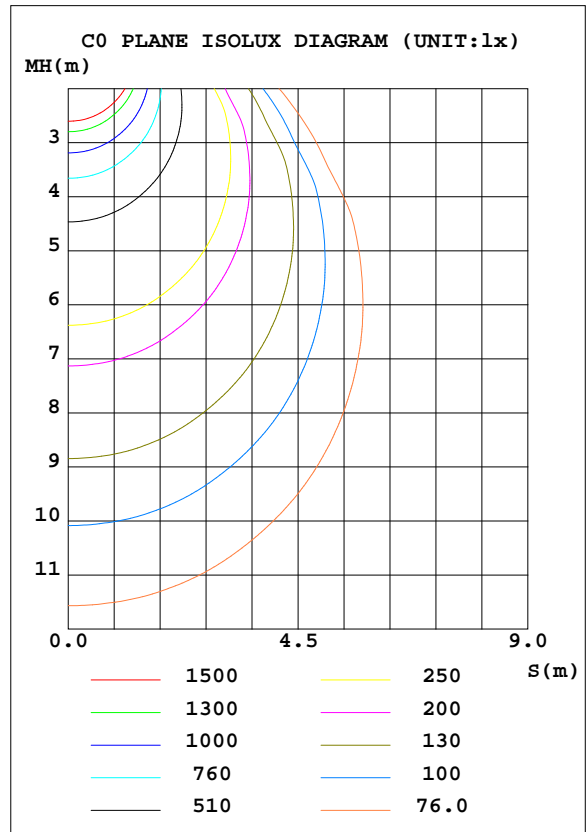
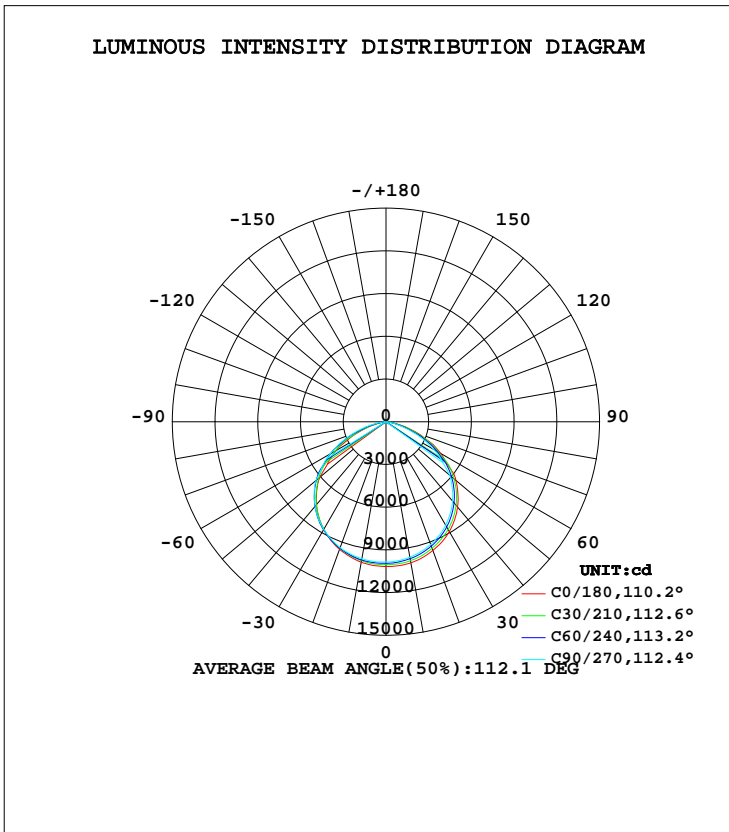


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 140.57 lm/W			
MODEL	F2144-200W	Imax(cd)	10169	S/MH(C0/180)	1.30
NOMINAL POWER(W)	200	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	232	TOTAL FLUX(lm)	27926	η UP, DN(C0-180)	0.8, 47.6
NOMINAL FLUX(lm)	27925.7	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.9, 50.6
LAMPS INSIDE	1	η up(%)	1.7	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	232.0	η down(%)	98.3	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-05-14

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.7312]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Flum, lamp
10	1005	983.6	965.8	954.6	1002	988.5	976.9	967.8	0- 10	940.4	940.4	3.37,3.37
20	961.9	937.9	917.9	904.3	953.8	946.3	941.0	932.0	10- 20	2711	3652	13.1,13.1
30	890.0	862.9	838.6	824.4	873.8	874.8	873.7	867.4	20- 30	4158	7810	28,28
40	783.0	754.8	727.7	711.5	759.2	769.1	775.1	771.8	30- 40	5081	12890	46.2,46.2
50	641.0	611.8	583.9	563.5	608.3	627.4	641.3	642.2	40- 50	5306	18196	65.2,65.2
60	442.2	417.4	383.3	368.4	405.6	432.9	453.5	459.3	50- 60	4635	22831	81.8,81.8
70	240.0	208.9	181.5	159.5	187.1	218.7	250.2	262.0	60- 70	3149	25980	93,93
80	59.52	44.54	31.86	21.37	32.92	45.17	63.70	73.84	70- 80	1280	27260	97.6,97.6
90	4.940	4.632	4.528	4.554	5.257	5.118	5.333	5.889	80- 90	181.0	27441	98.3,98.3
100	5.232	5.269	5.315	5.332	6.108	5.879	5.674	5.583	90-100	56.20	27497	98.5,98.5
110	6.195	6.211	6.290	6.262	7.183	6.847	6.621	6.525	100-110	63.54	27561	98.7,98.7
120	7.187	7.261	7.251	7.248	8.203	7.756	7.558	7.444	110-120	69.39	27630	98.9,98.9
130	8.113	8.243	8.179	8.207	8.970	8.596	8.388	8.272	120-130	70.88	27701	99.2,99.2
140	9.148	9.304	9.180	9.224	9.900	9.505	9.277	9.153	130-140	68.27	27769	99.4,99.4
150	10.33	10.41	10.30	10.21	10.99	10.53	10.32	10.17	140-150	61.77	27831	99.7,99.7
160	11.46	11.33	11.35	11.04	11.94	11.37	11.25	11.03	150-160	50.08	27881	99.8,99.8
170	12.23	12.12	12.01	11.75	12.50	12.03	11.85	11.70	160-170	33.04	27914	100,100
180	12.22	11.95	11.86	11.60	12.36	11.89	11.79	11.61	170-180	11.42	27926	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

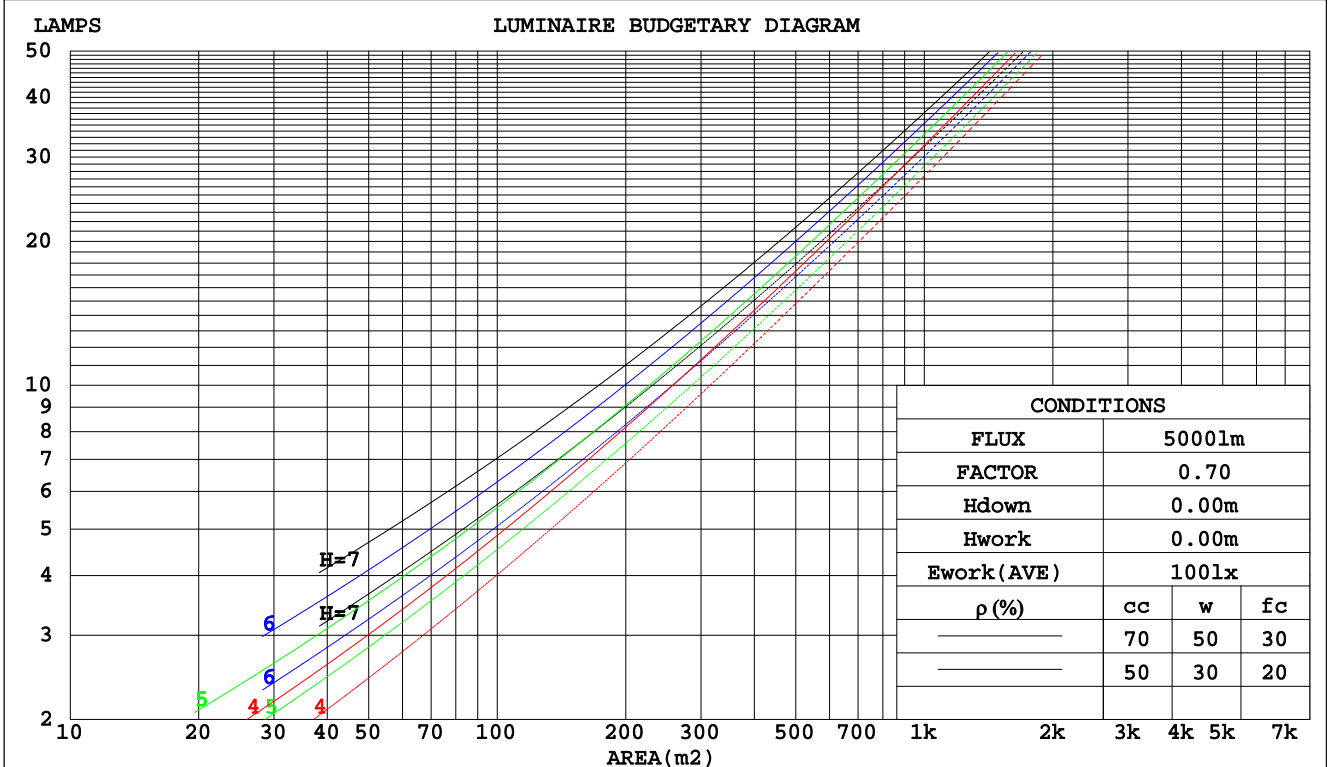
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc																0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	.98
1.0	1.05	1.01	.97	1.02	.99	.96	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.92	.85	.80	.90	.84	.79	.86	.81	.77	.83	.78	.75	.79	.76	.73	.71
3.0	.81	.73	.67	.79	.72	.66	.76	.70	.65	.73	.68	.63	.70	.66	.62	.60
4.0	.72	.63	.57	.70	.62	.56	.68	.61	.55	.65	.59	.54	.63	.58	.54	.51
5.0	.64	.55	.49	.63	.55	.49	.61	.53	.48	.59	.52	.47	.57	.51	.47	.44
6.0	.58	.49	.43	.57	.48	.42	.55	.47	.42	.53	.46	.41	.51	.45	.41	.39
7.0	.52	.44	.38	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.36	.34
8.0	.48	.39	.34	.47	.39	.33	.45	.38	.33	.44	.38	.33	.43	.37	.32	.31
9.0	.44	.36	.30	.43	.35	.30	.42	.35	.30	.41	.34	.30	.40	.34	.29	.27
10.0	.40	.33	.27	.40	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.27	.25



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

WEC AND CCEC

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.283	.161	.051	.276	.157	.050	.262	.150	.048	.249	.144	.046	.237	.137	.044	
2.0	.274	.150	.046	.267	.147	.045	.255	.142	.044	.243	.136	.043	.233	.132	.041	
3.0	.257	.137	.041	.251	.135	.040	.240	.130	.040	.230	.126	.039	.220	.122	.038	
4.0	.240	.125	.037	.234	.123	.036	.225	.119	.036	.216	.116	.035	.207	.112	.034	
5.0	.223	.114	.033	.219	.112	.033	.210	.109	.032	.202	.106	.032	.194	.104	.031	
6.0	.208	.104	.030	.204	.103	.030	.196	.101	.029	.189	.098	.029	.182	.096	.028	
7.0	.194	.096	.027	.191	.095	.027	.184	.093	.027	.177	.091	.026	.171	.089	.026	
8.0	.182	.089	.025	.179	.088	.025	.172	.086	.025	.167	.084	.024	.161	.083	.024	
9.0	.171	.083	.023	.168	.082	.023	.162	.080	.023	.157	.079	.023	.152	.077	.022	
10.0	.161	.077	.021	.158	.077	.021	.153	.075	.021	.148	.074	.021	.144	.072	.021	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.204	.204	.204	.174	.174	.174	.119	.119	.119	.068	.068	.068	.022	.022	.022	
1.0	.192	.170	.150	.164	.146	.129	.112	.100	.089	.065	.058	.052	.021	.019	.017	
2.0	.183	.145	.114	.157	.125	.098	.108	.087	.069	.062	.050	.040	.020	.016	.013	
3.0	.175	.128	.090	.150	.110	.078	.103	.077	.054	.060	.045	.032	.019	.015	.011	
4.0	.168	.114	.073	.144	.099	.064	.099	.069	.045	.057	.040	.027	.018	.013	.009	
5.0	.161	.104	.062	.138	.090	.054	.095	.063	.038	.055	.037	.023	.018	.012	.007	
6.0	.154	.096	.054	.132	.083	.047	.091	.058	.033	.053	.034	.020	.017	.011	.006	
7.0	.147	.089	.047	.127	.077	.041	.088	.054	.029	.051	.032	.017	.016	.010	.006	
8.0	.141	.083	.043	.122	.072	.037	.084	.050	.026	.049	.030	.016	.016	.010	.005	
9.0	.135	.078	.039	.117	.068	.034	.081	.048	.024	.047	.028	.015	.015	.009	.005	
10.0	.130	.074	.036	.112	.064	.032	.078	.045	.023	.045	.027	.013	.015	.009	.004	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

Uncorrected UGR Table

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm										
NAME: F2144-200W					TYPE:			WEIGHT:		
DIM.:					SPEC.:			SERIAL No.:		
MFR.:					SUR.:0.2*0.22			PROTECTION ANGLE:		
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	31.5	33.0	31.8	33.2	33.5	31.1	32.5	31.4	32.8	33.0
3H	32.7	34.1	33.0	34.3	34.6	32.0	33.3	32.3	33.6	33.9
4H	33.0	34.3	33.4	34.6	34.9	32.2	33.5	32.5	33.7	34.0
6H	33.1	34.3	33.5	34.6	35.0	32.2	33.4	32.5	33.7	34.0
8H	33.1	34.3	33.5	34.6	34.9	32.2	33.3	32.5	33.6	33.9
12H	33.1	34.2	33.5	34.5	34.9	32.1	33.2	32.5	33.5	33.9
4H 2H	32.0	33.3	32.3	33.6	33.8	31.6	32.9	32.0	33.2	33.5
3H	33.3	34.4	33.7	34.7	35.1	32.7	33.8	33.1	34.1	34.4
4H	33.7	34.7	34.1	35.0	35.4	32.9	33.9	33.3	34.3	34.6
6H	33.9	34.7	34.3	35.1	35.5	33.0	33.9	33.4	34.2	34.6
8H	33.9	34.7	34.3	35.1	35.5	32.9	33.8	33.4	34.2	34.6
12H	33.9	34.6	34.3	35.0	35.5	32.9	33.7	33.4	34.1	34.5
8H 4H	33.7	34.6	34.2	35.0	35.4	33.0	33.8	33.5	34.2	34.7
6H	34.0	34.6	34.4	35.1	35.5	33.1	33.8	33.6	34.2	34.7
8H	34.0	34.6	34.5	35.1	35.5	33.1	33.7	33.6	34.1	34.6
12H	34.0	34.5	34.5	35.0	35.5	33.1	33.6	33.6	34.1	34.6
12H 4H	33.7	34.5	34.2	34.9	35.3	33.0	33.7	33.4	34.2	34.6
6H	33.9	34.5	34.4	35.0	35.5	33.1	33.7	33.6	34.1	34.6
8H	34.0	34.5	34.5	35.0	35.5	33.1	33.6	33.6	34.1	34.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.4				
1.5H	+ 0.3 / - 0.5					+ 0.3 / - 0.6				
2.0H	+ 0.5 / - 0.4					+ 0.4 / - 0.6				

CIE Pub.117 Corrected 27926 lm Total Lamp Luminous Flux.(8log(F/F0) = 11.6)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:

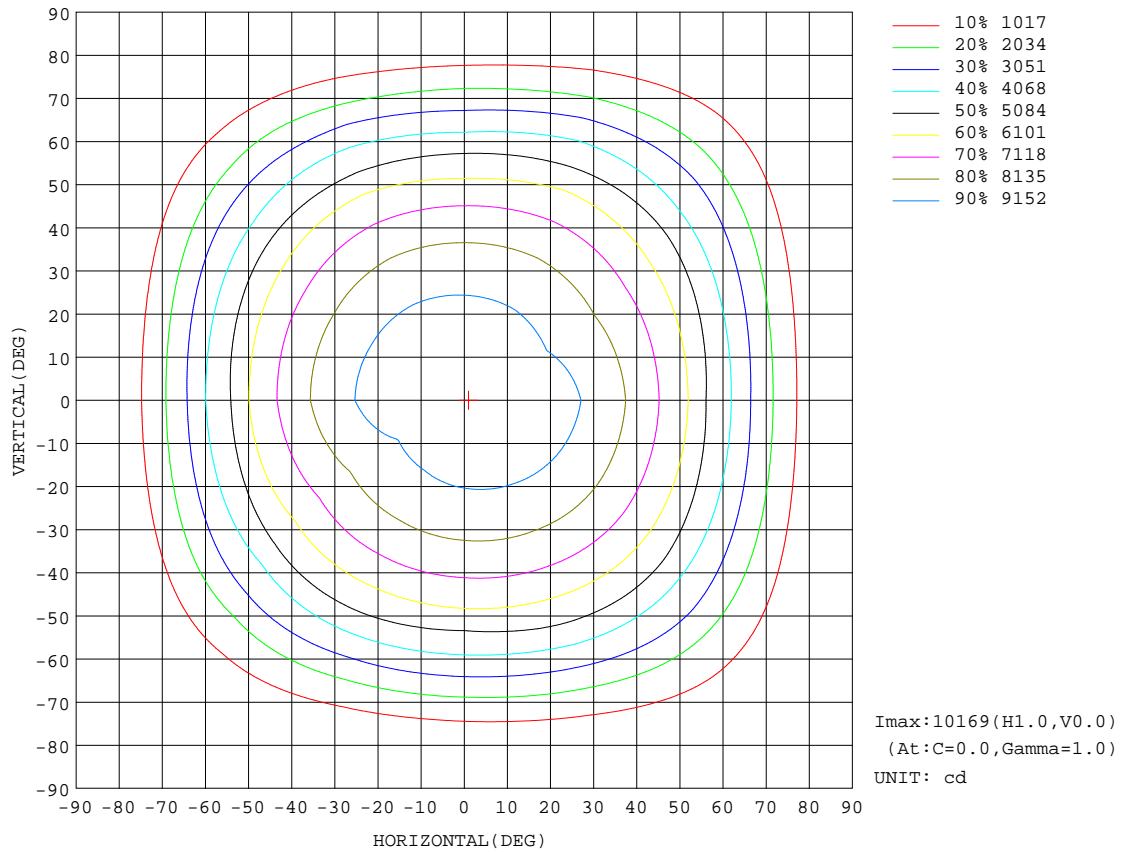
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	47	40	57	46	40	56	46	39	33
0.80	68	57	50	67	57	50	65	56	49	42
1.00	77	66	59	76	66	59	73	67	58	51
1.25	84	74	67	83	73	67	80	72	66	59
1.50	89	80	73	88	79	73	84	77	71	64
2.00	96	88	82	94	87	81	91	84	79	71
2.50	100	92	87	98	91	86	94	88	84	75
3.00	103	97	91	101	95	90	97	92	88	79
4.00	107	102	97	104	100	96	100	96	93	84
5.00	109	105	101	107	103	99	102	99	96	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:

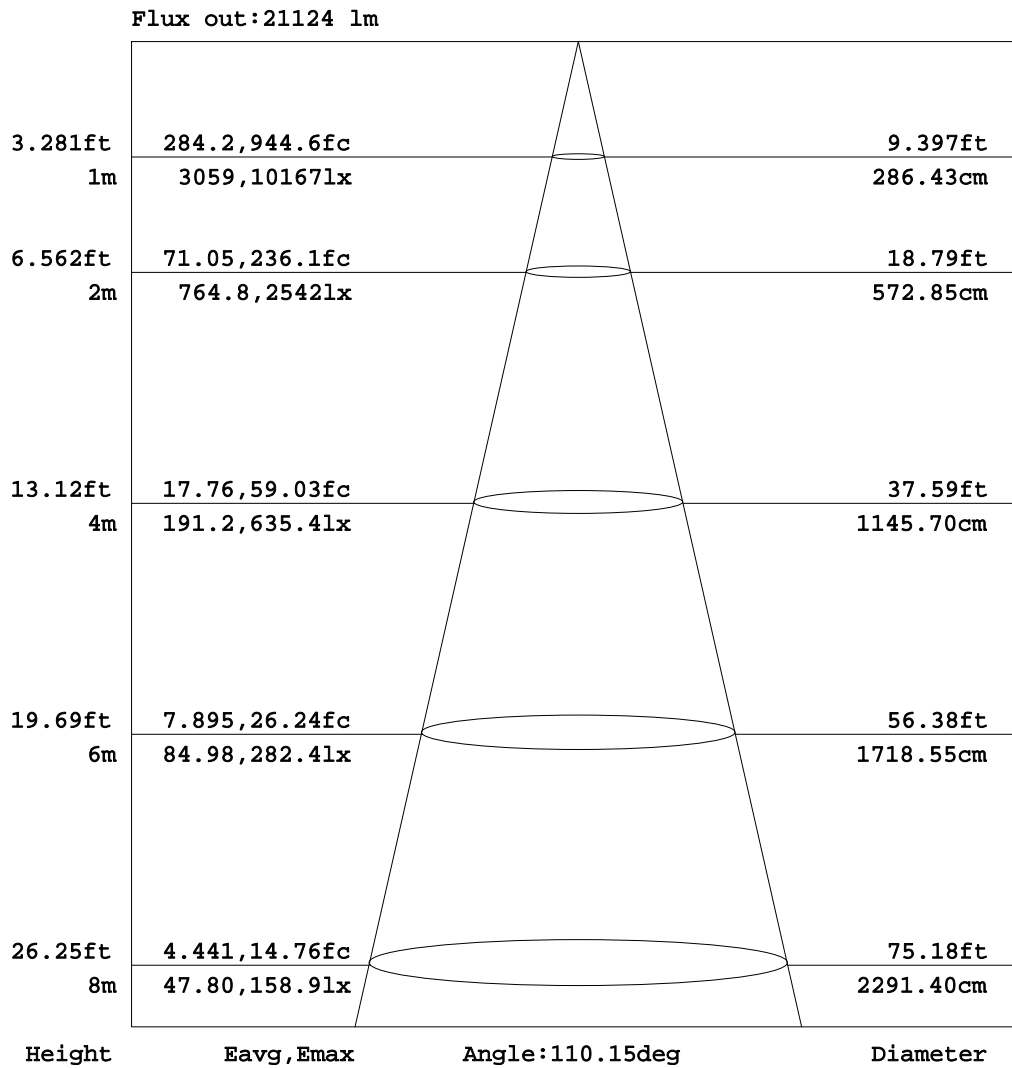


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

AAI Figure

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:



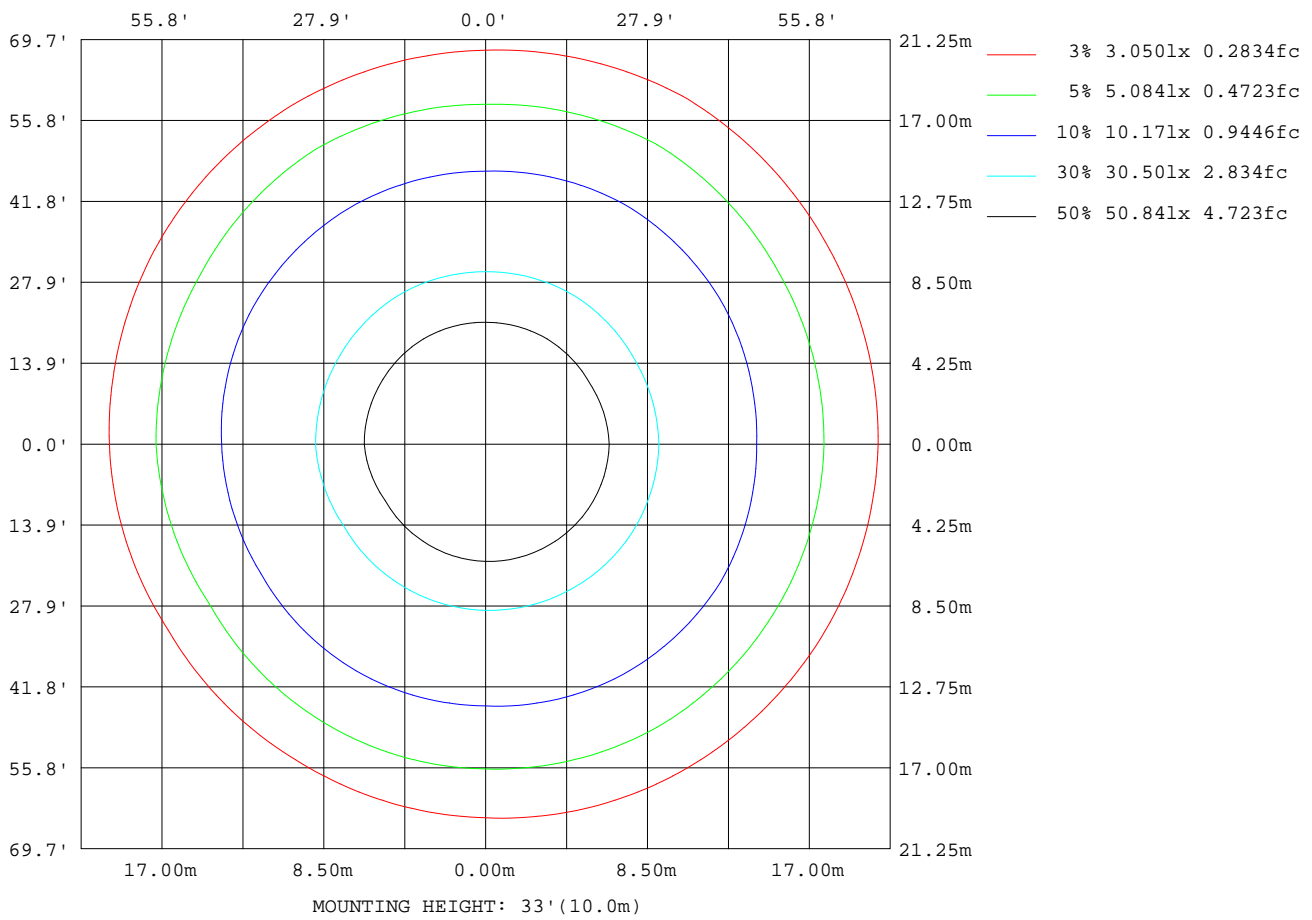
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

ISOLUX DIAGRAM

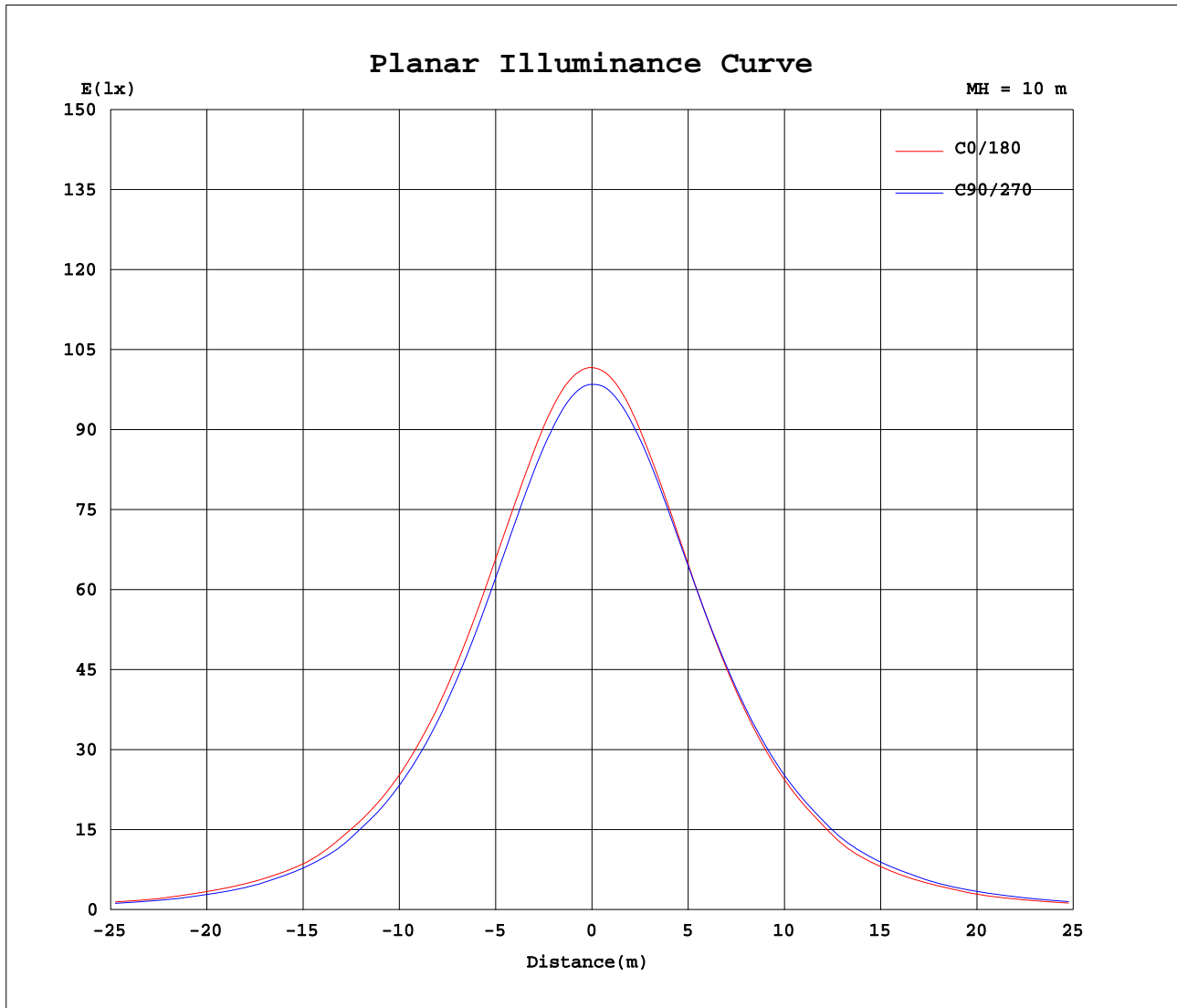
Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7312]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:232.0V I:0.8741A P:198.7W PF:0.9794 Lamp Flux:27925.7x1 lm		
NAME: F2144-200W	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:0.2*0.22	PROTECTION ANGLE:

Table--1

UNIT: x10cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	1017	1004	994	985	978	971	1017	1004	994	985	978	971							
5	1015	1001	989	980	972	966	1013	1002	994	985	978	970							
10	1005	991	976	966	958	952	1002	991	986	977	972	964							
15	988	972	956	946	936	930	981	973	970	963	957	949							
20	962	946	930	918	907	902	954	947	946	941	937	927							
25	931	913	895	882	871	866	918	914	915	911	909	898							
30	890	873	853	839	827	822	874	873	877	874	872	863							
35	840	824	802	787	775	769	821	821	831	829	830	819							
40	783	766	744	728	714	709	759	762	776	775	778	766							
45	714	700	676	659	644	638	689	693	712	713	718	706							
50	641	623	600	584	566	561	608	616	638	641	650	635							
55	532	542	517	481	469	456	495	526	543	544	571	559							
60	442	424	411	383	374	363	406	415	451	453	470	449							
65	344	333	306	283	272	257	292	321	342	355	372	359							
70	240	223	195	181	163	156	187	202	235	250	272	252							
75	141	126	105	93.9	73.4	73.2	99.1	107	135	150	163	154							
80	59.5	51.8	37.3	31.9	21.7	21.1	32.9	37.3	53.0	63.7	76.3	71.4							
85	16.4	13.2	8.34	6.58	5.42	5.28	7.18	7.63	12.2	15.9	21.9	21.3							
90	4.94	4.74	4.52	4.53	4.56	4.55	5.26	5.13	5.10	5.33	5.79	5.99							
95	4.84	4.85	4.88	4.90	4.93	4.91	5.64	5.50	5.36	5.25	5.18	5.16							
100	5.23	5.25	5.29	5.32	5.35	5.32	6.11	5.95	5.81	5.67	5.59	5.57							
105	5.69	5.70	5.74	5.78	5.80	5.76	6.67	6.44	6.29	6.15	6.06	6.02							
110	6.19	6.19	6.23	6.29	6.28	6.24	7.18	6.93	6.76	6.62	6.54	6.51							
115	6.74	6.77	6.75	6.81	6.78	6.75	7.71	7.40	7.23	7.10	7.02	6.98							
120	7.19	7.27	7.25	7.25	7.27	7.22	8.20	7.84	7.67	7.56	7.47	7.42							
125	7.64	7.75	7.74	7.69	7.76	7.68	8.56	8.25	8.10	7.98	7.89	7.84							
130	8.11	8.26	8.23	8.18	8.24	8.17	8.97	8.66	8.53	8.39	8.29	8.25							
135	8.62	8.81	8.73	8.66	8.74	8.69	9.41	9.09	8.97	8.81	8.72	8.66							
140	9.15	9.36	9.25	9.18	9.26	9.19	9.90	9.55	9.46	9.28	9.18	9.12							
145	9.72	9.95	9.79	9.74	9.79	9.72	10.4	10.1	9.98	9.79	9.70	9.64							
150	10.3	10.5	10.3	10.3	10.3	10.2	11.0	10.6	10.5	10.3	10.2	10.1							
155	10.9	11.0	10.7	10.8	10.7	10.5	11.5	11.0	11.0	10.8	10.6	10.6							
160	11.5	11.6	11.1	11.4	11.2	10.9	11.9	11.3	11.4	11.3	11.0	11.0							
165	11.9	12.0	11.6	11.8	11.5	11.4	12.3	11.8	11.8	11.7	11.5	11.4							
170	12.2	12.3	11.9	12.0	11.8	11.7	12.5	12.0	12.0	11.9	11.7	11.7							
175	12.4	12.3	11.9	12.0	11.7	11.7	12.4	11.9	11.9	11.8	11.6	11.6							
180	12.2	12.1	11.8	11.9	11.6	11.6	12.4	11.9	11.9	11.8	11.7	11.6							

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-05-14

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7312]
 Remarks: