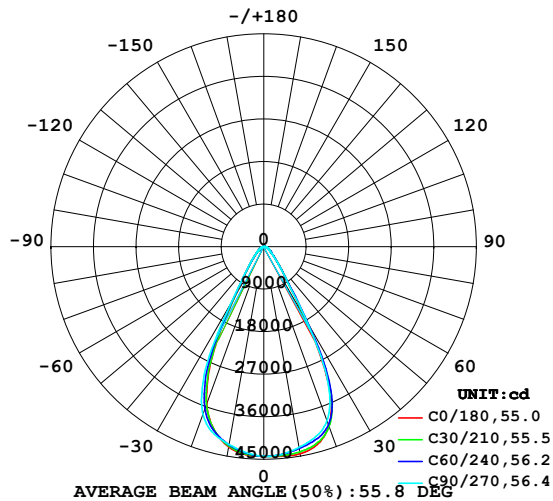


## LUMINAIRE PHOTOMETRIC TEST REPORT

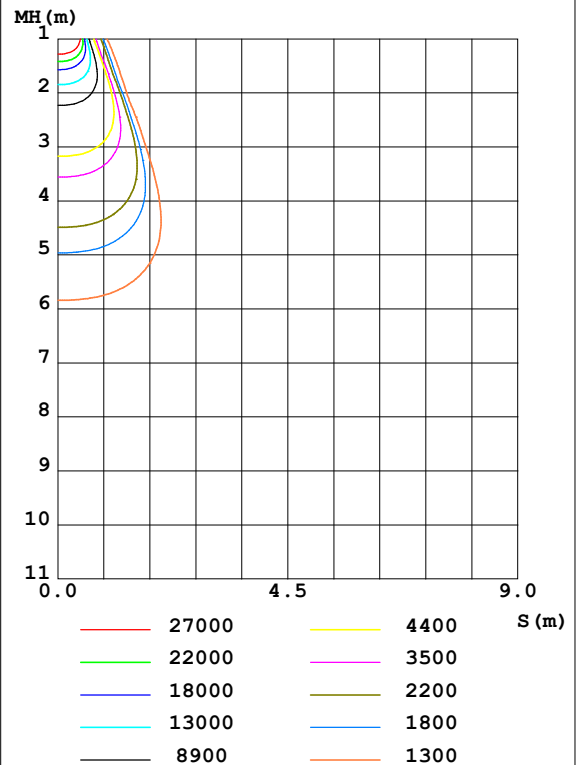
Test:U:229.9V I:1.322A P:298.5W PF:0.9823 Lamp Flux:38892.8x1 lm		
NAME: FL23-300-5070-F38402	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.336*0.22	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 130.28 lm/W			
MODEL	RF303	I <sub>max</sub> (cd)	44556	S/MH(C0/180)	0.77
NOMINAL POWER(W)	300	LOR(%)	100.0	S/MH(C90/270)	0.79
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	38893	η UP,DN(C0-180)	0.0,51.3
NOMINAL FLUX(lm)	38892.8	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,48.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.80

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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
5	4448	4422	4409	4424	4416	4392	4368	4396	0- 5	1057	1057	2.72,2.72
10	4447	4370	4313	4322	4298	4265	4249	4336	5- 10	3125	4182	10.8,10.8
15	4342	4273	4181	4102	4028	4029	4095	4225	10- 15	5036	9218	23.7,23.7
20	4033	4039	3916	3688	3538	3587	3771	3910	15- 20	6592	15810	40.7,40.7
25	3273	3357	3242	2873	2602	2672	2989	3099	20- 25	7227	23037	59.2,59.2
30	1748	1919	1788	1479	1271	1293	1427	1526	25- 30	5818	28856	74.2,74.2
35	810.5	846.1	803.1	724.0	663.6	654.6	698.7	732.6	30- 35	3114	31969	82.2,82.2
40	495.0	506.6	486.4	444.6	413.9	405.7	430.9	449.1	35- 40	1931	33900	87.2,87.2
45	318.0	320.3	314.1	285.6	270.1	266.9	281.5	291.6	40- 45	1350	35250	90.6,90.6
50	218.5	218.1	215.5	199.2	191.3	189.5	197.1	203.4	45- 50	980.8	36231	93.2,93.2
55	157.3	159.0	153.3	147.5	139.9	141.5	141.5	149.8	50- 55	753.4	36984	95.1,95.1
60	114.4	119.3	109.1	111.3	102.7	106.5	102.1	112.6	55- 60	591.7	37576	96.6,96.6
65	83.44	89.00	79.51	83.36	77.27	80.10	76.37	84.61	60- 65	464.1	38040	97.8,97.8
70	68.27	63.83	65.09	58.64	63.50	55.57	62.14	60.35	65- 70	361.7	38402	98.7,98.7
75	51.78	39.54	49.11	35.89	43.54	33.19	42.62	36.54	70- 75	264.4	38666	99.4,99.4
80	25.26	21.97	22.02	18.84	18.86	16.65	18.07	19.66	75- 80	157.2	38823	99.8,99.8
85	6.563	5.839	4.736	4.041	3.616	3.299	3.480	4.734	80- 85	60.99	38884	100,100
90	0.4069	0.3712	0.3436	0.3560	0.4185	0.4152	0.4115	0.4038	85- 90	8.738	38893	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): 35250 lm

%lum = 90.6%

%lamp = 90.6%

Conical surface Flux(120deg): 37576 lm

%lum = 96.6%

%lamp = 96.6%

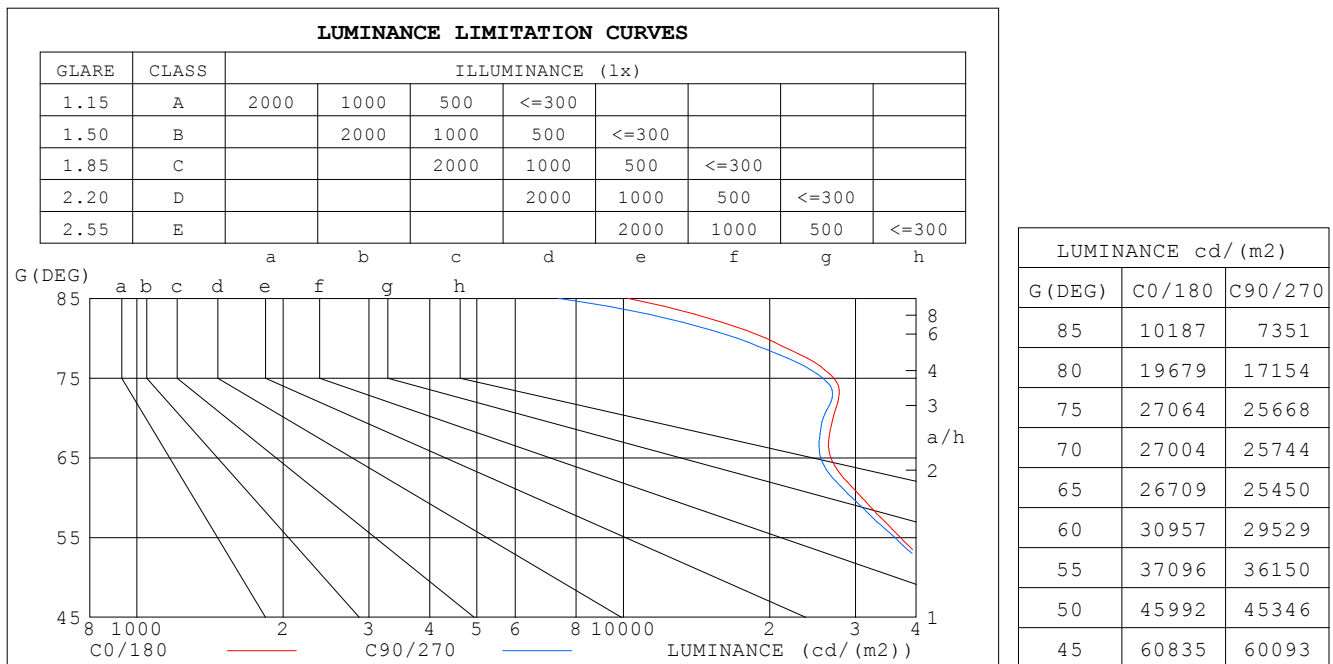
C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2019-11-05

Checker: LI

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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

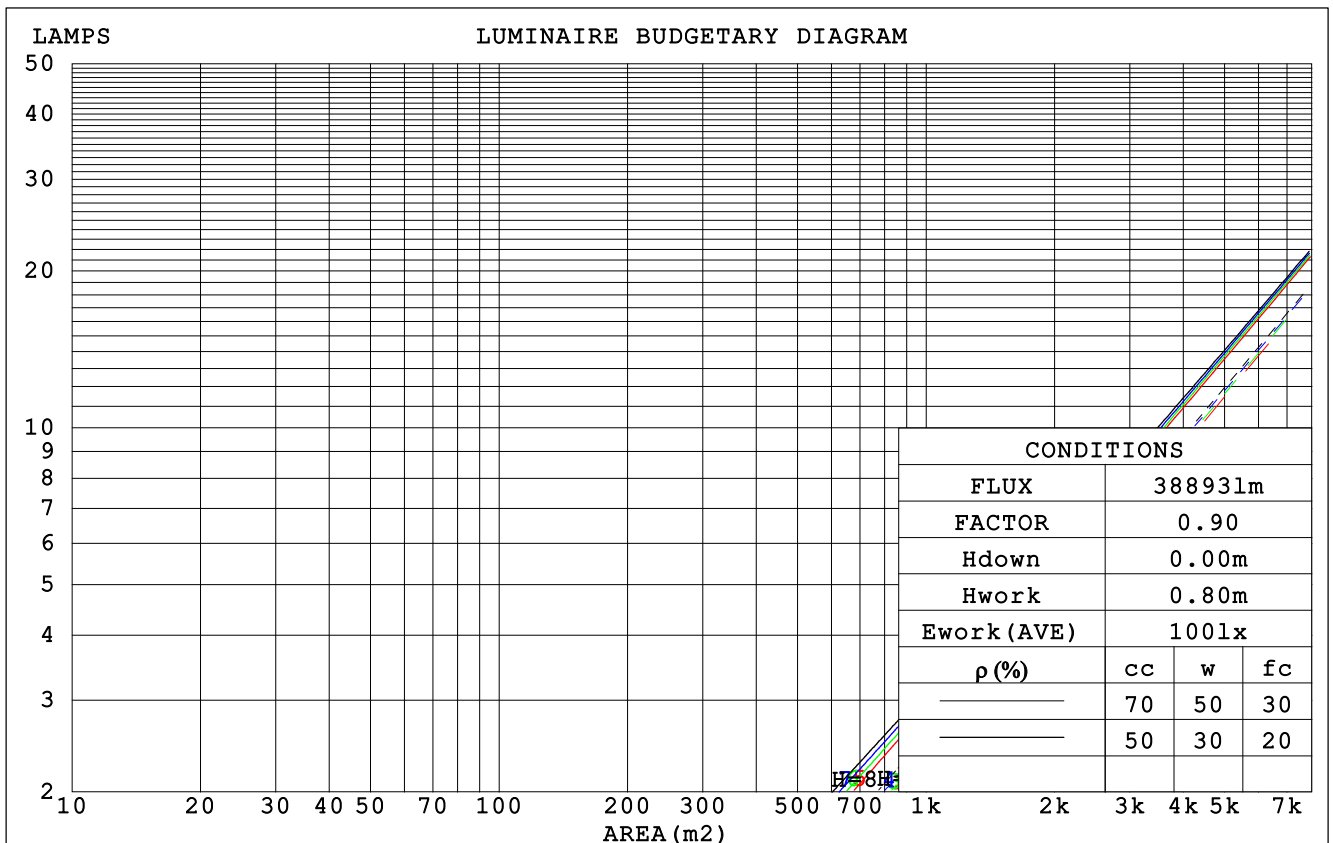
Checker: LI

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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	1.00
1.0	1.10	1.08	1.05	1.08	1.06	1.04	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.95	.93
2.0	1.02	.98	.94	1.00	.96	.93	.97	.94	.91	.94	.91	.89	.91	.89	.87	.86
3.0	.95	.90	.86	.94	.89	.85	.91	.87	.84	.88	.85	.82	.86	.83	.81	.79
4.0	.89	.83	.79	.87	.82	.78	.85	.81	.77	.83	.79	.76	.81	.78	.75	.74
5.0	.83	.77	.73	.82	.76	.72	.80	.75	.72	.79	.74	.71	.77	.73	.70	.69
6.0	.78	.72	.67	.77	.71	.67	.76	.71	.67	.74	.70	.66	.73	.69	.66	.64
7.0	.73	.67	.63	.73	.67	.63	.71	.66	.63	.70	.66	.62	.69	.65	.62	.60
8.0	.69	.63	.59	.69	.63	.59	.68	.62	.59	.67	.62	.58	.66	.61	.58	.57
9.0	.66	.60	.56	.65	.59	.56	.64	.59	.55	.63	.59	.55	.62	.58	.55	.54
10.0	.62	.56	.53	.62	.56	.52	.61	.56	.52	.60	.55	.52	.59	.55	.52	.51



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	.189	.107	.034	.182	.104	.033	.170	.097	.031	.158	.091	.029	.147	.085	.027		
2.0	.180	.099	.030	.174	.096	.030	.164	.091	.028	.154	.086	.027	.145	.082	.026		
3.0	.170	.091	.027	.165	.089	.027	.156	.085	.026	.148	.081	.025	.140	.077	.024		
4.0	.161	.084	.025	.157	.082	.024	.149	.079	.024	.141	.076	.023	.135	.073	.022		
5.0	.152	.078	.022	.149	.076	.022	.142	.074	.022	.135	.071	.021	.129	.069	.021		
6.0	.144	.072	.021	.141	.071	.021	.135	.069	.020	.130	.067	.020	.124	.065	.019		
7.0	.137	.068	.019	.135	.067	.019	.129	.065	.019	.124	.064	.019	.119	.062	.018		
8.0	.131	.064	.018	.128	.063	.018	.124	.062	.018	.119	.060	.017	.115	.059	.017		
9.0	.125	.060	.017	.123	.060	.017	.118	.059	.017	.114	.057	.016	.111	.056	.016		
10.0	.120	.057	.016	.118	.057	.016	.114	.056	.016	.110	.055	.016	.107	.054	.015		

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	.157	.132	.112	.135	.114	.096	.092	.079	.067	.053	.046	.039	.017	.015	.013	
3.0	.145	.114	.088	.125	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.135	.099	.071	.116	.086	.062	.080	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.126	.087	.059	.109	.076	.051	.075	.053	.036	.043	.031	.021	.014	.010	.007	
6.0	.119	.078	.049	.102	.068	.043	.070	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.071	.042	.097	.061	.036	.067	.043	.026	.039	.025	.015	.013	.008	.005	
8.0	.106	.064	.036	.092	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.101	.059	.031	.087	.051	.027	.060	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.096	.055	.027	.083	.048	.024	.058	.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:2019-11-05

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	22.3	23.3	22.5	23.4	23.6	22.2	23.2	22.5	23.4	23.6
3H	22.8	23.7	23.1	23.9	24.1	22.7	23.6	23.0	23.8	24.0
4H	23.1	24.0	23.4	24.2	24.4	23.0	23.8	23.3	24.1	24.3
6H	23.3	24.1	23.6	24.3	24.6	23.1	23.9	23.4	24.2	24.4
8H	23.3	24.1	23.6	24.3	24.6	23.1	23.9	23.4	24.2	24.4
12H	23.3	24.0	23.6	24.3	24.6	23.1	23.9	23.4	24.1	24.4
4H 2H	22.4	23.3	22.7	23.5	23.7	22.4	23.3	22.7	23.5	23.7
3H	23.2	23.9	23.5	24.2	24.5	23.1	23.8	23.4	24.1	24.4
4H	23.5	24.2	23.9	24.5	24.8	23.4	24.1	23.8	24.4	24.7
6H	23.8	24.4	24.2	24.7	25.1	23.6	24.2	24.0	24.6	24.9
8H	23.8	24.4	24.2	24.7	25.1	23.6	24.2	24.0	24.5	24.9
12H	23.8	24.3	24.2	24.7	25.1	23.6	24.1	24.0	24.5	24.9
8H 4H	23.6	24.1	24.0	24.5	24.9	23.5	24.0	23.9	24.4	24.8
6H	23.9	24.4	24.3	24.8	25.2	23.8	24.2	24.2	24.6	25.0
8H	24.0	24.4	24.4	24.8	25.2	23.8	24.2	24.3	24.6	25.1
12H	24.0	24.3	24.5	24.8	25.3	23.8	24.1	24.3	24.6	25.1
12H 4H	23.6	24.1	24.0	24.4	24.8	23.5	24.0	23.9	24.3	24.7
6H	23.9	24.3	24.3	24.7	25.2	23.7	24.1	24.2	24.6	25.0
8H	24.0	24.3	24.4	24.8	25.2	23.8	24.1	24.3	24.6	25.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.8 / - 1.0					+ 0.8 / - 1.1				
1.5H	+ 1.4 / - 0.7					+ 1.4 / - 0.8				
2.0H	+ 1.3 / - 0.8					+ 1.4 / - 0.9				

CIE Pub.117 Corrected 38893 lm Total Lamp Luminous Flux.(8log(F/F0) = 12.7)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	72	83	76	72	82	76	72	68
0.80	91	85	81	91	84	80	89	84	80	76
1.00	96	90	86	95	90	86	94	90	85	81
1.25	101	95	91	100	94	91	98	93	90	85
1.50	104	98	95	102	98	94	100	96	93	88
2.00	107	102	99	105	101	98	103	99	96	91
2.50	109	105	101	107	103	100	104	101	98	92
3.00	111	107	104	109	105	103	105	103	100	94
4.00	113	110	107	111	108	106	107	105	103	96
5.00	114	112	110	112	110	108	108	106	105	97
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

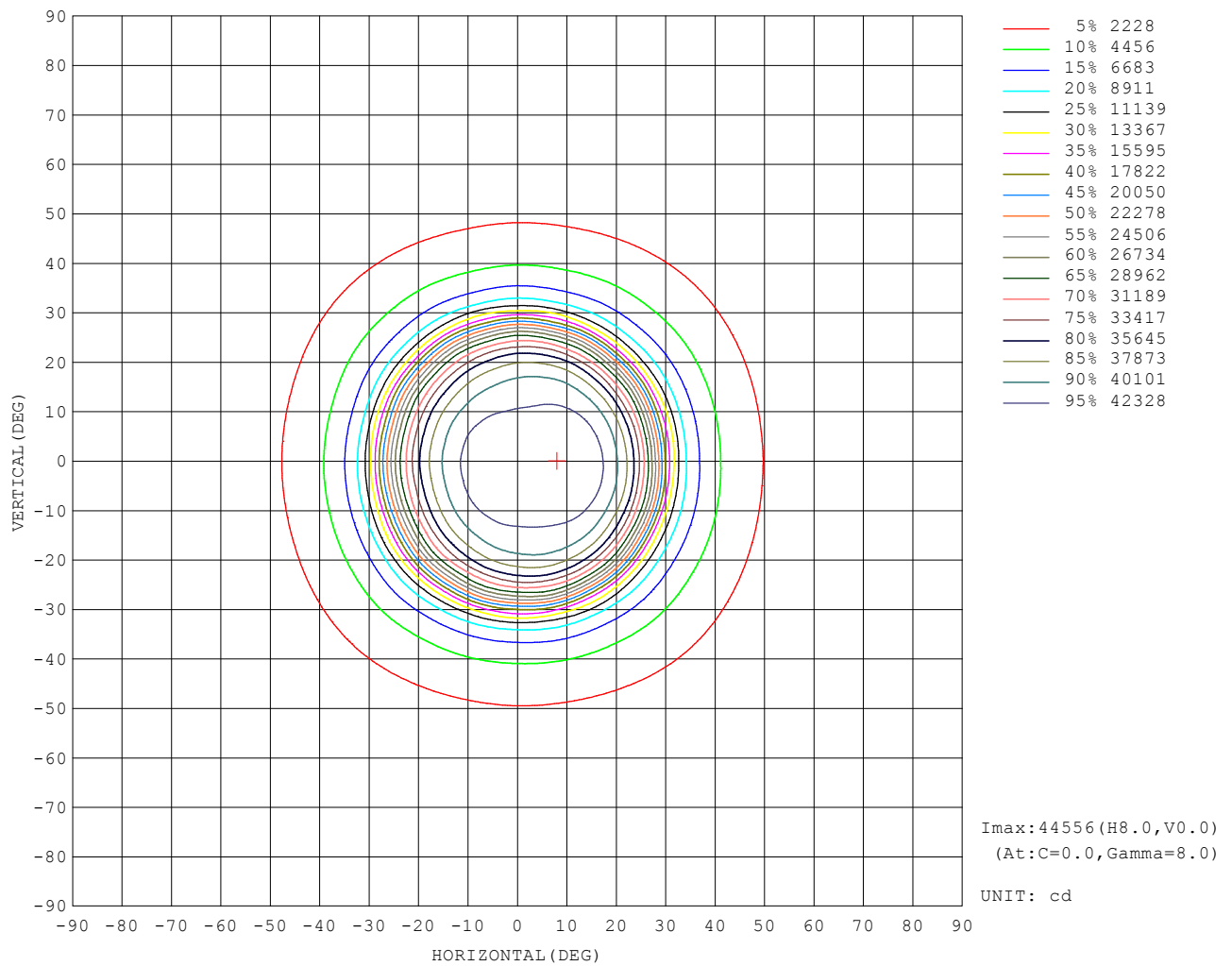
C Range: 0 - 360DEG  
 C Interval: 2.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2019-11-05

Checker: LI

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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

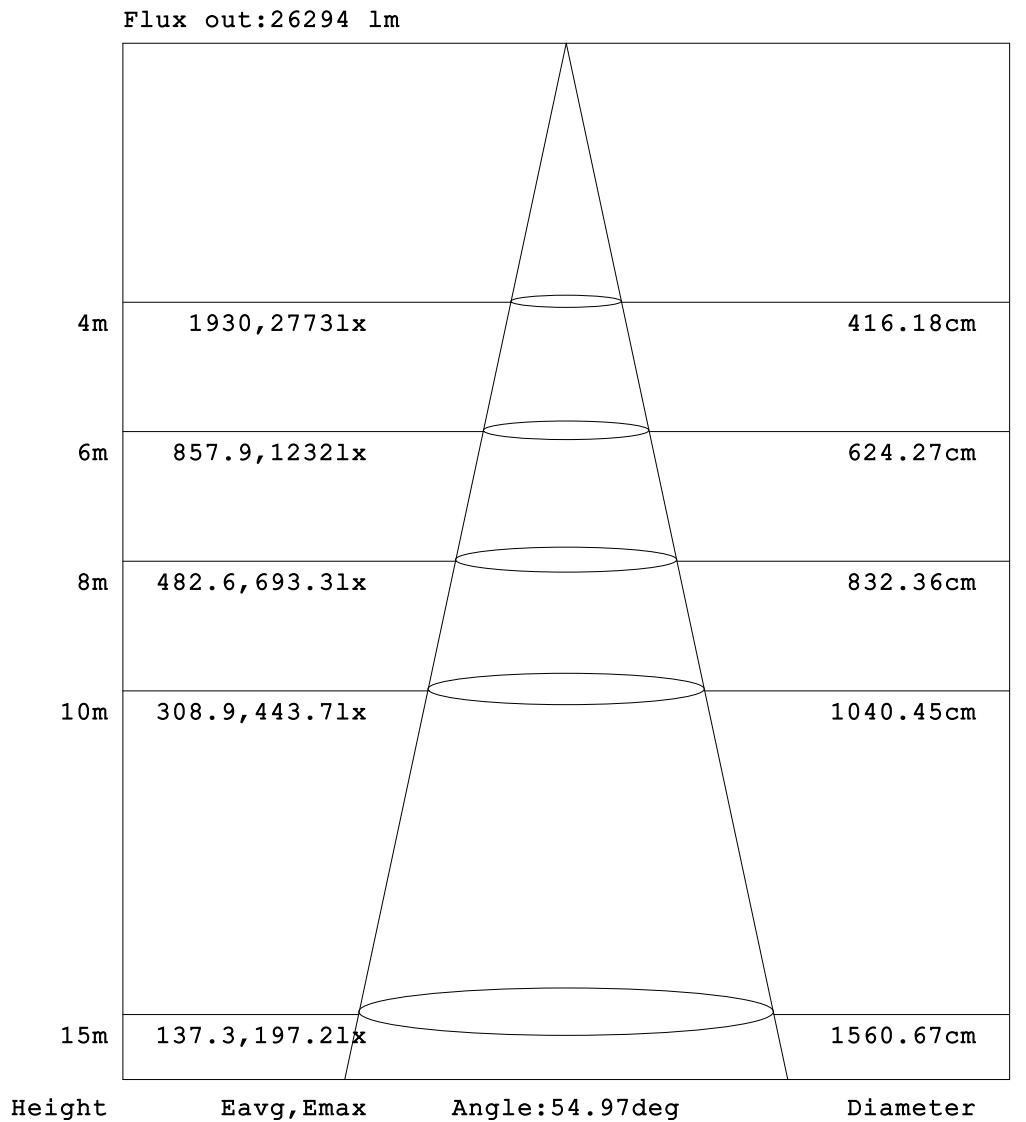
Checker: LI

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:



## AAI Figure



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

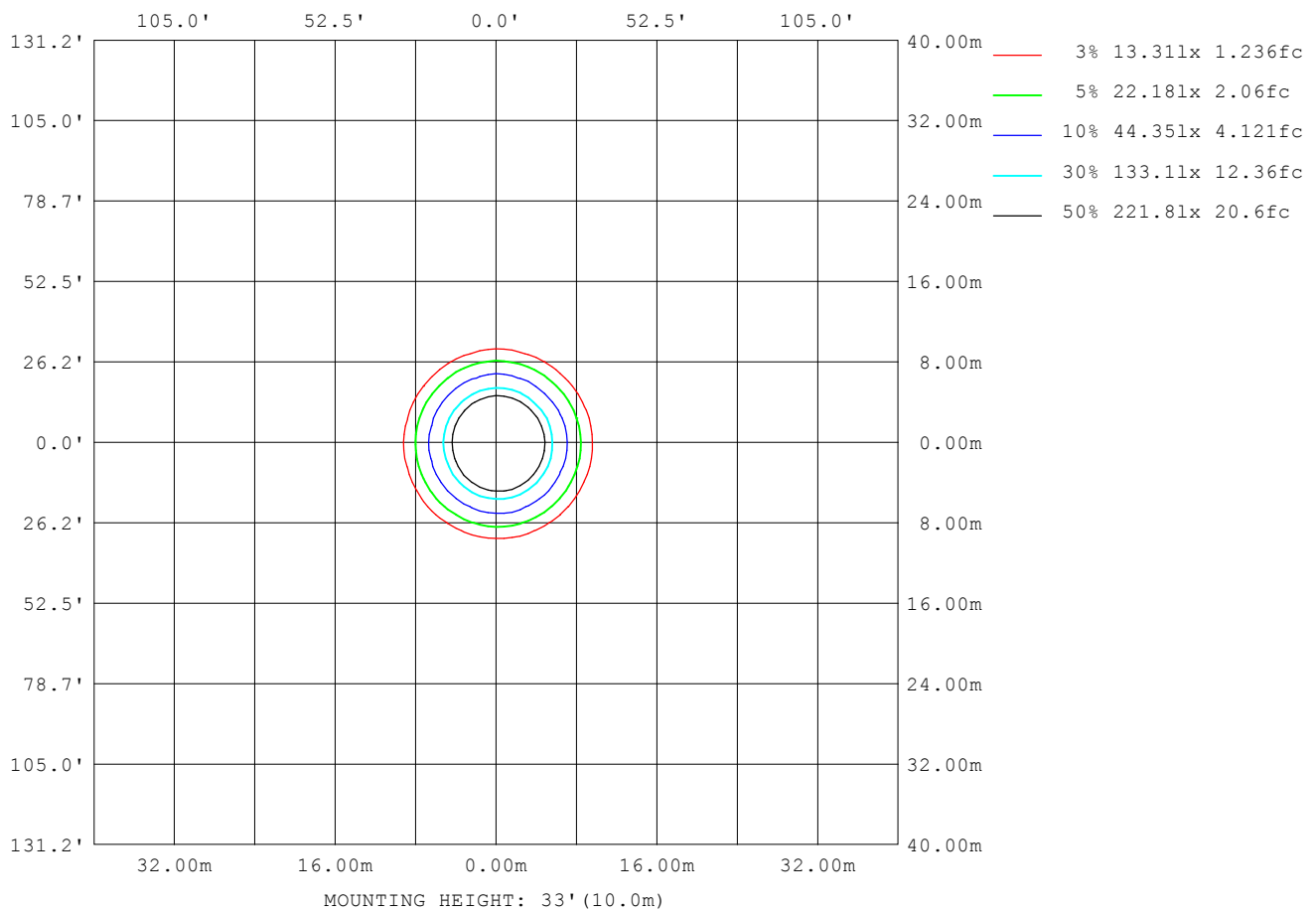
C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2019-11-05

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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



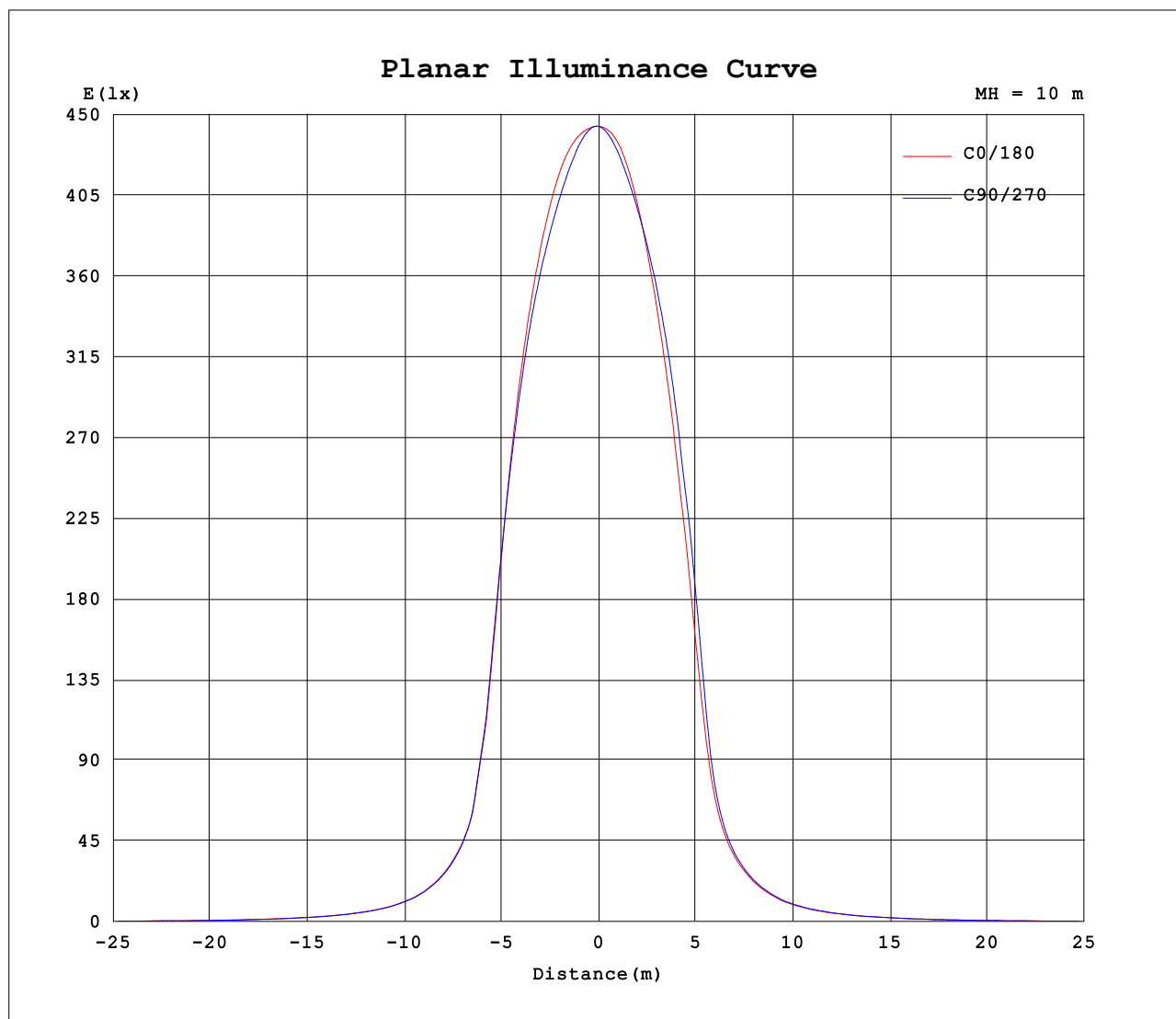
C Range: 0 - 360DEG  
C Interval: 2.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2019-11-05

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:

## 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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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: