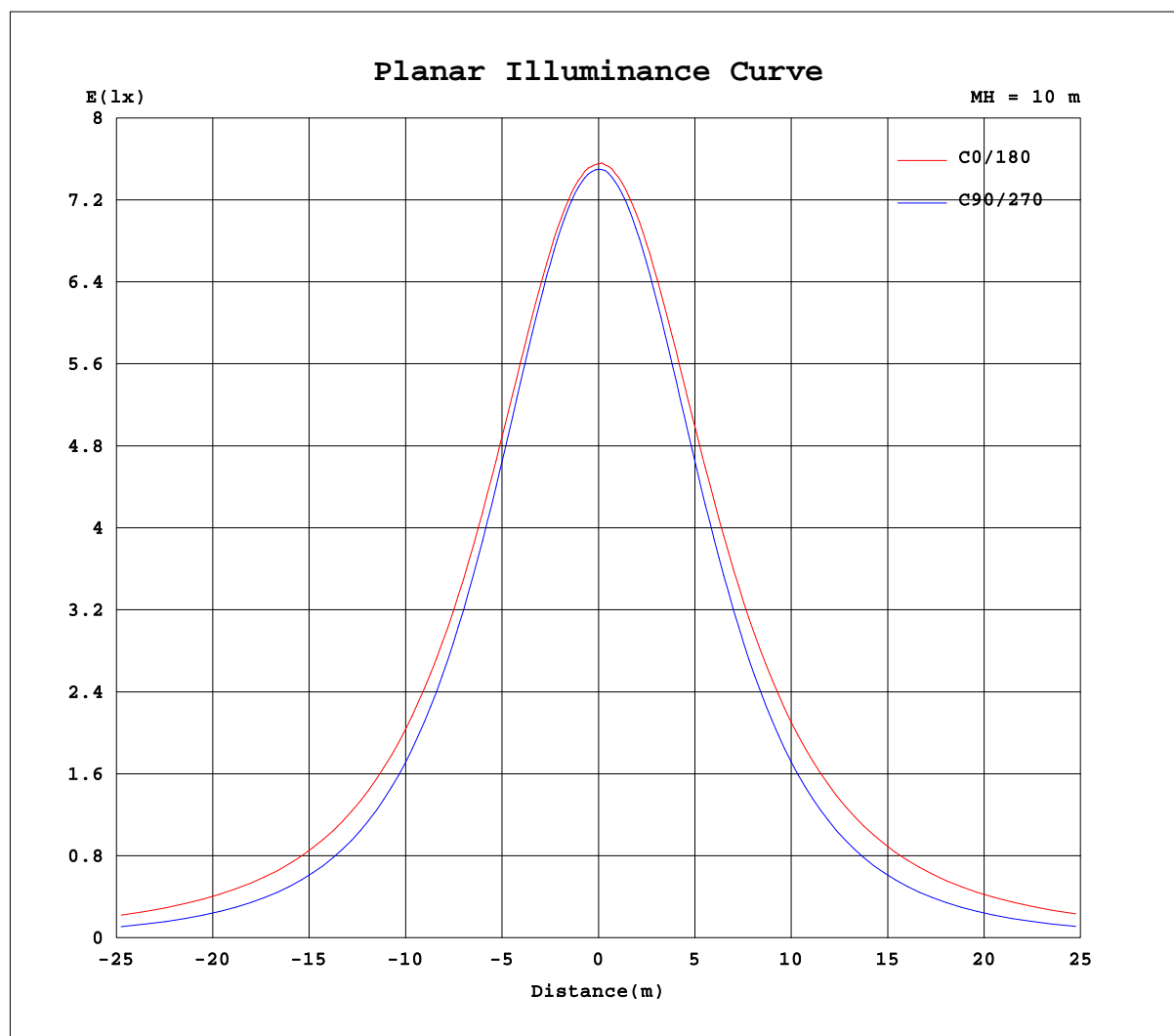
Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 9.580m [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: 2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 9.580m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:231.0V I:0.1360A P:30.00W PF:0.9540 Lamp Flux:3443.03x1 lm		
NAME: UP-DB18-30W-4000K	TYPE:30	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.07458	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	755	753	752	750	749	748	755	753	752	750	749	748						
5	752	750	747	746	746	746	755	751	749	746	745	745						
10	745	742	737	735	736	738	750	744	739	736	735	736						
15	730	726	720	717	720	725	740	732	723	717	719	723						
20	713	708	697	692	697	708	724	715	701	693	696	705						
25	691	684	667	661	669	686	704	692	673	661	668	681						
30	666	656	634	624	635	659	682	666	641	625	634	653						
35	637	624	596	582	598	629	655	634	603	583	596	622						
40	607	589	553	535	556	595	626	601	561	537	554	588						
45	577	554	507	485	512	561	596	566	516	486	508	553						
50	543	517	459	432	465	525	564	530	468	432	460	517						
55	509	480	409	375	415	489	532	493	419	375	410	479						
60	476	441	360	315	366	452	498	456	369	316	362	440						
65	445	404	311	253	318	415	467	419	320	254	312	404						
70	416	371	264	189	271	383	437	386	273	189	266	371						
75	388	339	220	126	228	352	409	355	229	126	223	340						
80	363	311	184	67.2	191	324	383	326	192	67.0	186	312						
85	337	286	154	20.6	162	298	358	301	162	20.5	156	286						
90	313	262	131	1.86	138	274	333	276	139	2.00	133	262						
95	289	240	115	2.96	122	252	308	254	122	3.16	117	241						
100	267	220	104	7.32	110	231	285	233	110	7.03	99.8	221						
105	247	203	96.9	12.9	102	212	263	215	102	12.5	95.6	202						
110	228	188	85.4	19.0	95.9	196	242	198	96.5	18.4	88.4	174						
115	211	175	75.9	25.1	92.0	181	222	183	92.4	24.4	78.2	169						
120	195	154	69.1	30.9	89.2	167	204	169	89.3	30.0	71.3	149						
125	181	130	64.6	36.4	87.1	155	188	157	87.0	35.3	66.7	130						
130	168	113	61.2	41.1	85.6	144	172	145	85.4	40.0	63.4	116						
135	156	100	58.2	45.2	83.9	134	158	135	83.4	44.1	60.7	103						
140	144	89.1	55.5	50.5	86.7	124	144	125	86.7	49.1	58.1	91.7						
145	134	79.5	55.3	58.6	89.0	115	131	116	89.4	57.3	56.7	82.1						
150	124	71.0	57.6	66.7	90.6	107	119	107	91.0	65.7	58.9	73.6						
155	115	63.0	61.2	74.4	94.6	107	107	106	94.3	73.8	61.8	65.7						
160	105	56.7	68.5	81.5	97.5	106	97.4	105	97.5	81.4	68.2	58.3						
165	89.7	57.9	76.6	87.7	98.4	106	79.4	104	98.3	88.0	76.3	57.4						
170	64.1	63.6	84.7	92.9	98.5	105	59.2	102	99.5	93.3	84.2	66.4						
175	51.4	75.5	92.9	97.3	99.1	99.5	55.2	98.6	101	97.5	92.2	79.3						
180	53.8	90.9	100	100	99.0	93.7	54.0	90.7	100	100	99.1	93.6						

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-02-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.580m [K=1.0000]
 Remarks: