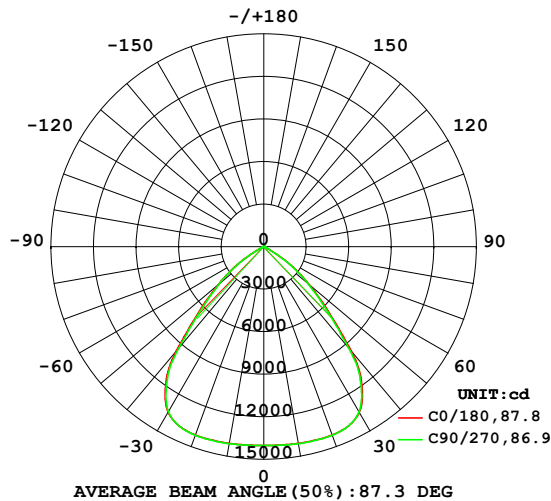


LUMINAIRE PHOTOMETRIC TEST REPORT

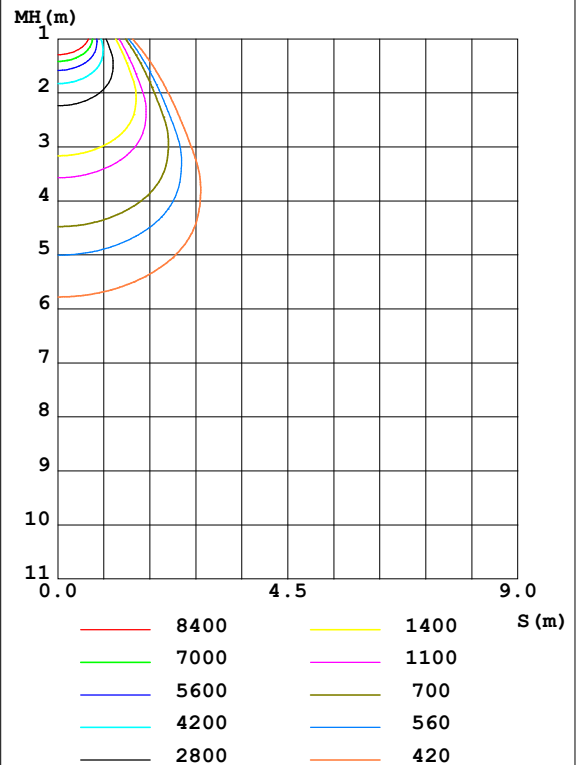
Test:U:230.0V I:0.6805A P:152.1W PF:0.9716 Lamp Flux:26573.4x1 lm		
NAME: 950-111_90° + 950-113	TYPE:150W	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:φ0.48	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 174.73 lm/W			
MODEL		I _{max} (cd)	14156	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)	26573	η UP,DN (C0-180)	0.0,50.0
NOMINAL FLUX(lm)	26573.4	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	1404	1405	1406	1405	1404	1405	1406	1405	0- 5	335.6	335.6	1.26,1.26
10	1408	1409	1411	1410	1408	1410	1411	1409	5- 10	1007	1343	5.05,5.05
15	1412	1413	1414	1414	1412	1414	1414	1413	10- 15	1675	3017	11.4,11.4
20	1414	1414	1415	1415	1414	1415	1415	1414	15- 20	2331	5349	20.1,20.1
25	1400	1400	1401	1401	1400	1401	1401	1400	20- 25	2956	8305	31.3,31.3
30	1348	1345	1344	1346	1348	1346	1344	1345	25- 30	3486	11791	44.4,44.4
35	1211	1202	1197	1203	1211	1203	1197	1202	30- 35	3773	15564	58.6,58.6
40	958.8	943.4	928.7	945.3	958.8	945.3	928.7	943.4	35- 40	3637	19201	72.3,72.3
45	642.0	628.1	619.3	637.0	642.0	637.0	619.3	628.1	40- 45	2864	22065	83,83
50	422.7	414.0	410.6	430.7	422.7	430.7	410.6	414.0	45- 50	2101	24167	90.9,90.9
55	251.5	248.6	244.2	256.7	251.5	256.7	244.2	248.6	50- 55	1449	25616	96.4,96.4
60	72.03	73.15	73.19	75.30	72.03	75.30	73.19	73.15	55- 60	749.8	26366	99.2,99.2
65	14.97	15.67	15.95	14.93	14.97	14.93	15.95	15.67	60- 65	161.2	26527	99.8,99.8
70	1.154	1.169	1.178	1.151	1.154	1.151	1.178	1.169	65- 70	37.45	26564	100,100
75	0.5244	0.5216	0.5251	0.5293	0.5244	0.5293	0.5251	0.5216	70- 75	3.669	26568	100,100
80	0.3648	0.3758	0.3565	0.3581	0.3648	0.3581	0.3565	0.3758	75- 80	2.354	26570	100,100
85	0.2910	0.3060	0.2743	0.2629	0.2910	0.2629	0.2743	0.3060	80- 85	1.695	26572	100,100
90	0.2155	0.2166	0.2104	0.2088	0.2155	0.2088	0.2104	0.2166	85- 90	1.317	26573	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): 22065 lm

%lum = 83.0%

%lamp = 83.0%

Conical surface Flux(120deg): 26366 lm

%lum = 99.2%

%lamp = 99.2%

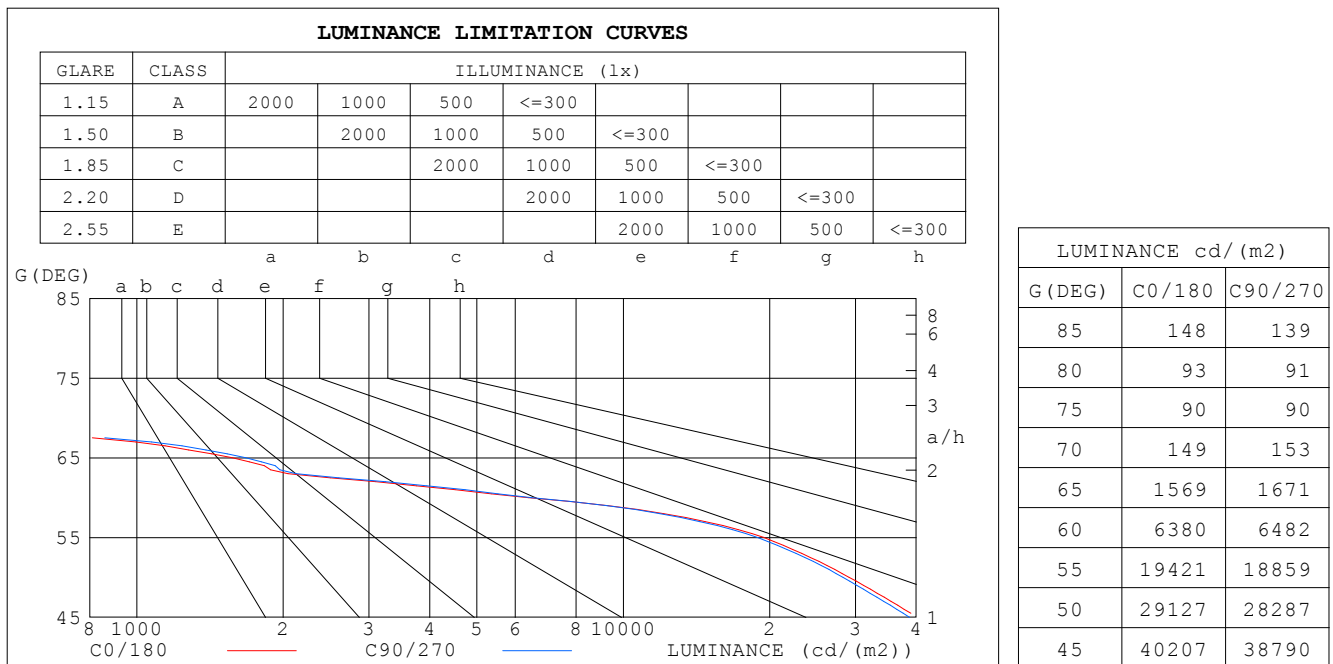
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2019-10-08

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

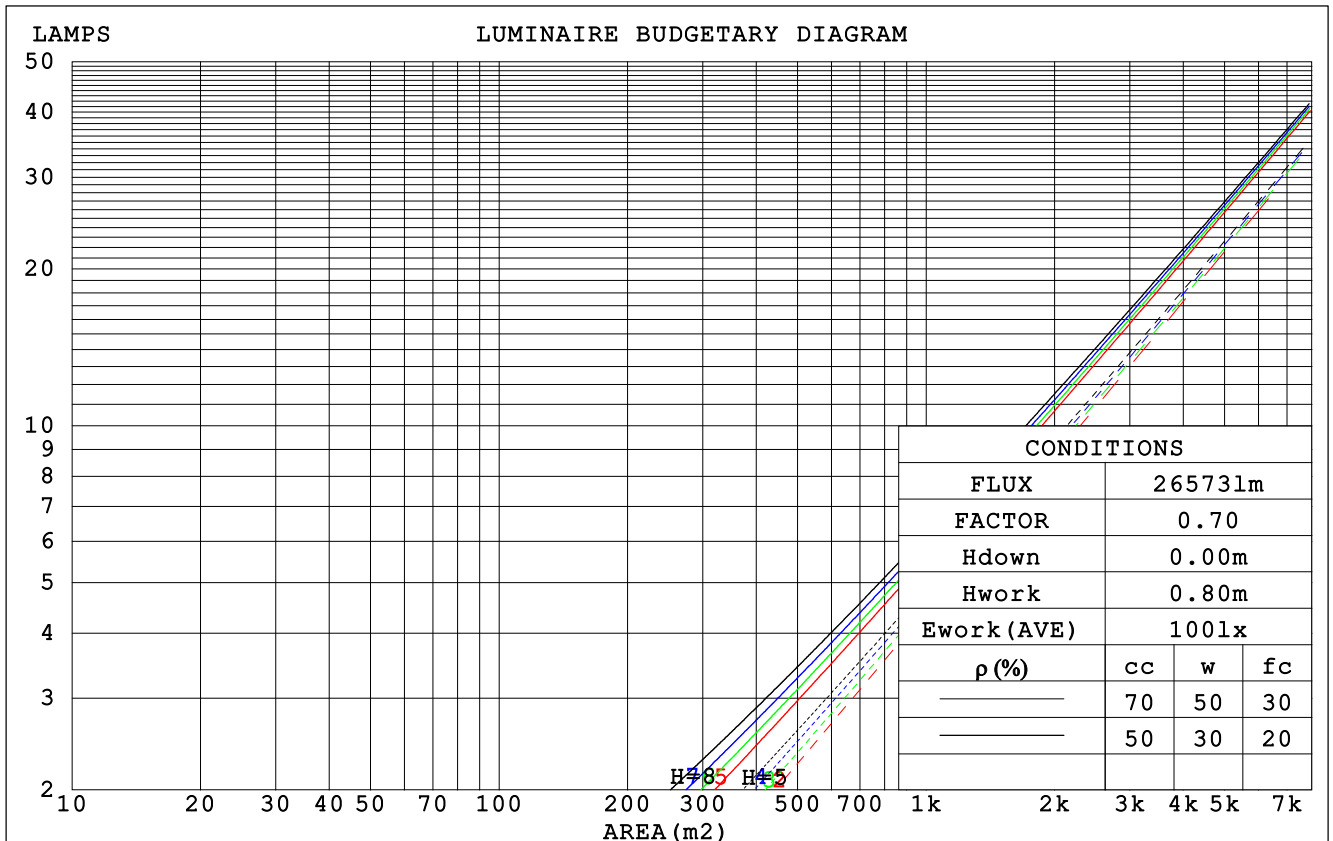
Checker: LI

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	1.00
1.0	1.09	1.06	1.03	1.07	1.04	1.02	1.03	1.01	.99	.99	.97	.96	.96	.94	.93	.91
2.0	.99	.94	.90	.98	.93	.89	.94	.90	.87	.91	.88	.85	.88	.86	.84	.82
3.0	.90	.84	.79	.89	.83	.79	.86	.81	.78	.84	.80	.76	.81	.78	.75	.73
4.0	.82	.76	.70	.81	.75	.70	.79	.73	.69	.77	.72	.68	.75	.71	.67	.66
5.0	.75	.68	.63	.74	.68	.63	.72	.66	.62	.71	.65	.61	.69	.64	.61	.59
6.0	.69	.62	.56	.68	.61	.56	.66	.60	.56	.65	.60	.55	.64	.59	.55	.53
7.0	.63	.56	.51	.63	.56	.51	.61	.55	.50	.60	.54	.50	.59	.54	.50	.48
8.0	.58	.51	.46	.58	.51	.46	.57	.50	.46	.55	.50	.46	.54	.49	.45	.44
9.0	.54	.47	.42	.54	.47	.42	.53	.46	.42	.52	.46	.42	.51	.45	.42	.40
10.0	.50	.43	.39	.50	.43	.39	.49	.43	.38	.48	.42	.38	.47	.42	.38	.37



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	.211	.120	.038	.204	.116	.037	.191	.110	.035	.179	.103	.033	.168	.098	.031	
2.0	.207	.113	.035	.201	.111	.034	.190	.106	.033	.180	.101	.032	.171	.097	.030	
3.0	.199	.106	.032	.194	.104	.031	.185	.100	.030	.176	.096	.030	.168	.093	.029	
4.0	.191	.099	.029	.186	.098	.029	.178	.094	.028	.170	.091	.028	.163	.089	.027	
5.0	.182	.093	.027	.178	.091	.027	.171	.089	.026	.164	.086	.026	.157	.084	.025	
6.0	.173	.087	.025	.170	.086	.025	.163	.084	.024	.157	.082	.024	.151	.080	.024	
7.0	.165	.082	.023	.162	.081	.023	.156	.079	.023	.151	.077	.022	.145	.076	.022	
8.0	.157	.077	.022	.154	.076	.021	.149	.075	.021	.144	.073	.021	.140	.072	.021	
9.0	.150	.072	.020	.147	.072	.020	.143	.070	.020	.138	.069	.020	.134	.068	.020	
10.0	.143	.068	.019	.141	.068	.019	.136	.067	.019	.132	.066	.019	.128	.065	.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	.173	.157	.142	.148	.135	.122	.102	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.161	.132	.108	.138	.114	.094	.094	.079	.065	.054	.046	.038	.017	.015	.012	
3.0	.151	.114	.084	.129	.098	.073	.089	.068	.051	.051	.040	.030	.016	.013	.010	
4.0	.142	.100	.067	.122	.086	.058	.084	.060	.041	.049	.035	.024	.016	.011	.008	
5.0	.135	.089	.054	.116	.077	.047	.080	.054	.033	.046	.031	.020	.015	.010	.007	
6.0	.129	.080	.045	.111	.069	.039	.076	.048	.028	.044	.028	.016	.014	.009	.005	
7.0	.123	.073	.038	.106	.063	.033	.073	.044	.023	.042	.026	.014	.014	.009	.005	
8.0	.117	.067	.032	.101	.058	.028	.070	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.112	.062	.028	.097	.054	.024	.067	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.107	.058	.025	.093	.050	.022	.064	.035	.015	.037	.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	22.6	23.8	22.8	24.0	24.1	22.4	23.6	22.6	23.8	24.0
3H	22.4	23.5	22.7	23.7	23.9	22.2	23.3	22.5	23.5	23.7
4H	22.3	23.3	22.6	23.6	23.8	22.1	23.1	22.4	23.4	23.6
6H	22.2	23.2	22.5	23.4	23.7	22.0	23.0	22.3	23.2	23.5
8H	22.2	23.1	22.5	23.3	23.6	22.0	22.9	22.3	23.2	23.4
12H	22.1	23.0	22.4	23.3	23.5	21.9	22.8	22.3	23.1	23.4
4H 2H	22.4	23.4	22.7	23.6	23.9	22.2	23.2	22.5	23.5	23.7
3H	22.2	23.1	22.5	23.4	23.6	22.0	22.9	22.4	23.2	23.5
4H	22.1	22.9	22.5	23.2	23.5	21.9	22.7	22.3	23.0	23.3
6H	22.0	22.7	22.4	23.0	23.4	21.8	22.5	22.2	22.9	23.2
8H	22.0	22.6	22.4	23.0	23.3	21.8	22.4	22.2	22.8	23.2
12H	21.9	22.5	22.3	22.9	23.3	21.7	22.3	22.2	22.7	23.1
8H 4H	22.0	22.6	22.4	23.0	23.3	21.8	22.4	22.2	22.8	23.2
6H	21.9	22.4	22.3	22.8	23.2	21.7	22.2	22.1	22.6	23.0
8H	21.8	22.3	22.3	22.7	23.1	21.6	22.1	22.1	22.5	23.0
12H	21.8	22.2	22.2	22.6	23.1	21.6	22.0	22.1	22.4	22.9
12H 4H	21.9	22.5	22.3	22.9	23.3	21.7	22.3	22.2	22.7	23.1
6H	21.8	22.3	22.3	22.7	23.1	21.6	22.1	22.1	22.5	23.0
8H	21.8	22.2	22.2	22.6	23.1	21.6	22.0	22.1	22.4	22.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.1 / - 4.7					+ 2.1 / - 4.8				
1.5H	+ 2.0 / - 2.2					+ 2.1 / - 2.5				
2.0H	+ 4.0 / -14.5					+ 4.0 / -13.9				

CIE Pub.117 Corrected 26573 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.4)

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) $k(RI) \times RCR = 5$									
$k = 0.60$	73	65	59	73	64	59	72	64	59	54
0.80	83	75	70	82	75	69	81	74	69	64
1.00	91	83	78	90	83	78	88	83	77	72
1.25	97	90	85	95	89	85	93	88	84	79
1.50	100	94	89	99	93	89	96	92	88	82
2.00	105	99	95	103	98	95	100	96	93	87
2.50	107	102	98	105	101	97	102	98	95	89
3.00	109	105	101	107	103	100	104	101	98	91
4.00	112	108	105	109	106	104	106	103	101	93
5.00	113	110	107	111	108	106	106	104	102	94
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

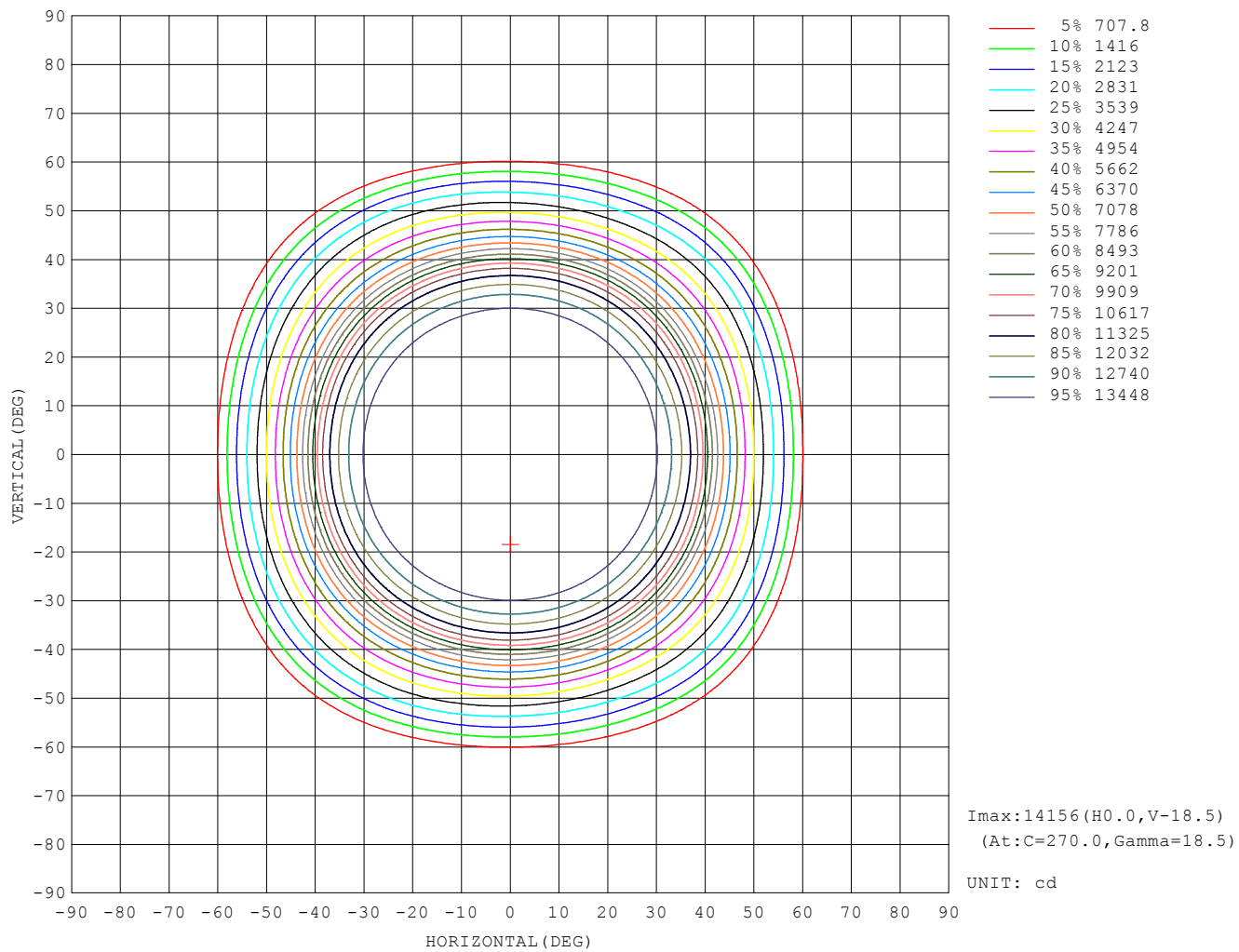
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-10-08

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



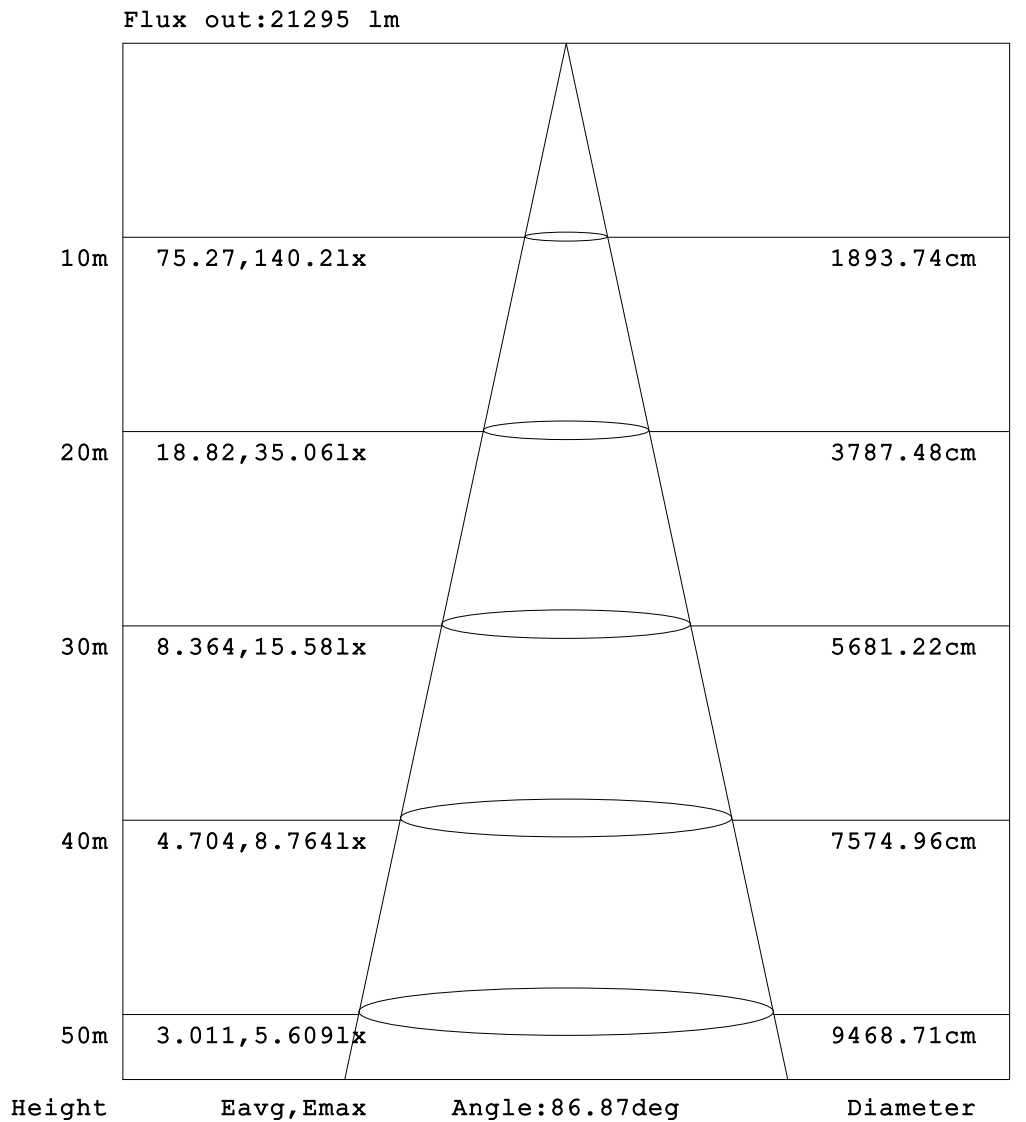
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-10-08

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.

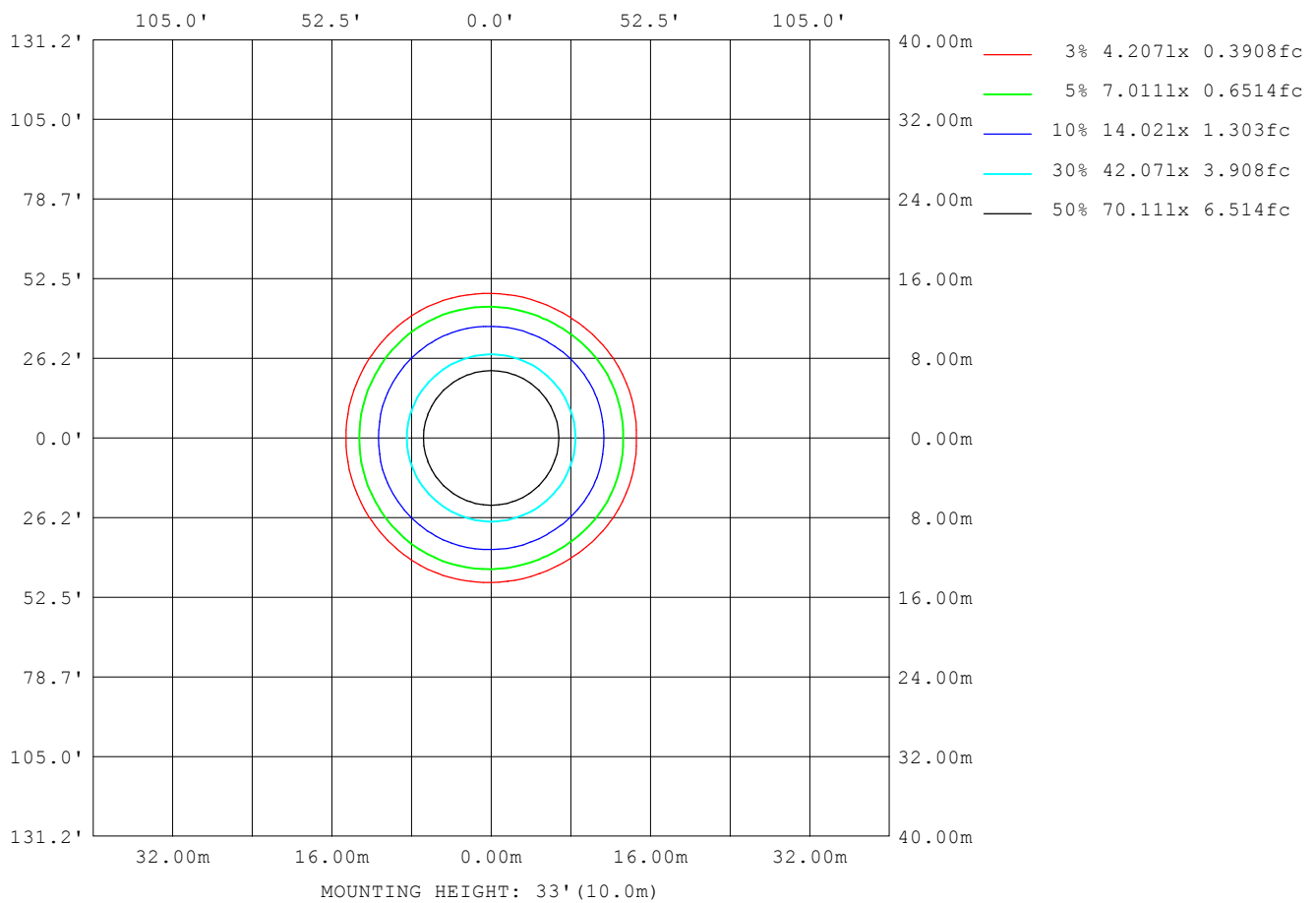
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-10-08

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



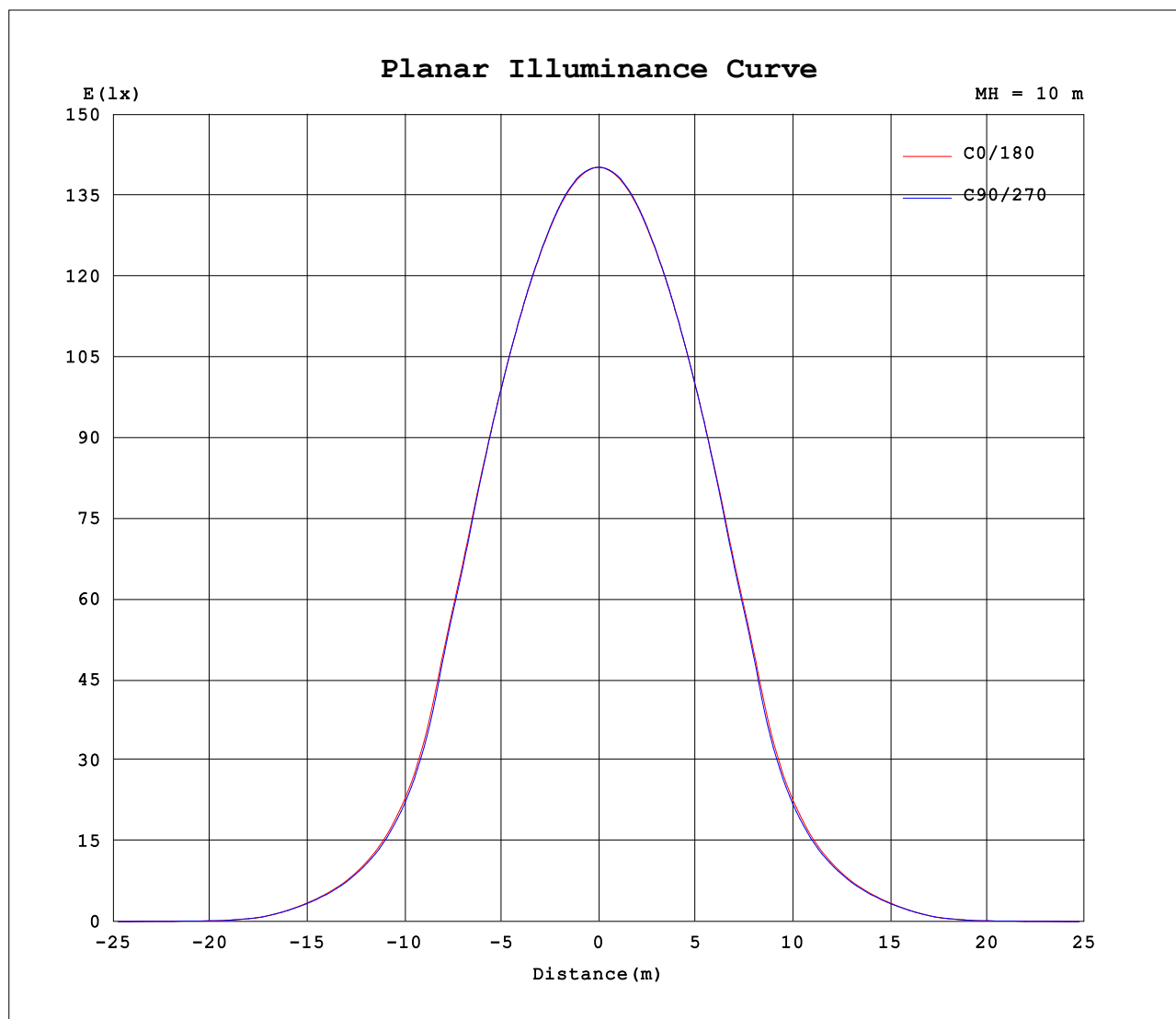
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-10-08

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:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--2

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

γ	C (DEG)	47.5	50	52.5	55	57.5	60	62.5	65	67.5	70	72.5	75	77.5	80	82.5	85	87.5	90	92.5
	(DEG)																			
0		1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402	1402
5		1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1406	1406
10		1409	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1411	1411	1411	1411	1411	1411	1411
15		1413	1413	1413	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414
20		1414	1414	1414	1414	1414	1414	1414	1415	1415	1415	1415	1415	1415	1415	1415	1415	1415	1415	1415
25		1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1401	1401	1401	1401
30		1345	1345	1345	1345	1345	1345	1345	1345	1345	1344	1344	1344	1344	1344	1344	1344	1344	1344	1344
35		1202	1202	1202	1202	1202	1202	1202	1201	1201	1200	1200	1199	1199	1198	1198	1198	1197	1197	1197
40		943	942	941	941	940	939	938	937	936	935	934	933	932	931	930	930	929	929	929
45		627	626	624	623	622	621	621	620	620	619	619	619	619	619	619	619	619	619	620
50		412	410	408	406	405	403	403	403	403	403	404	404	405	406	407	408	409	411	412
55		247	245	244	242	241	239	239	239	239	239	239	240	240	241	242	242	243	244	245
60		72.8	72.5	72.2	71.9	71.7	71.4	71.4	71.4	71.5	71.6	71.7	71.8	72.0	72.2	72.4	72.7	72.9	73.2	73.6
65		15.7	15.8	15.8	15.8	15.9	15.9	15.9	15.9	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	15.9	15.9
70		1.18	1.18	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.19	1.19	1.19	1.18	1.18	1.18	1.18
75		0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.53	0.53
80		0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
85		0.30	0.30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.28	0.27	0.27
90		0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21

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:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--7

UNIT: $\times 10 \text{cd}$ [illegible]

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:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--8

UNIT: $\times 10 \text{cd}$ [illegible]

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: