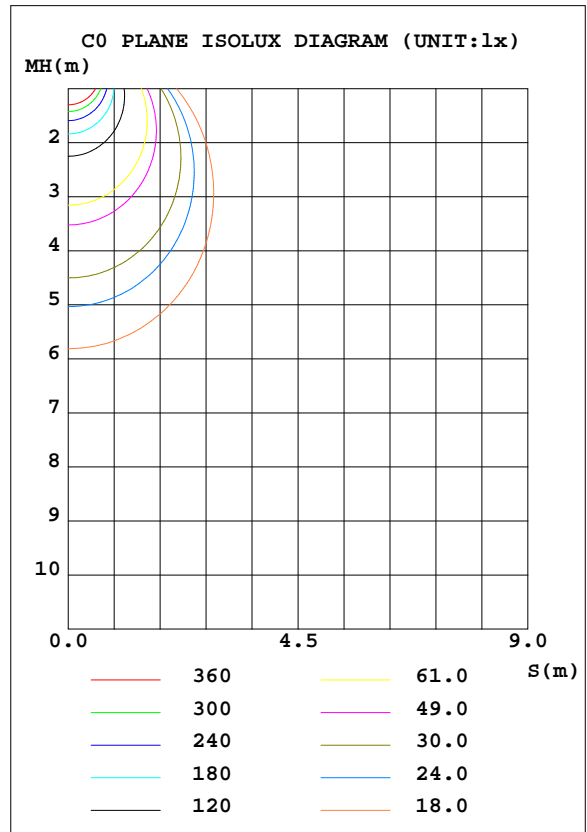
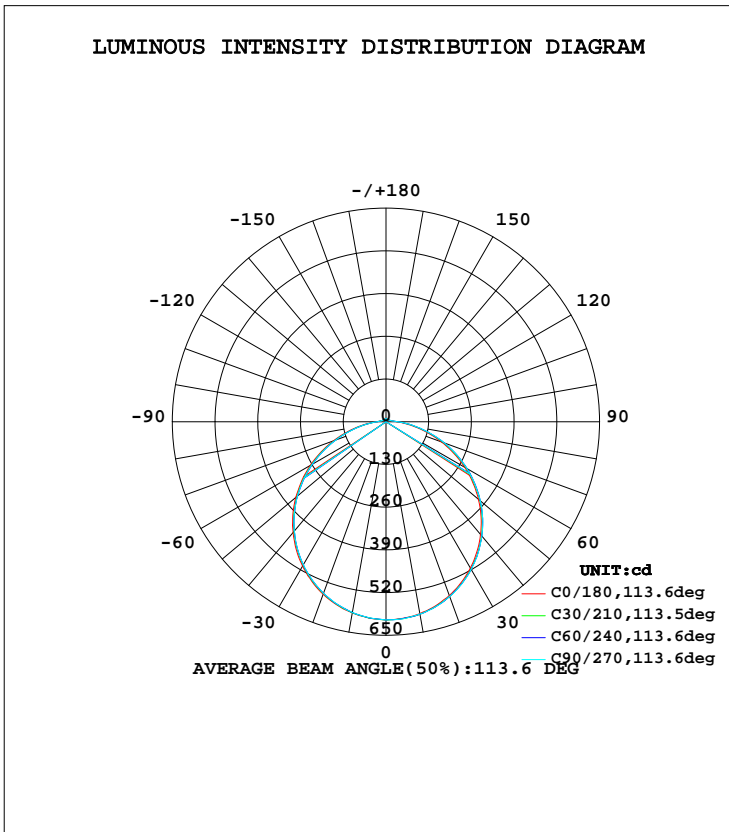


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 105.39 lm/W			
MODEL	136-040_3000K	I _{max} (cd)	603.3	S/MH(C0/180)	1.27
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	1.28
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1865.4	η UP, DN(C0-180)	2.2, 49.0
NOMINAL FLUX(lm)	1865.36	CIE CLASS	DIRECT	η UP, DN(C180-360)	2.1, 46.7
LAMPS INSIDE	1	η up(%)	4.3	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.0	η down(%)	95.7	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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	592.9	594.7	594.2	593.2	590.5	589.9	589.2	591.0	0- 10	57.02	57.02	3.06,3.06
20	563.1	566.1	566.1	563.3	558.9	556.0	555.8	559.2	10- 20	163.4	220.4	11.8,11.8
30	513.7	517.9	518.5	514.3	507.5	503.3	503.0	507.7	20- 30	248.0	468.4	25.1,25.1
40	447.6	453.4	454.1	448.2	440.1	434.8	434.1	439.9	30- 40	299.9	768.3	41.2,41.2
50	367.1	374.2	374.9	368.4	358.8	352.3	351.7	358.1	40- 50	312.5	1081	57.9,57.9
60	276.2	283.3	283.9	277.2	266.2	259.7	259.3	265.9	50- 60	284.3	1365	73.2,73.2
70	179.6	187.4	188.7	181.4	170.5	163.7	162.5	169.3	60- 70	221.2	1586	85,85
80	90.37	97.42	98.72	92.56	83.58	78.45	78.12	82.16	70- 80	137.1	1723	92.4,92.4
90	32.60	35.78	36.28	32.71	29.74	28.42	27.74	30.39	80- 90	61.00	1784	95.7,95.7
100	17.30	18.11	18.43	17.08	16.47	16.14	16.27	16.81	90-100	24.87	1809	97,97
110	12.77	13.14	13.17	12.62	12.54	12.46	12.55	12.70	100-110	15.44	1825	97.8,97.8
120	10.66	10.84	10.85	10.48	10.61	10.59	10.64	10.75	110-120	11.54	1836	98.4,98.4
130	9.374	9.554	9.593	9.183	9.521	9.574	9.618	9.686	120-130	9.005	1845	98.9,98.9
140	8.780	8.876	8.927	8.735	8.999	8.993	9.072	9.099	130-140	7.119	1852	99.3,99.3
150	8.679	8.643	8.664	8.579	8.797	8.817	8.723	8.889	140-150	5.529	1858	99.6,99.6
160	8.768	8.715	8.718	8.711	8.863	8.870	8.855	8.943	150-160	4.045	1862	99.8,99.8
170	9.189	9.154	9.174	9.171	9.218	9.211	9.209	9.241	160-170	2.538	1864	100,100
180	9.485	9.491	9.497	9.490	9.527	9.491	9.491	9.505	170-180	0.8909	1865	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

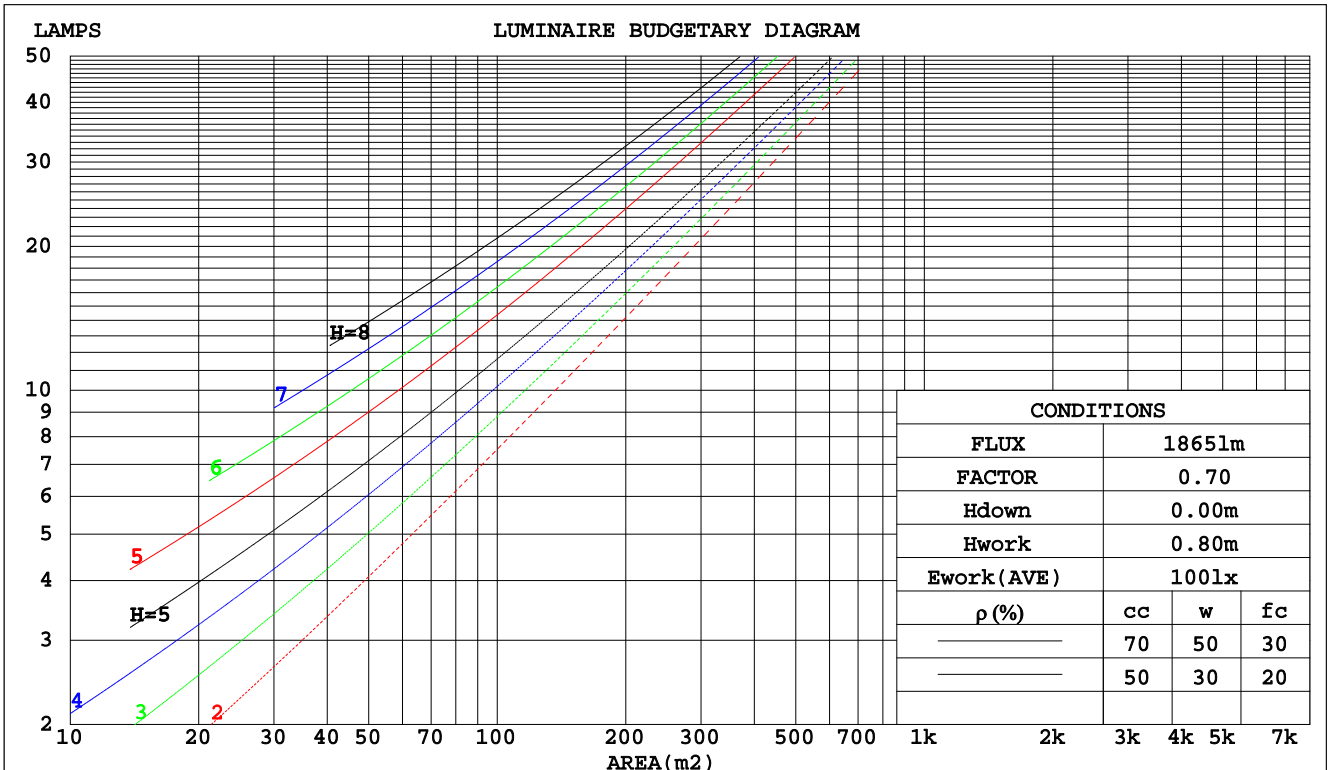
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc	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	1.03	1.03	1.03	.98	.98	.98	.96
1.0	1.02	.97	.93	.99	.95	.91	.94	.91	.88	.90	.87	.84	.85	.83	.81	.79
2.0	.89	.81	.75	.86	.80	.74	.82	.77	.72	.78	.74	.70	.74	.71	.67	.65
3.0	.78	.69	.62	.76	.68	.62	.72	.65	.60	.69	.63	.58	.66	.61	.57	.54
4.0	.69	.60	.53	.67	.59	.52	.64	.57	.51	.61	.55	.50	.58	.53	.49	.46
5.0	.61	.52	.45	.60	.51	.45	.57	.50	.44	.55	.48	.43	.52	.47	.42	.40
6.0	.55	.46	.39	.54	.45	.39	.52	.44	.38	.49	.43	.38	.47	.42	.37	.35
7.0	.50	.41	.35	.49	.40	.34	.47	.39	.34	.45	.38	.33	.43	.37	.33	.31
8.0	.45	.37	.31	.45	.36	.31	.43	.35	.30	.41	.35	.30	.40	.34	.29	.27
9.0	.42	.33	.28	.41	.33	.28	.39	.32	.27	.38	.31	.27	.37	.31	.26	.25
10.0	.38	.30	.25	.38	.30	.25	.36	.29	.25	.35	.29	.24	.34	.28	.24	.22



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-07-20

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:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	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 Coefficients(WEC)									
0.0																
1.0	.326	.186	.059	.318	.181	.058	.302	.173	.055	.288	.166	.053	.274	.159	.051	
2.0	.300	.165	.050	.293	.161	.050	.279	.155	.048	.266	.149	.047	.254	.143	.045	
3.0	.275	.146	.044	.268	.144	.043	.256	.139	.042	.244	.134	.041	.233	.129	.040	
4.0	.252	.131	.039	.246	.129	.038	.235	.125	.037	.225	.121	.036	.215	.117	.036	
5.0	.232	.118	.034	.227	.117	.034	.217	.113	.033	.208	.110	.033	.199	.106	.032	
6.0	.215	.108	.031	.210	.106	.031	.201	.103	.030	.193	.100	.029	.185	.097	.029	
7.0	.200	.099	.028	.195	.097	.028	.187	.095	.027	.180	.092	.027	.173	.090	.026	
8.0	.186	.091	.026	.182	.090	.025	.175	.087	.025	.168	.085	.025	.162	.083	.024	
9.0	.174	.084	.024	.171	.083	.023	.164	.081	.023	.158	.079	.023	.152	.077	.022	
10.0	.164	.079	.022	.161	.078	.022	.155	.076	.021	.149	.074	.021	.143	.072	.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	.224	.224	.224	.191	.191	.191	.130	.130	.130	.075	.075	.075	.024	.024	.024	
1.0	.215	.189	.166	.184	.163	.143	.126	.112	.099	.072	.065	.058	.023	.021	.019	
2.0	.207	.165	.131	.177	.142	.113	.121	.099	.079	.070	.057	.046	.022	.019	.015	
3.0	.199	.148	.107	.171	.128	.093	.117	.089	.065	.068	.052	.038	.022	.017	.013	
4.0	.192	.135	.092	.164	.117	.080	.113	.081	.056	.065	.048	.033	.021	.015	.011	
5.0	.184	.125	.081	.158	.108	.070	.109	.075	.050	.063	.044	.029	.020	.014	.010	
6.0	.177	.116	.073	.152	.101	.064	.105	.071	.045	.061	.042	.027	.020	.014	.009	
7.0	.170	.110	.067	.146	.095	.059	.101	.067	.042	.059	.039	.025	.019	.013	.008	
8.0	.163	.104	.063	.141	.090	.055	.097	.063	.039	.057	.037	.023	.018	.012	.008	
9.0	.157	.099	.059	.136	.086	.052	.094	.060	.037	.055	.036	.022	.018	.012	.007	
10.0	.152	.095	.057	.131	.082	.050	.091	.058	.035	.053	.034	.021	.017	.011	.007	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm										
NAME: 136-040_3000K					TYPE:18W			WEIGHT:		
DIM.:					SPEC.:3000K			SERIAL No.:1		
MFR.:					SUR.:0.15			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	20.0	21.5	20.3	21.8	22.1	20.1	21.5	20.4	21.8	22.1
3H	21.6	23.0	22.0	23.3	23.6	21.7	23.1	22.1	23.4	23.7
4H	22.3	23.6	22.7	24.0	24.3	22.5	23.8	22.8	24.1	24.4
6H	22.9	24.1	23.3	24.5	24.9	23.1	24.3	23.5	24.7	25.1
8H	23.2	24.3	23.6	24.7	25.1	23.4	24.6	23.8	24.9	25.3
12H	23.4	24.5	23.8	24.9	25.3	23.7	24.8	24.1	25.2	25.6
4H 2H	20.6	21.9	21.0	22.3	22.6	20.7	22.0	21.1	22.3	22.7
3H	22.5	23.6	22.9	24.0	24.4	22.6	23.7	23.0	24.1	24.5
4H	23.3	24.4	23.8	24.8	25.2	23.4	24.5	23.9	24.9	25.3
6H	24.1	25.0	24.5	25.4	25.9	24.2	25.2	24.7	25.6	26.0
8H	24.4	25.2	24.9	25.7	26.2	24.6	25.5	25.1	25.9	26.4
12H	24.7	25.5	25.2	26.0	26.5	24.9	25.7	25.4	26.2	26.7
8H 4H	23.7	24.5	24.1	25.0	25.4	23.8	24.6	24.2	25.1	25.6
6H	24.6	25.3	25.1	25.8	26.3	24.8	25.5	25.3	26.0	26.5
8H	25.1	25.7	25.6	26.2	26.7	25.2	25.9	25.8	26.4	26.9
12H	25.5	26.1	26.1	26.6	27.2	25.8	26.3	26.3	26.8	27.4
12H 4H	23.7	24.5	24.2	24.9	25.4	23.8	24.6	24.3	25.1	25.6
6H	24.7	25.4	25.2	25.9	26.4	24.9	25.5	25.4	26.0	26.5
8H	25.2	25.8	25.8	26.3	26.9	25.4	26.0	26.0	26.5	27.1
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 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 1865 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.2)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	PROTECTION ANGLE:

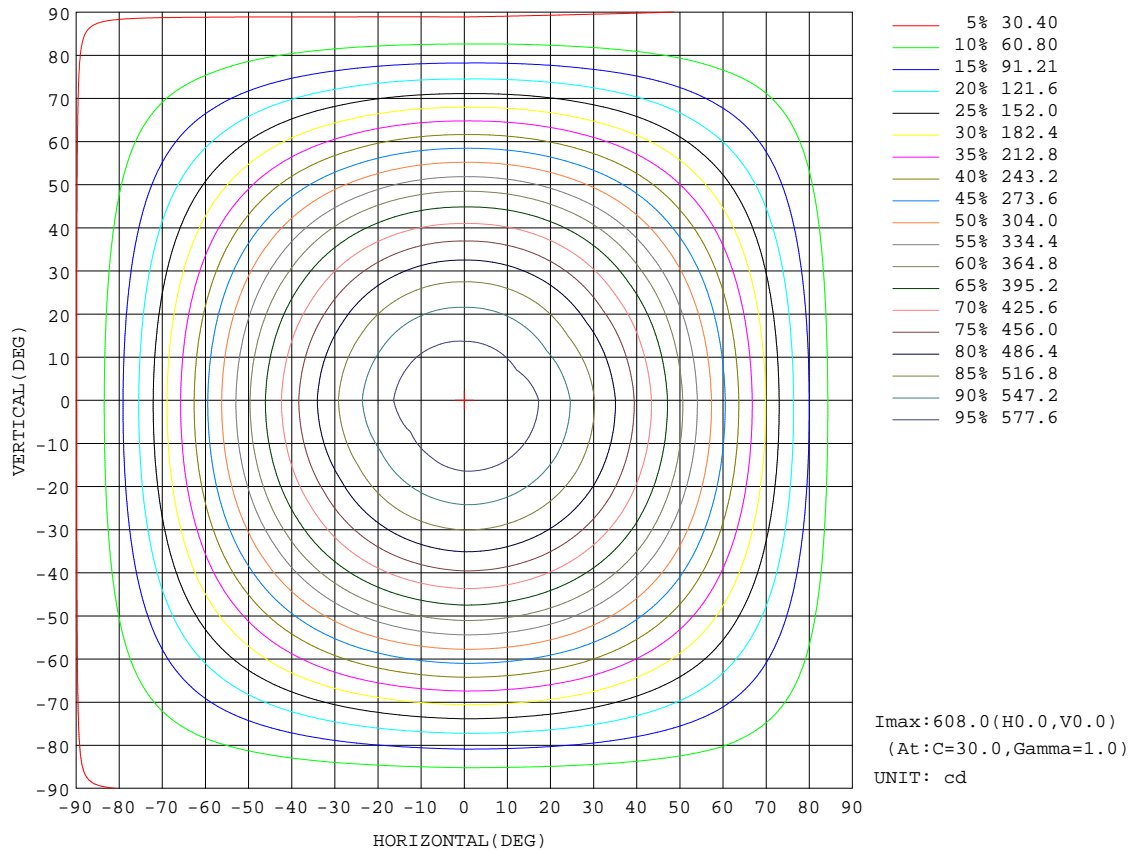
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	55	44	37	55	43	36	53	43	36	30
0.80	65	53	46	64	53	46	62	52	45	38
1.00	74	62	54	72	61	54	70	62	53	46
1.25	81	70	62	79	69	62	76	67	61	53
1.50	86	75	68	84	74	67	80	72	66	58
2.00	92	83	77	90	82	76	86	79	74	65
2.50	97	88	82	94	87	81	90	83	78	69
3.00	100	93	87	97	91	85	93	87	83	73
4.00	104	98	93	101	96	91	96	92	88	78
5.00	107	101	97	104	99	95	99	95	91	81
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:2019-07-20

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:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	PROTECTION ANGLE:

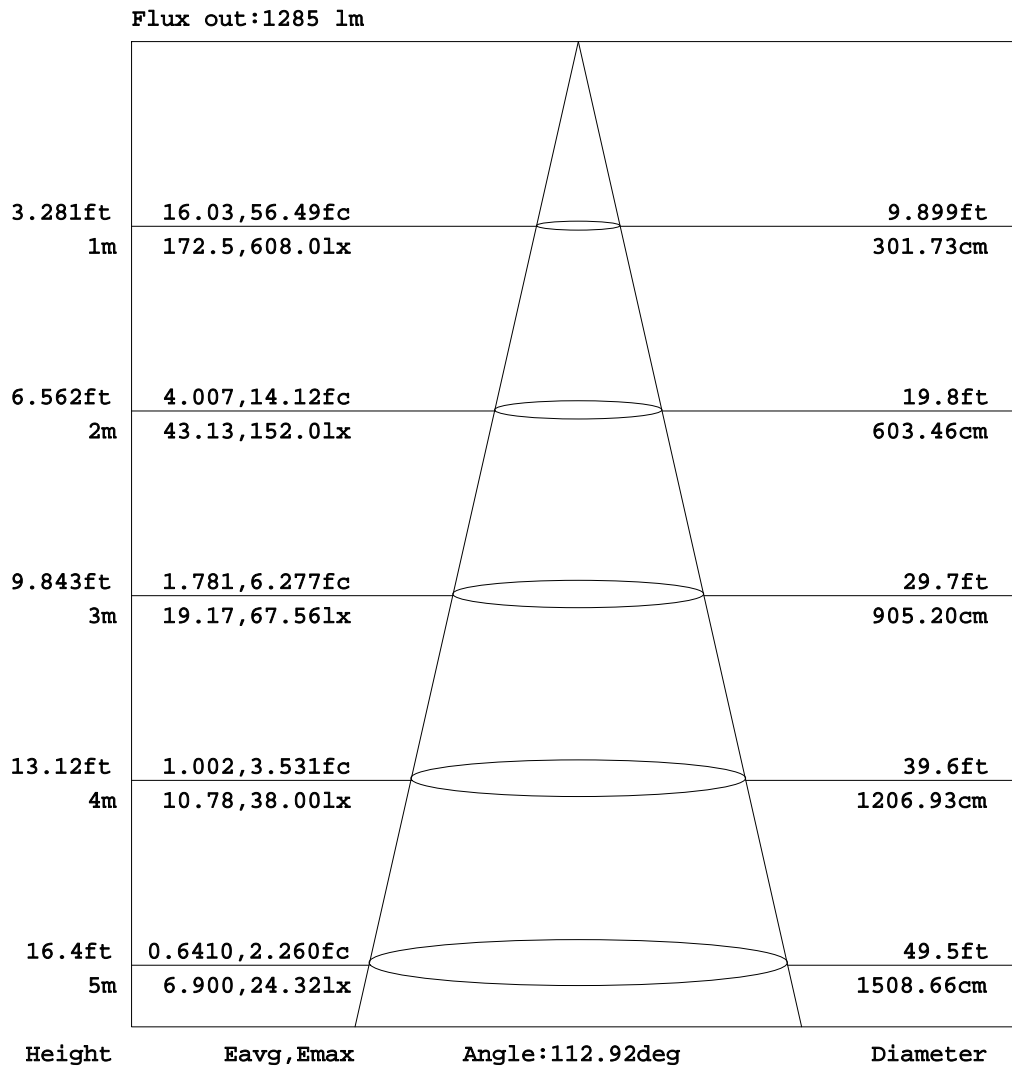


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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:

AAI Figure

Test:U:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	PROTECTION ANGLE:



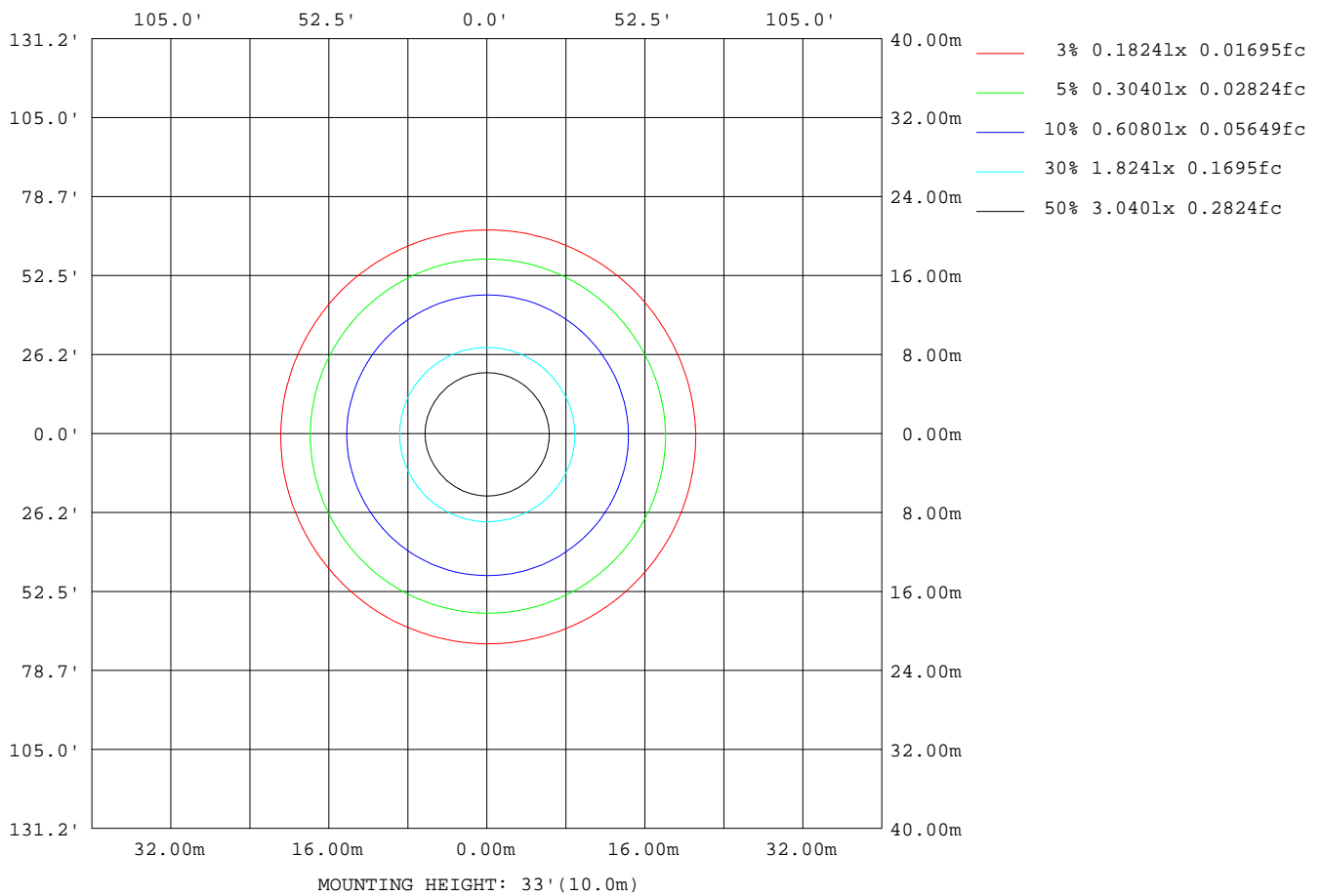
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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:

ISOLUX DIAGRAM

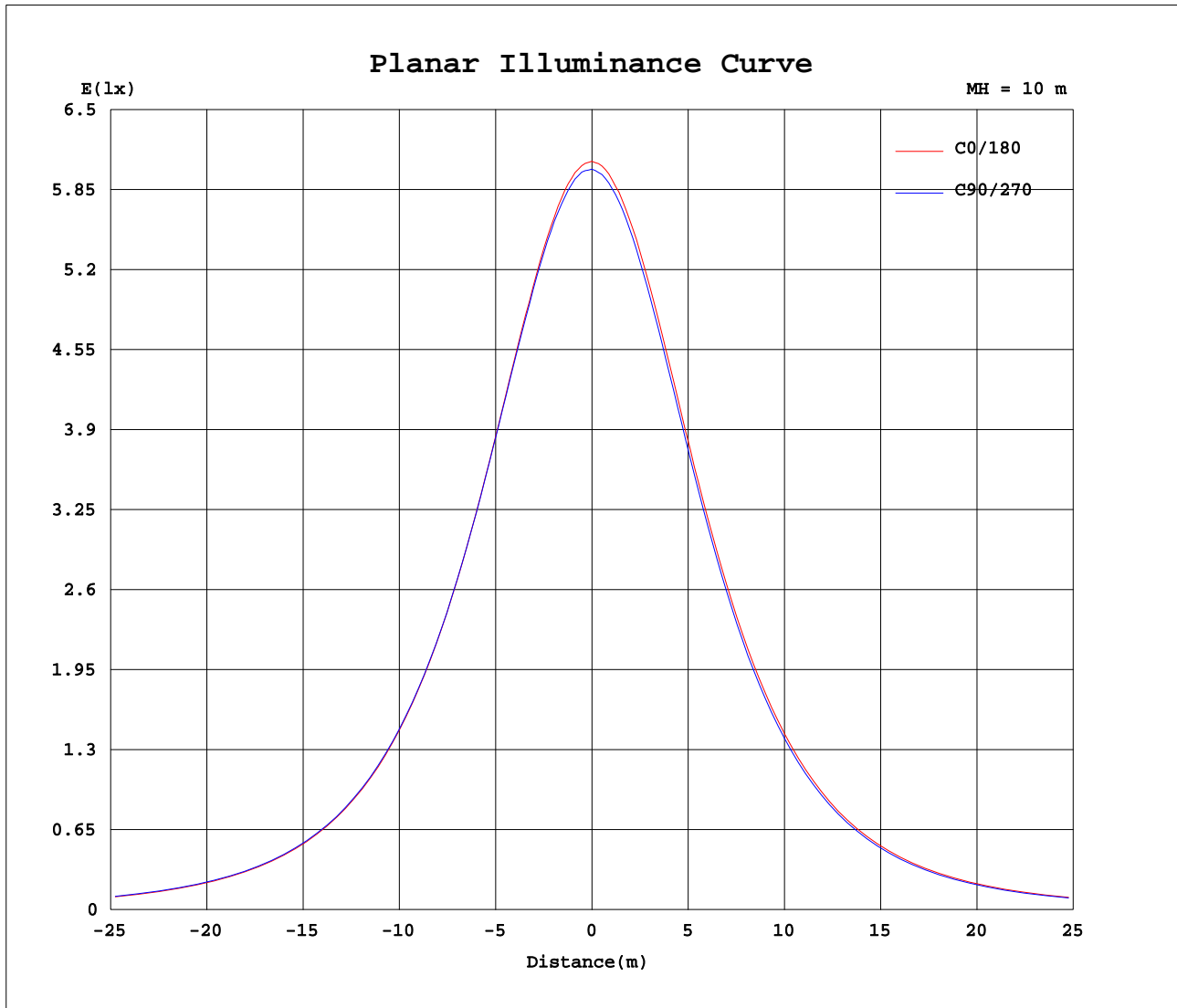
Test:U:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-07-20

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:240.0V I:0.0770A P:17.70W PF:0.9540 Lamp Flux:1865.36x1 lm		
NAME: 136-040_3000K	TYPE:18W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.15	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	603	603	603	603	603	603	603	603	603	603	603	603							
5	601	601	601	602	600	601	599	599	599	598	599	599							
10	593	595	595	594	594	593	590	590	589	589	591	591							
15	581	583	583	583	581	580	577	576	575	575	576	578							
20	563	566	566	566	564	562	559	556	556	556	558	560							
25	540	544	545	545	542	539	535	533	531	532	534	537							
30	514	518	518	518	516	512	508	504	503	503	506	510							
35	483	487	488	488	485	481	476	472	471	471	474	478							
40	448	453	454	454	450	446	440	435	434	434	438	442							
45	409	414	416	416	412	408	401	396	394	394	399	403							
50	367	374	375	375	371	366	359	353	351	352	355	361							
55	323	328	331	330	327	320	313	308	305	306	310	316							
60	276	282	285	284	281	274	266	261	258	259	263	269							
65	228	234	237	237	233	226	218	213	210	211	214	221							
70	180	186	189	189	185	178	170	165	163	162	166	172							
75	133	139	141	142	137	132	125	119	118	117	121	125							
80	90.4	96.5	98.3	98.7	94.8	90.3	83.6	78.9	78.0	78.1	80.2	84.1							
85	56.1	61.5	62.0	62.3	59.9	56.5	51.3	47.2	46.7	46.7	48.6	50.9							
90	32.6	35.5	36.1	36.3	33.9	31.6	29.7	28.9	27.9	27.7	29.6	31.2							
95	22.7	23.4	24.5	24.9	23.0	21.3	20.7	20.3	20.0	20.1	21.1	22.3							
100	17.3	17.9	18.3	18.4	17.5	16.7	16.5	16.1	16.1	16.3	16.7	16.9							
105	14.5	15.0	15.1	15.1	14.6	14.1	14.1	13.9	13.9	14.0	14.3	14.4							
110	12.8	13.1	13.2	13.2	12.8	12.4	12.5	12.4	12.5	12.5	12.7	12.7							
115	11.6	11.8	11.9	11.8	11.5	11.3	11.4	11.3	11.5	11.5	11.5	11.6							
120	10.7	10.8	10.8	10.8	10.5	10.4	10.6	10.6	10.6	10.6	10.7	10.8							
125	10.00	10.1	10.1	10.1	9.84	9.76	9.60	10.0	10.0	10.1	10.1	10.1							
130	9.37	9.58	9.52	9.59	9.30	9.07	9.52	9.57	9.58	9.62	9.69	9.68							
135	9.05	9.12	9.13	9.20	9.01	8.74	9.22	9.26	9.26	9.29	9.37	9.36							
140	8.78	8.89	8.87	8.93	8.78	8.69	9.00	9.04	8.94	9.07	9.07	9.13							
145	8.71	8.72	8.70	8.75	8.65	8.58	8.87	8.91	8.79	8.85	8.88	8.97							
150	8.68	8.67	8.62	8.66	8.60	8.55	8.80	8.84	8.79	8.72	8.89	8.88							
155	8.67	8.67	8.61	8.65	8.61	8.58	8.79	8.81	8.78	8.80	8.86	8.88							
160	8.77	8.74	8.69	8.72	8.72	8.70	8.86	8.89	8.85	8.86	8.94	8.94							
165	8.94	8.91	8.85	8.88	8.89	8.88	9.04	9.02	9.00	9.00	9.05	9.06							
170	9.19	9.17	9.14	9.17	9.16	9.18	9.22	9.21	9.21	9.21	9.24	9.24							
175	9.40	9.41	9.36	9.39	9.39	9.41	9.43	9.40	9.40	9.42	9.42	9.41							
180	9.49	9.51	9.47	9.50	9.49	9.49	9.53	9.48	9.51	9.49	9.52	9.49							

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-07-20

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: