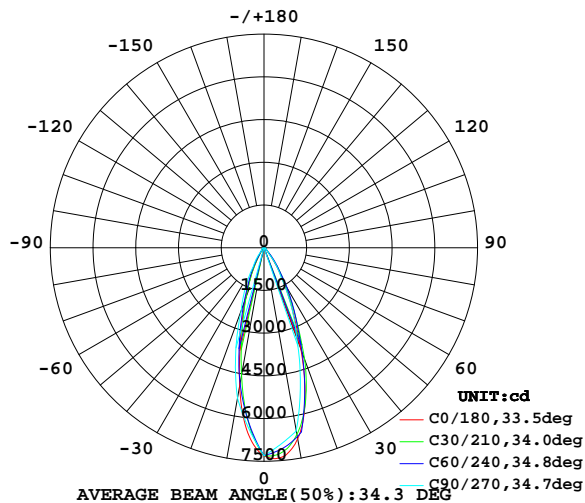


LUMINAIRE PHOTOMETRIC TEST REPORT

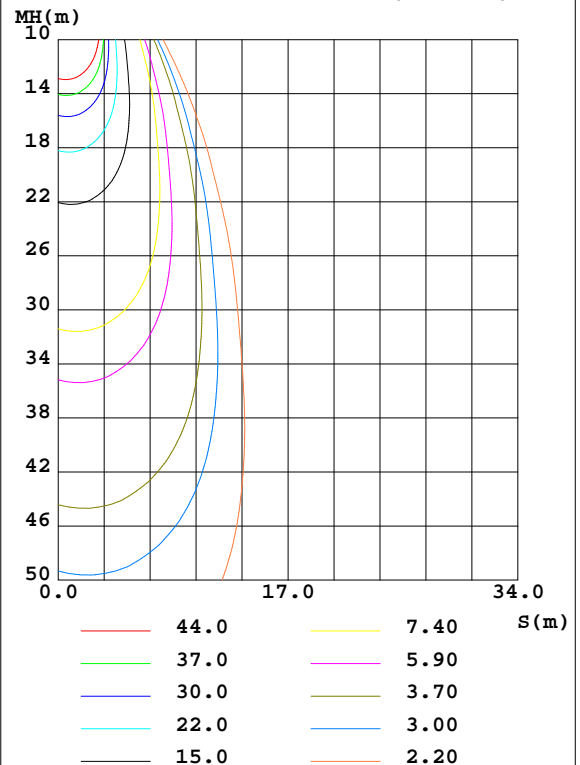
Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm		
NAME: TURBINELINE LED 40W	TYPE:	WEIGHT:
SPEC.:05000666	DIM.:	SERIAL No.:
MFR.: Mobilux GmbH	SUR.:1	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 75.48 lm/W			
MODEL	SAMSUNG-COB 3000K	I _{max} (cd)	7416	S/MH(C0/180)	0.45
NOMINAL POWER(W)	40	LOR(%)	100.0	S/MH(C90/270)	0.52
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	3238.1	η UP,DN(C0-180)	0.0,55.1
NOMINAL FLUX(lm)	3238.09	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,44.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)		η down(%)	100.0	CIBSE SHR MAX	0.60

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2016-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
 Humidity:65.0%
 Test Distance:7.400m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\%lum, lamp$
5	7376	7152	6917	6544	6530	6139	6335	6744	0- 5	165.6	165.6	5.11,5.11
10	6813	6704	6532	5345	4928	4634	5369	5904	5- 10	443.0	608.6	18.8,18.8
15	5579	5773	4943	3815	3156	3109	3854	4681	10- 15	592.4	1201	37.1,37.1
20	3804	4098	3354	2361	1876	1931	2338	3137	15- 20	580.6	1782	55,55
25	2320	2625	2283	1405	1069	1105	1545	1855	20- 25	470.7	2252	69.6,69.6
30	1337	1585	1212	767.5	496.7	568.2	752.0	1061	25- 30	339.2	2591	80,80
35	708.4	876.5	735.8	348.2	208.2	262.0	457.3	561.7	30- 35	210.4	2802	86.5,86.5
40	317.1	404.0	259.9	145.3	118.5	131.8	162.6	245.1	35- 40	120.0	2922	90.2,90.2
45	169.4	218.4	181.7	108.2	98.02	108.2	132.1	156.2	40- 45	66.75	2989	92.3,92.3
50	117.2	121.9	103.4	90.84	89.47	95.91	101.7	106.2	45- 50	49.10	3038	93.8,93.8
55	97.06	104.0	94.72	84.66	81.58	85.49	94.00	98.17	50- 55	42.72	3080	95.1,95.1
60	91.03	93.08	86.07	75.86	69.80	73.65	86.30	90.61	55- 60	40.60	3121	96.4,96.4
65	81.64	83.05	72.81	61.70	54.69	58.64	71.34	77.96	60- 65	37.44	3158	97.5,97.5
70	66.52	69.01	59.54	45.18	34.98	41.84	56.37	64.02	65- 70	31.66	3190	98.5,98.5
75	51.79	52.31	41.19	26.70	18.04	24.43	38.21	48.83	70- 75	24.11	3214	99.3,99.3
80	33.11	33.86	22.84	12.66	5.103	12.44	20.04	31.52	75- 80	15.68	3230	99.7,99.7
85	15.62	9.494	0	2.112	0.3769	2.544	0	8.797	80- 85	7.293	3237	100,100
90	0.2317	0	0	0	0.2770	0	0	0	85- 90	0.9508	3238	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

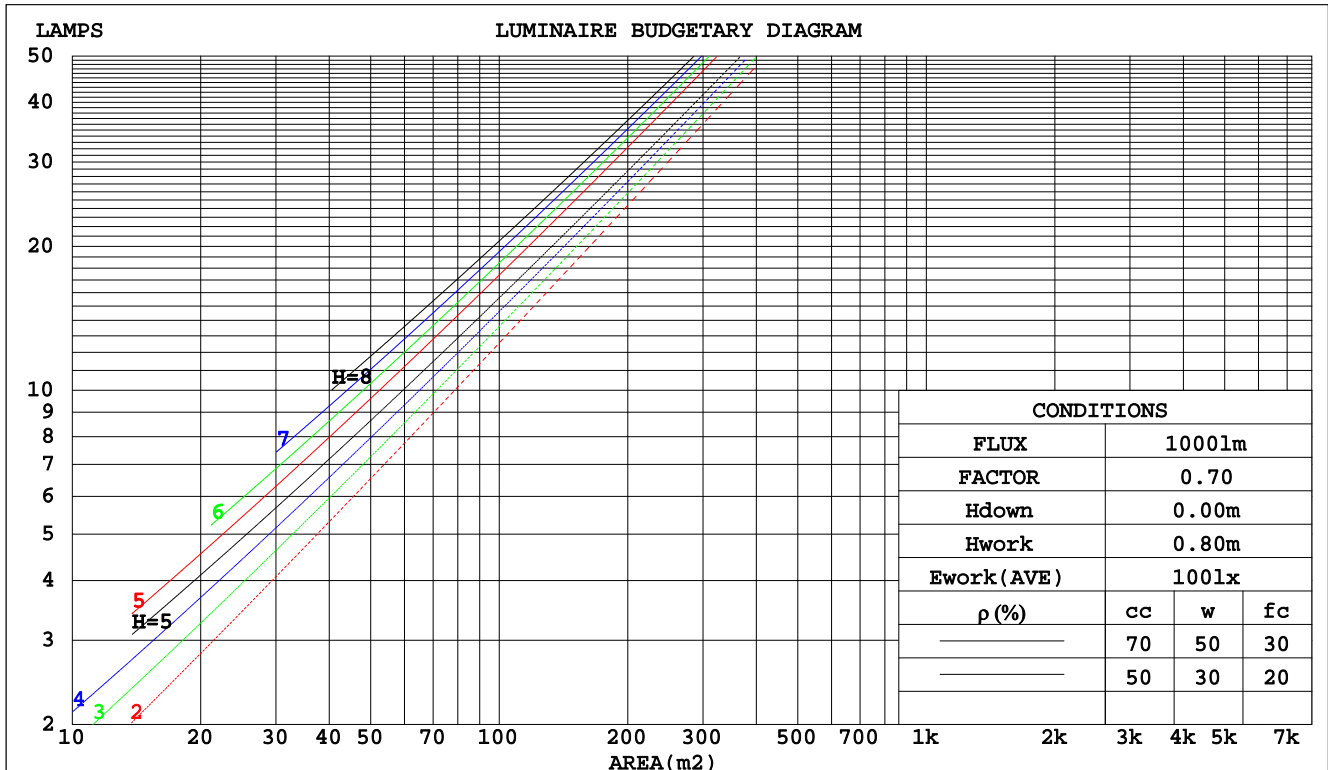
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2016-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
 Humidity:65.0%
 Test Distance:7.400m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm		
NAME: TURBINELINE LED 40W	TYPE:	WEIGHT:
SPEC.:05000666	DIM.:	SERIAL No.:
MFR.: Mobilux GmbH	SUR.:1	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	Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.11	1.08	1.06	1.09	1.06	1.04	1.05	1.03	1.01	1.01	.00	.98	.97	.96	.95	.94
2.0	1.04	.00	.96	1.02	.98	.95	.99	.96	.93	.96	.93	.91	.93	.91	.89	.88
3.0	.97	.92	.89	.96	.91	.88	.93	.90	.86	.91	.88	.85	.89	.86	.84	.82
4.0	.92	.86	.82	.90	.86	.82	.88	.84	.81	.86	.83	.80	.85	.82	.79	.78
5.0	.87	.81	.77	.86	.81	.77	.84	.80	.76	.82	.79	.76	.81	.78	.75	.73
6.0	.82	.77	.73	.81	.76	.73	.80	.75	.72	.79	.75	.72	.77	.74	.71	.70
7.0	.78	.73	.69	.78	.72	.69	.76	.72	.68	.75	.71	.68	.74	.70	.68	.66
8.0	.75	.69	.66	.74	.69	.65	.73	.68	.65	.72	.68	.65	.71	.67	.65	.63
9.0	.71	.66	.62	.71	.66	.62	.70	.65	.62	.69	.65	.62	.68	.65	.62	.61
10.0	.68	.63	.60	.68	.63	.60	.67	.63	.59	.67	.62	.59	.66	.62	.59	.58



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2016-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm					
NAME: TURBINELINE LED 40W			TYPE:		WEIGHT:
SPEC.:05000666			DIM.:		SERIAL No.:
MFR.: Mobilux GmbH			SUR.:1		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	.177	.101	.032	.170	.097	.031	.158	.090	.029	.146	.084	.027	.135	.078	.025		
2.0	.166	.091	.028	.161	.089	.027	.150	.084	.026	.140	.079	.025	.131	.074	.023		
3.0	.156	.083	.025	.151	.081	.024	.142	.077	.023	.134	.073	.023	.126	.070	.022		
4.0	.147	.076	.022	.142	.075	.022	.135	.071	.021	.128	.069	.021	.121	.066	.020		
5.0	.138	.070	.020	.135	.069	.020	.128	.067	.020	.122	.064	.019	.116	.062	.019		
6.0	.131	.065	.019	.128	.064	.019	.122	.062	.018	.116	.060	.018	.111	.059	.017		
7.0	.124	.061	.017	.121	.060	.017	.116	.059	.017	.111	.057	.017	.107	.055	.016		
8.0	.118	.058	.016	.116	.057	.016	.111	.055	.016	.107	.054	.016	.103	.053	.015		
9.0	.112	.054	.015	.110	.054	.015	.106	.053	.015	.102	.051	.015	.099	.050	.015		
10.0	.107	.052	.014	.106	.051	.014	.102	.050	.014	.099	.049	.014	.095	.048	.014		

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.171	.157	.145	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.156	.133	.113	.133	.114	.098	.091	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.143	.114	.090	.122	.098	.078	.084	.068	.055	.048	.040	.032	.016	.013	.011	
4.0	.132	.099	.074	.113	.085	.064	.078	.059	.045	.045	.035	.027	.014	.011	.009	
5.0	.122	.087	.061	.105	.075	.053	.072	.053	.037	.042	.031	.022	.013	.010	.007	
6.0	.114	.077	.051	.098	.067	.044	.068	.047	.031	.039	.028	.019	.013	.009	.006	
7.0	.107	.070	.043	.092	.060	.038	.064	.042	.027	.037	.025	.016	.012	.008	.005	
8.0	.101	.063	.037	.087	.055	.033	.060	.039	.023	.035	.023	.014	.011	.007	.005	
9.0	.096	.058	.032	.082	.050	.028	.057	.035	.020	.033	.021	.012	.011	.007	.004	
10.0	.091	.053	.029	.078	.046	.025	.054	.033	.018	.032	.019	.011	.010	.006	.003	

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2016-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm											
NAME: TURBINELINE LED 40W						TYPE:		WEIGHT:			
SPEC.:05000666						DIM.:		SERIAL No.:			
MFR.: Mobilux GmbH						SUR.:1		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	15.3	16.2	15.5	16.3	16.5	15.3	16.2	15.5	16.3	16.5	
	3H	16.3	17.1	16.5	17.3	17.5	16.1	16.9	16.4	17.1	17.3
	4H	16.8	17.6	17.1	17.8	18.0	16.5	17.3	16.8	17.5	17.7
	6H	17.3	18.0	17.6	18.2	18.5	16.8	17.5	17.1	17.7	18.0
	8H	17.4	18.2	17.8	18.4	18.7	16.8	17.5	17.1	17.8	18.0
	12H	17.6	18.2	17.9	18.5	18.8	16.8	17.4	17.1	17.7	18.0
4H	2H	15.6	16.3	15.8	16.6	16.8	15.6	16.4	15.8	16.6	16.8
	3H	16.8	17.5	17.2	17.8	18.1	16.7	17.4	17.0	17.6	17.9
	4H	17.6	18.2	17.9	18.5	18.8	17.2	17.9	17.6	18.2	18.5
	6H	18.2	18.7	18.6	19.1	19.4	17.6	18.2	18.0	18.5	18.8
	8H	18.4	18.9	18.8	19.3	19.6	17.7	18.2	18.1	18.5	18.9
	12H	18.6	19.1	19.0	19.4	19.8	17.7	18.1	18.1	18.5	18.9
8H	4H	17.8	18.3	18.2	18.7	19.0	17.5	18.0	17.9	18.4	18.7
	6H	18.6	19.0	19.0	19.4	19.8	18.1	18.5	18.5	18.9	19.3
	8H	18.9	19.3	19.4	19.7	20.2	18.2	18.6	18.6	19.0	19.4
	12H	19.2	19.5	19.7	20.0	20.4	18.2	18.5	18.6	18.9	19.4
12H	4H	17.8	18.3	18.2	18.7	19.0	17.5	18.0	18.0	18.4	18.8
	6H	18.6	19.0	19.1	19.4	19.9	18.1	18.5	18.6	18.9	19.4
	8H	19.0	19.3	19.5	19.8	20.3	18.3	18.6	18.8	19.0	19.5
Variations with the observer position at spacings:											
S = 1.0H	+ 0.5 / - 0.6					+ 0.8 / - 0.9					
1.5H	+ 1.1 / - 0.6					+ 1.7 / - 1.0					
2.0H	+ 0.2 / - 0.3					+ 0.7 / - 0.5					

CIE Pub.117 Corrected 3238 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.1)

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2016-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm		
NAME: TURBINELINE LED 40W	TYPE:	WEIGHT:
SPEC.:05000666	DIM.:	SERIAL No.:
MFR.: Mobilux GmbH	SUR.:1	PROTECTION ANGLE:

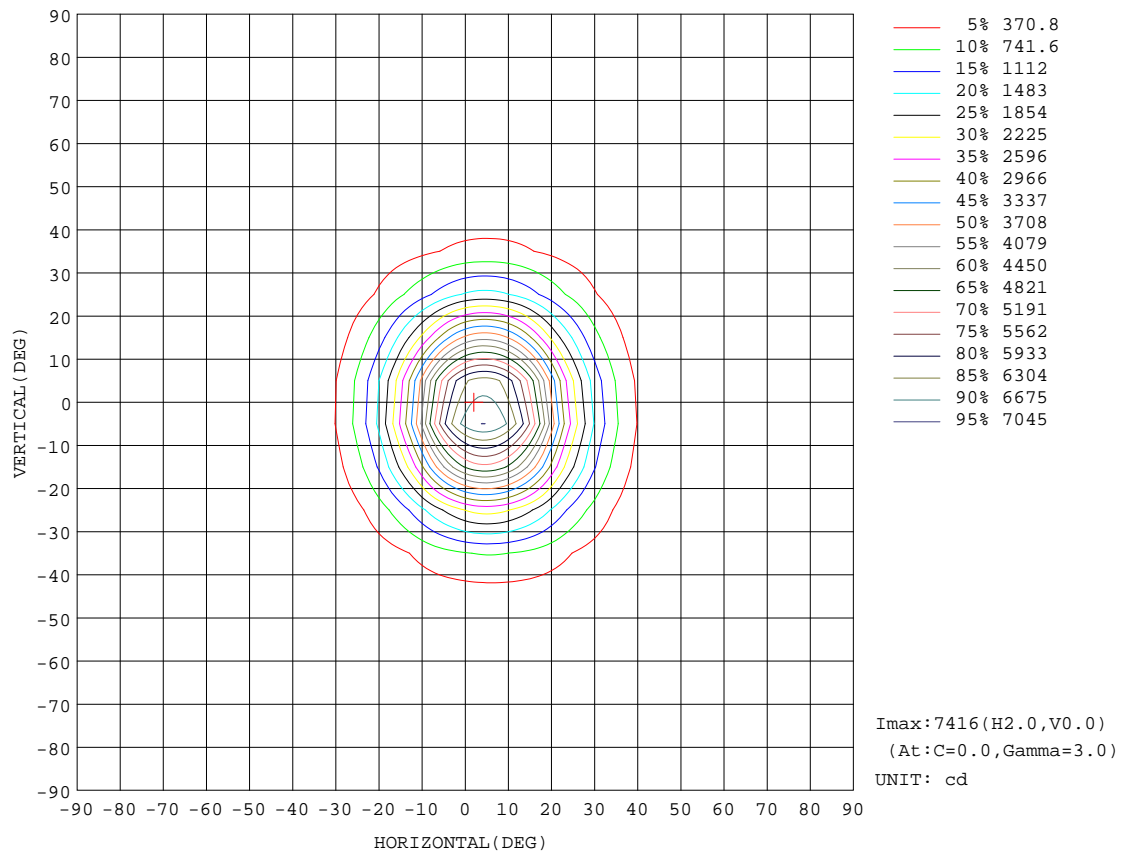
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	86	79	75	85	79	75	84	78	75	71
0.80	93	87	83	92	86	83	91	86	82	78
1.00	98	92	88	97	91	87	95	91	87	83
1.25	102	96	92	101	95	92	99	94	91	87
1.50	104	99	96	103	99	95	101	97	94	89
2.00	107	103	99	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	104	101	99	93
3.00	111	107	104	109	106	103	106	103	101	94
4.00	113	110	108	111	109	106	107	105	104	96
5.00	115	112	110	112	110	109	108	107	105	98
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2016-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm		
NAME: TURBINELINE LED 40W	TYPE:	WEIGHT:
SPEC.:05000666	DIM.:	SERIAL No.:
MFR.: Mobilux GmbH	SUR.:1	PROTECTION ANGLE:

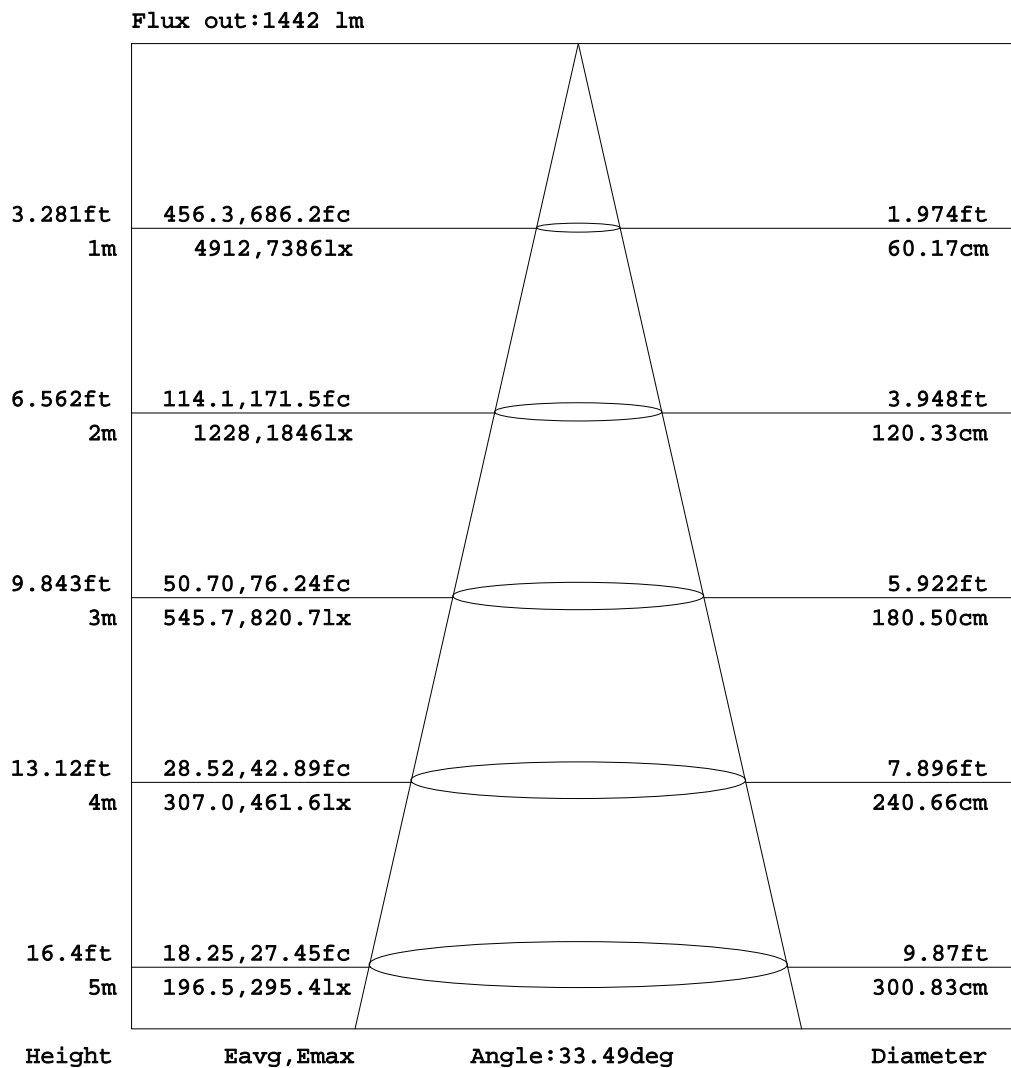


C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2016-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm		
NAME: TURBINELINE LED 40W	TYPE:	WEIGHT:
SPEC.:05000666	DIM.:	SERIAL No.:
MFR.: Mobilux GmbH	SUR.:1	PROTECTION ANGLE:



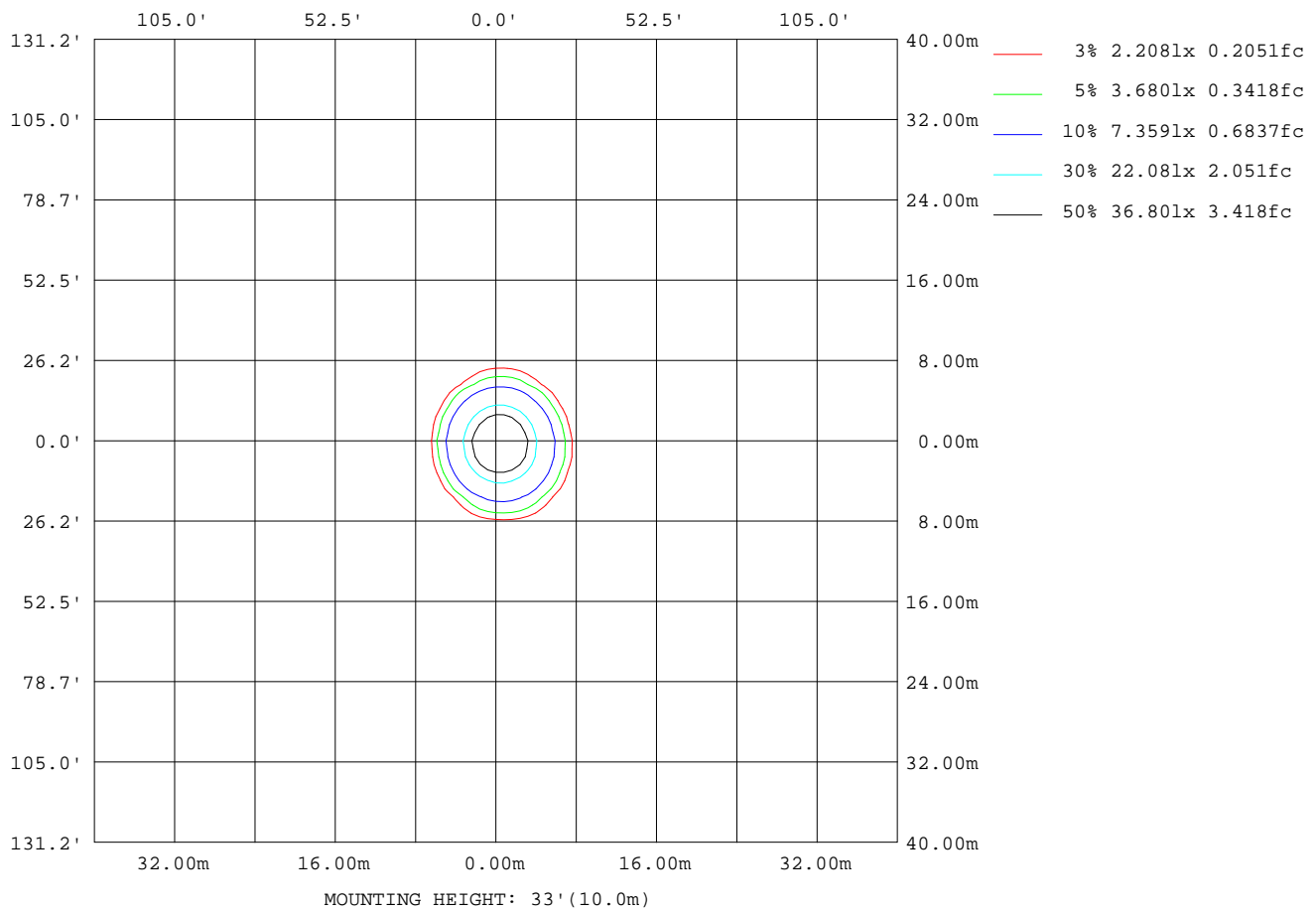
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2016-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

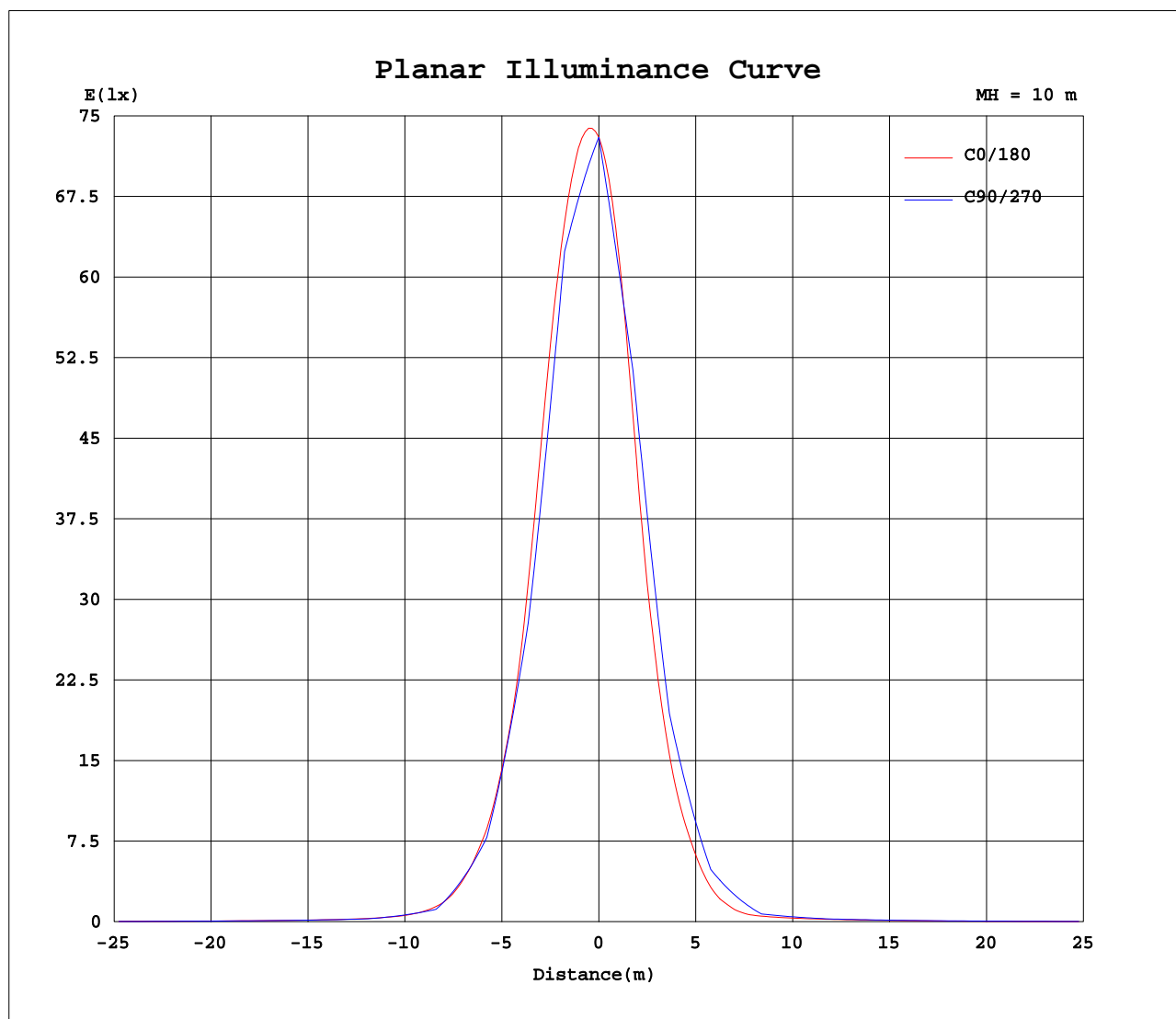
Test:U:220.1V I:0.2023A P:42.90W PF:0.9634 Lamp Flux:3238.09x1 lm		
NAME: TURBINELINE LED 40W	TYPE:	WEIGHT:
SPEC.:05000666	DIM.:	SERIAL No.:
MFR.: Mobilux GmbH	SUR.:1	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2016-06-01

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2016-06-01

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity: 65.0%
Test Distance: 7.400m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:7.400m [K=1.0000]
Remarks:

```