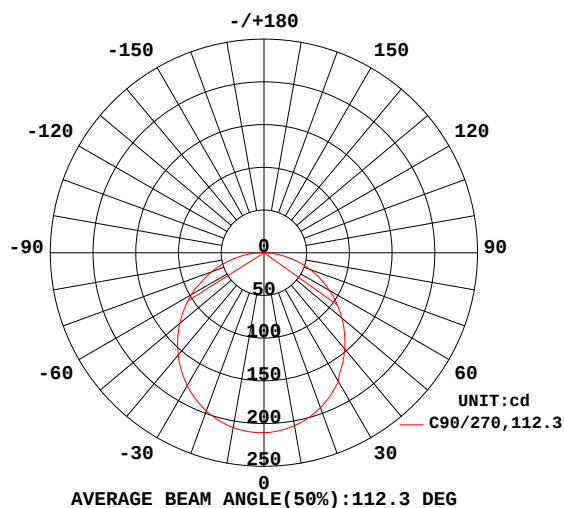


LUMINAIRE PHOTOMETRIC TEST REPORT

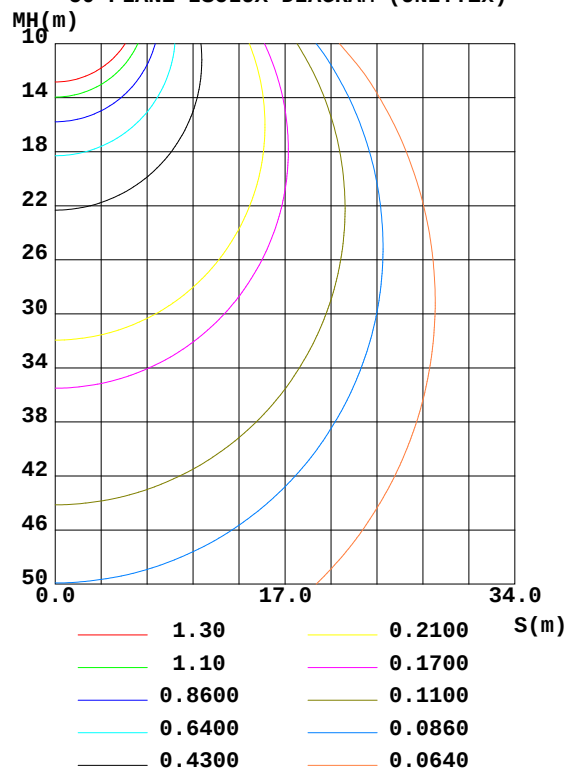
NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3	TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 55.31 lm/W			
MODEL	2835	I _{max} (cd)	214.2	S/MH(C0/180)	1.26
NOMINAL POWER(W)	12	LOR(%)	106.6	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	629.92	η UP, DN(C0-180)	0.8, 51.4
NOMINAL FLUX(lm)	590.88	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.8, 53.7
LAMPS INSIDE	1	η up(%)	1.6	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	105.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT: lx)



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Dillon
 Test Date: 22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 6.950m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	210.2	207.8	205.5	207.1	210.7	209.7	207.8	208.6	0- 10	20.07	20.07	3.19,3.4
20	198.8	195.9	193.0	195.1	199.7	199.4	197.4	197.8	10- 20	57.47	77.54	12.3,13.1
30	180.5	177.5	174.0	176.5	181.6	181.9	179.7	180.3	20- 30	87.03	164.6	26.1,27.9
40	156.6	152.4	147.0	151.1	155.4	157.4	156.4	155.7	30- 40	104.4	268.9	42.7,45.5
50	128.2	124.4	118.9	123.2	127.8	129.7	128.8	128.2	40- 50	108.4	377.3	59.9,63.9
60	97.09	94.04	88.80	92.99	97.41	99.24	98.28	97.67	50- 60	99.46	476.8	75.7,80.7
70	63.02	61.49	57.57	60.79	65.36	66.50	65.10	64.97	60- 70	78.60	555.4	88.2,94
80	29.19	28.32	25.24	27.97	31.63	33.08	32.17	31.63	70- 80	49.30	604.7	96,102
90	1.771	2.637	1.037	2.736	3.091	3.901	3.562	3.021	80- 90	15.95	620.7	98.5,105
100	1.532	2.087	0.3706	2.131	2.991	2.427	1.311	1.714	90-100	2.316	623.0	98.9,105
110	1.599	1.848	0.2208	1.820	2.776	1.936	1.118	1.415	100-110	1.873	624.8	99.2,106
120	1.695	1.664	0.1218	1.591	2.499	1.369	0.1775	0.9806	110-120	1.488	626.3	99.4,106
130	1.681	1.571	0.2378	1.470	2.207	1.299	0.1697	1.022	120-130	1.144	627.5	99.6,106
140	1.574	1.433	0.3624	1.332	1.879	1.194	0.2943	0.9792	130-140	0.9397	628.4	99.8,106
150	1.404	1.268	0.5068	1.174	1.559	1.064	0.4724	0.8533	140-150	0.6979	629.1	99.9,106
160	1.248	1.111	0.6341	1.003	1.253	0.9454	0.6112	0.8323	150-160	0.4676	629.6	99.9,107
170	1.081	0.9736	0.7303	0.8576	0.9706	0.8505	0.7273	0.8477	160-170	0.2616	629.8	100,107
180	0.8604	0.8321	0.8264	0.7967	0.8264	0.8335	0.8095	0.8024	170-180	0.0812	629.9	100,107
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 334.33 lm

%lum = 53.1%

%lamp = 56.6%

Conical surface Flux(120deg): 476.8 lm

%lum = 75.7%

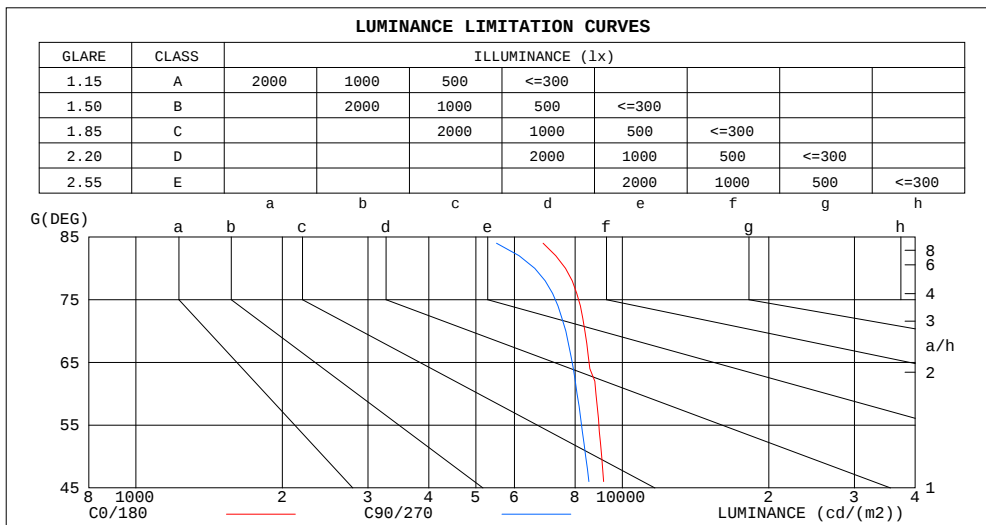
%lamp = 80.7%

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:6.950m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm
MFR.: CLEAR	SUR.: 22*1000mm
	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	8240	6611
80	7640	6607
75	8731	7856
70	8376	7651
65	8897	8228
60	8827	8073
55	9191	8480
50	9067	8407
45	9365	8749

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm
MFR.: CLEAR	SUR.: 22*1000mm
	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.343	.195	.062	.335	.191	.061	.320	.183	.059	.306	.176	.057	.293	.170	.055		
2.0	.319	.175	.054	.312	.172	.053	.298	.166	.052	.286	.160	.050	.275	.155	.049		
3.0	.293	.156	.047	.287	.154	.046	.275	.149	.045	.264	.145	.044	.254	.141	.044		
4.0	.269	.140	.041	.264	.138	.041	.253	.134	.040	.244	.131	.039	.234	.127	.039		
5.0	.248	.127	.037	.243	.125	.036	.234	.122	.036	.225	.119	.035	.217	.116	.035		
6.0	.230	.115	.033	.225	.114	.033	.217	.111	.032	.209	.109	.032	.202	.106	.032		
7.0	.214	.106	.030	.210	.104	.030	.202	.102	.029	.195	.100	.029	.188	.098	.029		
8.0	.199	.097	.027	.196	.096	.027	.189	.094	.027	.183	.092	.027	.177	.091	.026		
9.0	.186	.090	.025	.183	.089	.025	.177	.088	.025	.171	.086	.025	.166	.084	.024		
10.0	.175	.084	.023	.172	.083	.023	.167	.082	.023	.162	.080	.023	.157	.079	.023		

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fC}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients(CCEC)												
0.0	.215	.215	.215	.184	.184	.184	.125	.125	.125	.072	.072	.072	.023	.023	.023	
1.0	.205	.178	.154	.176	.153	.133	.120	.105	.092	.069	.061	.053	.022	.020	.017	
2.0	.197	.153	.116	.169	.131	.100	.116	.091	.070	.067	.053	.041	.021	.017	.013	
3.0	.189	.134	.091	.162	.116	.079	.111	.080	.055	.064	.047	.032	.021	.015	.011	
4.0	.180	.120	.074	.155	.104	.064	.106	.072	.045	.062	.042	.027	.020	.014	.009	
5.0	.172	.109	.062	.148	.094	.054	.102	.066	.038	.059	.039	.023	.019	.013	.007	
6.0	.165	.100	.054	.142	.087	.047	.098	.061	.033	.057	.036	.020	.018	.012	.007	
7.0	.157	.093	.048	.135	.080	.041	.094	.056	.029	.054	.033	.017	.018	.011	.006	
8.0	.150	.087	.043	.129	.075	.037	.090	.053	.026	.052	.031	.016	.017	.010	.005	
9.0	.144	.081	.039	.124	.071	.034	.086	.050	.024	.050	.029	.014	.016	.010	.005	
10.0	.138	.077	.036	.119	.067	.032	.082	.047	.022	.048	.028	.013	.016	.009	.004	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3TYPE:						WEIGHT: 0.590kg/m					
SPEC.:						DIM.: 22*22mm		SERIAL No.:			
MFR.: CLEAR						SUR.: 22*1000mm		Shielding 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		22.2	23.7	22.5	23.9	24.1	21.9	23.4	22.2	23.7	23.9
3H		23.8	25.2	24.1	25.5	25.8	23.5	24.9	23.8	25.2	25.4
4H		24.5	25.9	24.9	26.1	26.4	24.1	25.5	24.5	25.8	26.1
6H		25.1	26.3	25.4	26.6	26.9	24.6	25.9	25.0	26.2	26.5
8H		25.3	26.5	25.6	26.8	27.1	24.8	26.0	25.1	26.3	26.6
12H		25.4	26.5	25.7	26.9	27.2	24.8	26.0	25.2	26.3	26.7
4H 2H		22.8	24.1	23.1	24.4	24.7	22.6	23.9	22.9	24.2	24.5
3H		24.6	25.8	25.0	26.1	26.5	24.4	25.5	24.7	25.9	26.2
4H		25.5	26.6	25.9	26.9	27.3	25.2	26.2	25.6	26.6	26.9
6H		26.2	27.1	26.6	27.5	27.9	25.8	26.7	26.2	27.1	27.5
8H		26.4	27.3	26.8	27.7	28.1	26.0	26.9	26.4	27.2	27.7
12H		26.6	27.4	27.0	27.8	28.2	26.1	26.9	26.5	27.3	27.7
8H 4H		25.8	26.7	26.2	27.1	27.5	25.5	26.4	25.9	26.8	27.2
6H		26.6	27.4	27.1	27.8	28.3	26.3	27.0	26.7	27.4	27.9
8H		27.0	27.6	27.4	28.1	28.6	26.6	27.2	27.0	27.7	28.2
12H		27.2	27.8	27.7	28.2	28.7	26.7	27.3	27.2	27.8	28.3
12H 4H		25.8	26.6	26.2	27.0	27.5	25.5	26.3	26.0	26.8	27.2
6H		26.7	27.4	27.2	27.8	28.3	26.4	27.0	26.8	27.5	28.0
8H		27.1	27.6	27.6	28.1	28.6	26.7	27.3	27.2	27.7	28.2
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H		+ 0.1 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.1 / - 0.3					+ 0.1 / - 0.4				

CIE Pub.117, 590.9 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.8)
Area: 0.022 m2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3	TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

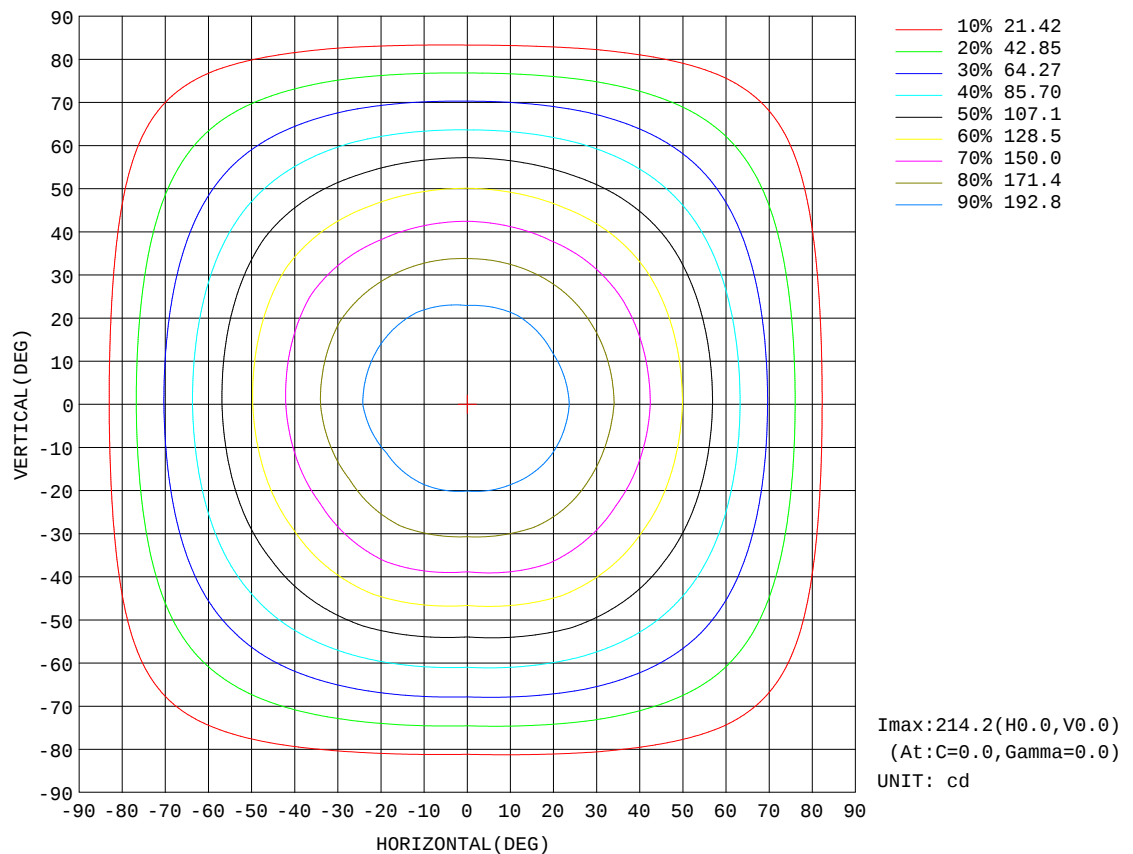
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	60	48	40	59	47	40	58	47	40	33
0.80	71	58	50	70	58	50	68	57	49	42
1.00	80	67	59	78	67	59	76	68	59	51
1.25	87	76	68	85	75	67	82	73	66	58
1.50	92	82	74	91	81	73	87	79	72	64
2.00	100	90	83	98	89	82	94	86	81	72
2.50	104	96	89	102	94	88	97	91	86	76
3.00	108	100	94	105	98	93	101	95	90	81
4.00	112	106	101	110	104	99	105	100	96	86
5.00	115	109	105	112	107	103	107	103	100	89
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:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm
MFR.: CLEAR	SUR.: 22*1000mm
	SERIAL No.:
	Shielding Angle:

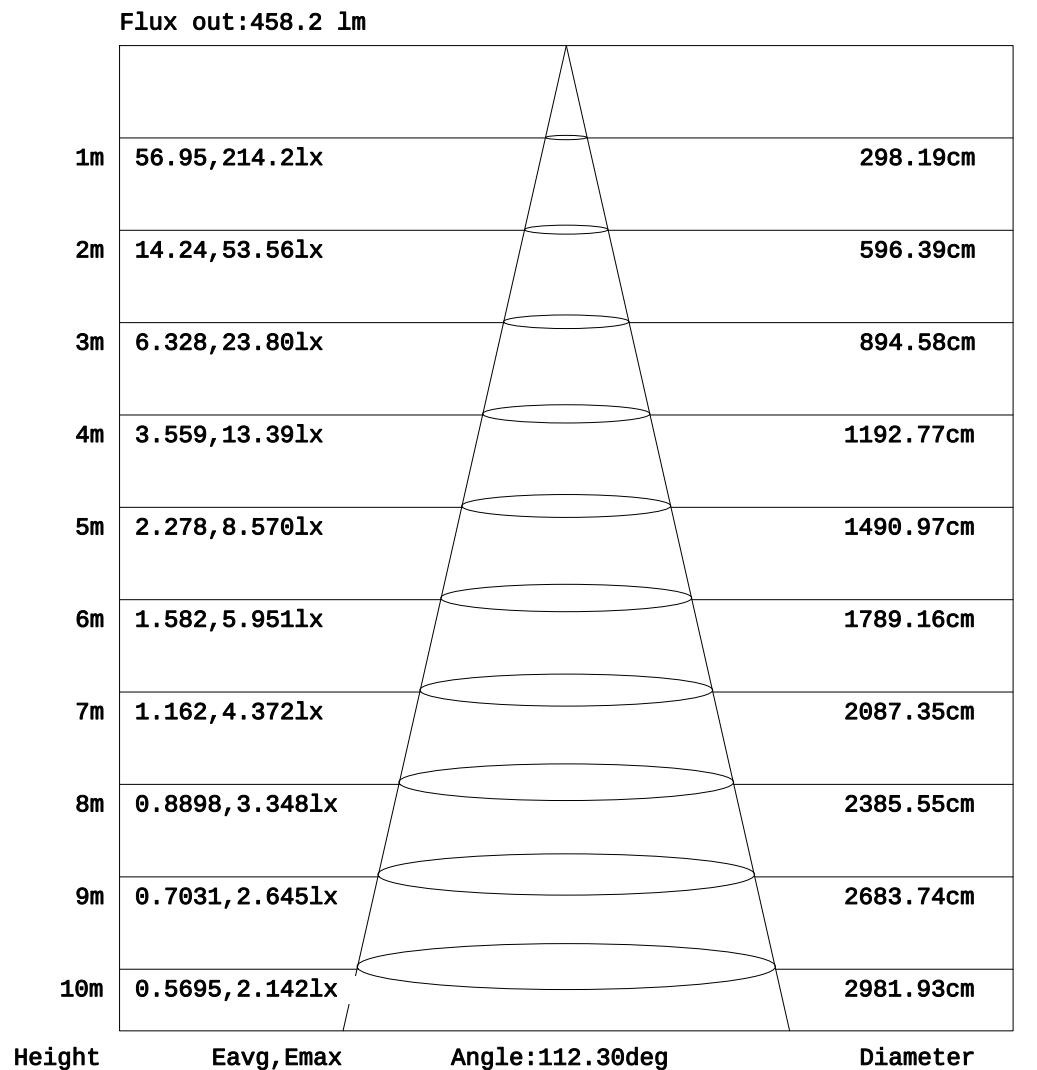


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Dillon
Test Date: 22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 6.950m [K=1.0000]
Remarks:

AAI Figure

NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3TYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

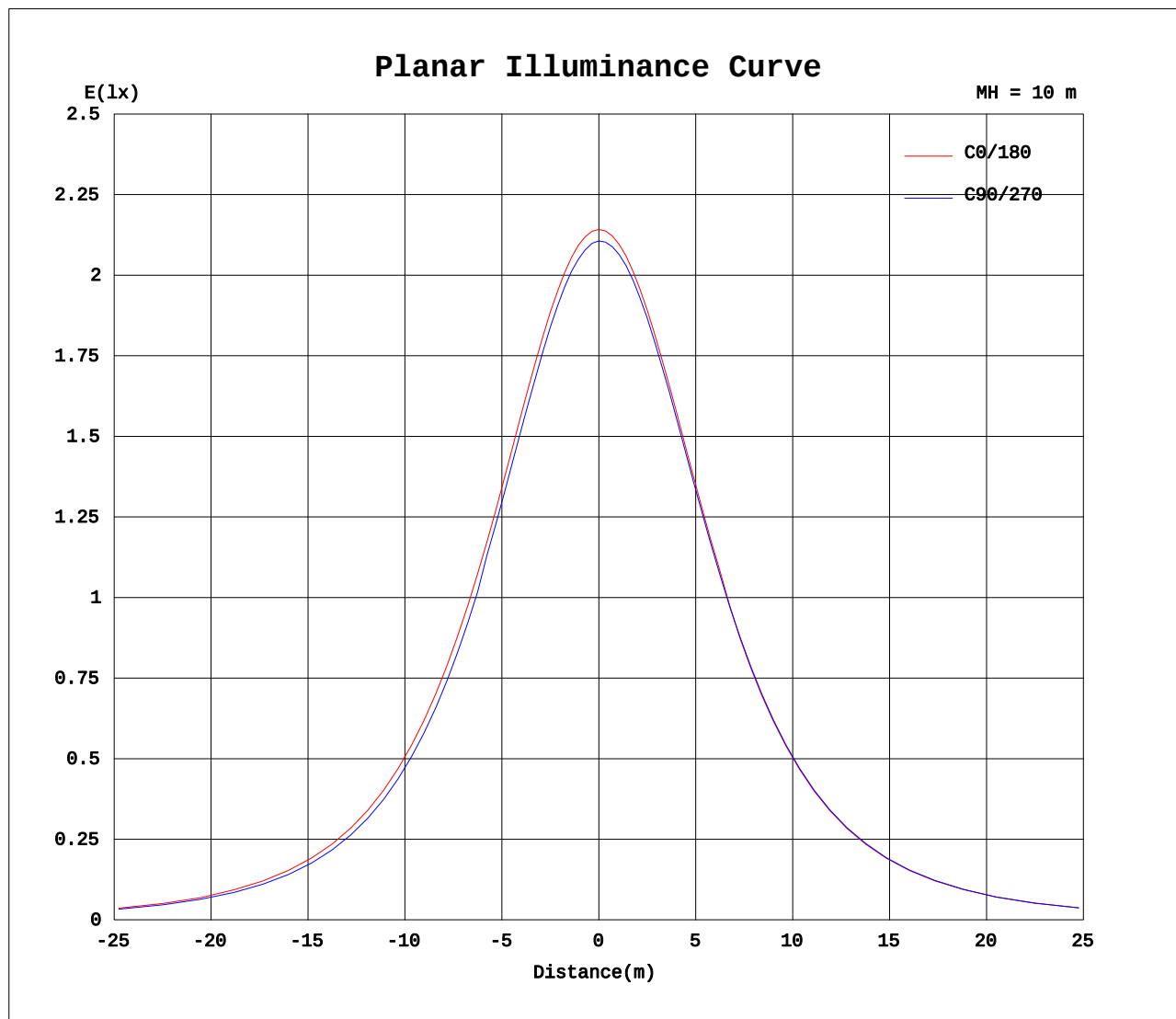


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:6.950m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Dillon
Test Date: 22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 6.950m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: C-SFR-F2222S12-HB-24CC-57K-WM-84-80-12W-83.3	TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	214	213	212	211	212	212	214	213	212	211	212	212						
5	214	213	211	209	211	211	214	213	212	210	212	211						
10	210	209	207	206	207	207	211	210	209	208	209	208						
15	207	205	203	201	203	203	207	207	206	204	205	205						
20	199	197	195	193	195	196	200	200	199	197	198	197						
25	192	191	188	186	188	189	193	193	193	191	192	191						
30	180	179	176	174	176	177	182	182	182	180	181	180						
35	171	167	167	162	166	166	171	173	172	171	171	171						
40	157	152	152	147	151	151	155	159	156	156	155	156						
45	146	142	141	136	140	140	145	148	146	146	144	146						
50	128	125	124	119	123	123	128	131	129	129	128	129						
55	116	113	112	107	111	111	116	119	117	117	116	117						
60	97.1	94.2	93.9	88.8	92.7	93.3	97.4	100	98.4	98.3	97.3	98.0						
65	82.7	81.6	79.9	76.5	78.8	80.9	84.8	85.7	85.8	84.2	84.7	83.8						
70	63.0	62.3	60.7	57.6	59.7	61.9	65.4	66.4	66.6	65.1	65.5	64.5						
75	49.7	49.1	47.7	44.7	46.9	48.9	52.1	53.2	53.4	52.0	52.3	51.2						
80	29.2	29.0	27.7	25.2	27.0	28.9	31.6	32.9	33.3	32.2	32.4	30.9						
85	15.8	15.8	14.8	12.7	14.2	15.9	18.2	19.5	20.0	19.1	19.0	17.7						
90	1.77	2.56	2.72	1.04	2.43	3.04	3.09	3.72	4.08	3.56	3.56	2.48						
95	1.69	2.30	2.26	0.52	1.94	2.76	3.06	2.92	2.22	1.49	1.88	1.80						
100	1.53	2.12	2.06	0.37	1.69	2.57	2.99	2.80	2.05	1.31	1.73	1.70						
105	1.51	2.05	1.91	0.32	1.57	2.46	2.91	2.66	1.94	1.23	1.68	1.67						
110	1.60	1.95	1.75	0.22	1.40	2.24	2.78	2.07	1.80	1.12	1.62	1.21						
115	1.65	1.94	1.65	0.21	1.30	2.17	2.69	2.01	1.61	1.06	1.43	1.23						
120	1.70	1.93	1.40	0.12	1.12	2.07	2.50	1.93	0.81	0.18	0.68	1.28						
125	1.69	1.88	1.35	0.13	1.08	2.00	2.39	1.85	0.81	0.10	0.72	1.29						
130	1.68	1.82	1.32	0.24	1.06	1.88	2.21	1.75	0.85	0.17	0.77	1.28						
135	1.65	1.76	1.28	0.28	1.06	1.79	2.09	1.67	0.84	0.21	0.76	1.29						
140	1.57	1.64	1.23	0.36	1.02	1.64	1.88	1.55	0.84	0.29	0.69	1.27						
145	1.51	1.55	1.18	0.43	0.98	1.53	1.78	1.45	0.84	0.33	0.61	1.22						
150	1.40	1.43	1.11	0.51	0.97	1.38	1.56	1.30	0.82	0.47	0.54	1.17						
155	1.34	1.34	1.07	0.55	0.95	1.29	1.44	1.21	0.84	0.52	0.53	1.15						
160	1.25	1.23	1.00	0.63	0.89	1.12	1.25	1.08	0.81	0.61	0.56	1.10						
165	1.15	1.15	0.95	0.67	0.86	1.03	1.13	1.00	0.79	0.65	0.61	1.06						
170	1.08	1.04	0.91	0.73	0.80	0.92	0.97	0.88	0.82	0.73	0.69	1.00						
175	0.99	1.01	0.86	0.77	0.76	0.85	0.87	0.83	0.77	0.76	0.71	0.96						
180	0.86	0.83	0.83	0.83	0.77	0.83	0.83	0.84	0.82	0.81	0.77	0.83						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks: