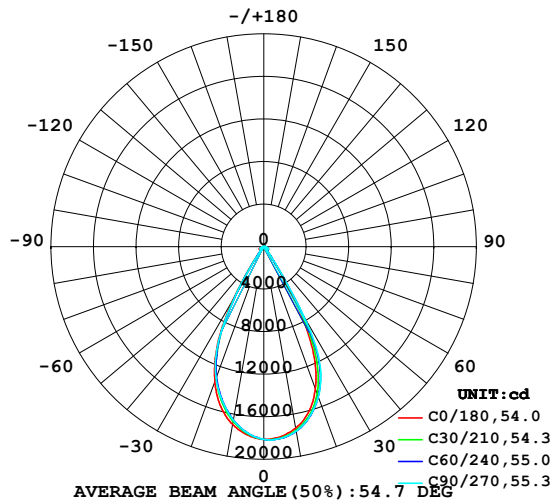


LUMINAIRE PHOTOMETRIC TEST REPORT

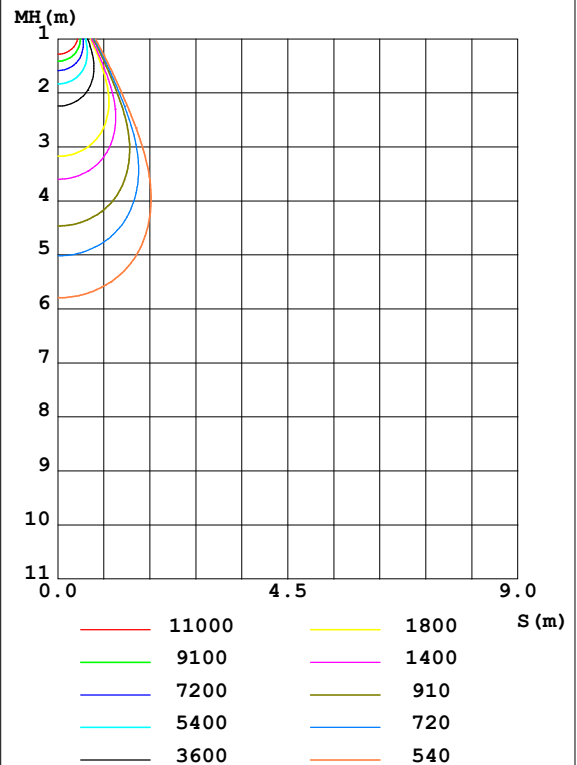
Test:U:230.1V I:0.4374A P:99.33W PF:0.9869 Lamp Flux:13014.5x1 lm		
NAME: FL23-100-5070-F12802	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:0.202*0.12	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 131.02 lm/W			
MODEL	RF303	I _{max} (cd)	18197	S/MH(C0/180)	0.79
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	0.78
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	13015	η UP,DN(C0-180)	0.0,52.4
NOMINAL FLUX(lm)	13014.5	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,47.6
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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
5	1795	1811	1810	1799	1778	1760	1760	1773	0- 5	430.0	430.0	3.3,3.3
10	1733	1762	1760	1737	1696	1655	1656	1684	5- 10	1251	1681	12.9,12.9
15	1617	1659	1658	1621	1560	1502	1506	1545	10- 15	1955	3635	27.9,27.9
20	1420	1495	1502	1436	1348	1296	1315	1347	15- 20	2457	6092	46.8,46.8
25	1110	1225	1263	1155	1044	1002	1031	1046	20- 25	2637	8729	67.1,67.1
30	583.0	695.4	744.8	666.4	578.3	516.4	529.5	530.9	25- 30	2216	10945	84.1,84.1
35	146.4	166.8	169.1	160.6	148.0	141.4	128.6	143.0	30- 35	995.2	11940	91.7,91.7
40	46.70	47.84	49.08	48.10	47.21	45.15	45.65	45.11	35- 40	253.8	12194	93.7,93.7
45	34.51	35.75	35.46	36.02	34.73	34.31	33.38	34.35	40- 45	148.3	12342	94.8,94.8
50	27.22	28.19	27.29	28.41	26.99	27.21	26.48	27.24	45- 50	124.5	12467	95.8,95.8
55	28.48	24.05	27.51	24.11	27.99	23.75	26.68	23.81	50- 55	111.3	12578	96.6,96.6
60	33.73	22.26	34.49	22.35	30.98	21.96	33.43	21.97	55- 60	112.2	12690	97.5,97.5
65	37.98	24.20	35.96	24.08	37.80	22.35	33.42	22.54	60- 65	117.2	12807	98.4,98.4
70	20.96	14.84	22.62	14.93	21.22	14.19	18.41	14.12	65- 70	94.07	12901	99.1,99.1
75	10.75	9.881	10.35	10.03	11.00	9.087	9.222	8.964	70- 75	63.88	12965	99.6,99.6
80	5.381	4.166	5.204	4.327	6.162	3.852	4.393	3.704	75- 80	35.15	13000	99.9,99.9
85	0.9708	0.8056	0.7253	0.8873	1.150	0.7561	0.5582	0.6687	80- 85	12.60	13013	100,100
90	0.1049	0.0971	0.0983	0.0963	0.1108	0.1046	0.1090	0.1039	85- 90	1.542	13015	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): 12342 lm

%lum = 94.8%

%lamp = 94.8%

Conical surface Flux(120deg): 12690 lm

%lum = 97.5%

%lamp = 97.5%

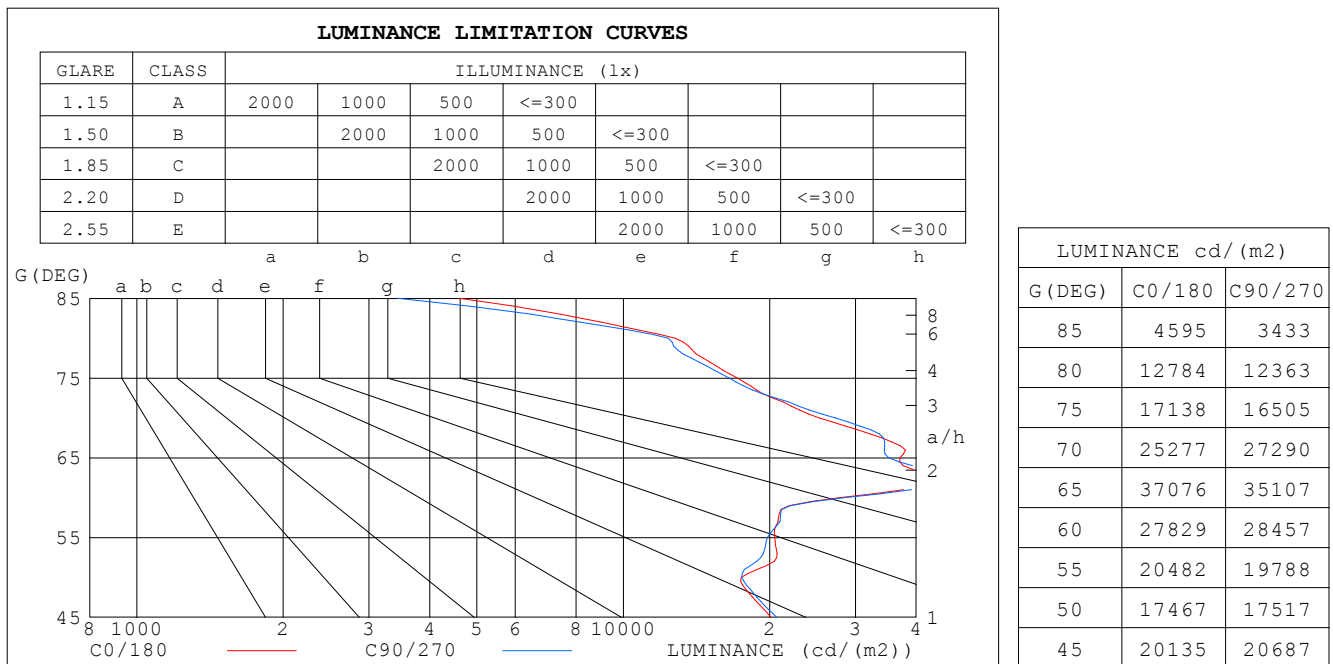
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2019-11-05

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

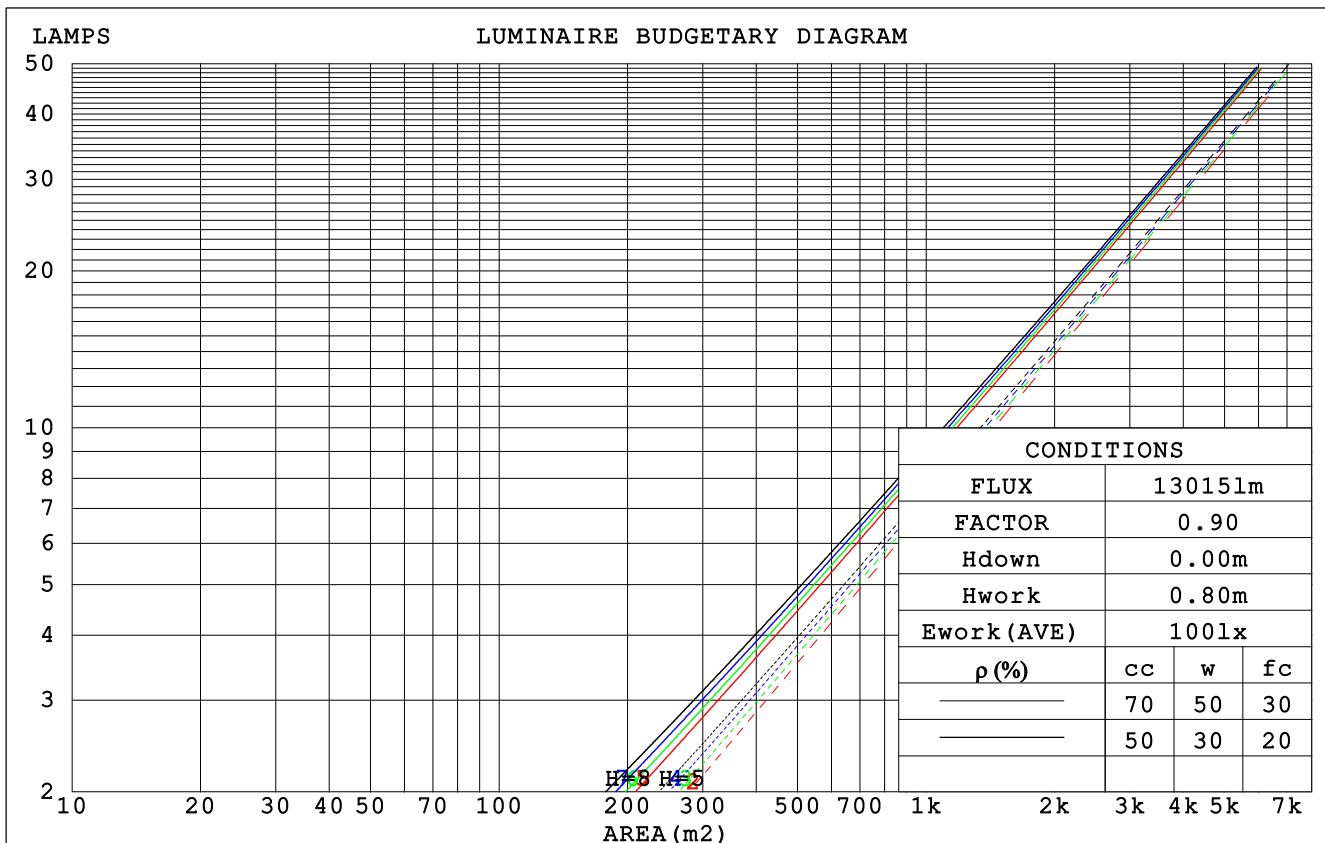
Checker: LI

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	1.00
1.0	1.11	1.08	1.06	1.09	1.07	1.05	1.05	1.03	1.01	1.01	.00	.98	.98	.97	.96	.94
2.0	1.04	.00	.96	1.02	.98	.95	.99	.96	.93	.96	.93	.91	.93	.91	.89	.88
3.0	.97	.92	.89	.96	.91	.88	.93	.89	.86	.91	.88	.85	.89	.86	.84	.82
4.0	.91	.86	.82	.90	.85	.82	.88	.84	.81	.86	.83	.80	.84	.81	.79	.77
5.0	.86	.81	.77	.85	.80	.76	.83	.79	.76	.82	.78	.75	.80	.77	.74	.73
6.0	.82	.76	.72	.81	.75	.72	.79	.75	.71	.78	.74	.71	.77	.73	.70	.69
7.0	.77	.72	.68	.77	.71	.68	.75	.71	.67	.74	.70	.67	.73	.69	.66	.65
8.0	.73	.68	.64	.73	.68	.64	.72	.67	.64	.71	.66	.63	.70	.66	.63	.62
9.0	.70	.64	.61	.69	.64	.60	.68	.64	.60	.68	.63	.60	.67	.63	.60	.59
10.0	.66	.61	.58	.66	.61	.57	.65	.61	.57	.65	.60	.57	.64	.60	.57	.56



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	.175	.099	.032	.168	.096	.030	.156	.089	.029	.144	.083	.027	.133	.077	.025	
2.0	.166	.091	.028	.160	.088	.027	.149	.083	.026	.140	.078	.025	.131	.074	.023	
3.0	.156	.083	.025	.151	.081	.024	.142	.077	.023	.134	.074	.023	.126	.070	.022	
4.0	.148	.077	.023	.144	.075	.022	.136	.072	.022	.129	.069	.021	.122	.066	.020	
5.0	.140	.071	.021	.136	.070	.020	.130	.068	.020	.123	.065	.019	.118	.063	.019	
6.0	.133	.067	.019	.130	.066	.019	.124	.064	.018	.119	.062	.018	.113	.060	.018	
7.0	.127	.063	.018	.124	.062	.018	.119	.060	.017	.114	.058	.017	.109	.057	.017	
8.0	.121	.059	.017	.119	.058	.017	.114	.057	.016	.110	.056	.016	.106	.054	.016	
9.0	.116	.056	.016	.114	.055	.016	.110	.054	.015	.106	.053	.015	.102	.052	.015	
10.0	.111	.053	.015	.109	.053	.015	.106	.052	.015	.102	.051	.014	.099	.050	.014	

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	.171	.157	.145	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.155	.133	.113	.133	.114	.098	.091	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.143	.114	.090	.122	.098	.078	.084	.068	.055	.048	.040	.032	.016	.013	.011	
4.0	.132	.099	.073	.113	.085	.064	.078	.059	.045	.045	.035	.027	.014	.011	.009	
5.0	.123	.087	.061	.105	.075	.053	.073	.053	.037	.042	.031	.022	.014	.010	.007	
6.0	.115	.078	.051	.099	.067	.044	.068	.047	.031	.040	.028	.019	.013	.009	.006	
7.0	.108	.070	.043	.093	.061	.038	.064	.042	.027	.037	.025	.016	.012	.008	.005	
8.0	.102	.064	.037	.088	.055	.032	.061	.039	.023	.035	.023	.014	.011	.007	.005	
9.0	.097	.058	.032	.084	.051	.028	.058	.036	.020	.034	.021	.012	.011	.007	.004	
10.0	.093	.054	.028	.080	.047	.025	.055	.033	.017	.032	.019	.010	.010	.006	.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	19.0	19.9	19.2	20.1	20.2	19.6	20.5	19.9	20.7	20.9
3H	20.0	20.9	20.3	21.1	21.3	20.6	21.4	20.8	21.6	21.8
4H	20.3	21.1	20.6	21.3	21.5	20.8	21.6	21.1	21.8	22.0
6H	20.5	21.2	20.8	21.4	21.7	20.9	21.6	21.2	21.9	22.1
8H	20.5	21.2	20.8	21.4	21.7	20.9	21.6	21.2	21.8	22.1
12H	20.4	21.1	20.8	21.4	21.7	20.8	21.5	21.2	21.8	22.1
4H 2H	19.2	20.0	19.5	20.2	20.4	19.7	20.5	20.0	20.7	21.0
3H	20.3	21.0	20.7	21.3	21.6	20.8	21.4	21.1	21.7	22.0
4H	20.7	21.3	21.1	21.6	21.9	21.1	21.7	21.4	22.0	22.3
6H	20.9	21.5	21.3	21.8	22.1	21.2	21.8	21.6	22.1	22.4
8H	20.9	21.4	21.3	21.8	22.1	21.2	21.7	21.6	22.1	22.4
12H	20.9	21.4	21.3	21.7	22.1	21.2	21.6	21.6	22.0	22.4
8H 4H	20.8	21.3	21.2	21.6	22.0	21.1	21.6	21.5	22.0	22.3
6H	21.0	21.4	21.4	21.8	22.2	21.3	21.7	21.7	22.1	22.5
8H	21.0	21.4	21.5	21.8	22.3	21.3	21.7	21.8	22.1	22.5
12H	21.0	21.3	21.5	21.8	22.3	21.3	21.6	21.7	22.0	22.5
12H 4H	20.7	21.2	21.1	21.6	22.0	21.1	21.5	21.5	21.9	22.3
6H	21.0	21.4	21.4	21.8	22.2	21.3	21.6	21.7	22.1	22.5
8H	21.0	21.3	21.5	21.8	22.3	21.3	21.6	21.8	22.0	22.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.3					+ 0.9 / - 0.4				
1.5H	+ 1.8 / - 0.6					+ 2.0 / - 0.9				
2.0H	+ 1.5 / - 0.6					+ 1.6 / - 0.7				

CIE Pub.117 Corrected 13015 lm Total Lamp Luminous Flux.(8log(F/F0) = 8.9)

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:

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) $k(RI) \times RCR = 5$									
$k = 0.60$	88	81	78	87	81	78	86	81	78	74
0.80	95	89	85	94	89	85	93	88	85	81
1.00	99	94	90	98	93	90	97	93	89	85
1.25	103	98	94	102	97	94	100	96	93	89
1.50	106	101	98	104	100	97	102	99	96	91
2.00	108	104	101	107	103	100	104	101	99	93
2.50	110	106	103	108	105	102	105	103	100	94
3.00	112	108	105	110	107	104	106	104	102	96
4.00	114	111	109	112	109	107	108	106	105	98
5.00	115	113	111	113	111	109	109	108	106	99
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

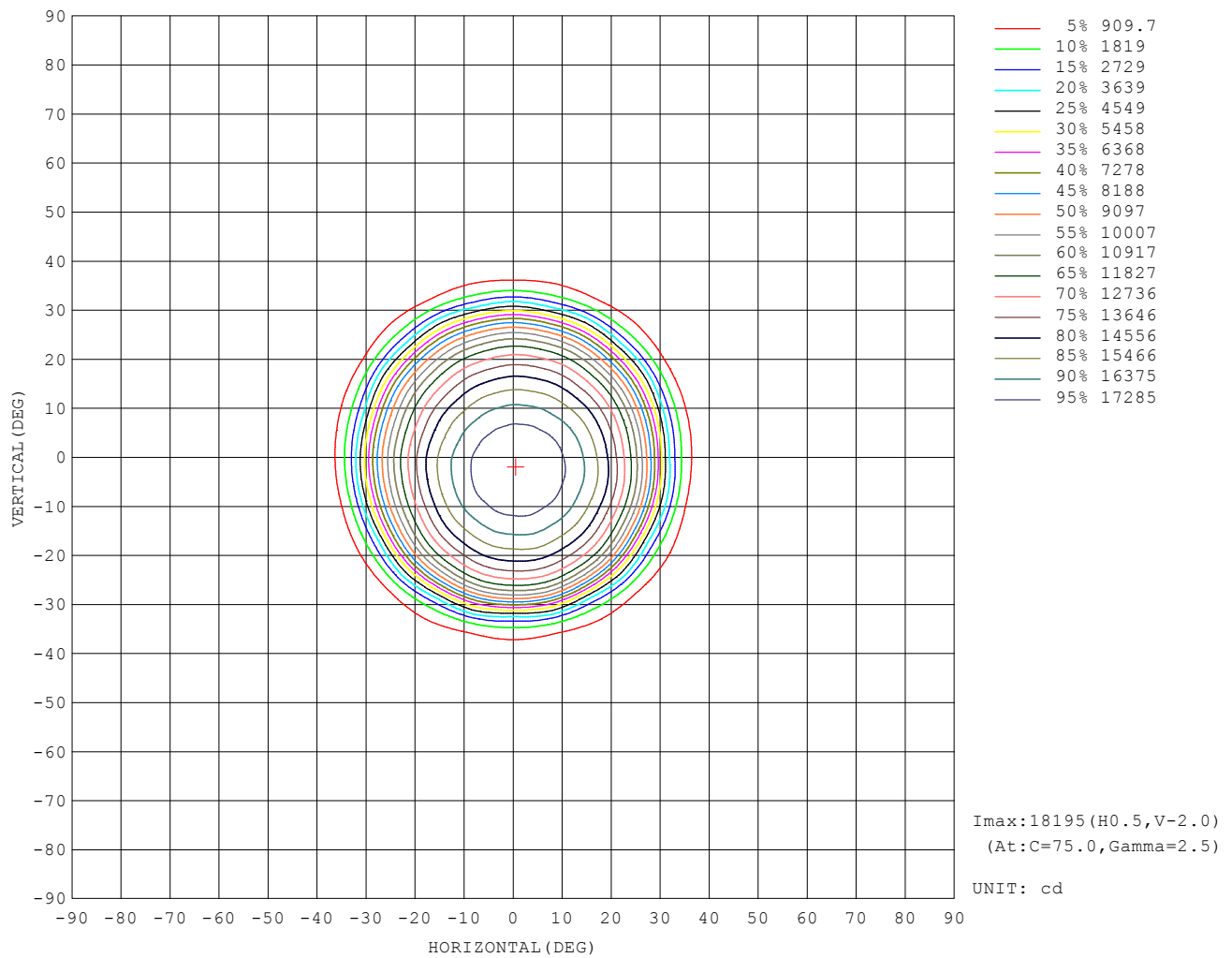
C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-11-05

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



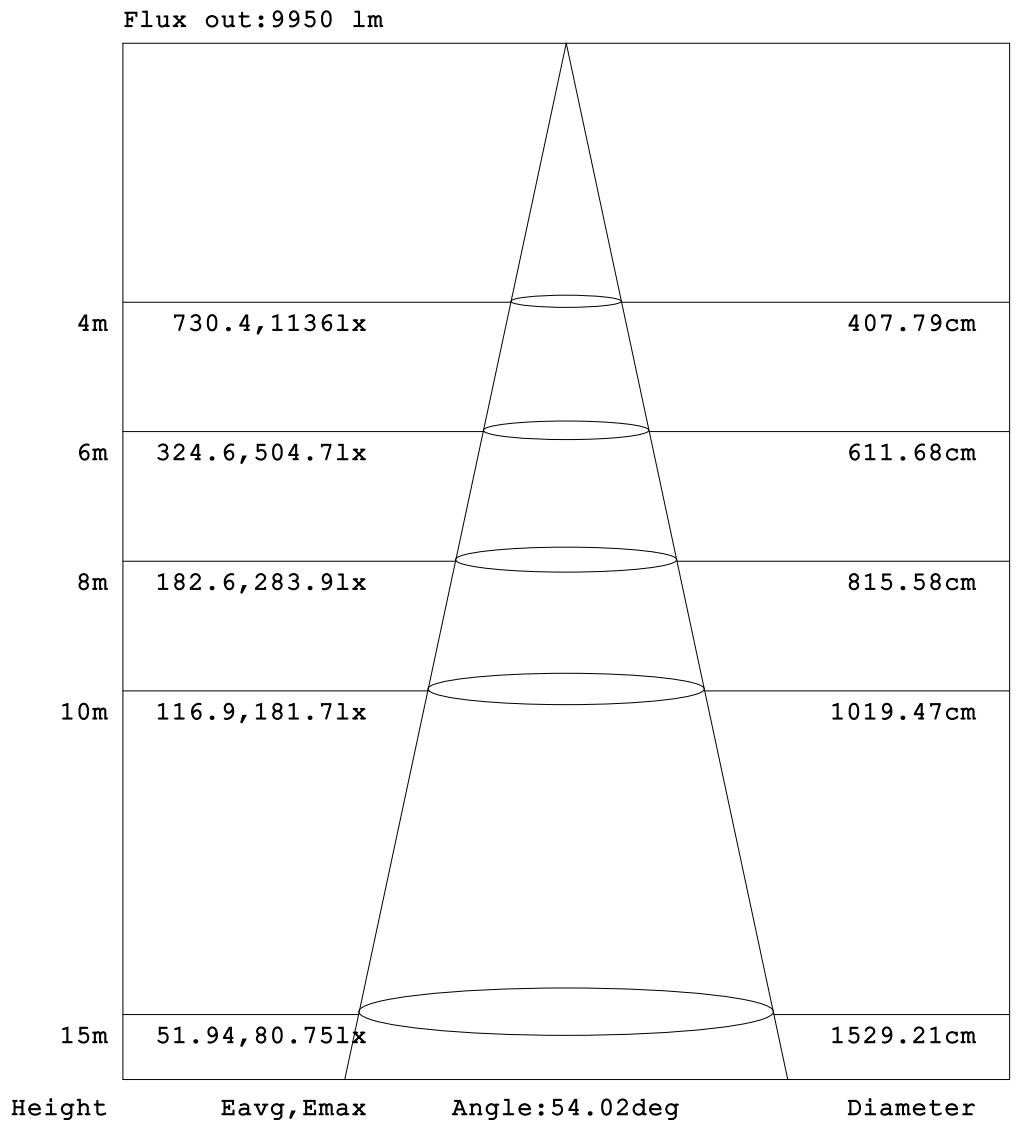
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-11-05

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.

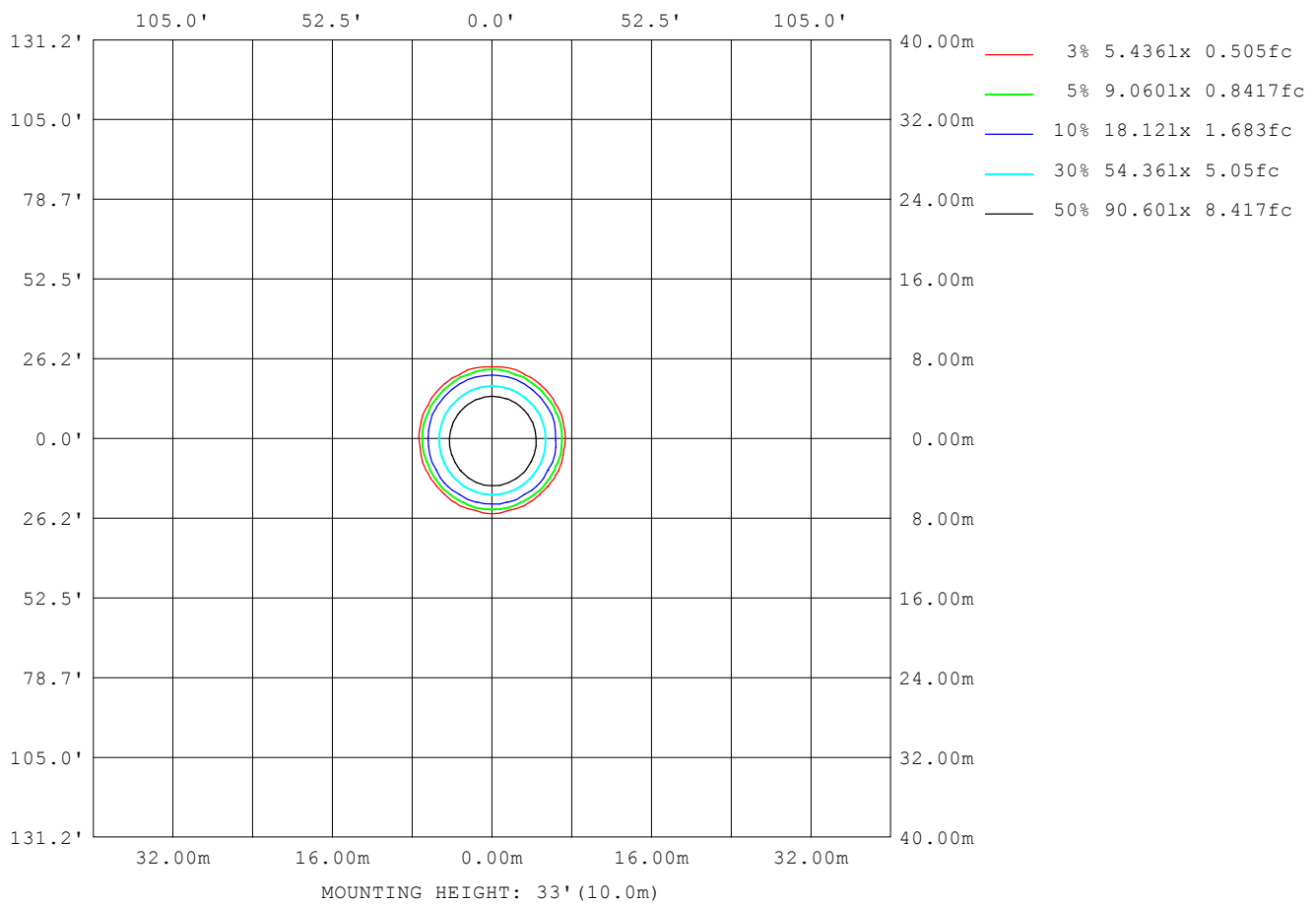
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-05

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:

ISOLUX DIAGRAM



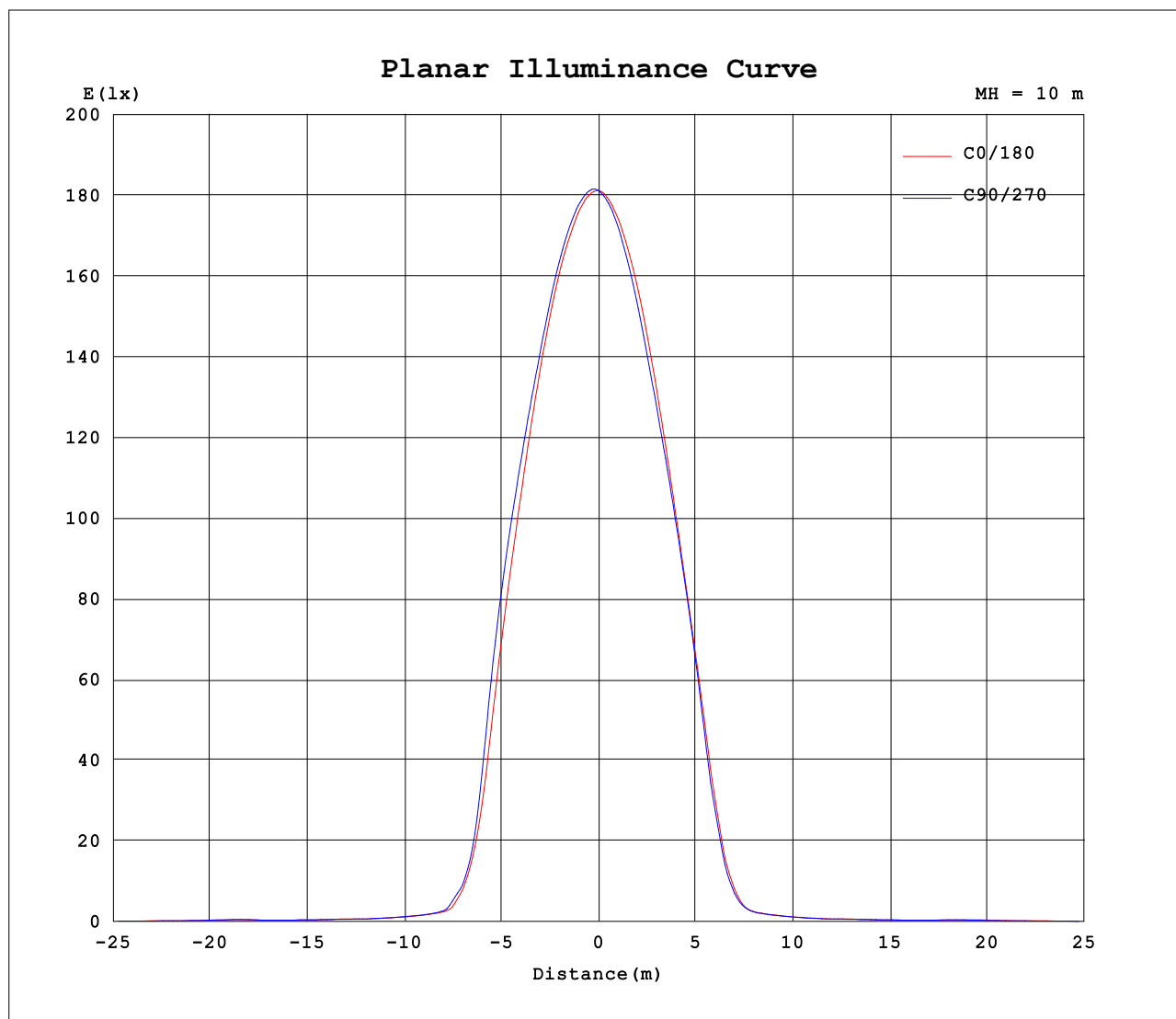
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-11-05

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: