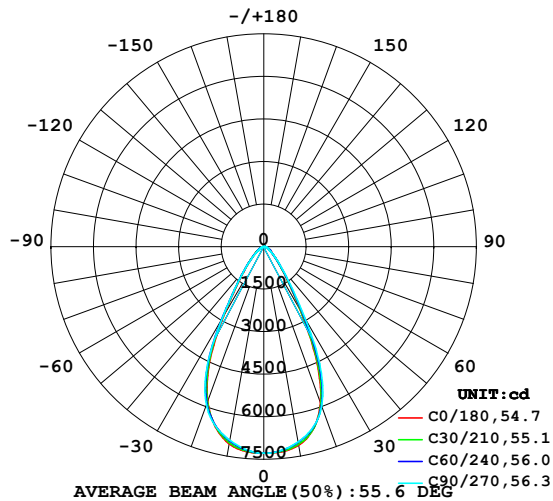


LUMINAIRE PHOTOMETRIC TEST REPORT

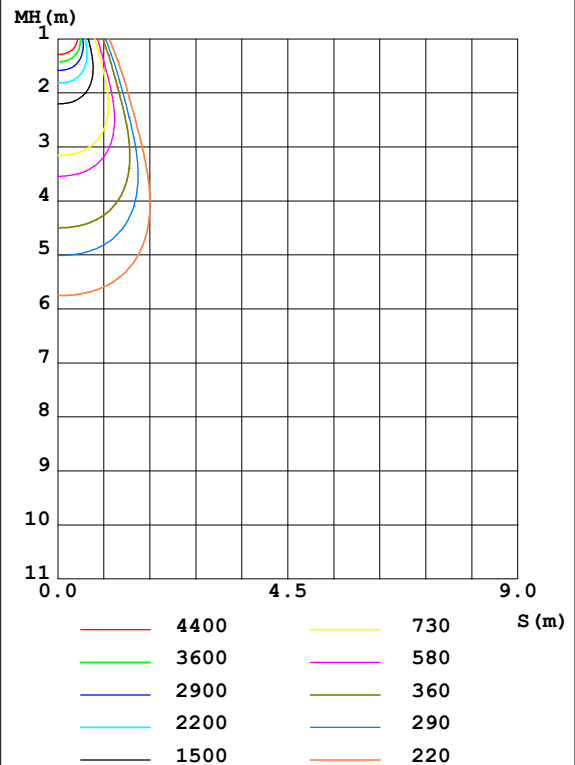
Test:U:230.1V I:0.2401A P:53.04W PF:0.9601 Lamp Flux:6616.16x1 lm		
NAME: FL23-050-5070-F06402	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.164*0.098	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 124.73 lm/W			
MODEL	RF303	I _{max} (cd)	7288	S/MH(C0/180)	0.82
NOMINAL POWER(W)	50	LOR(%)	100.0	S/MH(C90/270)	0.83
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	6616.2	η UP,DN(C0-180)	0.0,49.9
NOMINAL FLUX(lm)	6616.16	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.85

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-11-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Checker: LI

Assessor:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	7259	7232	7211	7243	7249	7212	7181	7204	0- 5	173.4	173.4	2.62,2.62
10	7108	7051	6990	7043	7055	6980	6932	7007	5- 10	509.7	683.1	10.3,10.3
15	6689	6687	6630	6625	6589	6544	6561	6630	10- 15	809.8	1493	22.6,22.6
20	5843	5953	5977	5868	5782	5820	5926	5888	15- 20	1034	2526	38.2,38.2
25	4380	4603	4745	4619	4538	4637	4766	4553	20- 25	1106	3633	54.9,54.9
30	2549	2703	2922	2883	2857	2964	2994	2735	25- 30	937.7	4570	69.1,69.1
35	1490	1531	1633	1610	1620	1695	1704	1593	30- 35	626.8	5197	78.6,78.6
40	947.4	951.6	990.2	986.6	1015	1046	1047	988.3	35- 40	423.6	5621	85,85
45	623.9	629.2	645.3	647.9	664.6	656.0	645.7	619.5	40- 45	296.4	5917	89.4,89.4
50	417.4	432.1	431.2	444.1	442.7	431.2	407.1	409.6	45- 50	211.7	6129	92.6,92.6
55	288.8	308.2	293.4	316.9	307.5	301.1	274.7	287.2	50- 55	155.4	6284	95,95
60	198.2	221.1	199.5	228.0	212.3	216.8	186.9	206.6	55- 60	116.3	6401	96.7,96.7
65	135.6	156.5	133.3	162.5	145.1	153.6	123.5	145.9	60- 65	86.22	6487	98,98
70	98.03	99.34	87.57	105.8	103.3	99.09	81.87	91.76	65- 70	61.17	6548	99,99
75	63.20	50.35	58.33	55.41	72.83	52.24	53.40	47.09	70- 75	39.51	6587	99.6,99.6
80	25.65	22.18	22.93	26.05	33.26	24.26	20.38	20.40	75- 80	20.85	6608	99.9,99.9
85	4.179	3.536	3.400	5.323	7.460	5.313	3.459	3.500	80- 85	6.951	6615	100,100
90	0.6484	0.6413	0.5749	0.5990	0.7011	0.7108	0.6878	0.7232	85- 90	0.9255	6616	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		

Conical surface Flux(90deg): 5917.2 lm

%lum = 89.4%

%lamp = 89.4%

Conical surface Flux(120deg): 6400.5 lm

%lum = 96.7%

%lamp = 96.7%

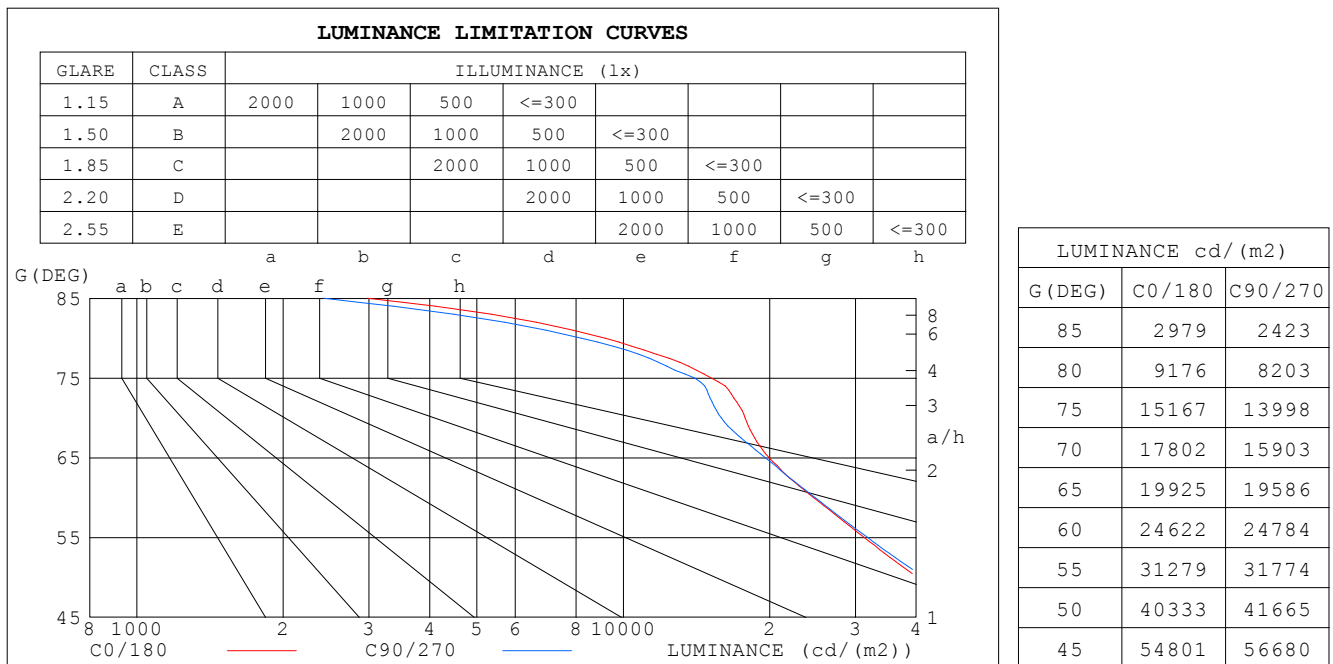
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2019-11-06

Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:9.470m [K=1.0000]
 Remarks:

Assessor:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-06

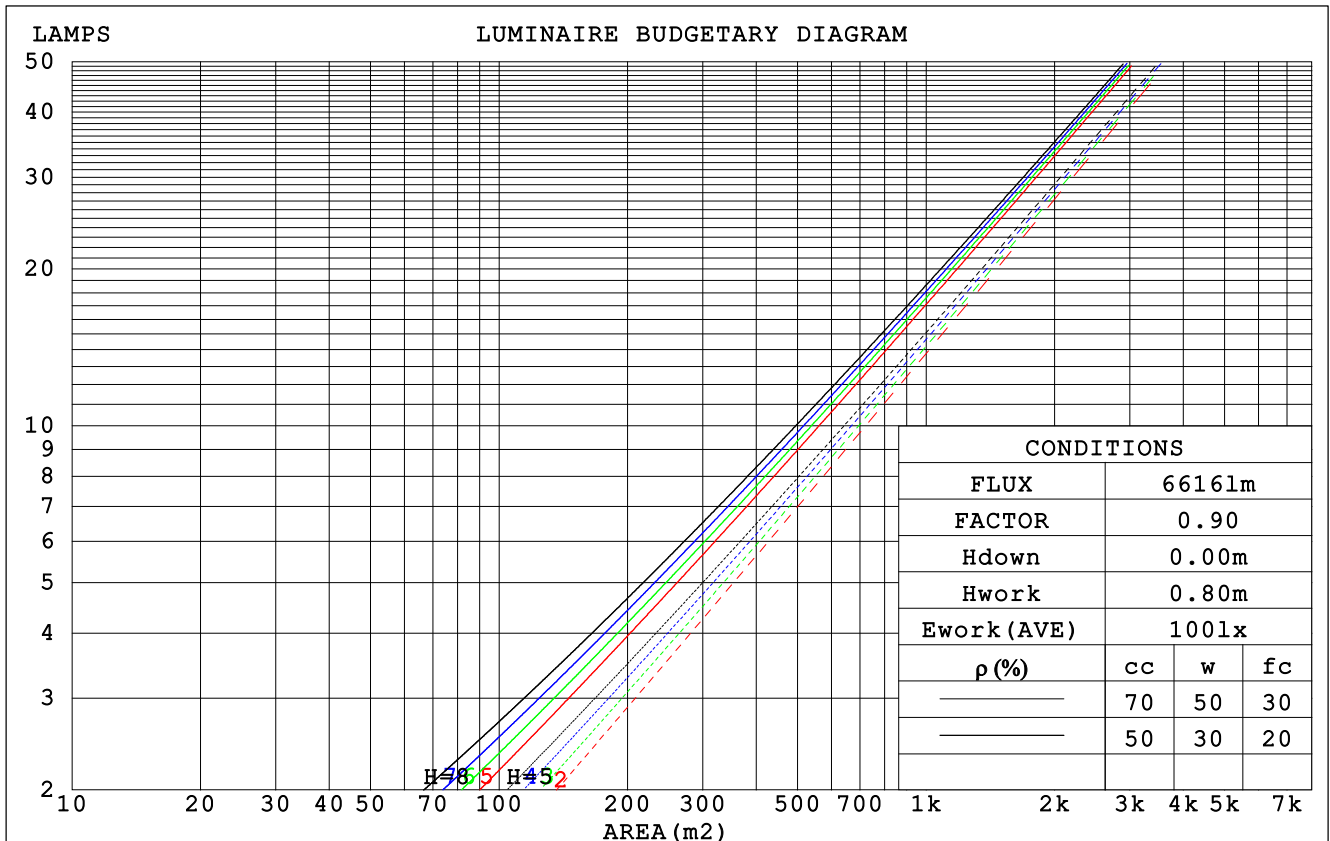
Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Assessor:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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	.00
1.0	1.10	1.07	1.05	1.08	1.05	1.03	1.04	1.02	1.00	1.00	.99	.97	.97	.95	.94	.92
2.0	1.02	.97	.94	.90	.96	.93	.97	.93	.91	.94	.91	.89	.91	.89	.87	.85
3.0	.94	.89	.85	.93	.88	.84	.90	.86	.83	.88	.84	.81	.85	.83	.80	.78
4.0	.88	.82	.77	.87	.81	.77	.84	.80	.76	.82	.78	.75	.80	.77	.74	.73
5.0	.82	.76	.71	.81	.75	.71	.79	.74	.70	.77	.73	.70	.76	.72	.69	.67
6.0	.77	.70	.66	.76	.70	.66	.74	.69	.65	.73	.68	.65	.71	.67	.64	.63
7.0	.72	.66	.61	.71	.65	.61	.70	.65	.61	.69	.64	.60	.68	.63	.60	.59
8.0	.68	.62	.57	.67	.61	.57	.66	.61	.57	.65	.60	.57	.64	.60	.56	.55
9.0	.64	.58	.54	.63	.58	.54	.62	.57	.53	.62	.57	.53	.61	.56	.53	.52
10.0	.60	.55	.51	.60	.54	.50	.59	.54	.50	.58	.54	.50	.58	.53	.50	.49



C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-11-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Checker: LI

Assessor:

WEC AND CCEC

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	.192	.109	.035	.185	.106	.034	.173	.099	.032	.161	.093	.030	.150	.087	.028	
2.0	.184	.101	.031	.178	.098	.030	.168	.093	.029	.158	.089	.028	.149	.084	.027	
3.0	.175	.093	.028	.170	.091	.027	.161	.087	.026	.152	.083	.026	.144	.080	.025	
4.0	.165	.086	.025	.161	.084	.025	.153	.081	.024	.146	.078	.024	.139	.075	.023	
5.0	.157	.080	.023	.153	.079	.023	.146	.076	.022	.140	.074	.022	.134	.071	.021	
6.0	.149	.075	.021	.146	.073	.021	.139	.071	.021	.134	.069	.020	.128	.068	.020	
7.0	.141	.070	.020	.139	.069	.020	.133	.067	.019	.128	.066	.019	.123	.064	.019	
8.0	.135	.066	.019	.132	.065	.018	.127	.064	.018	.123	.062	.018	.118	.061	.018	
9.0	.129	.062	.017	.126	.062	.017	.122	.060	.017	.118	.059	.017	.114	.058	.017	
10.0	.123	.059	.016	.121	.058	.016	.117	.057	.016	.113	.056	.016	.110	.055	.016	

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	.172	.157	.144	.147	.135	.124	.101	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.158	.132	.111	.135	.114	.096	.093	.079	.067	.053	.046	.039	.017	.015	.013	
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010	
4.0	.136	.099	.071	.117	.086	.062	.080	.060	.043	.046	.035	.026	.015	.011	.008	
5.0	.128	.088	.058	.110	.076	.051	.076	.053	.036	.044	.031	.021	.014	.010	.007	
6.0	.120	.078	.048	.103	.068	.042	.071	.048	.030	.041	.028	.018	.013	.009	.006	
7.0	.114	.071	.041	.098	.062	.036	.068	.043	.025	.039	.025	.015	.013	.008	.005	
8.0	.108	.065	.035	.093	.056	.031	.064	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.103	.060	.031	.088	.052	.027	.061	.036	.019	.036	.021	.011	.012	.007	.004	
10.0	.098	.055	.027	.084	.048	.023	.059	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-11-06

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

UGR(Unified Glare Rating) Table

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	21.9	23.0	22.2	23.1	23.3	22.2	23.2	22.4	23.4	23.5
3H	22.3	23.2	22.5	23.4	23.6	22.4	23.4	22.7	23.6	23.8
4H	22.4	23.3	22.7	23.5	23.7	22.5	23.4	22.8	23.6	23.8
6H	22.4	23.2	22.7	23.5	23.7	22.5	23.3	22.8	23.6	23.8
8H	22.4	23.2	22.7	23.4	23.7	22.5	23.3	22.8	23.5	23.8
12H	22.3	23.1	22.7	23.4	23.7	22.4	23.2	22.8	23.5	23.8
4H 2H	22.1	23.0	22.4	23.2	23.4	22.3	23.2	22.6	23.4	23.6
3H	22.6	23.3	22.9	23.6	23.9	22.7	23.4	23.0	23.7	24.0
4H	22.7	23.4	23.1	23.7	24.0	22.8	23.5	23.2	23.8	24.1
6H	22.8	23.4	23.2	23.7	24.1	22.8	23.4	23.2	23.8	24.1
8H	22.8	23.3	23.2	23.7	24.0	22.8	23.4	23.2	23.7	24.1
12H	22.7	23.2	23.1	23.6	24.0	22.8	23.3	23.2	23.7	24.0
8H 4H	22.7	23.3	23.1	23.6	24.0	22.8	23.3	23.2	23.7	24.1
6H	22.8	23.3	23.2	23.6	24.1	22.8	23.3	23.3	23.7	24.1
8H	22.8	23.2	23.2	23.6	24.0	22.8	23.2	23.3	23.6	24.1
12H	22.7	23.1	23.2	23.5	24.0	22.8	23.1	23.2	23.6	24.0
12H 4H	22.7	23.2	23.1	23.6	23.9	22.7	23.3	23.2	23.6	24.0
6H	22.7	23.2	23.2	23.6	24.0	22.8	23.2	23.2	23.6	24.1
8H	22.7	23.1	23.2	23.5	24.0	22.8	23.1	23.2	23.6	24.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.1 / - 1.5					+ 1.3 / - 1.7				
1.5H	+ 1.7 / - 1.0					+ 2.0 / - 1.2				
2.0H	+ 1.8 / - 1.4					+ 2.0 / - 1.4				

CIE Pub.117 Corrected 6616 lm Total Lamp Luminous Flux.(8log(F/F0) = 6.6)

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-11-06

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	82	75	70	82	75	70	81	74	70	66
0.80	90	83	79	89	83	79	88	82	78	74
1.00	95	89	85	95	88	84	93	89	84	80
1.25	100	94	90	99	93	90	97	92	89	84
1.50	103	98	94	102	97	93	100	95	92	87
2.00	107	102	98	105	101	97	102	99	96	90
2.50	109	104	101	107	103	100	104	101	98	92
3.00	110	107	103	109	105	102	105	102	100	93
4.00	113	110	107	111	108	106	107	105	103	96
5.00	114	111	109	112	110	108	108	106	105	97
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

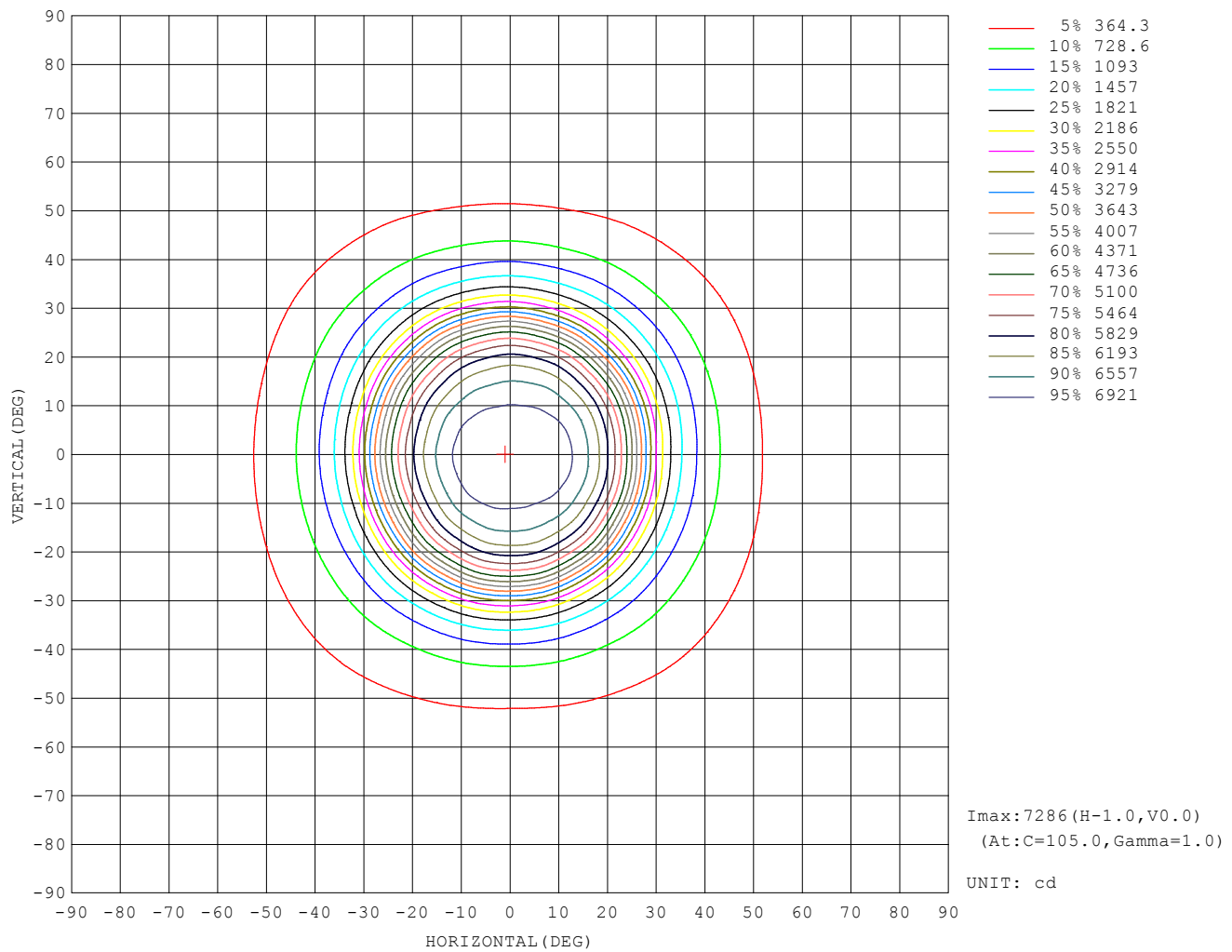
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-11-06

Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Assessor:

ISOCANDELA DIAGRAM



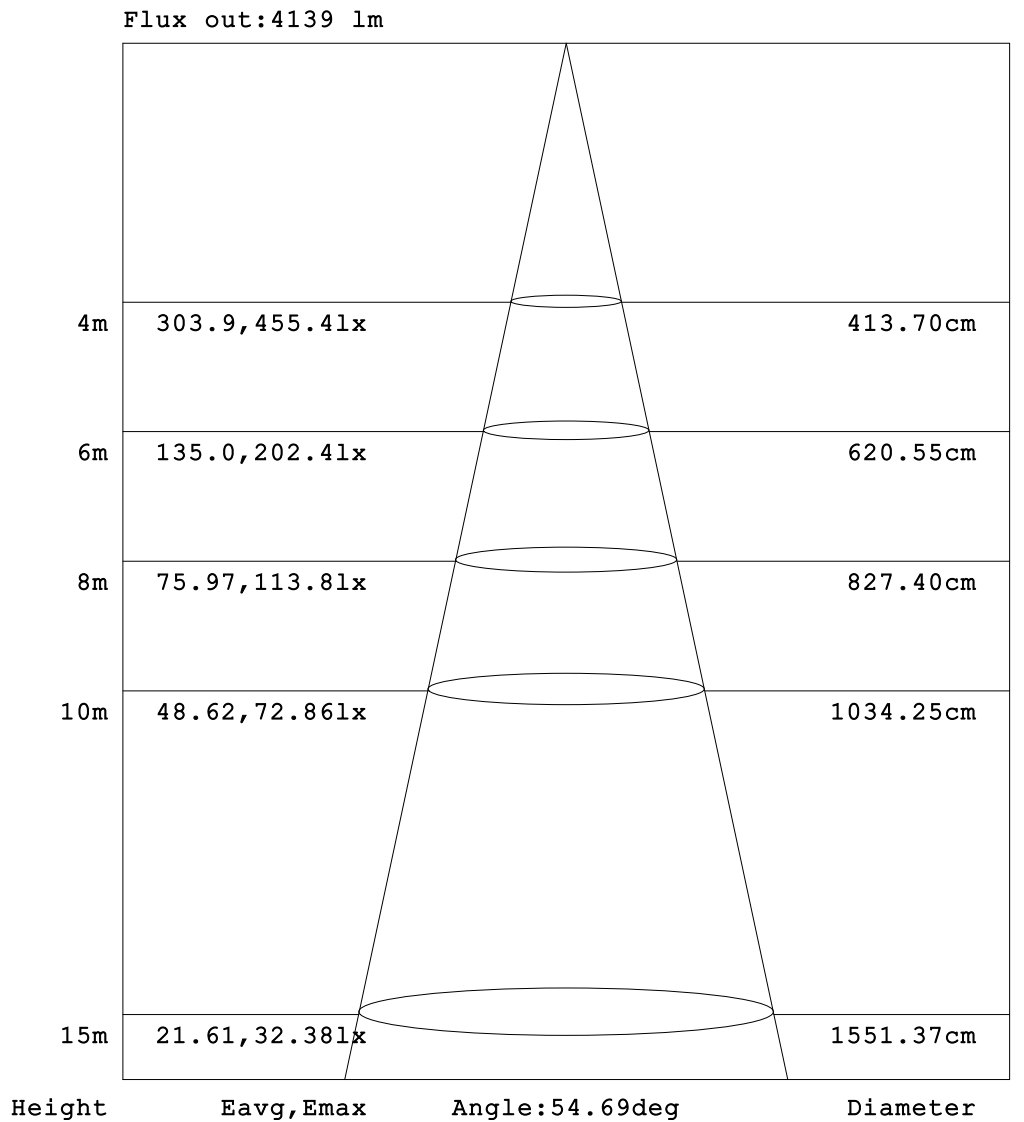
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

AAI Figure



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

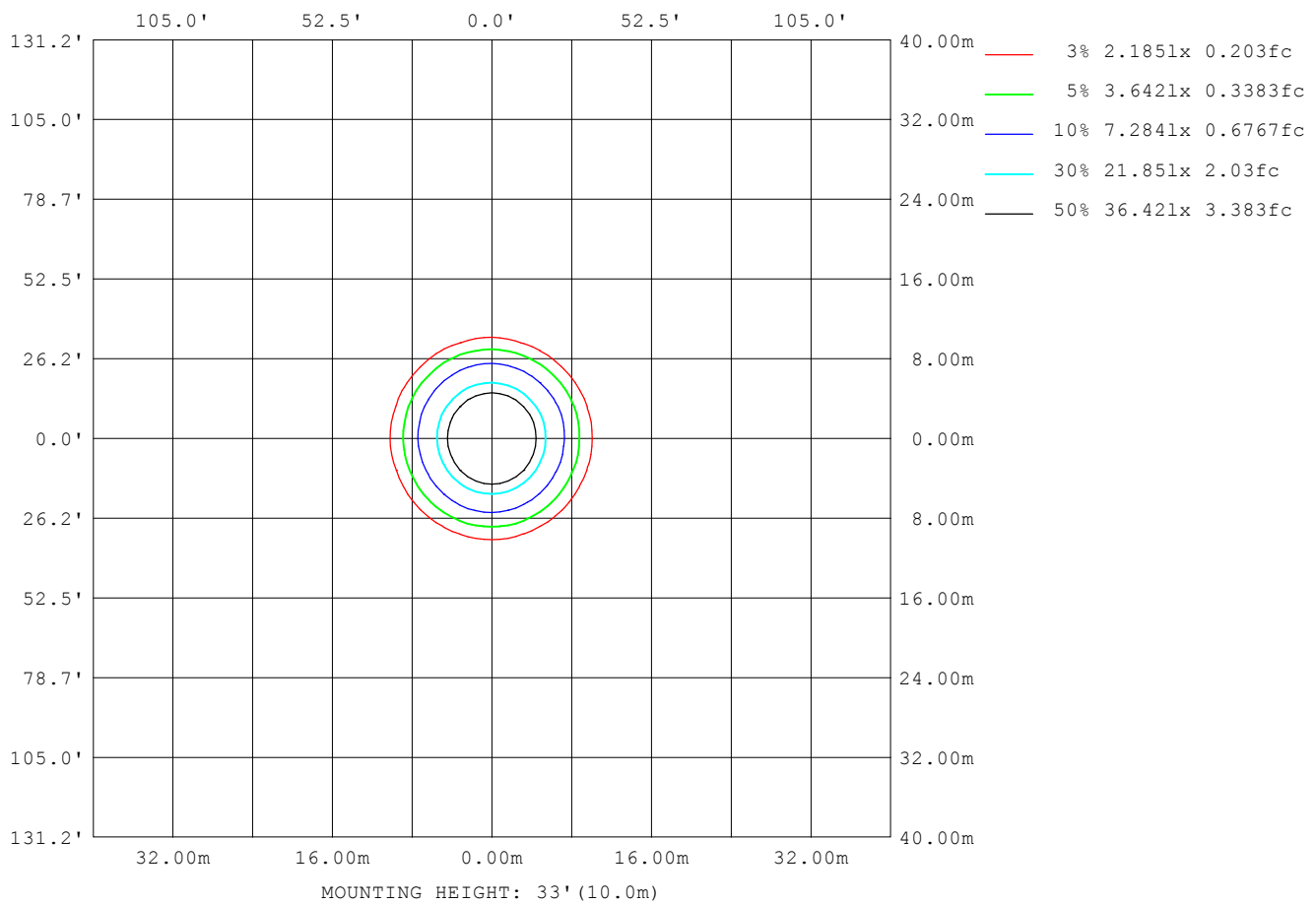
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

ISOLUX DIAGRAM



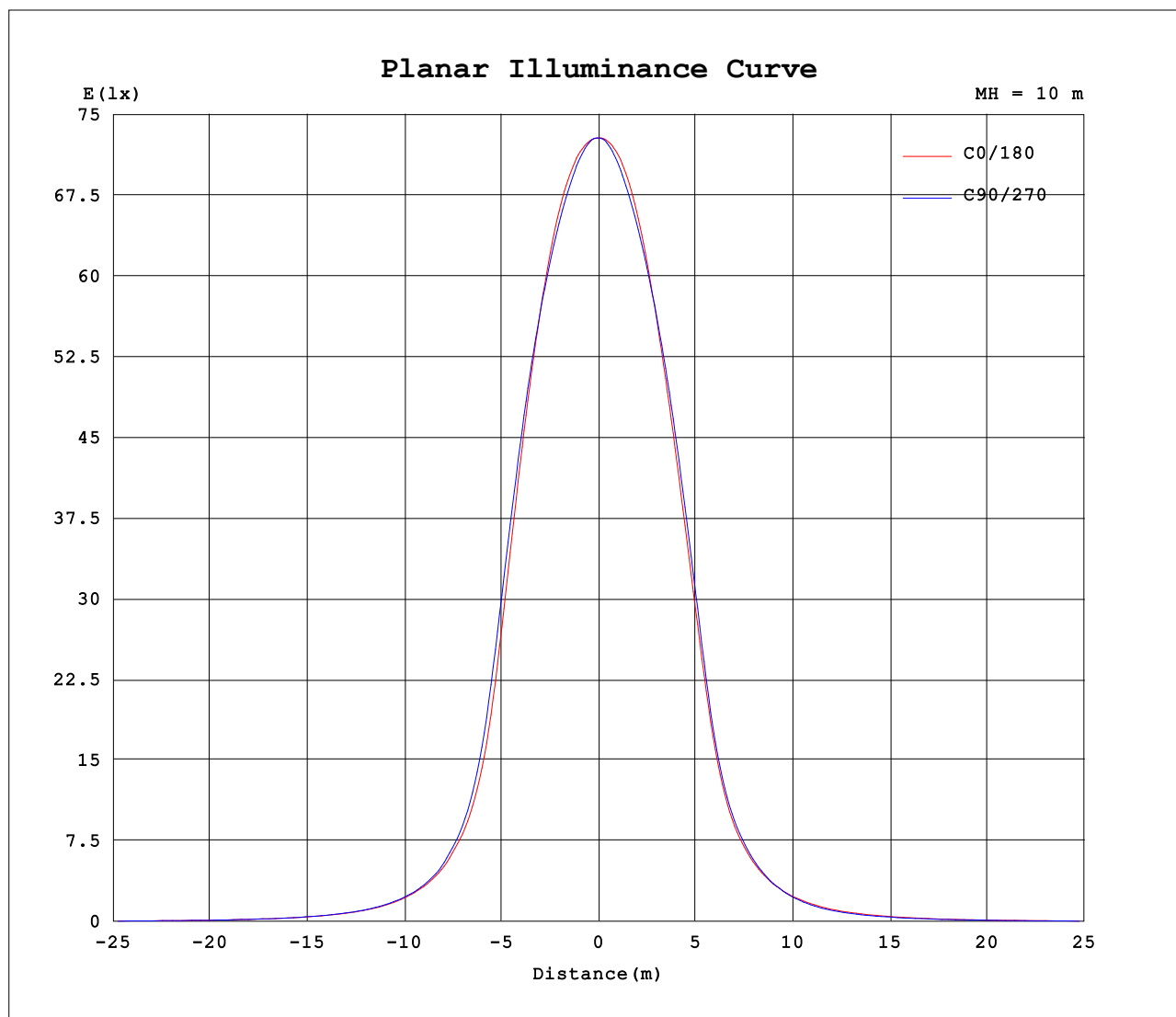
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-06

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor: