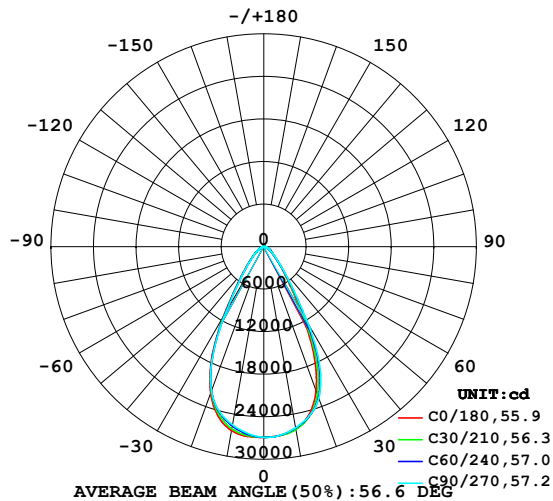


LUMINAIRE PHOTOMETRIC TEST REPORT

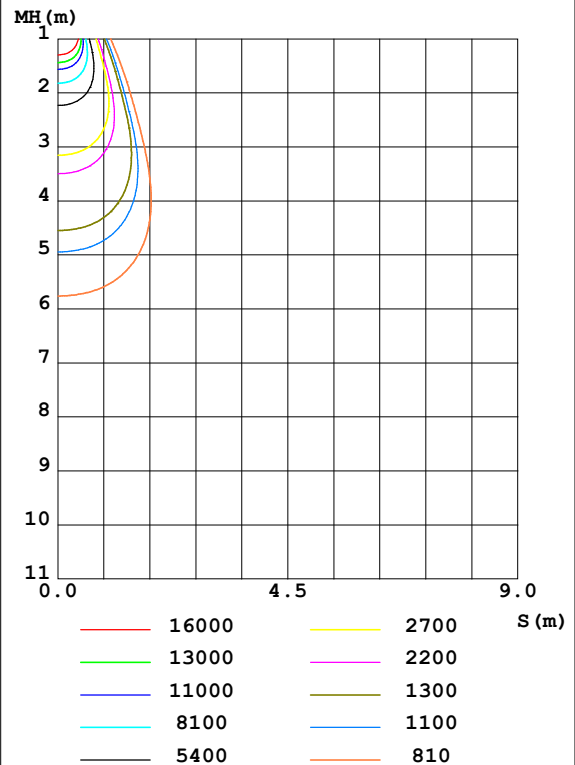
Test:U:230.0V I:0.8712A P:198.9W PF:0.9929 Lamp Flux:25642.4x1 lm		
NAME: FL23-200-5070-F22402	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.272*0.18	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.90 lm/W			
MODEL	RF303	Imax(cd)	26932	S/MH(C0/180)	0.84
NOMINAL POWER(W)	200	LOR(%)	100.0	S/MH(C90/270)	0.83
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	25642	η UP,DN(C0-180)	0.0,51.2
NOMINAL FLUX(lm)	25642.4	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,48.8
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: 2019-11-05

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	2675	2675	2670	2686	2686	2663	2643	2652	0- 5	640.6	640.6	2.5,2.5
10	2613	2612	2593	2629	2634	2584	2551	2573	5- 10	1885	2526	9.85,9.85
15	2457	2488	2474	2492	2481	2429	2413	2425	10- 15	3002	5528	21.6,21.6
20	2159	2250	2272	2242	2196	2155	2162	2137	15- 20	3847	9375	36.6,36.6
25	1667	1816	1877	1819	1744	1700	1708	1646	20- 25	4156	13531	52.8,52.8
30	1035	1172	1247	1212	1147	1085	1072	1012	25- 30	3627	17159	66.9,66.9
35	614.7	673.9	705.8	697.3	667.1	628.8	620.3	595.1	30- 35	2520	19679	76.7,76.7
40	388.4	414.6	429.2	426.5	412.5	389.3	390.7	375.8	35- 40	1708	21386	83.4,83.4
45	258.0	267.6	277.8	275.7	269.8	257.6	255.7	251.4	40- 45	1207	22594	88.1,88.1
50	177.1	184.6	190.8	190.0	185.1	179.8	178.3	176.3	45- 50	887.1	23481	91.6,91.6
55	123.2	132.7	132.7	136.2	129.2	129.0	124.9	126.8	50- 55	672.2	24153	94.2,94.2
60	85.84	96.65	91.39	99.07	89.63	94.19	86.07	92.72	55- 60	510.3	24663	96.2,96.2
65	58.59	69.09	59.80	70.70	60.75	67.40	57.21	66.39	60- 65	381.7	25045	97.7,97.7
70	40.92	45.57	39.03	46.76	41.93	44.53	37.88	43.53	65- 70	273.8	25319	98.7,98.7
75	27.74	24.46	25.88	24.96	28.31	24.14	25.08	23.41	70- 75	181.0	25500	99.4,99.4
80	12.92	11.48	12.71	11.78	13.84	11.09	11.41	10.87	75- 80	100.5	25600	99.8,99.8
85	2.862	2.661	2.535	2.836	3.306	2.613	2.247	2.420	80- 85	36.90	25637	100,100
90	0.2633	0.2639	0.2482	0.2568	0.2913	0.3033	0.3004	0.3088	85- 90	5.132	25642	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 22594 lm

%lum = 88.1%

%lamp = 88.1%

Conical surface Flux(120deg): 24663 lm

%lum = 96.2%

%lamp = 96.2%

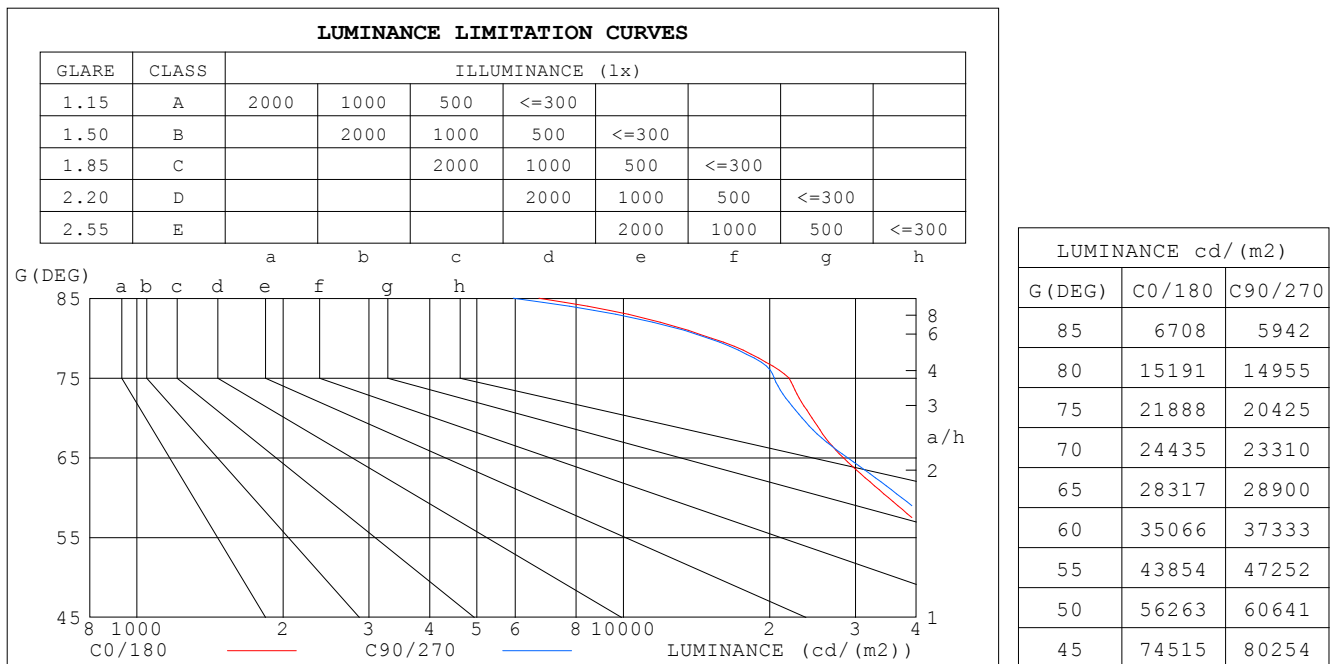
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2019-11-05

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: 2019-11-05

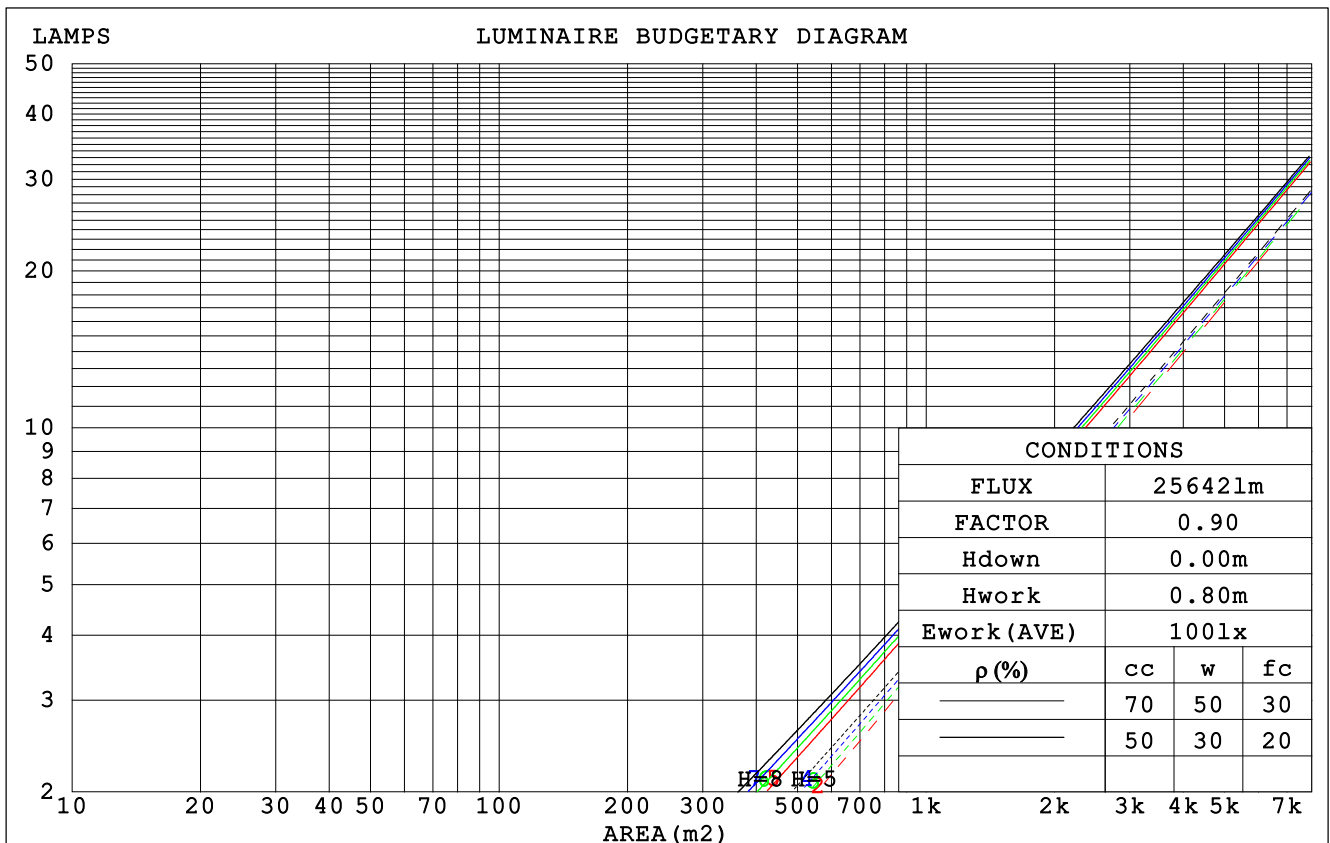
Checker: LI

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

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	1.11	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	.00	.00	.98	.97	.96	.95	.94	.92
2.0	1.01	.97	.93	.99	.95	.92	.96	.93	.90	.93	.90	.88	.90	.88	.86	.84
3.0	.94	.88	.84	.92	.87	.83	.90	.85	.82	.87	.83	.80	.85	.82	.79	.78
4.0	.87	.81	.76	.86	.80	.76	.84	.79	.75	.81	.77	.74	.80	.76	.73	.72
5.0	.81	.75	.70	.80	.74	.70	.78	.73	.69	.76	.72	.68	.75	.71	.68	.66
6.0	.76	.69	.65	.75	.69	.64	.73	.68	.64	.72	.67	.64	.71	.66	.63	.62
7.0	.71	.65	.60	.70	.64	.60	.69	.64	.60	.68	.63	.59	.67	.62	.59	.57
8.0	.67	.60	.56	.66	.60	.56	.65	.60	.56	.64	.59	.55	.63	.59	.55	.54
9.0	.63	.57	.52	.62	.56	.52	.61	.56	.52	.60	.56	.52	.60	.55	.52	.50
10.0	.59	.53	.49	.59	.53	.49	.58	.53	.49	.57	.52	.49	.57	.52	.49	.47



C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-11-05

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	.197	.112	.035	.190	.108	.034	.177	.102	.032	.165	.095	.031	.155	.090	.029	
2.0	.188	.103	.032	.183	.101	.031	.172	.096	.030	.162	.091	.028	.153	.086	.027	
3.0	.179	.095	.028	.174	.093	.028	.165	.089	.027	.156	.085	.026	.148	.082	.025	
4.0	.169	.088	.026	.165	.086	.025	.157	.083	.025	.149	.080	.024	.142	.077	.024	
5.0	.160	.082	.024	.156	.080	.023	.149	.078	.023	.143	.075	.022	.137	.073	.022	
6.0	.152	.076	.022	.148	.075	.022	.142	.073	.021	.137	.071	.021	.131	.069	.020	
7.0	.144	.071	.020	.141	.070	.020	.136	.069	.020	.131	.067	.019	.126	.065	.019	
8.0	.137	.067	.019	.135	.066	.019	.130	.065	.019	.125	.063	.018	.121	.062	.018	
9.0	.131	.063	.018	.129	.063	.018	.124	.061	.017	.120	.060	.017	.116	.059	.017	
10.0	.125	.060	.017	.123	.059	.017	.119	.058	.016	.115	.057	.016	.112	.056	.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	.143	.148	.135	.123	.101	.093	.085	.058	.054	.050	.019	.017	.016		
2.0	.158	.132	.111	.136	.114	.096	.093	.079	.067	.054	.046	.039	.017	.015	.013		
3.0	.147	.114	.087	.126	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010		
4.0	.137	.099	.070	.118	.086	.061	.081	.060	.043	.047	.035	.025	.015	.011	.008		
5.0	.129	.088	.058	.110	.076	.050	.076	.053	.035	.044	.031	.021	.014	.010	.007		
6.0	.121	.079	.048	.104	.068	.042	.072	.048	.030	.042	.028	.018	.013	.009	.006		
7.0	.115	.071	.041	.099	.062	.035	.068	.043	.025	.040	.025	.015	.013	.008	.005		
8.0	.109	.065	.035	.094	.056	.030	.065	.040	.022	.038	.023	.013	.012	.008	.004		
9.0	.104	.060	.030	.089	.052	.026	.062	.037	.019	.036	.022	.011	.012	.007	.004		
10.0	.099	.056	.027	.085	.048	.023	.059	.034	.016	.035	.020	.010	.011	.007	.003		

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-11-05

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	23.4	24.5	23.7	24.7	24.8	23.9	24.9	24.1	25.1	25.3
3H	23.8	24.8	24.1	25.0	25.2	24.2	25.2	24.5	25.4	25.6
4H	23.9	24.8	24.2	25.1	25.3	24.3	25.2	24.6	25.4	25.6
6H	24.0	24.8	24.3	25.1	25.3	24.3	25.2	24.6	25.4	25.7
8H	24.0	24.8	24.3	25.0	25.3	24.3	25.1	24.6	25.4	25.6
12H	23.9	24.7	24.3	25.0	25.3	24.3	25.0	24.6	25.3	25.6
4H 2H	23.6	24.5	23.9	24.7	25.0	24.0	24.9	24.3	25.1	25.4
3H	24.1	24.9	24.5	25.2	25.5	24.5	25.2	24.8	25.5	25.8
4H	24.3	25.0	24.7	25.3	25.7	24.6	25.3	25.0	25.6	25.9
6H	24.4	25.0	24.8	25.4	25.7	24.7	25.3	25.1	25.7	26.0
8H	24.4	25.0	24.8	25.4	25.7	24.7	25.3	25.1	25.6	26.0
12H	24.4	24.9	24.8	25.3	25.7	24.6	25.2	25.1	25.6	25.9
8H 4H	24.3	24.9	24.7	25.3	25.6	24.6	25.2	25.0	25.6	25.9
6H	24.5	25.0	24.9	25.4	25.8	24.7	25.2	25.2	25.6	26.0
8H	24.5	24.9	24.9	25.3	25.8	24.7	25.2	25.2	25.6	26.0
12H	24.5	24.8	24.9	25.3	25.7	24.7	25.1	25.2	25.5	26.0
12H 4H	24.3	24.8	24.7	25.2	25.6	24.6	25.1	25.0	25.5	25.9
6H	24.5	24.9	24.9	25.3	25.7	24.7	25.1	25.1	25.5	26.0
8H	24.5	24.8	24.9	25.3	25.7	24.7	25.1	25.2	25.5	26.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.0 / - 1.3					+ 1.1 / - 1.5				
1.5H	+ 1.4 / - 0.9					+ 1.8 / - 1.0				
2.0H	+ 1.6 / - 1.2					+ 1.7 / - 1.2				

CIE Pub.117 Corrected 25642 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.3)

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-11-05

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:

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) $k(RI) \times RCR = 5$									
$k = 0.60$	81	74	69	81	74	69	80	73	69	65
0.80	89	82	78	89	82	78	87	81	77	73
1.00	95	88	84	94	88	83	92	88	83	78
1.25	99	93	89	98	93	89	96	91	88	83
1.50	103	97	93	101	96	92	99	95	91	86
2.00	106	101	97	105	100	97	102	98	95	90
2.50	108	104	100	107	102	99	103	100	97	91
3.00	110	106	103	108	105	102	105	102	100	93
4.00	112	109	107	110	108	105	107	104	102	95
5.00	114	111	109	112	109	107	108	106	104	96
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

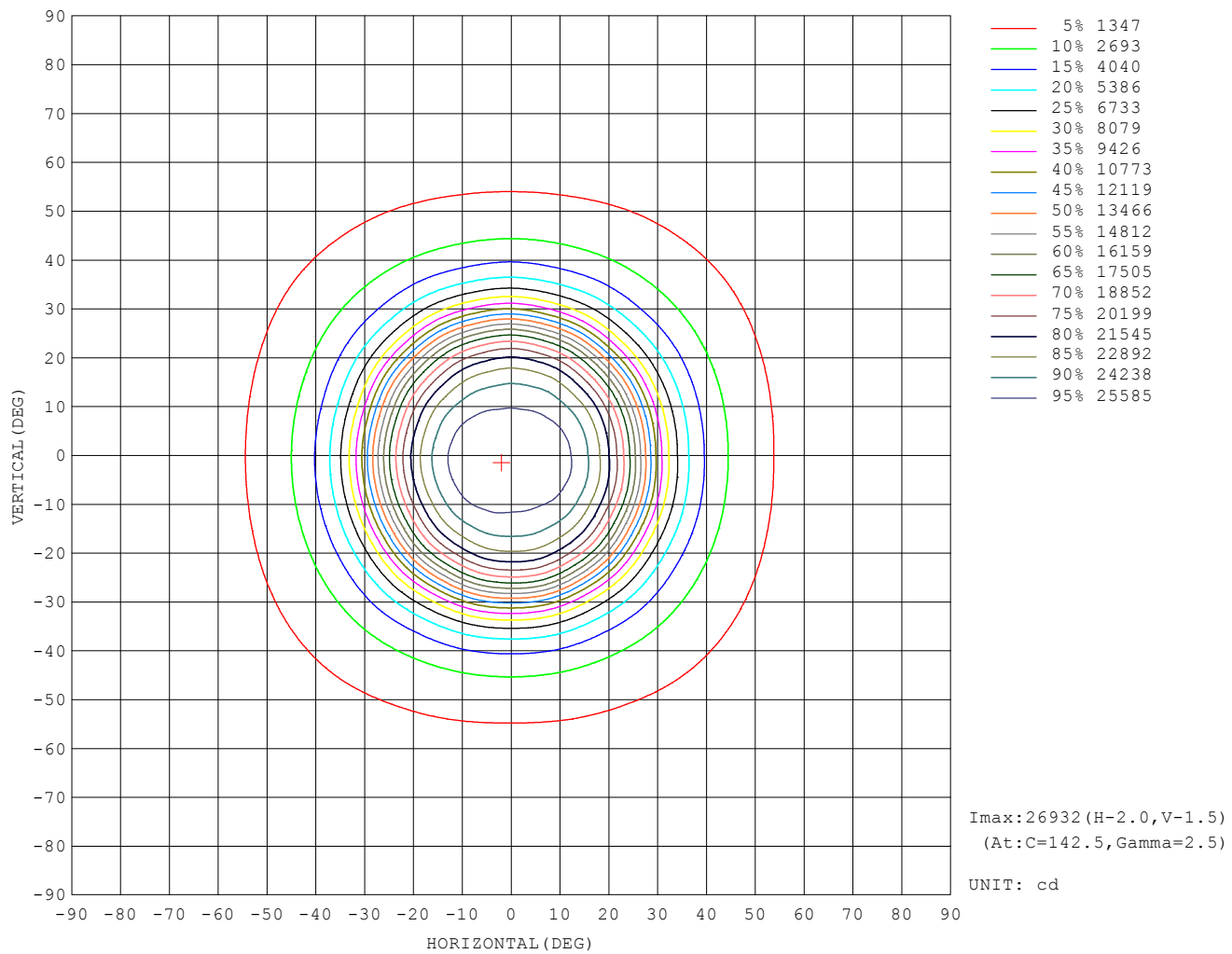
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-11-05

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



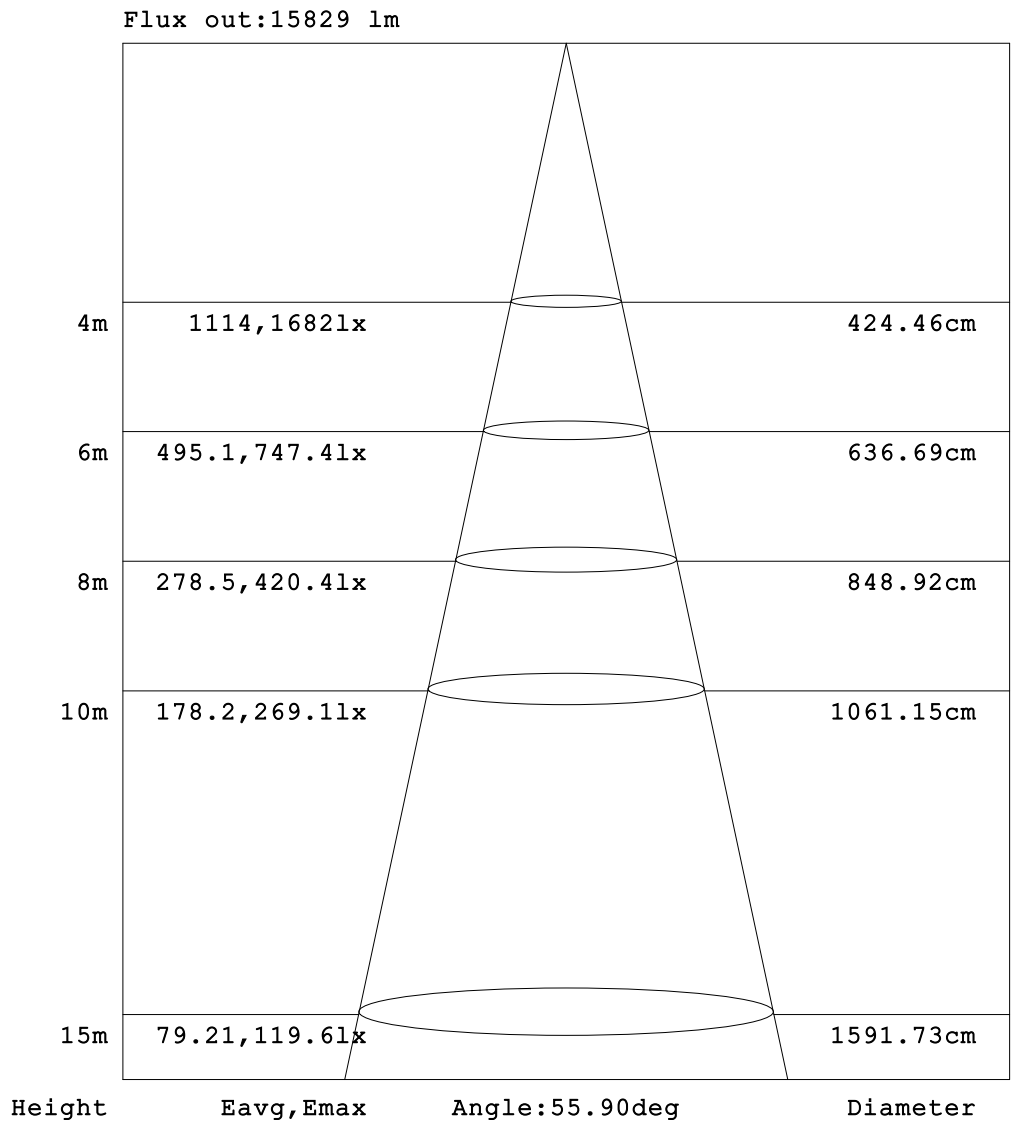
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-11-05

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.

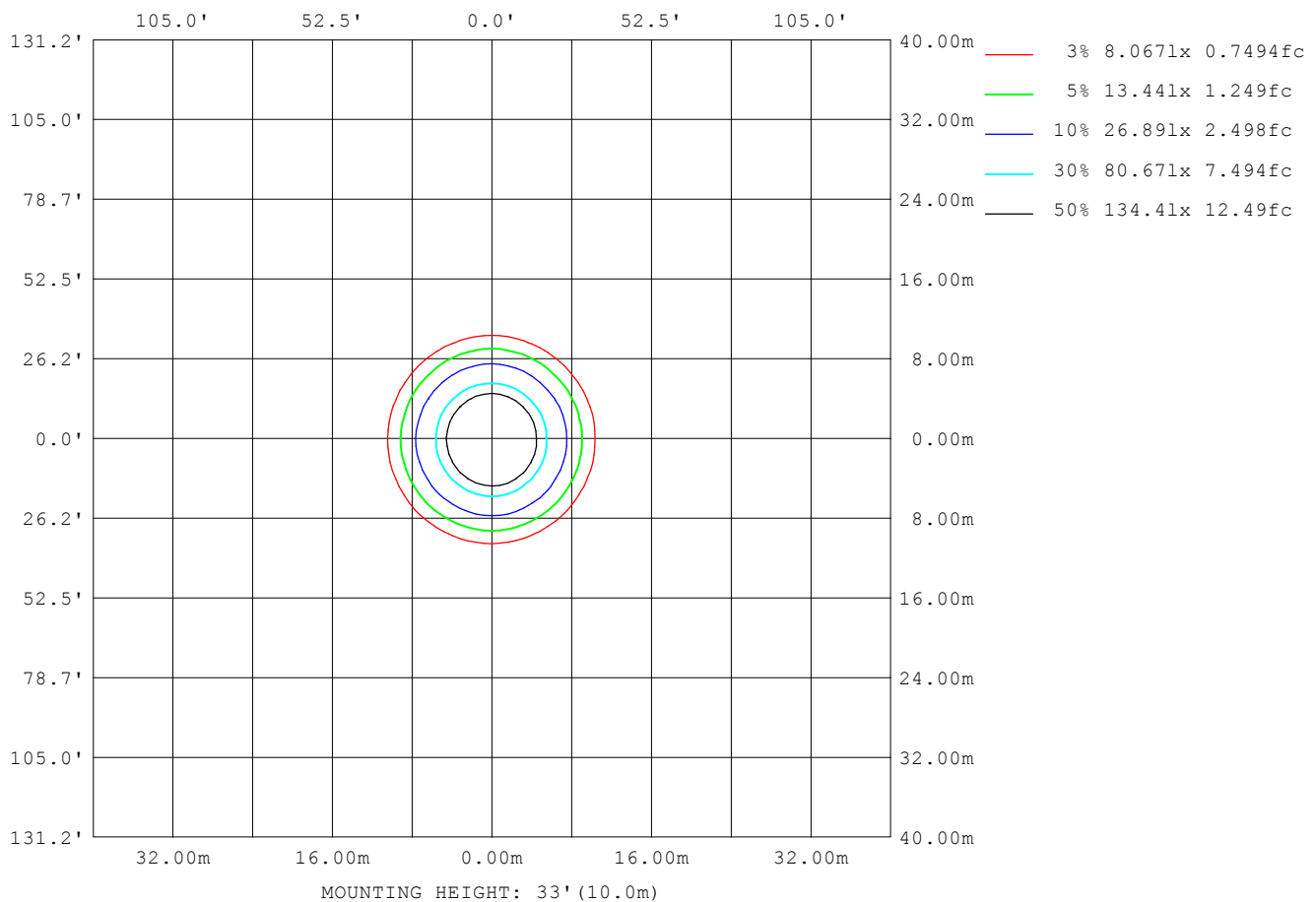
C Range: 0 - 360 DEG
C Interval: 2.5 DEG
Test Speed: HIGH
Temperature: 25.3 DEG
Operators:
Test Date: 2019-11-05

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

Checker: LI

Assessor:

ISOLUX DIAGRAM



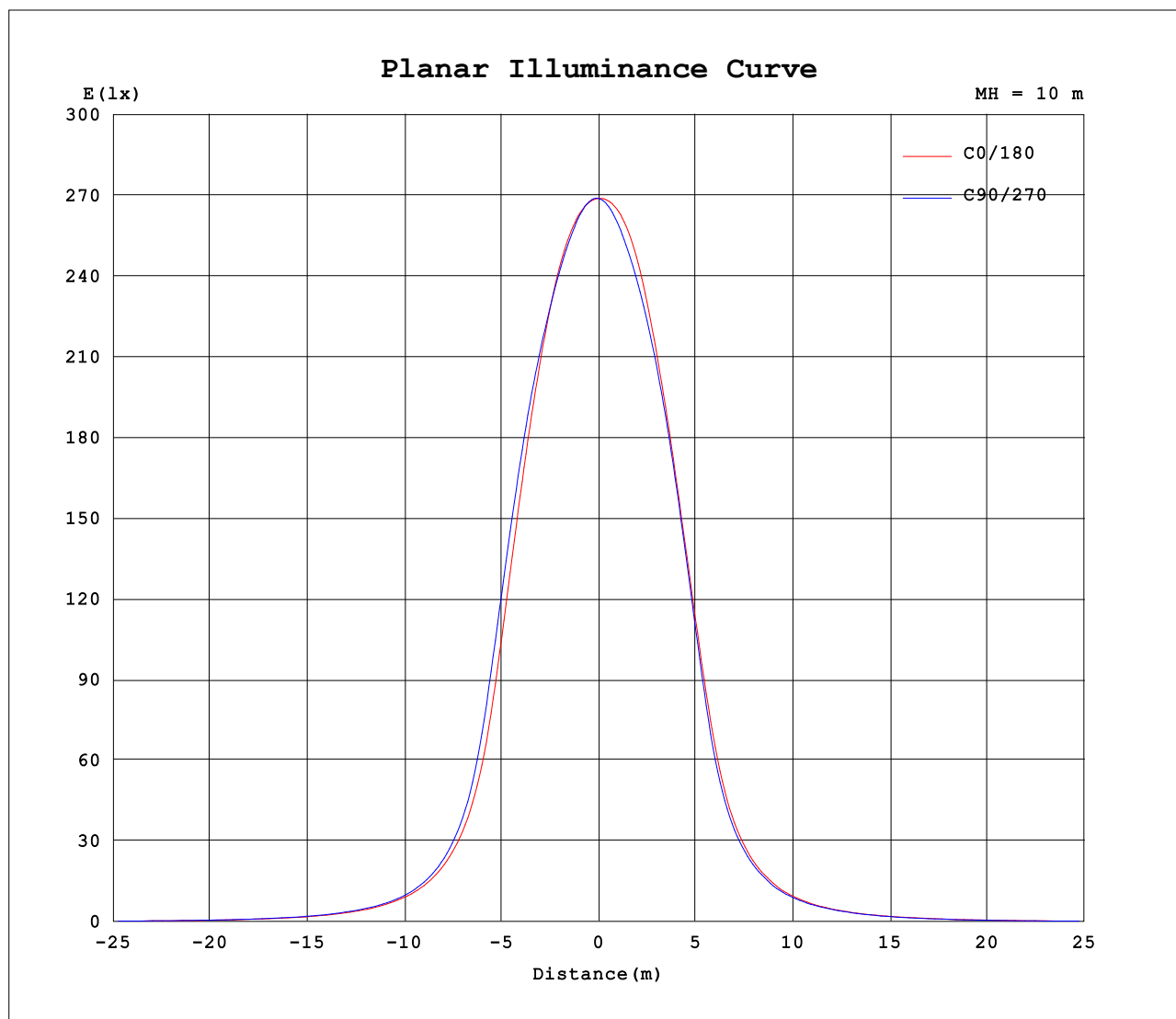
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-05

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-05

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: