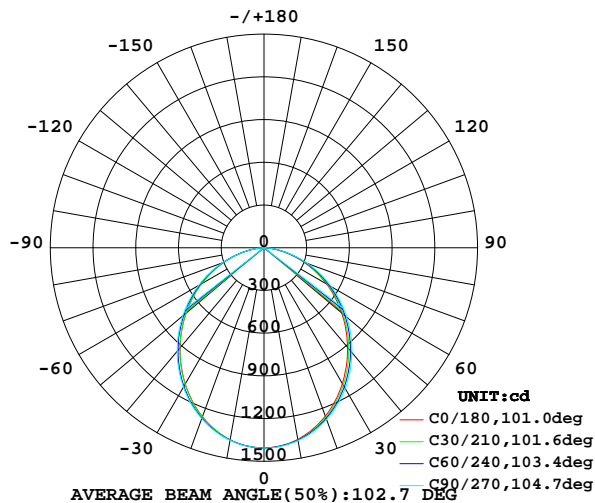


LUMINAIRE PHOTOMETRIC TEST REPORT

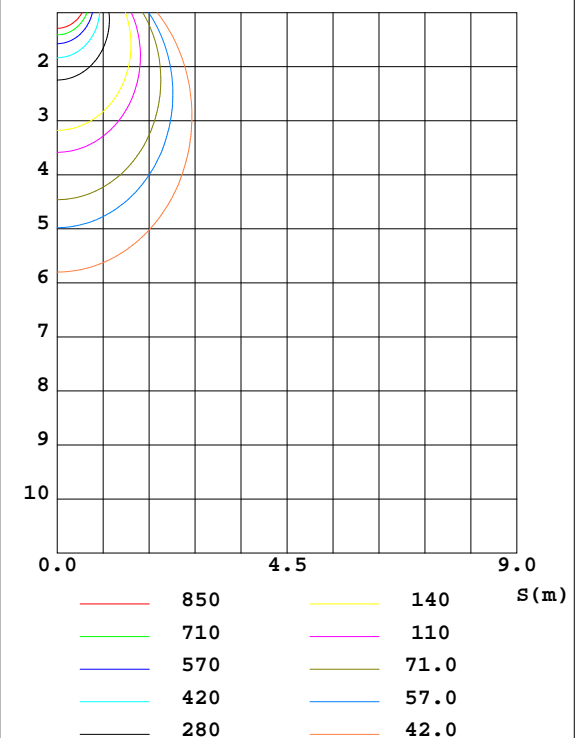
Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm		
NAME: DB77A-1200-36W	TYPE:36W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.055X1.199	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 103.22 lm/W			
MODEL	DB77A-1200-36W	I _{max} (cd)	1406	S/MH(C0/180)	1.17
NOMINAL POWER(W)	36	LOR(%)	100.0	S/MH(C90/270)	1.21
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	3633.4	η UP,DN(C0-180)	0.7,49.5
NOMINAL FLUX(lm)	3633.39	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.6,49.2
LAMPS INSIDE	1	η up(%)	1.3	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230.7	η down(%)	98.7	CIBSE SHR MAX	1.35

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:2020-07-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:10.237m [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	1366	1371	1375	1371	1370	1370	1372	1371	0- 10	132.5	132.5	3.65,3.65
20	1259	1271	1284	1271	1264	1269	1277	1271	10- 20	374.3	506.8	13.9,13.9
30	1102	1121	1141	1120	1106	1116	1131	1120	20- 30	552.6	1059	29.2,29.2
40	912.9	935.8	960.7	935.2	916.9	929.2	948.9	934.4	30- 40	643.8	1703	46.9,46.9
50	711.9	733.7	759.3	732.2	715.1	725.1	745.2	731.2	40- 50	643.3	2347	64.6,64.6
60	506.3	524.1	546.5	520.8	508.5	514.3	530.0	520.7	50- 60	560.1	2907	80,80
70	299.6	313.3	327.4	309.3	300.8	304.1	312.0	309.5	60- 70	410.4	3317	91.3,91.3
80	109.2	118.0	123.6	114.2	111.1	111.6	110.3	115.4	70- 80	220.4	3537	97.4,97.4
90	2.452	3.132	3.090	2.550	2.183	2.340	2.032	2.695	80- 90	49.47	3587	98.7,98.7
100	3.121	3.345	3.430	3.339	2.651	2.974	3.398	2.893	90-100	2.700	3590	98.8,98.8
110	4.870	5.038	5.402	5.107	4.290	4.738	5.479	4.602	100-110	4.227	3594	98.9,98.9
120	6.834	6.974	7.501	7.065	6.156	6.683	7.586	6.581	110-120	5.827	3600	99.1,99.1
130	8.988	9.024	9.612	9.110	8.210	8.764	9.626	8.655	120-130	7.094	3607	99.3,99.3
140	11.10	11.01	11.49	11.09	9.940	10.50	11.07	10.32	130-140	7.600	3614	99.5,99.5
150	13.06	12.86	13.12	12.92	11.77	12.17	12.50	11.92	140-150	7.303	3622	99.7,99.7
160	14.85	14.38	14.47	14.43	13.56	13.60	13.69	13.34	150-160	6.128	3628	99.8,99.8
170	16.29	15.58	15.48	15.62	15.10	14.75	14.62	14.50	160-170	4.130	3632	100,100
180	16.89	16.20	15.96	16.18	16.92	16.18	15.93	16.20	170-180	1.494	3633	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

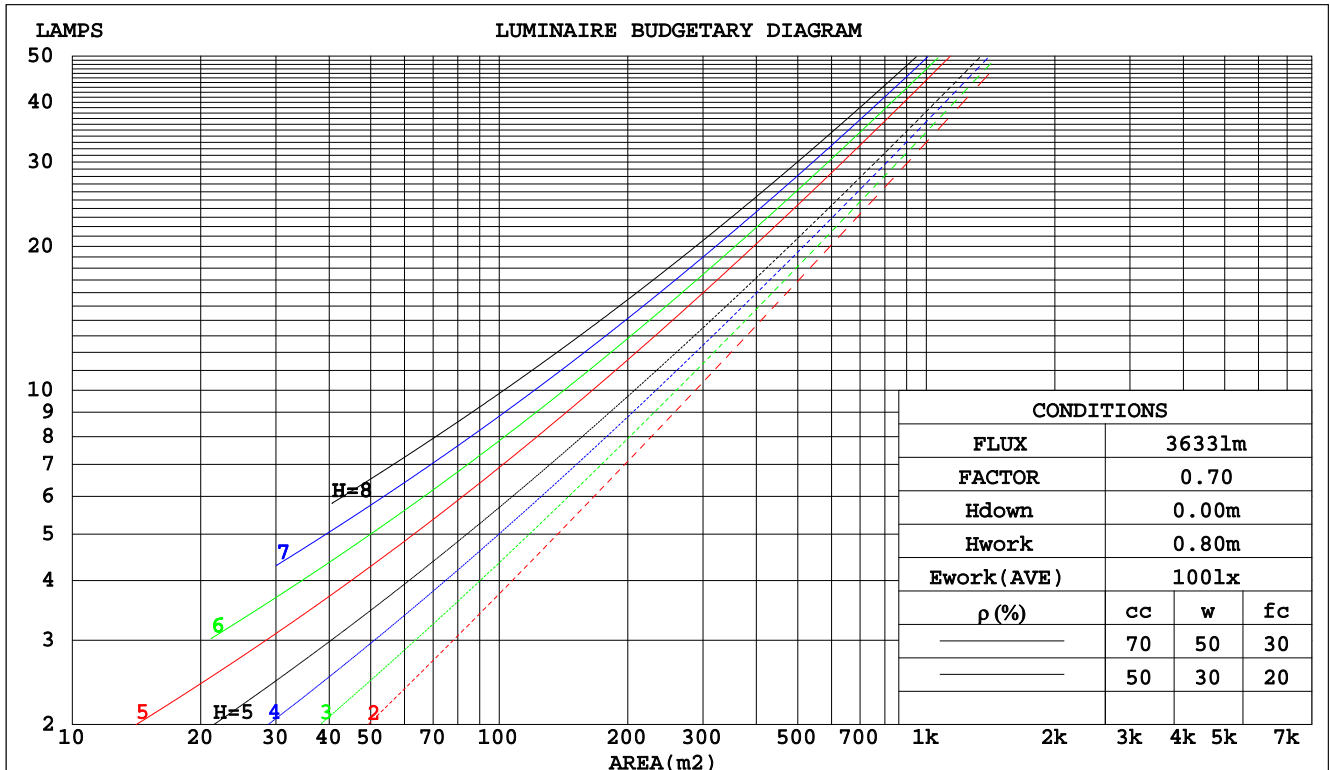
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-07-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:10.237m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm		
NAME: DB77A-1200-36W	TYPE:36W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.055X1.199	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						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	1.01	1.01	1.01	.99
1.0	1.04	1.00	.97	1.02	.98	.95	.97	.94	.92	.93	.91	.89	.90	.88	.86	.84
2.0	.91	.85	.79	.89	.83	.78	.86	.80	.76	.82	.78	.74	.79	.75	.72	.70
3.0	.80	.73	.66	.79	.71	.65	.76	.69	.64	.73	.67	.63	.70	.66	.62	.59
4.0	.71	.63	.56	.70	.62	.56	.67	.60	.55	.65	.59	.54	.63	.57	.53	.51
5.0	.64	.55	.49	.63	.55	.48	.61	.53	.48	.58	.52	.47	.57	.51	.46	.44
6.0	.58	.49	.43	.57	.48	.42	.55	.47	.42	.53	.46	.41	.51	.46	.41	.39
7.0	.52	.44	.38	.52	.43	.38	.50	.43	.37	.48	.42	.37	.47	.41	.37	.35
8.0	.48	.40	.34	.47	.39	.34	.46	.39	.33	.44	.38	.33	.43	.37	.33	.31
9.0	.44	.36	.30	.43	.36	.30	.42	.35	.30	.41	.35	.30	.40	.34	.30	.28
10.0	.41	.33	.28	.40	.33	.28	.39	.32	.27	.38	.32	.27	.37	.31	.27	.25



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-07-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:10.237m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm					
NAME: DB77A-1200-36W			TYPE:36W		WEIGHT:
DIM.:			SPEC.:5000K		SERIAL No.:
MFR.: EVERFINE			SUR.:0.055X1.199		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	.296	.168	.053	.288	.164	.052	.274	.157	.050	.261	.151	.048	.250	.145	.047		
2.0	.281	.154	.047	.274	.151	.046	.262	.146	.045	.250	.140	.044	.240	.136	.043		
3.0	.261	.139	.042	.255	.137	.041	.244	.132	.040	.234	.128	.039	.225	.125	.039		
4.0	.242	.126	.037	.237	.124	.037	.227	.120	.036	.218	.117	.035	.210	.114	.035		
5.0	.224	.114	.033	.220	.113	.033	.211	.110	.032	.203	.107	.032	.196	.105	.031		
6.0	.208	.105	.030	.204	.103	.030	.197	.101	.029	.190	.099	.029	.183	.096	.029		
7.0	.194	.096	.027	.191	.095	.027	.184	.093	.027	.177	.091	.026	.171	.089	.026		
8.0	.182	.089	.025	.179	.088	.025	.172	.086	.025	.167	.084	.024	.161	.083	.024		
9.0	.171	.083	.023	.168	.082	.023	.162	.080	.023	.157	.079	.023	.152	.077	.022		
10.0	.161	.077	.021	.158	.076	.021	.153	.075	.021	.148	.074	.021	.144	.072	.021		

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	.200	.200	.200	.171	.171	.171	.117	.117	.117	.067	.067	.067	.021	.021	.021		
1.0	.189	.166	.145	.162	.143	.125	.111	.098	.087	.064	.057	.050	.020	.018	.016		
2.0	.181	.142	.109	.155	.122	.094	.106	.084	.066	.061	.049	.039	.020	.016	.013		
3.0	.173	.124	.086	.148	.107	.074	.102	.074	.052	.059	.043	.031	.019	.014	.010		
4.0	.165	.111	.069	.142	.096	.060	.097	.067	.042	.056	.039	.025	.018	.013	.008		
5.0	.158	.100	.058	.135	.087	.051	.093	.061	.036	.054	.036	.021	.017	.012	.007		
6.0	.151	.092	.050	.129	.080	.043	.089	.056	.031	.052	.033	.018	.017	.011	.006		
7.0	.144	.085	.044	.124	.074	.038	.085	.052	.027	.050	.030	.016	.016	.010	.005		
8.0	.137	.079	.039	.118	.069	.034	.082	.048	.024	.048	.028	.014	.015	.009	.005		
9.0	.132	.074	.036	.113	.065	.031	.079	.045	.022	.046	.027	.013	.015	.009	.004		
10.0	.126	.070	.033	.109	.061	.029	.075	.043	.020	.044	.025	.012	.014	.008	.004		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-07-20

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm										
NAME: DB77A-1200-36W					TYPE:36W			WEIGHT:		
DIM.:					SPEC.:5000K			SERIAL No.:		
MFR.: EVERFINE					SUR.:0.055X1.199			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	22.4	23.8	22.6	24.1	24.3	22.6	24.1	22.9	24.3	24.5
3H	23.7	25.1	24.0	25.3	25.6	24.0	25.4	24.4	25.6	25.9
4H	24.2	25.5	24.5	25.8	26.0	24.6	25.9	24.9	26.1	26.4
6H	24.5	25.7	24.9	26.0	26.3	24.9	26.1	25.3	26.4	26.7
8H	24.6	25.8	24.9	26.1	26.4	25.0	26.2	25.4	26.5	26.8
12H	24.6	25.7	25.0	26.0	26.4	25.0	26.1	25.4	26.5	26.8
4H 2H	23.0	24.2	23.3	24.5	24.8	23.2	24.4	23.5	24.7	25.0
3H	24.5	25.6	24.9	25.9	26.2	24.8	25.9	25.1	26.2	26.5
4H	25.1	26.1	25.5	26.5	26.8	25.4	26.4	25.8	26.8	27.1
6H	25.5	26.4	25.9	26.8	27.2	25.8	26.8	26.3	27.1	27.5
8H	25.6	26.5	26.0	26.8	27.3	26.0	26.8	26.4	27.2	27.6
12H	25.7	26.4	26.1	26.8	27.3	26.0	26.8	26.5	27.2	27.6
8H 4H	25.3	26.2	25.8	26.6	27.0	25.6	26.4	26.0	26.8	27.2
6H	25.9	26.6	26.3	27.0	27.4	26.2	26.9	26.6	27.3	27.8
8H	26.0	26.7	26.5	27.1	27.6	26.4	27.0	26.8	27.4	27.9
12H	26.1	26.7	26.6	27.1	27.6	26.5	27.0	27.0	27.5	28.0
12H 4H	25.3	26.1	25.8	26.5	26.9	25.6	26.4	26.0	26.8	27.2
6H	25.9	26.5	26.4	27.0	27.4	26.2	26.8	26.7	27.3	27.7
8H	26.1	26.6	26.6	27.1	27.6	26.4	26.9	26.9	27.4	27.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 3633 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.5)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-07-20

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm		
NAME: DB77A-1200-36W	TYPE:36W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.055X1.199	PROTECTION ANGLE:

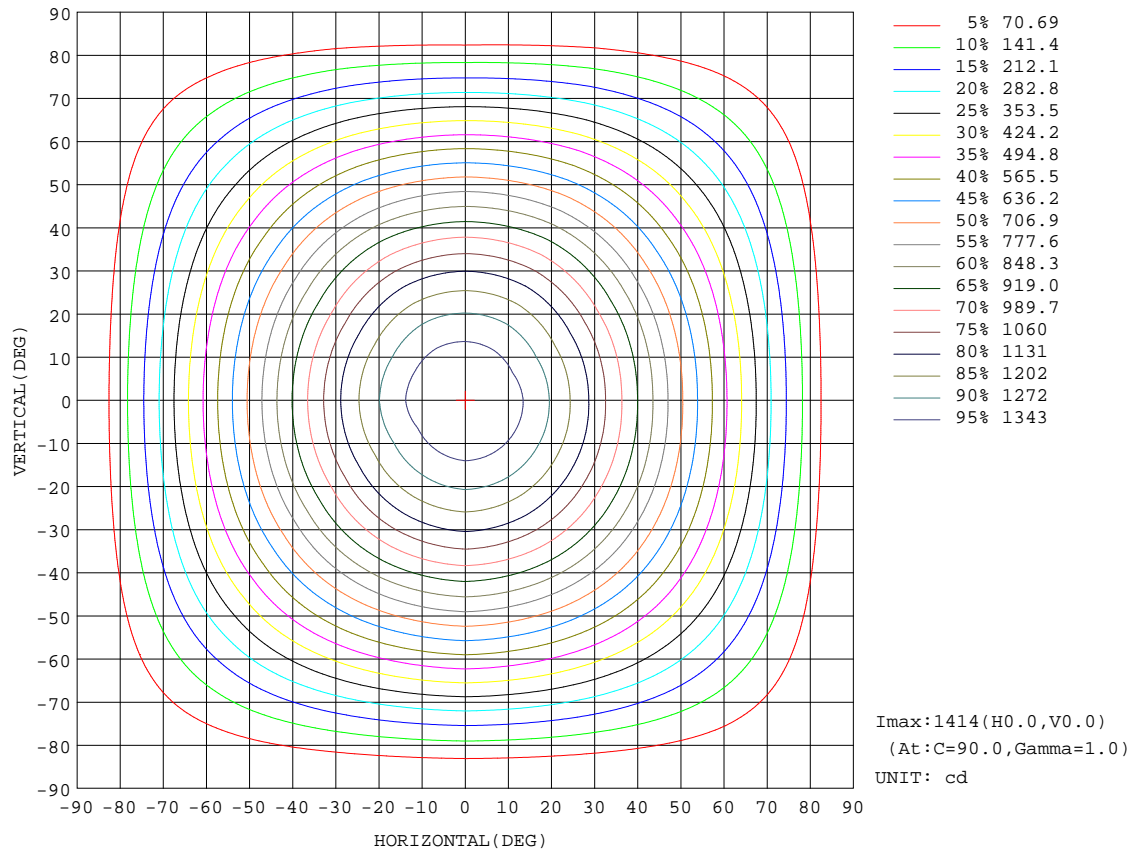
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	59	47	41	58	47	41	57	47	40	34
0.80	69	57	50	68	57	50	66	56	50	43
1.00	77	66	59	76	66	59	74	67	58	51
1.25	84	74	67	83	73	67	80	72	66	58
1.50	89	79	73	87	79	72	84	77	71	63
2.00	96	87	81	94	86	80	90	84	79	71
2.50	99	92	86	97	91	85	93	88	83	75
3.00	103	96	91	100	94	90	96	91	87	79
4.00	107	101	97	104	99	95	100	96	92	83
5.00	109	104	100	106	102	99	102	98	95	86
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:2020-07-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm		
NAME: DB77A-1200-36W	TYPE:36W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.055X1.199	PROTECTION ANGLE:



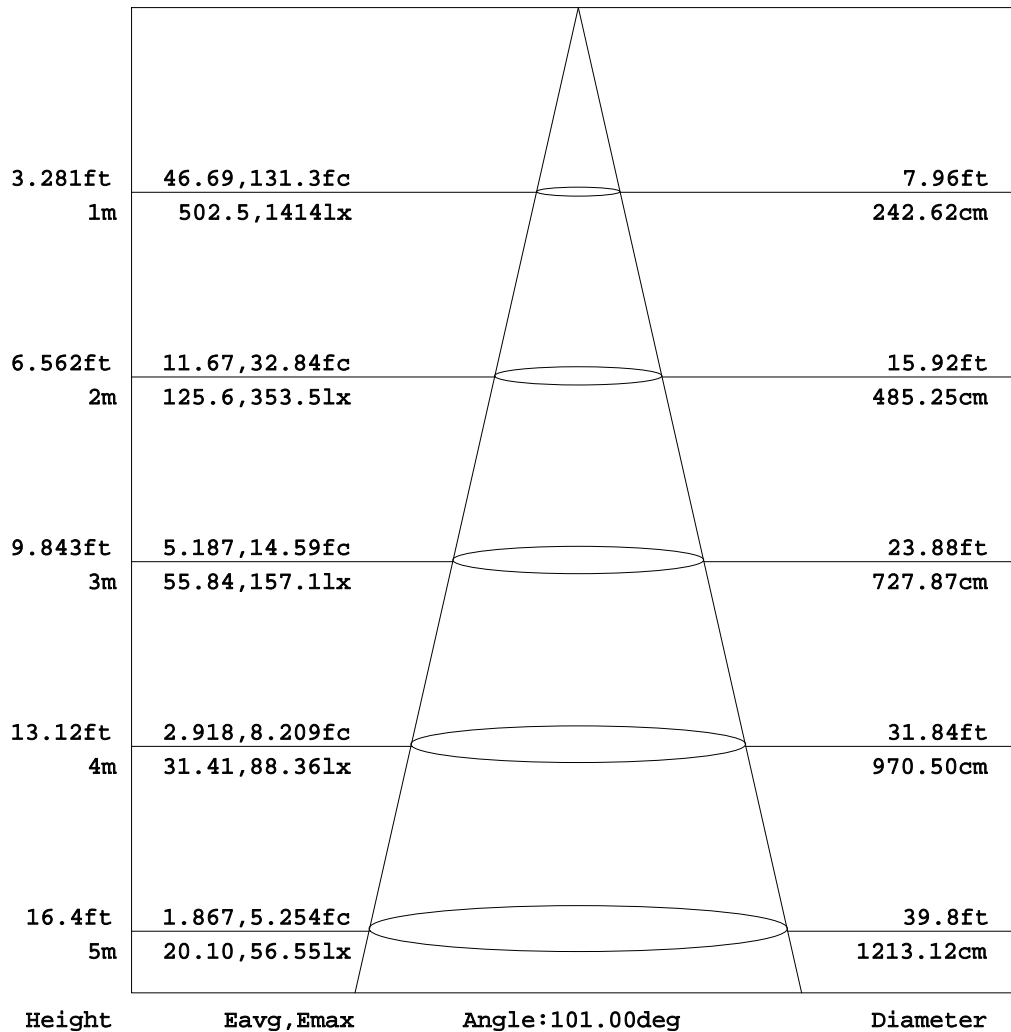
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-07-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm		
NAME: DB77A-1200-36W	TYPE:36W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.055X1.199	PROTECTION ANGLE:

Flux out:2408 lm



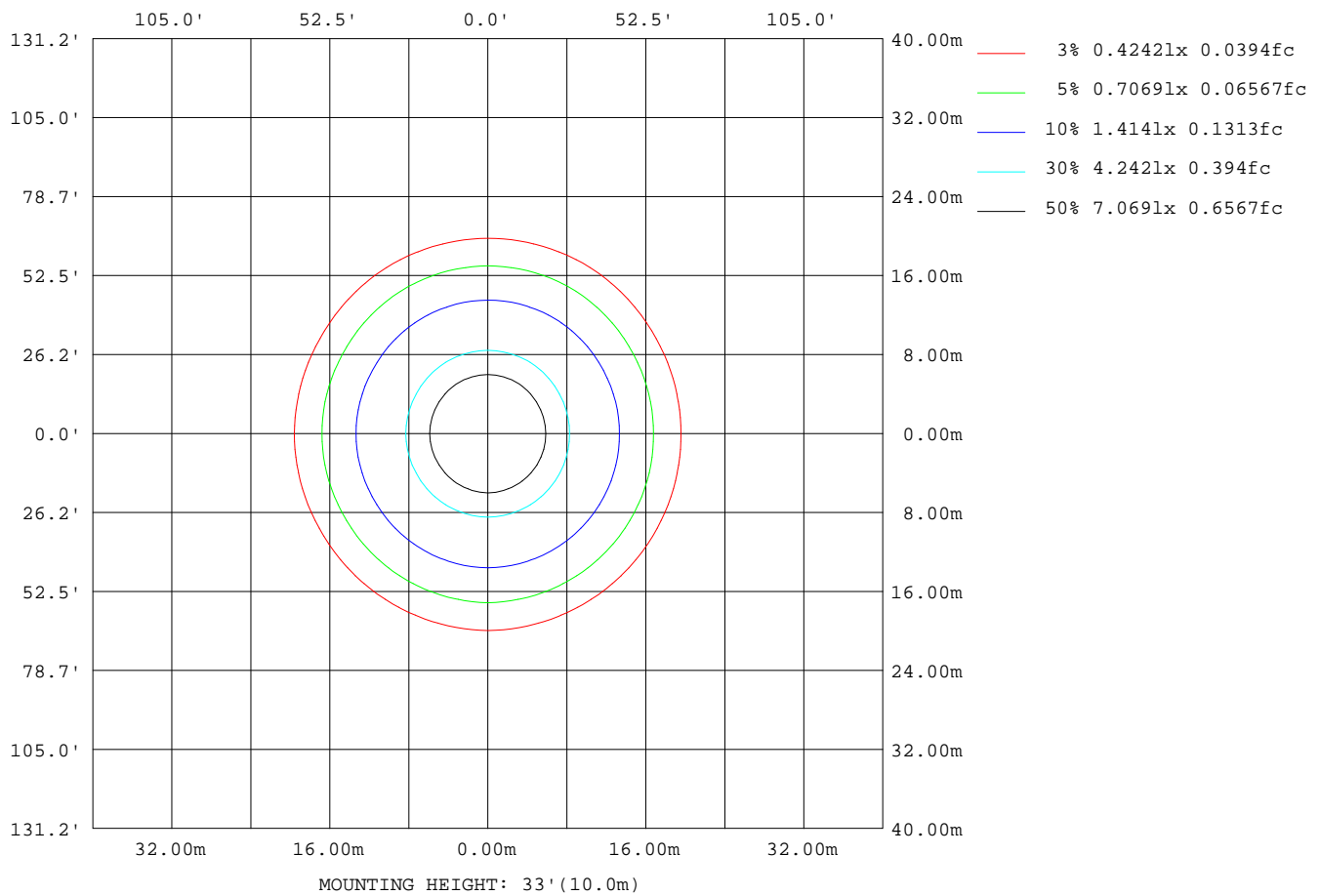
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-07-20

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

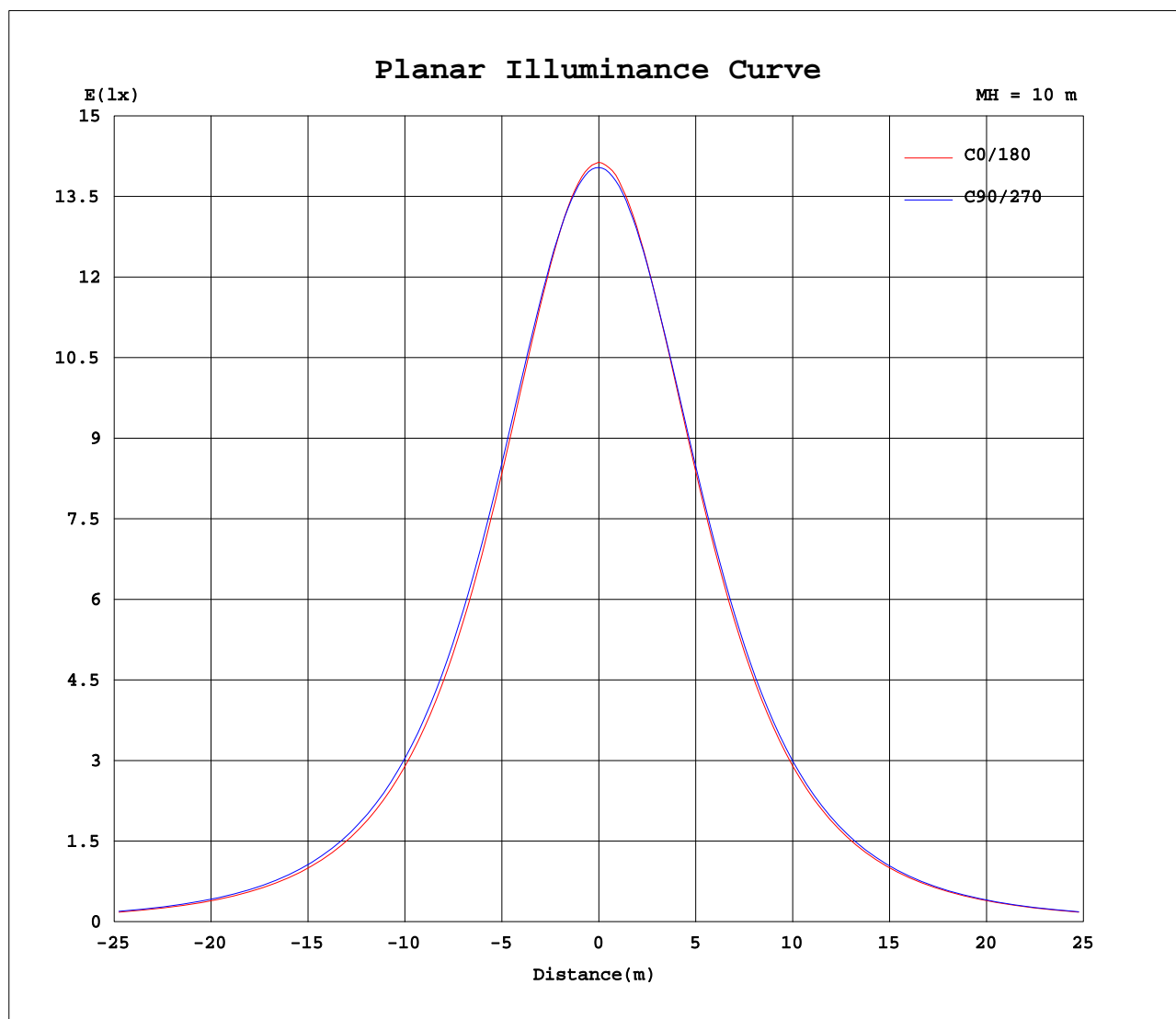
Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm		
NAME: DB77A-1200-36W	TYPE:36W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.055X1.199	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-07-20

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [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: 2020-07-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity: 65.0%
Test Distance: 10.237m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.7V I:0.1570A P:35.20W PF:0.9690 Lamp Flux:3633.39x1 lm		
NAME: DB77A-1200-36W	TYPE:36W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.055X1.199	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	1406	1406	1406	1406	1406	1406	1406	1406	1406	1406	1406	1406						
5	1395	1397	1396	1399	1398	1397	1398	1396	1397	1397	1398	1396						
10	1366	1370	1372	1375	1372	1371	1370	1369	1371	1372	1372	1369						
15	1319	1327	1331	1336	1332	1327	1325	1324	1331	1332	1332	1326						
20	1259	1267	1276	1284	1275	1267	1264	1264	1274	1277	1276	1266						
25	1185	1195	1207	1217	1208	1196	1190	1192	1205	1210	1208	1193						
30	1102	1113	1128	1141	1128	1112	1106	1108	1124	1131	1128	1112						
35	1010	1023	1040	1054	1040	1022	1014	1016	1035	1044	1040	1021						
40	913	927	945	961	945	925	917	919	939	949	945	924						
45	813	827	846	862	846	824	816	819	838	848	845	824						
50	712	725	742	759	742	722	715	715	735	745	741	721						
55	609	621	638	654	637	617	612	611	629	638	635	617						
60	506	517	531	547	529	512	508	507	522	530	529	513						
65	403	412	424	437	422	407	404	402	415	421	421	408						
70	300	308	319	327	316	303	301	299	309	312	315	304						
75	200	208	215	222	212	203	202	200	207	207	212	205						
80	109	117	119	124	116	112	111	109	114	110	118	113						
85	37.3	41.7	41.7	43.3	39.2	38.0	38.2	36.3	38.5	33.5	40.5	39.3						
90	2.45	3.19	3.07	3.09	2.68	2.42	2.18	2.21	2.47	2.03	2.75	2.64						
95	2.37	2.55	2.70	2.51	2.67	2.44	2.00	2.11	2.38	2.55	2.32	2.12						
100	3.12	3.26	3.43	3.43	3.46	3.22	2.65	2.80	3.14	3.40	3.06	2.72						
105	3.97	4.07	4.21	4.37	4.31	4.09	3.44	3.58	4.03	4.36	3.96	3.48						
110	4.87	4.96	5.12	5.40	5.20	5.02	4.29	4.47	5.00	5.48	4.90	4.30						
115	5.81	5.87	6.06	6.44	6.17	5.98	5.19	5.37	6.04	6.50	5.92	5.21						
120	6.83	6.88	7.07	7.50	7.20	6.93	6.16	6.26	7.10	7.59	6.95	6.21						
125	7.89	7.87	8.13	8.55	8.29	7.90	7.18	7.29	8.15	8.64	8.03	7.24						
130	8.99	8.90	9.15	9.61	9.30	8.92	8.21	8.33	9.20	9.63	9.07	8.23						
135	10.0	9.91	10.2	10.6	10.3	9.92	8.97	9.15	9.96	10.2	9.65	9.13						
140	11.1	10.9	11.1	11.5	11.3	10.9	9.94	10.1	10.9	11.1	10.5	10.1						
145	12.1	11.9	12.0	12.3	12.2	11.9	10.8	11.0	11.7	11.8	11.3	10.9						
150	13.1	12.8	12.9	13.1	13.0	12.8	11.8	11.9	12.4	12.5	12.1	11.8						
155	14.0	13.7	13.6	13.8	13.8	13.7	12.7	12.7	13.1	13.1	12.8	12.6						
160	14.9	14.4	14.3	14.5	14.4	14.4	13.6	13.4	13.8	13.7	13.4	13.3						
165	15.6	15.2	14.9	15.0	15.1	15.1	14.3	14.1	14.3	14.2	13.9	13.9						
170	16.3	15.7	15.5	15.5	15.5	15.7	15.1	14.7	14.8	14.6	14.5	14.5						
175	16.7	16.1	15.8	15.8	15.9	16.1	16.6	16.0	15.8	15.7	15.8	16.0						
180	16.9	16.4	16.1	16.0	16.0	16.3	16.9	16.3	16.1	15.9	16.1	16.3						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-07-20

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:10.237m [K=1.0000]
Remarks: