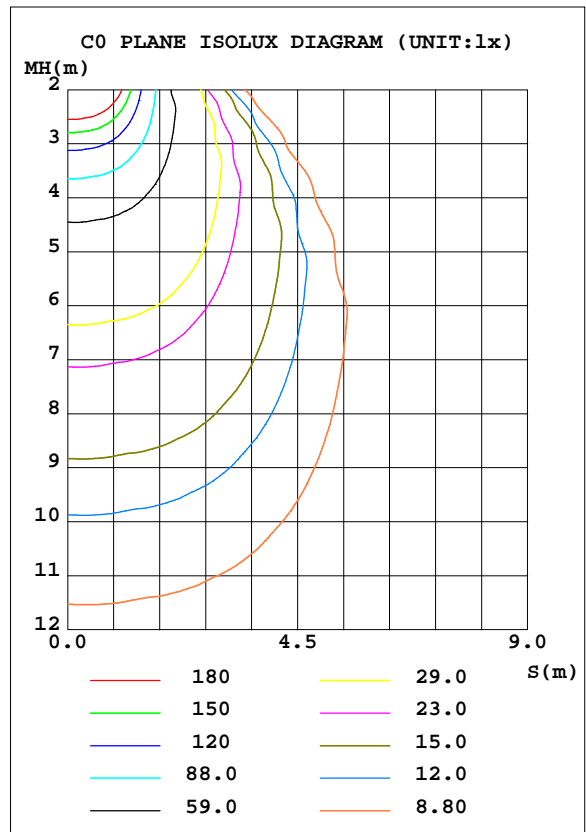
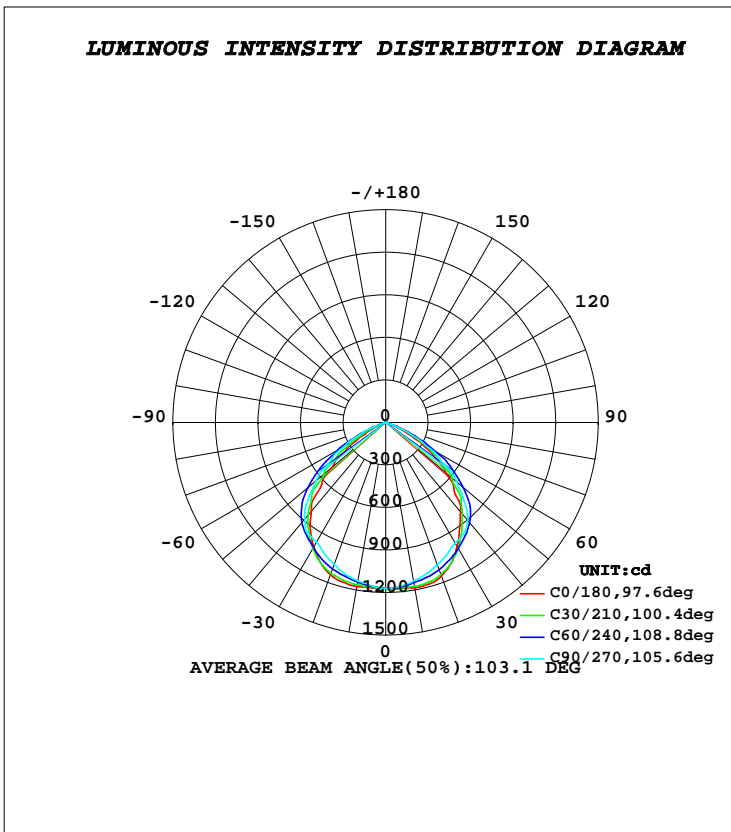


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 78.98 lm/W			
MODEL		I _{max} (cd)	1185	S/MH(C0/180)	1.27
NOMINAL POWER(W)	50	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	2747.2	η UP, DN(C0-180)	0.0, 50.2
NOMINAL FLUX(lm)	2747.19	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.8
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Lauhin
 Test Date:2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity:65.0%
 Test Distance:26.000m [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	1184	1165	1136	1155	1175	1153	1135	1153	0- 10	111.0	111.0	4.04,4.04
20	1153	1131	1068	1120	1142	1121	1066	1122	10- 20	322.4	433.4	15.8,15.8
30	1010	1041	983.1	1044	1015	1038	974.5	1032	20- 30	493.6	927.0	33.7,33.7
40	822.4	879.1	899.9	900.1	814.6	881.2	888.3	886.2	30- 40	595.7	1523	55.4,55.4
50	553.0	694.9	654.2	692.9	500.3	673.1	641.9	694.9	40- 50	592.5	2115	77,77
60	284.0	393.1	327.3	365.2	214.1	335.1	329.1	385.8	50- 60	436.4	2552	92.9,92.9
70	28.70	75.41	73.31	53.17	23.30	48.10	75.35	75.31	60- 70	178.7	2730	99.4,99.4
80	3.478	1.937	1.737	0.8704	3.187	2.334	2.326	2.660	70- 80	16.37	2747	100,100
90	0	0	0	0	0	0	0	0	80- 90	0.5664	2747	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

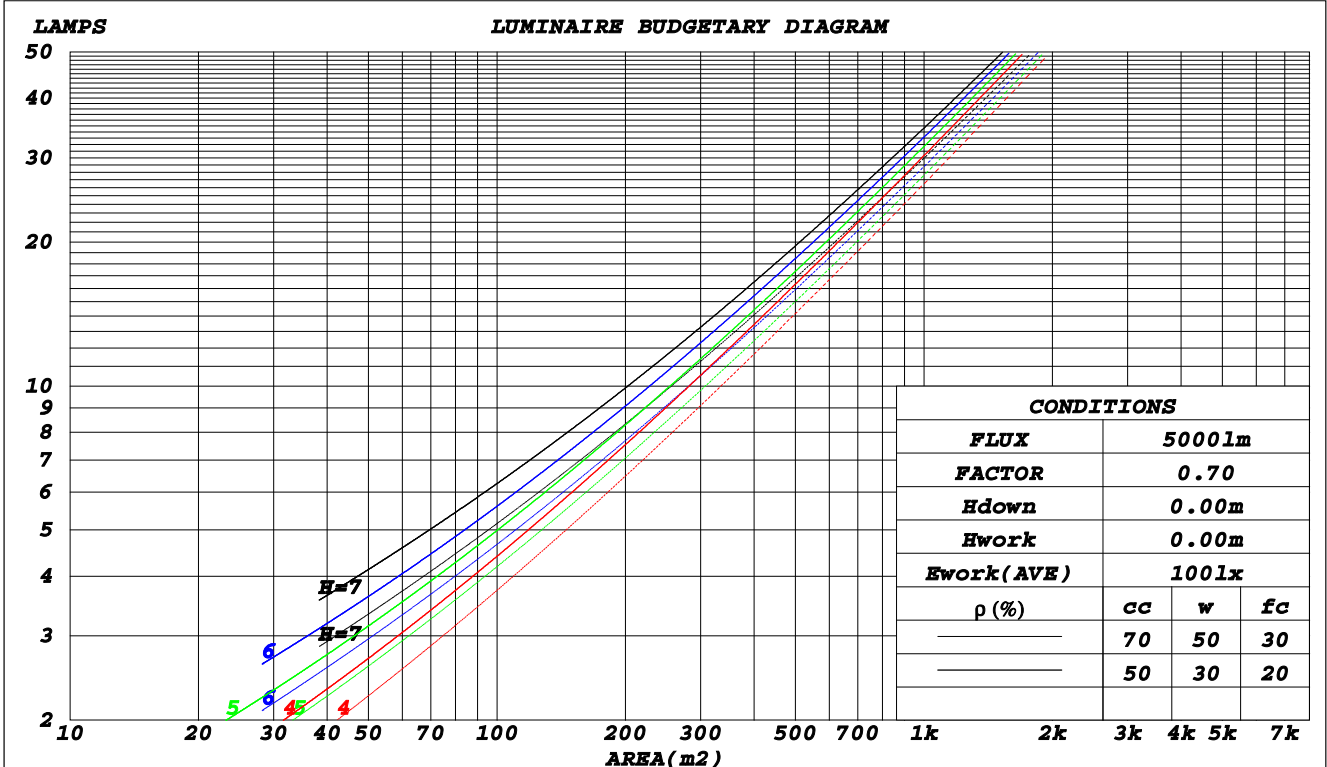
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Lauhin
 Test Date:2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity:65.0%
 Test Distance:26.000m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	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	1.19	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	1.07	1.04	1.01	1.05	1.02	.99	1.01	.99	.96	.97	.95	.93	.94	.92	.91	.89
2.0	.96	.90	.86	.94	.89	.85	.91	.86	.83	.88	.84	.81	.85	.82	.79	.77
3.0	.86	.79	.73	.84	.78	.72	.81	.76	.71	.79	.74	.70	.76	.72	.69	.67
4.0	.77	.69	.63	.75	.68	.63	.73	.67	.62	.71	.65	.61	.69	.64	.60	.58
5.0	.69	.61	.55	.68	.60	.55	.66	.59	.54	.64	.58	.54	.62	.57	.53	.51
6.0	.63	.54	.49	.62	.54	.48	.60	.53	.48	.58	.52	.48	.57	.51	.47	.45
7.0	.57	.49	.43	.56	.48	.43	.55	.48	.43	.53	.47	.42	.52	.46	.42	.40
8.0	.52	.44	.39	.51	.44	.39	.50	.43	.38	.49	.43	.38	.48	.42	.38	.36
9.0	.48	.40	.35	.47	.40	.35	.46	.39	.35	.45	.39	.34	.44	.38	.34	.33
10.0	.44	.37	.32	.44	.36	.32	.43	.36	.31	.42	.36	.31	.41	.35	.31	.30



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Lauhin
 Test Date: 2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity: 65.0%
 Test Distance: 26.000m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.242	.138	.044	.235	.134	.043	.222	.127	.041	.210	.121	.039	.199	.116	.037	
2.0	.239	.131	.040	.233	.129	.040	.222	.123	.038	.212	.119	.037	.202	.114	.036	
3.0	.230	.122	.037	.224	.120	.036	.214	.116	.035	.205	.113	.035	.197	.109	.034	
4.0	.218	.113	.033	.213	.112	.033	.205	.108	.032	.196	.105	.032	.189	.103	.031	
5.0	.206	.105	.030	.202	.104	.030	.194	.101	.030	.187	.099	.029	.180	.096	.029	
6.0	.194	.097	.028	.190	.096	.028	.183	.094	.027	.177	.092	.027	.171	.090	.027	
7.0	.183	.090	.026	.180	.090	.026	.174	.088	.025	.168	.086	.025	.162	.084	.025	
8.0	.173	.084	.024	.170	.084	.024	.164	.082	.023	.159	.081	.023	.154	.079	.023	
9.0	.163	.079	.022	.161	.078	.022	.156	.077	.022	.151	.076	.022	.146	.074	.021	
10.0	.155	.074	.021	.152	.074	.021	.148	.072	.020	.143	.071	.020	.139	.070	.020	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.176	.157	.140	.150	.135	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.157	.114	.080	.134	.098	.069	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.149	.100	.063	.128	.087	.055	.088	.060	.039	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.136	.081	.042	.117	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.129	.074	.035	.111	.064	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
8.0	.124	.068	.030	.106	.059	.026	.074	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.118	.063	.026	.102	.055	.023	.070	.039	.016	.041	.023	.010	.013	.007	.003	
10.0	.113	.059	.023	.097	.051	.020	.068	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Lauhin
 Test Date:2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity:65.0%
 Test Distance:26.000m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	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		25.1	26.5	25.4	26.7	26.9	26.4	27.8	26.6	27.9	28.1
	3H	25.1	26.3	25.4	26.5	26.8	26.6	27.8	26.9	28.0	28.3
	4H	25.0	26.2	25.3	26.4	26.6	26.5	27.6	26.8	27.9	28.1
	6H	24.9	26.0	25.2	26.2	26.5	26.4	27.5	26.7	27.7	28.0
	8H	24.8	25.9	25.2	26.2	26.4	26.3	27.4	26.7	27.7	27.9
	12H	24.8	25.8	25.1	26.1	26.4	26.3	27.3	26.6	27.6	27.9
4H	2H	25.5	26.7	25.8	26.9	27.2	26.6	27.7	26.9	28.0	28.2
	3H	25.5	26.5	25.8	26.8	27.1	26.8	27.8	27.1	28.1	28.4
	4H	25.4	26.3	25.7	26.6	26.9	26.7	27.6	27.1	27.9	28.2
	6H	25.3	26.1	25.7	26.4	26.8	26.6	27.4	27.0	27.7	28.1
	8H	25.2	26.0	25.7	26.3	26.7	26.6	27.3	27.0	27.7	28.0
	12H	25.2	25.9	25.6	26.3	26.7	26.5	27.2	26.9	27.6	28.0
8H	4H	25.3	26.0	25.7	26.4	26.7	26.6	27.3	27.0	27.7	28.0
	6H	25.2	25.8	25.6	26.2	26.6	26.5	27.1	26.9	27.5	27.9
	8H	25.1	25.7	25.6	26.1	26.5	26.4	27.0	26.9	27.4	27.8
	12H	25.1	25.6	25.6	26.0	26.5	26.4	26.8	26.9	27.3	27.8
12H	4H	25.2	25.9	25.6	26.3	26.7	26.5	27.2	26.9	27.6	28.0
	6H	25.1	25.7	25.6	26.1	26.5	26.4	27.0	26.9	27.4	27.8
	8H	25.1	25.6	25.6	26.0	26.5	26.4	26.8	26.9	27.3	27.8

Variations with the observer position at spacings:		
S = 1.0H	+ 0.8 / - 1.0	+ 0.6 / - 1.0
1.5H	+ 0.6 / - 1.0	+ 0.7 / - 1.4
2.0H	+ 1.0 / - 2.8	+ 1.2 / - 2.2

CIE Pub.117 Corrected 2747 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.5)

C Range: 0 - 360DEG	γ Range: 0 - 90DEG
C Interval: 15.0DEG	γ Interval: 1.0DEG
Test Speed: HIGH	Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.285
Temperature:25.3DEG	Humidity:65.0%
Operators:Lauhin	Test Distance:26.000m [K=1.0000]
Test Date:2019-06-04	Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	PROTECTION ANGLE:

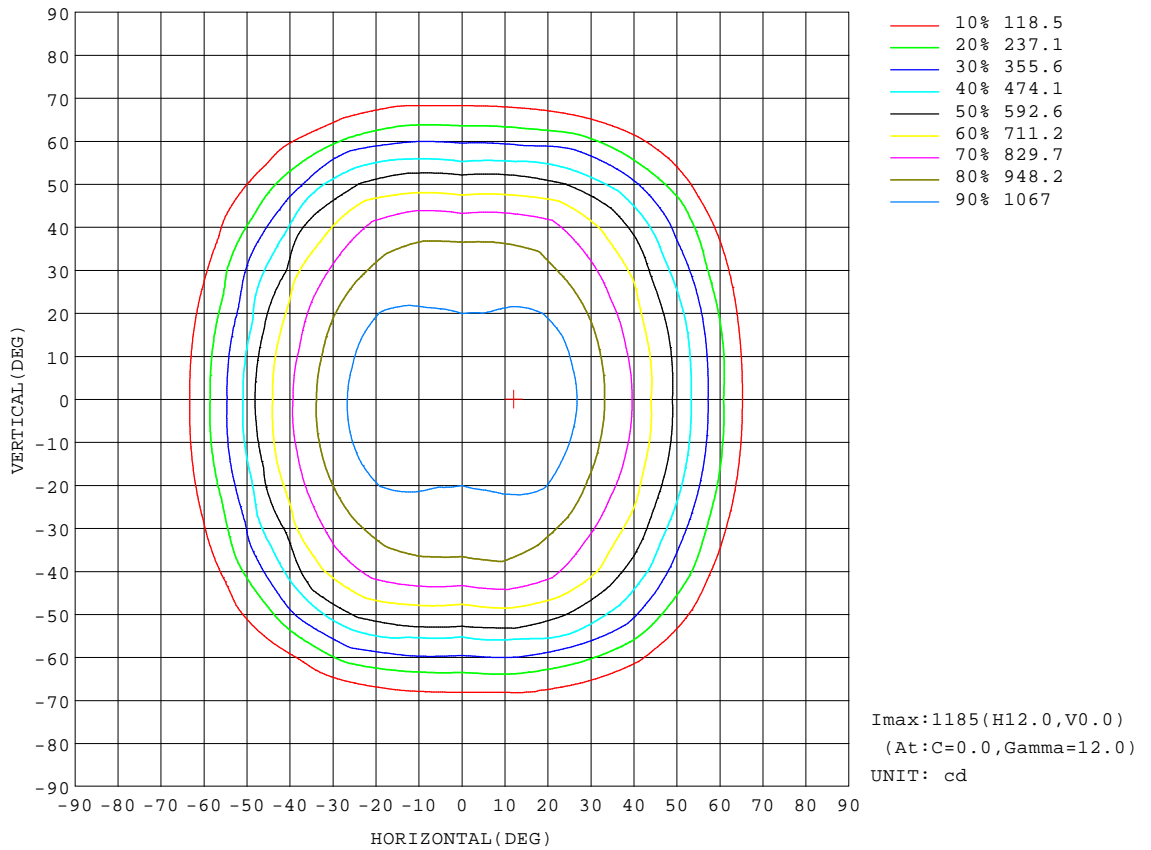
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	63	52	46	62	52	46	61	51	46	40
0.80	74	63	57	73	63	57	71	62	56	50
1.00	83	73	67	82	73	67	79	74	66	60
1.25	90	81	75	88	80	75	86	79	74	67
1.50	94	86	81	93	85	80	90	84	79	72
2.00	100	94	88	99	92	88	96	90	86	79
2.50	103	97	92	102	96	92	98	93	90	82
3.00	106	101	97	104	99	95	100	97	93	86
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	107	104	109	105	103	105	102	99	91
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Lauhin
 Test Date:2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity:65.0%
 Test Distance:26.000m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	PROTECTION ANGLE:



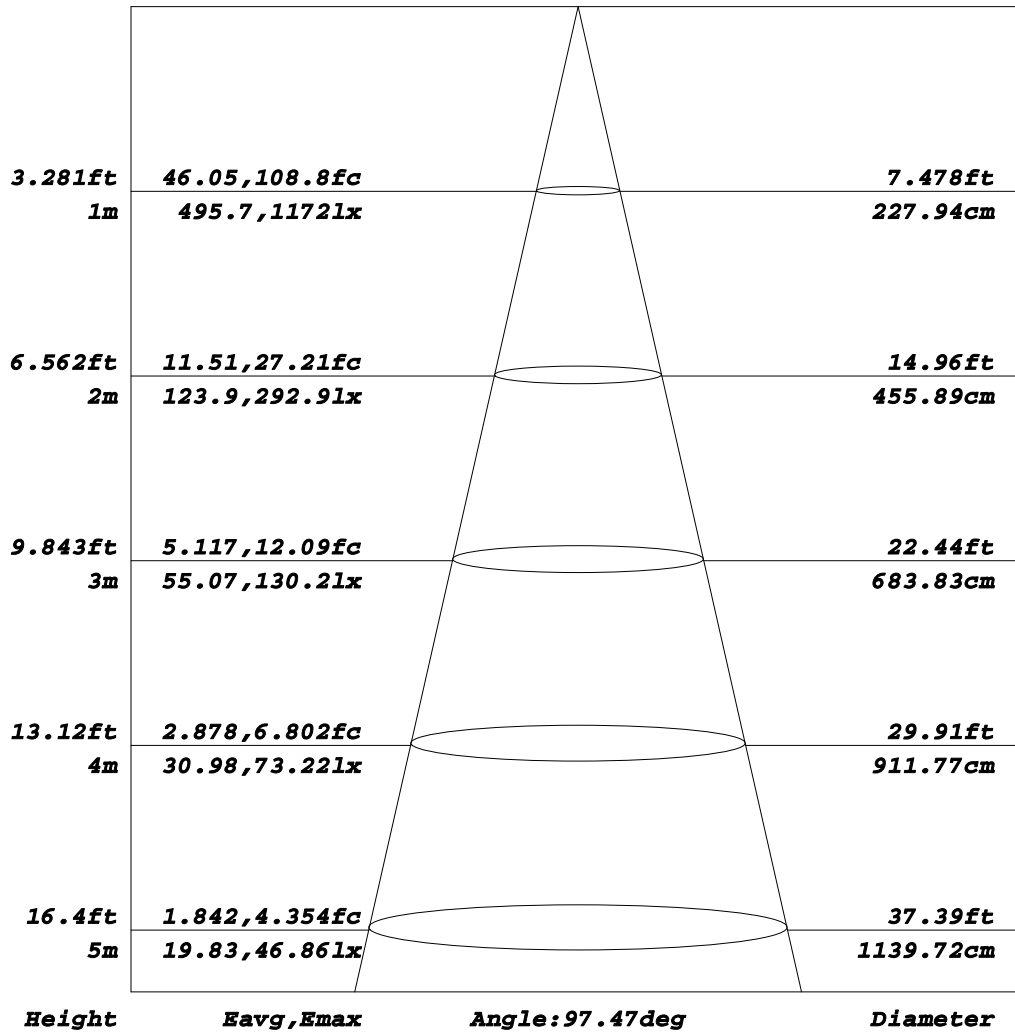
C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Lauhin
 Test Date: 2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity: 65.0%
 Test Distance: 26.000m [K=1.0000]
 Remarks:

AAI Figure

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	PROTECTION ANGLE:

Flux out:2061 lm



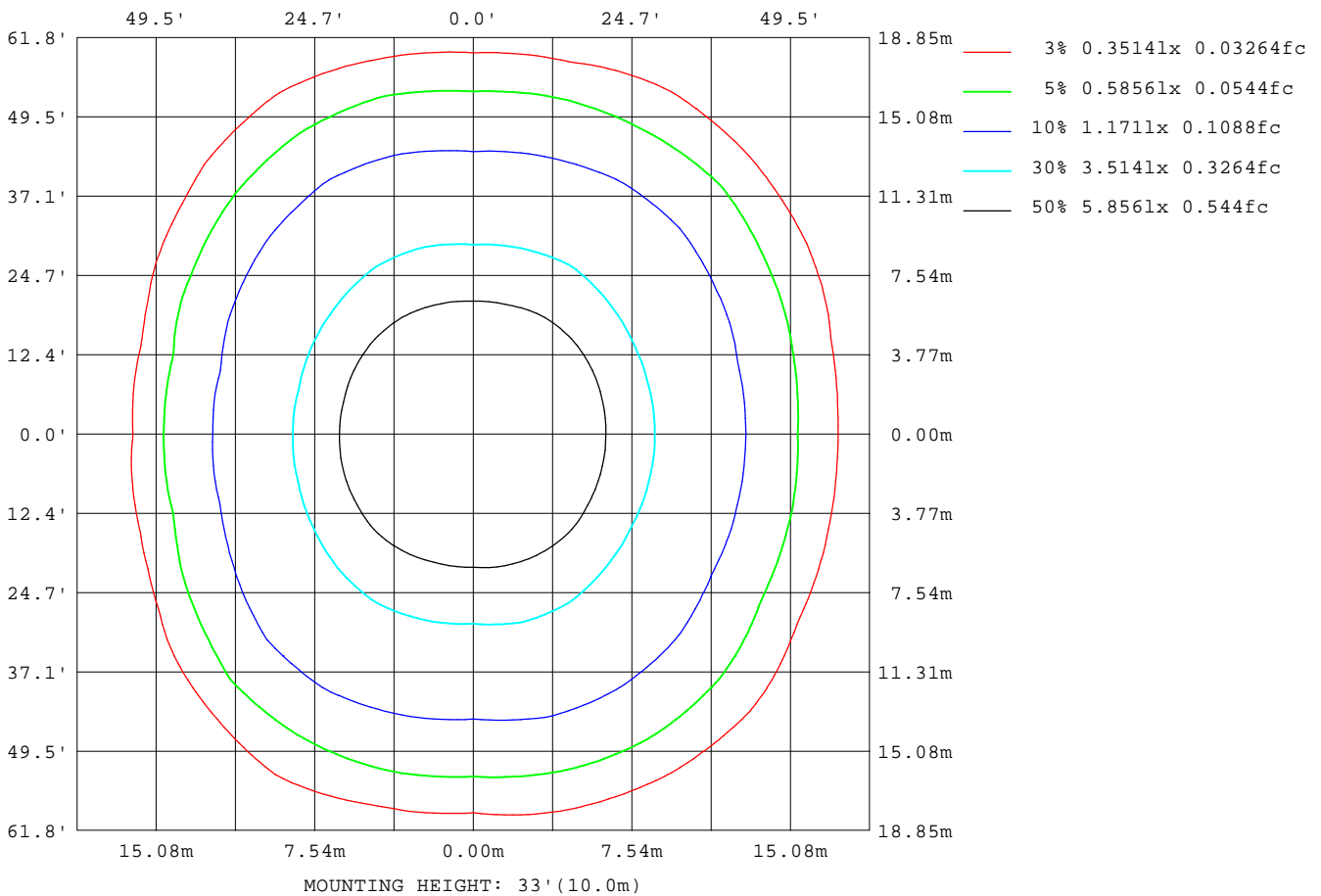
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Lauhin
 Test Date: 2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity: 65.0%
 Test Distance: 26.000m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

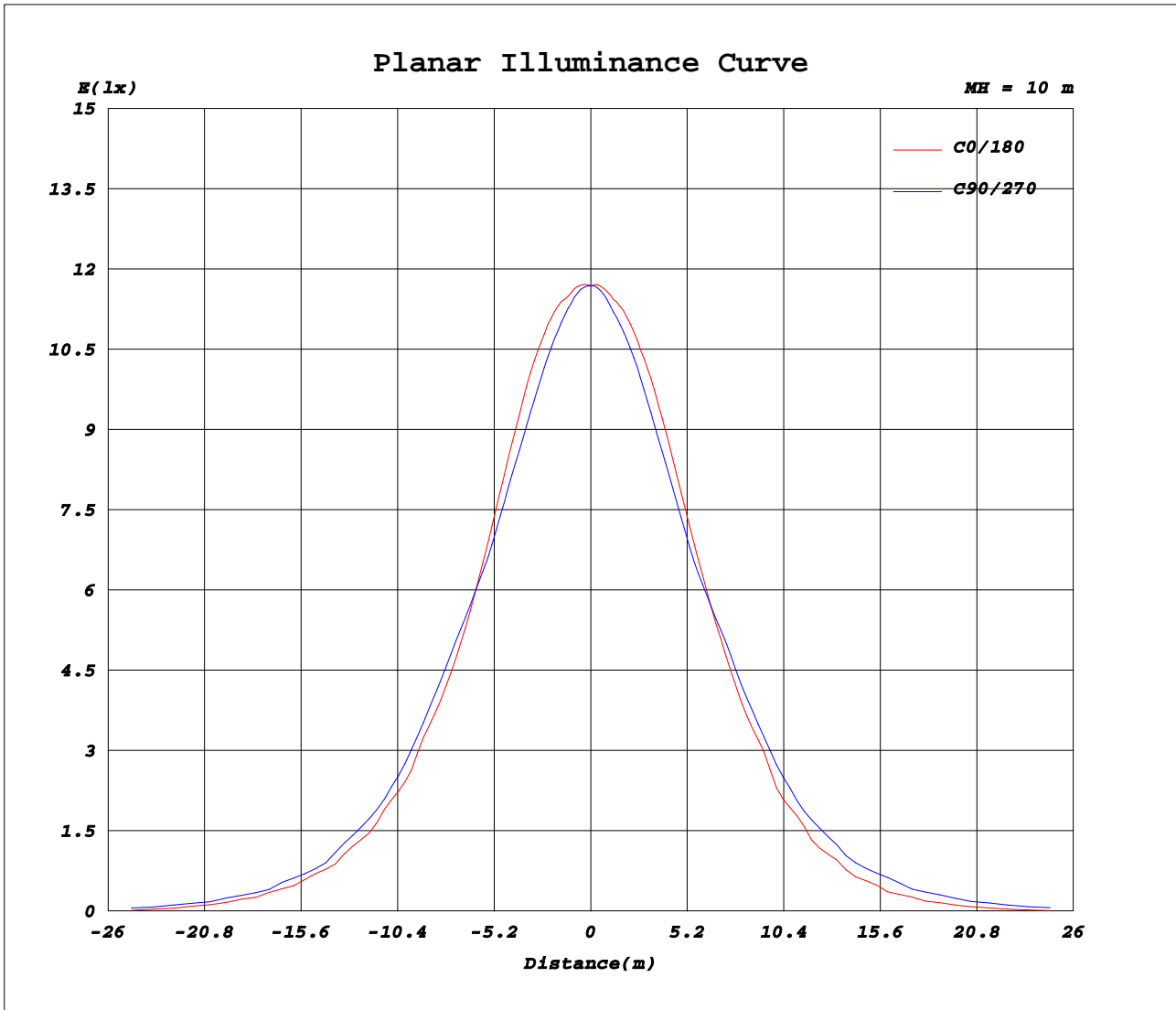
Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Lauhin
Test Date: 2019-06-04

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.285
Humidity: 65.0%
Test Distance: 26.000m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Lauhin
 Test Date: 2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity: 65.0%
 Test Distance: 26.000m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1169	1170	1170	1171	1169	1168	1169	1169	1167	1169	1168	1168	1169	1170	1170	1171	1169	1168	1169
5	1177	1175	1173	1171	1167	1166	1161	1161	1165	1165	1169	1172	1171	1167	1166	1166	1161	1165	1157
10	1184	1181	1174	1165	1146	1146	1136	1140	1145	1155	1166	1175	1175	1168	1162	1153	1145	1140	1135
15	1180	1179	1167	1154	1130	1113	1106	1113	1122	1141	1156	1169	1166	1163	1152	1141	1122	1109	1106
20	1153	1151	1141	1131	1105	1082	1068	1076	1098	1120	1135	1145	1142	1137	1132	1121	1100	1081	1066
25	1094	1094	1093	1097	1068	1044	1026	1036	1063	1089	1094	1093	1090	1087	1091	1089	1065	1035	1023
30	1010	1013	1024	1041	1027	1001	983	989	1018	1044	1033	1026	1015	1014	1026	1038	1018	991	974
35	912	916	936	969	977	978	959	963	976	976	957	939	926	928	947	965	974	966	956
40	822	826	841	879	920	933	900	919	928	900	862	828	815	814	851	881	921	917	888
45	684	694	751	785	844	836	781	815	848	811	741	711	654	675	739	785	838	826	775
50	553	570	610	695	713	697	654	681	719	693	573	554	500	526	572	673	717	679	642
55	416	418	476	546	573	570	479	530	587	548	414	374	340	349	420	501	566	521	479
60	284	297	332	393	392	401	327	381	393	365	272	216	214	219	277	335	392	387	329
65	128	139	185	215	227	209	198	208	221	176	129	92.4	84.6	93.4	131	165	221	214	203
70	28.7	28.6	28.4	75.4	84.9	78.7	73.3	74.1	75.4	53.2	32.2	21.0	23.3	22.9	22.6	48.1	66.9	77.9	75.4
75	12.0	12.9	12.6	9.14	7.71	6.27	4.99	5.37	4.64	5.40	8.54	9.76	10.5	10.8	11.0	7.48	5.91	6.67	6.30
80	3.48	3.46	3.55	1.94	1.81	1.47	1.74	1.06	1.40	0.87	2.27	2.79	3.19	3.59	3.26	2.33	1.86	2.40	2.33
85	0.14	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.20	0.00	0.27	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Lauhin
 Test Date: 2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity: 65.0%
 Test Distance: 26.000m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.3V I:0.1578A P:34.78W PF:0.9574 Lamp Flux:2747.19x1 lm		
NAME:	TYPE:3000K	WEIGHT:
SPEC.:10014	DIM.: 180*135*40mm	SERIAL No.:
MFR.: VNILS	SUR.:	PROTECTION ANGLE:

Table--2

UNIT: cd

C(DEG) γ (DEG)	285	300	315	330	345														
0	1169	1167	1169	1168	1168														
5	1158	1163	1165	1168	1172														
10	1137	1143	1153	1165	1174														
15	1109	1123	1141	1158	1173														
20	1072	1098	1122	1138	1146														
25	1030	1063	1086	1093	1088														
30	983	1020	1032	1030	1012														
35	961	975	965	943	919														
40	909	929	886	846	825														
45	808	846	793	753	705														
50	665	715	695	618	588														
55	500	566	546	486	432														
60	350	399	386	352	299														
65	209	234	227	186	140														
70	77.6	92.0	75.3	55.2	29.9														
75	6.58	6.77	8.31	12.9	13.9														
80	2.80	2.19	2.66	3.52	4.34														
85	0.47	0.00	0.20	0.00	0.47														
90	0.00	0.00	0.00	0.00	0.00														

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Lauhin
 Test Date: 2019-06-04

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.285
 Humidity: 65.0%
 Test Distance: 26.000m [K=1.0000]
 Remarks: