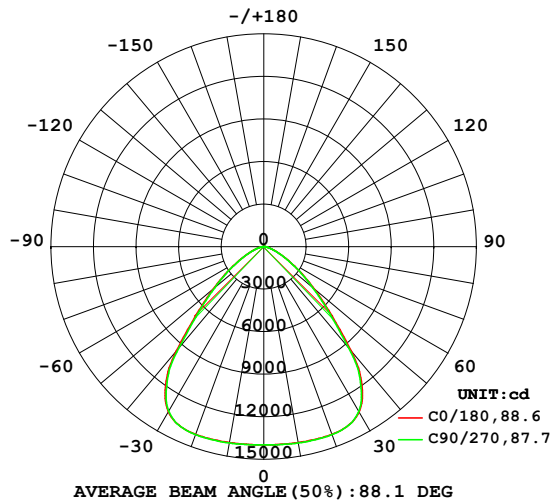


LUMINAIRE PHOTOMETRIC TEST REPORT

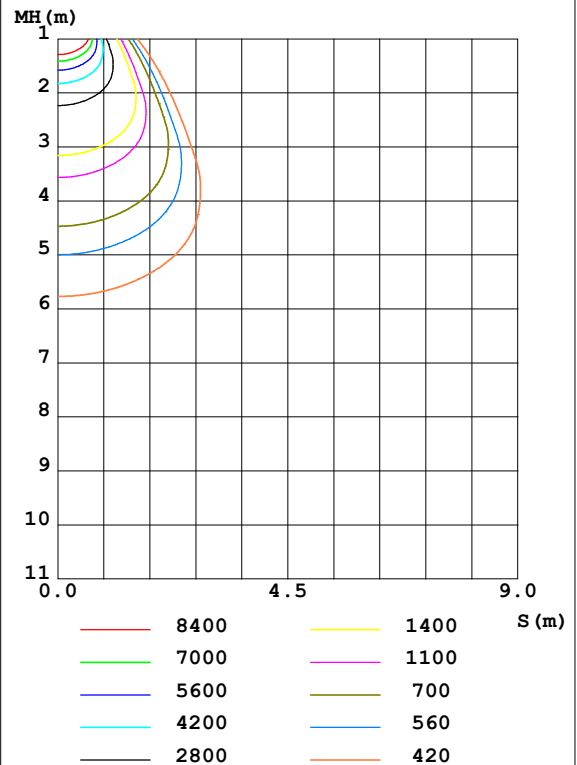
Test:U:230.0V I:0.6843A P:153.0W PF:0.9719 Lamp Flux:29067.1x1 lm		
NAME: 950-111_90°	TYPE:150W	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:φ0.27	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 190.02 lm/W			
MODEL	950-111	Imax(cd)	14110	S/MH(C0/180)	1.26
NOMINAL POWER(W)	150	LOR(%)	100.0	S/MH(C90/270)	1.25
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	29067	η UP,DN(C0-180)	0.0,50.0
NOMINAL FLUX(lm)	29067.1	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.30

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:2019-10-08

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	1399	1400	1401	1400	1399	1400	1401	1400	0- 5	334.4	334.4	1.15,1.15
10	1403	1404	1405	1404	1403	1404	1405	1404	5- 10	1003	1338	4.6,4.6
15	1407	1408	1409	1408	1407	1408	1409	1408	10- 15	1668	3006	10.3,10.3
20	1409	1409	1411	1410	1409	1410	1411	1409	15- 20	2323	5329	18.3,18.3
25	1396	1396	1397	1397	1396	1397	1397	1396	20- 25	2947	8276	28.5,28.5
30	1345	1342	1341	1343	1345	1343	1341	1342	25- 30	3478	11754	40.4,40.4
35	1209	1199	1194	1201	1209	1201	1194	1199	30- 35	3766	15520	53.4,53.4
40	958.3	942.1	926.8	944.2	958.3	944.2	926.8	942.1	35- 40	3630	19150	65.9,65.9
45	665.2	650.9	643.3	661.3	665.2	661.3	643.3	650.9	40- 45	2909	22059	75.9,75.9
50	467.1	458.1	452.9	473.4	467.1	473.4	452.9	458.1	45- 50	2236	24295	83.6,83.6
55	320.6	316.8	314.0	328.5	320.6	328.5	314.0	316.8	50- 55	1691	25986	89.4,89.4
60	209.0	207.6	204.5	210.4	209.0	210.4	204.5	207.6	55- 60	1204	27190	93.5,93.5
65	131.7	131.4	128.0	131.0	131.7	131.0	128.0	131.4	60- 65	813.4	28003	96.3,96.3
70	78.06	77.23	75.28	76.28	78.06	76.28	75.28	77.23	65- 70	512.2	28516	98.1,98.1
75	43.17	42.20	41.40	41.86	43.17	41.86	41.40	42.20	70- 75	304.3	28820	99.1,99.1
80	21.04	20.59	20.27	20.75	21.04	20.75	20.27	20.59	75- 80	163.3	28983	99.7,99.7
85	6.505	6.456	6.453	6.614	6.505	6.614	6.453	6.456	80- 85	70.43	29054	100,100
90	0.4730	0.4673	0.4625	0.4758	0.4730	0.4758	0.4625	0.4673	85- 90	13.50	29067	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): 22059 lm

%lum = 75.9%

%lamp = 75.9%

Conical surface Flux(120deg): 27190 lm

%lum = 93.5%

%lamp = 93.5%

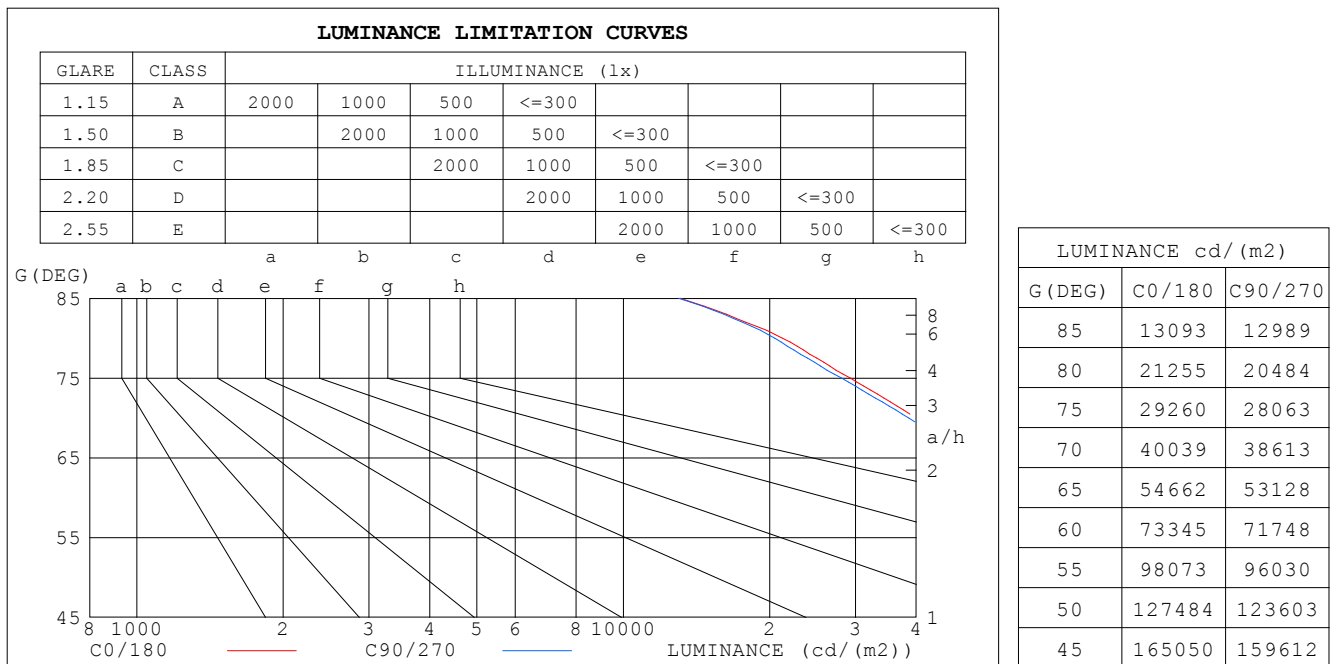
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2019-10-08

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: 2019-10-08

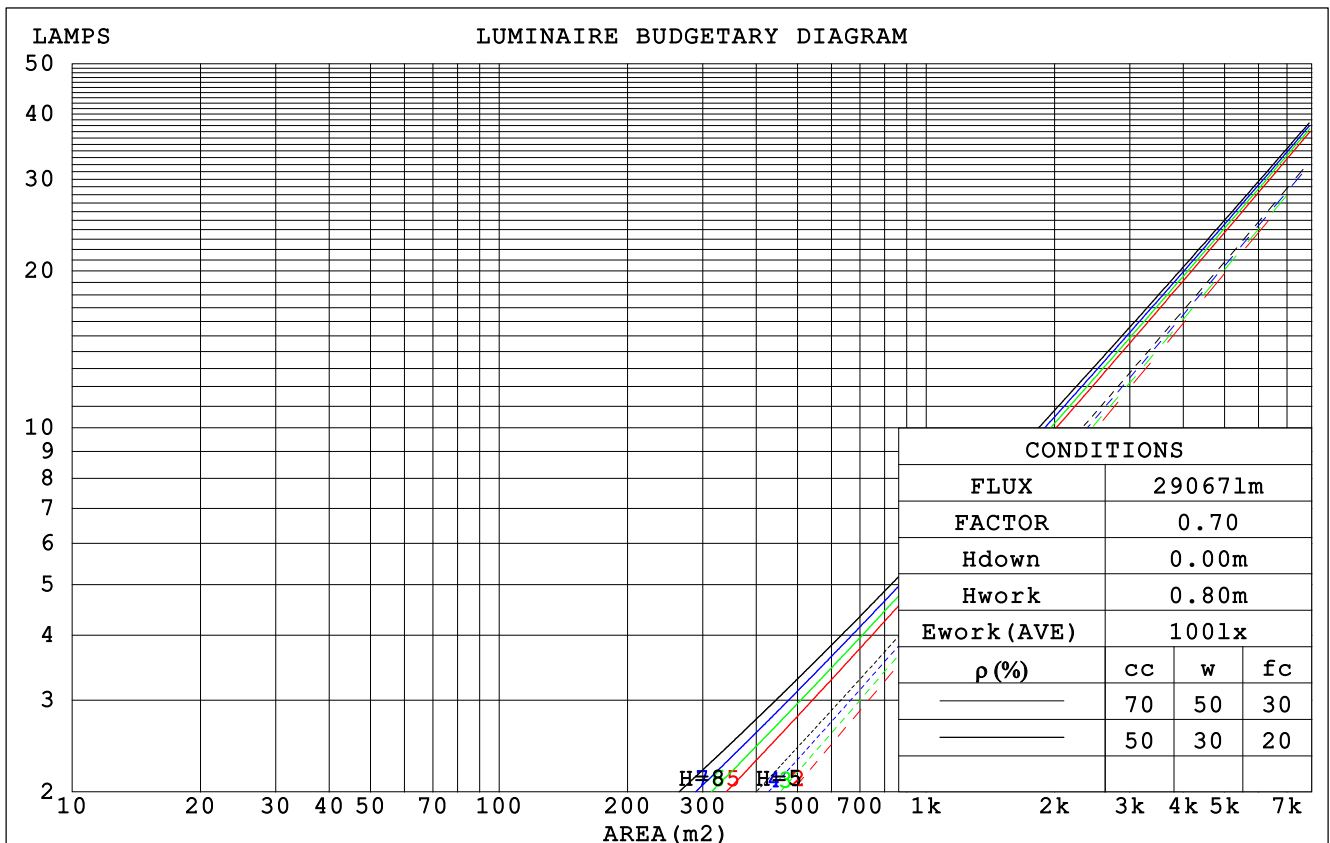
Checker: LI

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	1.08	1.05	1.02	1.06	1.03	1.00	1.01	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.90	.86	.92	.88	.84	.89	.85	.82	.86	.83	.81	.79
3.0	.88	.81	.76	.86	.80	.75	.83	.78	.74	.81	.76	.73	.78	.75	.71	.70
4.0	.79	.72	.67	.78	.71	.66	.76	.70	.65	.74	.69	.64	.72	.67	.64	.62
5.0	.72	.65	.59	.71	.64	.59	.69	.63	.58	.67	.62	.57	.66	.61	.57	.55
6.0	.66	.58	.53	.65	.58	.52	.63	.57	.52	.62	.56	.52	.60	.55	.51	.49
7.0	.60	.53	.47	.60	.52	.47	.58	.52	.47	.57	.51	.47	.56	.50	.46	.45
8.0	.56	.48	.43	.55	.48	.43	.54	.47	.42	.53	.47	.42	.51	.46	.42	.40
9.0	.51	.44	.39	.51	.44	.39	.50	.43	.39	.49	.43	.39	.48	.42	.38	.37
10.0	.48	.40	.36	.47	.40	.36	.46	.40	.35	.45	.39	.35	.44	.39	.35	.34



C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-10-08

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	.234	.133	.042	.227	.129	.041	.214	.123	.039	.202	.117	.037	.191	.111	.036	
2.0	.228	.125	.038	.222	.122	.038	.211	.117	.036	.200	.112	.035	.191	.108	.034	
3.0	.217	.115	.035	.212	.113	.034	.202	.109	.033	.193	.106	.032	.185	.102	.032	
4.0	.205	.107	.031	.201	.105	.031	.192	.102	.030	.184	.099	.030	.177	.096	.029	
5.0	.194	.099	.029	.190	.098	.028	.182	.095	.028	.175	.093	.028	.169	.090	.027	
6.0	.183	.092	.026	.180	.091	.026	.173	.089	.026	.167	.087	.025	.161	.085	.025	
7.0	.173	.086	.024	.170	.085	.024	.164	.083	.024	.159	.081	.024	.153	.080	.023	
8.0	.164	.080	.023	.161	.079	.022	.156	.078	.022	.151	.076	.022	.146	.075	.022	
9.0	.156	.075	.021	.153	.075	.021	.148	.073	.021	.144	.072	.021	.139	.071	.020	
10.0	.148	.071	.020	.146	.070	.020	.141	.069	.019	.137	.068	.019	.133	.067	.019	

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	.175	.157	.140	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.106	.140	.114	.091	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010	
4.0	.146	.100	.065	.125	.086	.056	.086	.060	.040	.050	.035	.023	.016	.011	.008	
5.0	.139	.089	.053	.119	.077	.046	.082	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.132	.080	.044	.113	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.126	.073	.037	.108	.064	.032	.075	.045	.023	.043	.026	.013	.014	.009	.004	
8.0	.120	.068	.031	.103	.059	.027	.072	.041	.019	.042	.024	.012	.013	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.068	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.058	.024	.095	.051	.021	.066	.036	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-10-08

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	28.2	29.4	28.4	29.6	29.8	27.9	29.2	28.2	29.4	29.6
3H	28.4	29.6	28.7	29.8	30.0	28.1	29.3	28.4	29.5	29.8
4H	28.4	29.5	28.7	29.8	30.0	28.2	29.3	28.5	29.5	29.8
6H	28.4	29.4	28.7	29.7	29.9	28.1	29.2	28.5	29.4	29.7
8H	28.4	29.4	28.7	29.6	29.9	28.1	29.1	28.4	29.4	29.7
12H	28.3	29.3	28.7	29.6	29.8	28.1	29.0	28.4	29.3	29.6
4H 2H	28.2	29.3	28.5	29.6	29.8	28.0	29.1	28.3	29.4	29.6
3H	28.5	29.5	28.9	29.8	30.1	28.3	29.3	28.7	29.6	29.8
4H	28.6	29.5	29.0	29.8	30.1	28.4	29.3	28.8	29.6	29.9
6H	28.6	29.4	29.0	29.7	30.1	28.4	29.2	28.8	29.5	29.9
8H	28.6	29.3	29.0	29.7	30.1	28.4	29.1	28.8	29.5	29.8
12H	28.6	29.2	29.0	29.6	30.0	28.4	29.0	28.8	29.4	29.8
8H 4H	28.6	29.3	29.0	29.6	30.0	28.3	29.0	28.8	29.4	29.8
6H	28.6	29.2	29.1	29.6	30.0	28.4	29.0	28.8	29.4	29.8
8H	28.6	29.1	29.1	29.5	30.0	28.4	28.9	28.9	29.3	29.8
12H	28.6	29.0	29.1	29.5	30.0	28.4	28.8	28.9	29.3	29.7
12H 4H	28.5	29.2	28.9	29.5	29.9	28.3	29.0	28.7	29.3	29.7
6H	28.6	29.1	29.0	29.5	30.0	28.4	28.9	28.8	29.3	29.7
8H	28.6	29.0	29.1	29.5	29.9	28.4	28.8	28.9	29.3	29.7
Variations with the observer position at spacings:										
S = 1.0H	+ 1.1 / - 1.6					+ 1.2 / - 1.6				
1.5H	+ 1.2 / - 0.9					+ 1.3 / - 1.1				
2.0H	+ 2.1 / - 1.9					+ 2.1 / - 2.0				

CIE Pub.117 Corrected 29067 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.7)

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-10-08

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) $k(RI) \times RCR = 5$									
$k = 0.60$	70	60	55	69	60	55	68	60	55	49
0.80	80	71	65	79	70	65	77	69	64	59
1.00	87	79	73	86	78	73	84	79	72	67
1.25	93	85	80	92	85	80	90	83	79	73
1.50	97	90	85	96	89	84	93	88	83	77
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	96	92	85
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	105	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

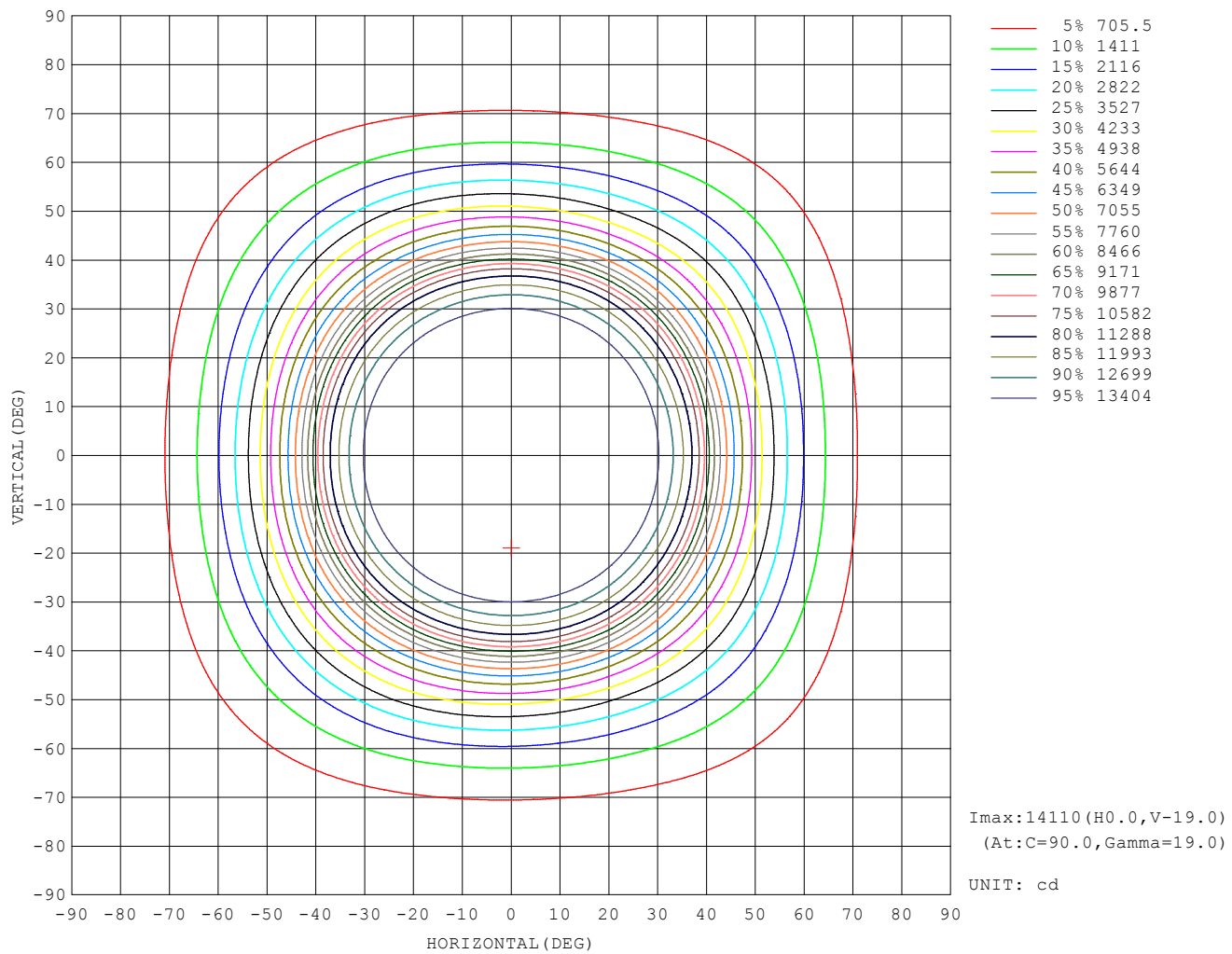
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-10-08

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



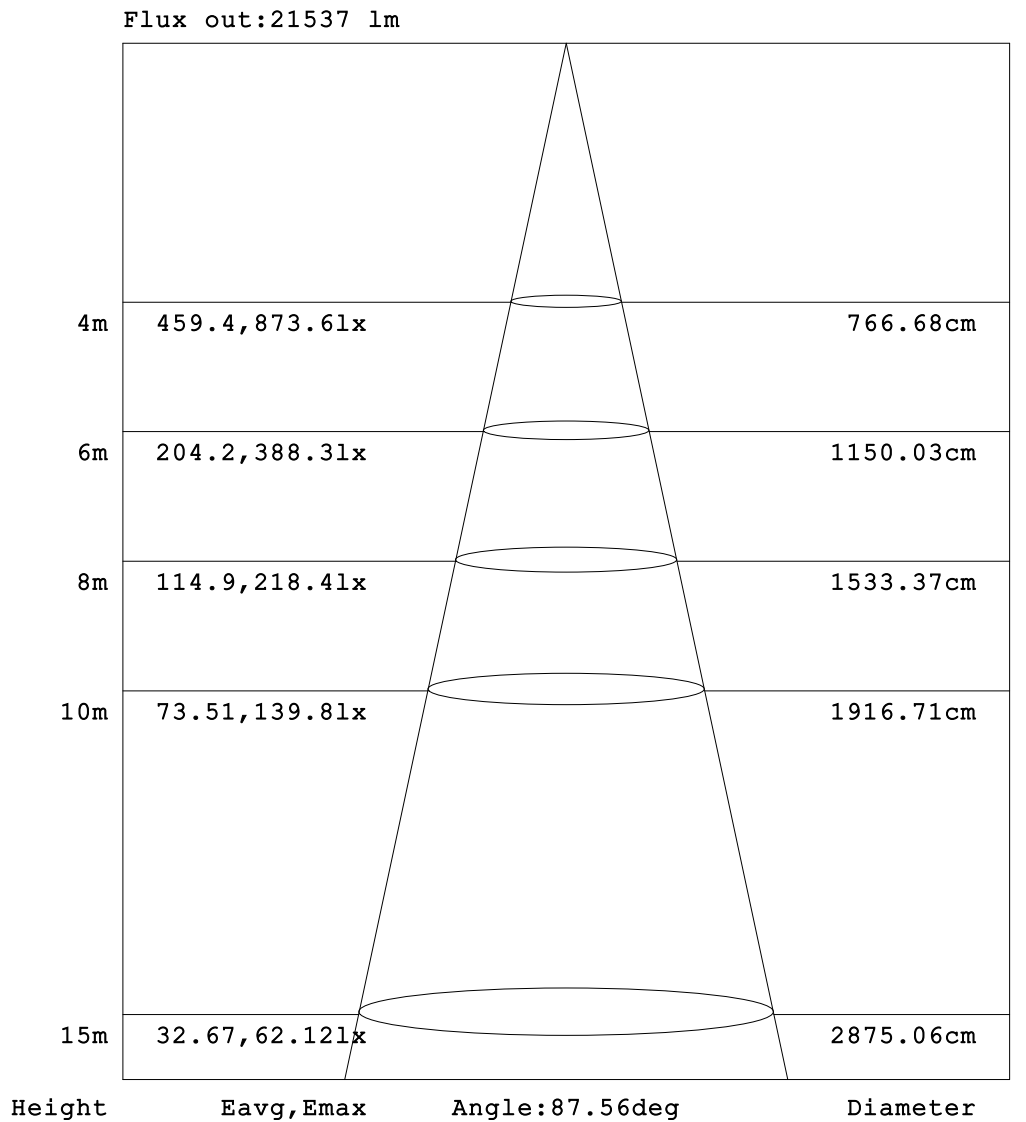
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-10-08

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.

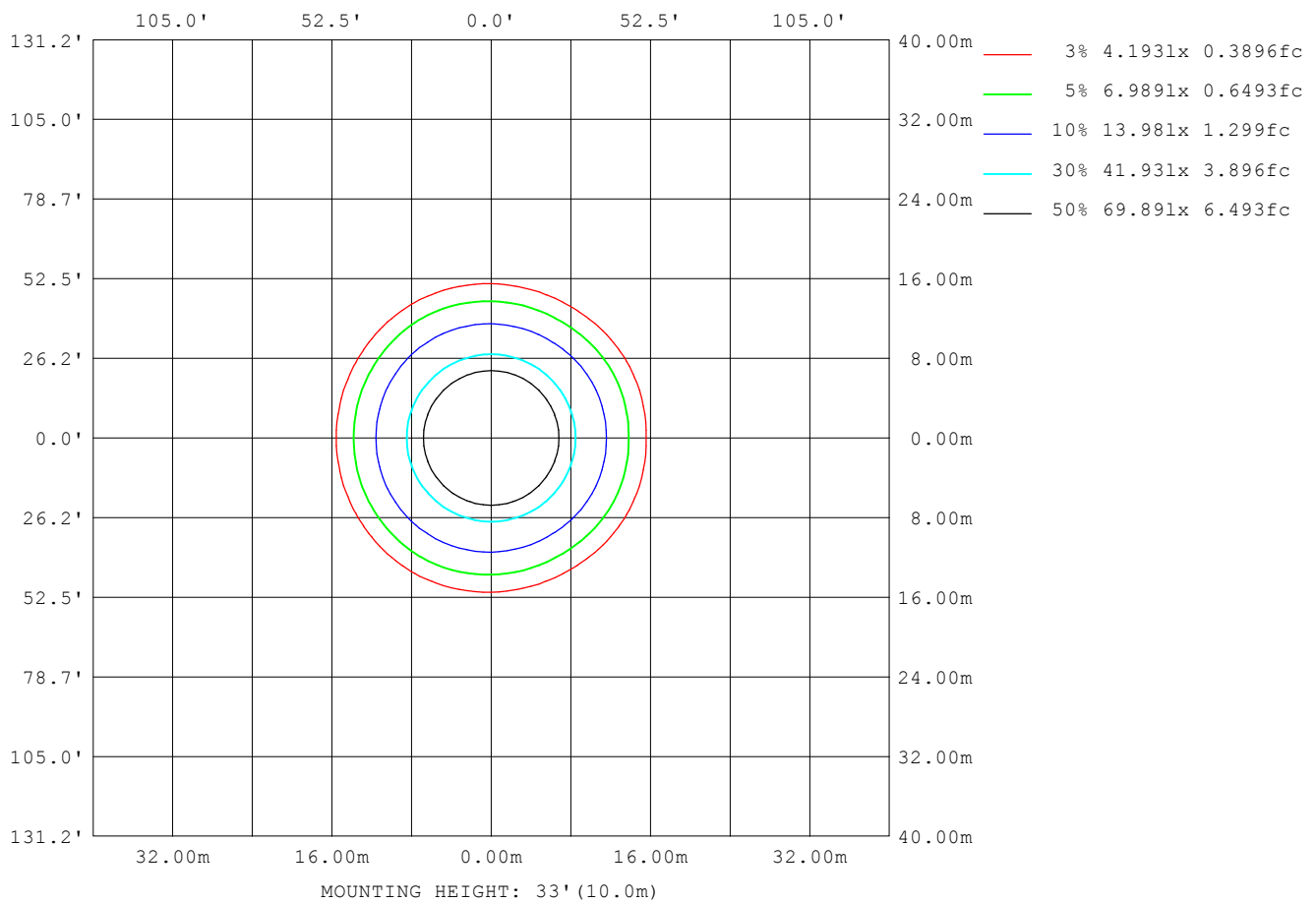
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-10-08

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



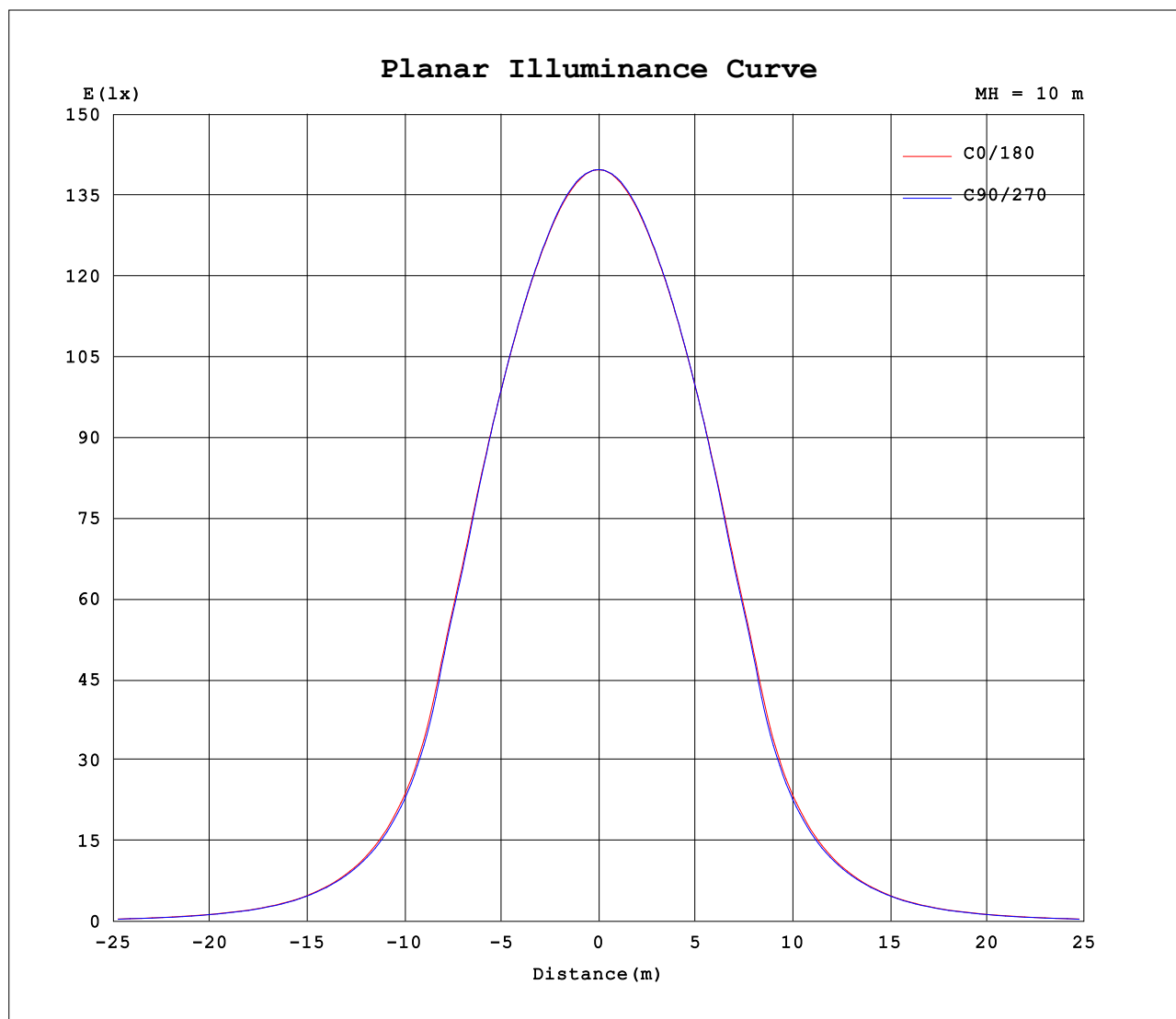
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-10-08

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: 2019-10-08

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:

Assessor:

Assessor:

Assessor:

Assessor:

Assessor:

Assessor:

Assessor:

UNIT: $\times 10 \text{cd}$

Assessor: