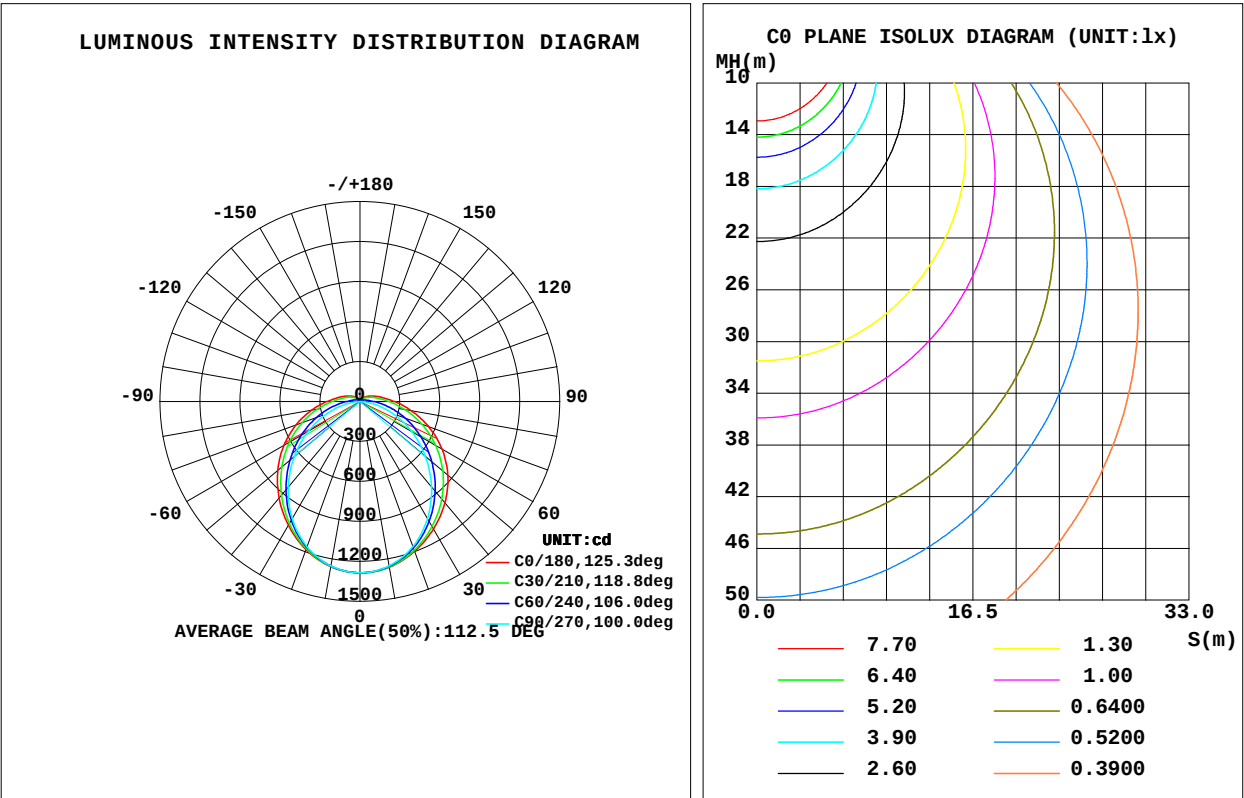


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:229.5V I:0.1550A P:34.70W PF:0.9700 Lamp Flux:4205.3x1 lm		
NAME: FF20 3000K	TYPE:	WEIGHT:
SPEC.:	DIM.: 1.205*0.056*0.063	SERIAL No.:
MFR.:	SUR.:1.205*0.056	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 121.19 lm/W			
MODEL	FF20 3000K	I _{max} (cd)	1285	S/MH(C0/180)	1.25
NOMINAL POWER(W)	36	LOR(%)	100.0	S/MH(C90/270)	1.18
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	4205.3	h UP, DN(C0-180)	4.0, 46.1
NOMINAL FLUX(lm)	4205.3	CIE CLASS	DIRECT	h UP, DN(C180-360)	4.0, 45.9
LAMPS INSIDE	1	h up(%)	8.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	229.9	h down(%)	92.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:24.6DEG
Operators:
Test Date:2026-05-15

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000H_V1 SYSTEM V2.0.286
Humidity:46.0%
Test Distance:9.960m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

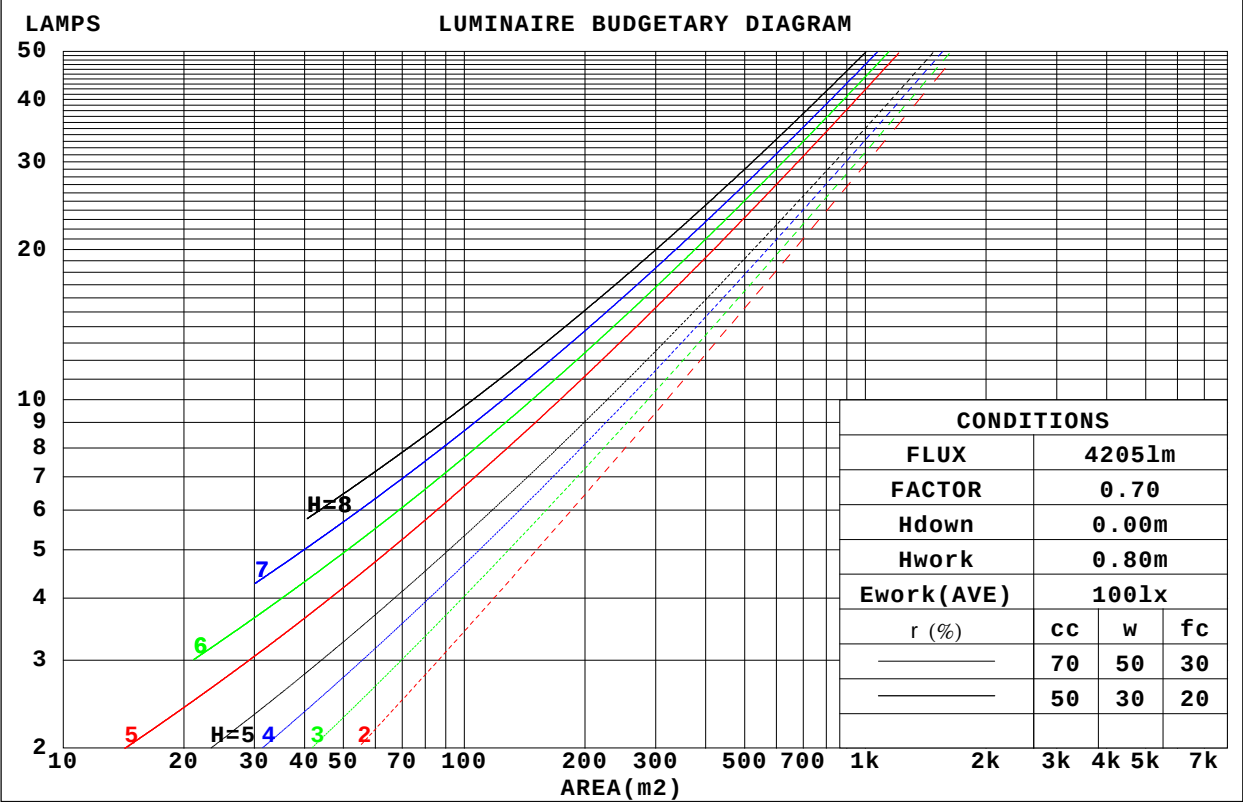
g	C0	C45	C90	C135	C180	C225	C270	C315	g	F zone	F total	%lum, lamp
10	1263	1259	1253	1255	1259	1256	1254	1260	0- 10	121.4	121.4	2.89, 2.89
20	1197	1180	1159	1170	1184	1172	1161	1182	10- 20	344.7	466.1	11.1, 11.1
30	1104	1061	1015	1042	1074	1045	1017	1065	20- 30	515.3	981.4	23.3, 23.3
40	992.7	917.0	835.8	888.2	945.0	891.4	838.5	922.4	30- 40	613.8	1595	37.9, 37.9
50	861.4	757.9	641.4	723.4	805.8	726.9	644.2	764.4	40- 50	636.0	2231	53.1, 53.1
60	710.1	591.3	446.1	558.4	659.8	561.7	448.7	598.5	50- 60	588.6	2820	67.1, 67.1
70	546.6	425.4	257.6	400.1	509.9	403.3	261.4	432.7	60- 70	485.7	3306	78.6, 78.6
80	388.3	274.5	91.84	256.6	366.4	259.5	93.68	279.7	70- 80	349.1	3655	86.9, 86.9
90	259.8	161.4	0.4063	152.7	248.0	154.9	0.4952	166.3	80- 90	214.7	3869	92, 92
100	175.2	101.5	0.5607	99.64	171.3	100.6	0.5441	103.8	90-100	131.1	4001	95.1, 95.1
110	120.3	67.67	0.7310	67.31	120.5	67.92	0.7694	68.79	100-110	84.88	4085	97.1, 97.1
120	82.96	43.62	0.9949	46.08	84.18	46.44	1.044	43.71	110-120	53.63	4139	98.4, 98.4
130	57.07	26.46	1.253	31.42	57.98	31.73	1.335	26.43	120-130	32.74	4172	99.2, 99.2
140	36.49	15.38	1.523	21.11	38.57	21.37	1.605	15.23	130-140	18.39	4190	99.6, 99.6
150	21.86	8.839	1.792	12.84	23.14	13.26	1.879	8.674	140-150	9.425	4200	99.9, 99.9
160	10.33	4.821	1.995	7.510	12.66	7.558	2.077	4.821	150-160	4.101	4204	100, 100
170	3.940	2.669	2.132	3.538	4.905	3.581	2.176	2.737	160-170	1.361	4205	100, 100
180	2.219	2.202	2.198	2.218	2.246	2.210	2.204	2.226	170-180	0.2500	4205	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:24.6DEG
 Operators:
 Test Date:2026-05-15

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE G0-2000H_V1 SYSTEM V2.0.286
 Humidity:46.0%
 Test Distance:9.960m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

r _{cc}	80%			70%			50%			30%			10%			0
r _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization(CU)												
0.0	1.17	1.17	1.17	1.13	1.13	1.13	1.07	1.07	1.07	1.00	1.00	1.00	.95	.95	.95	.92
1.0	.00	.95	.91	.97	.92	.88	.91	.87	.84	.86	.83	.80	.81	.78	.76	.74
2.0	.86	.79	.73	.84	.77	.71	.79	.73	.68	.74	.70	.66	.70	.66	.63	.60
3.0	.75	.67	.60	.73	.65	.59	.69	.62	.57	.65	.60	.55	.62	.57	.53	.50
4.0	.67	.58	.51	.65	.56	.50	.61	.54	.48	.58	.52	.47	.55	.50	.45	.43
5.0	.59	.50	.43	.58	.49	.43	.55	.47	.42	.52	.45	.40	.49	.44	.39	.37
6.0	.53	.44	.38	.52	.43	.37	.49	.42	.36	.47	.40	.35	.45	.39	.34	.32
7.0	.48	.39	.33	.47	.39	.33	.45	.37	.32	.43	.36	.31	.41	.35	.30	.28
8.0	.44	.35	.30	.43	.35	.29	.41	.34	.29	.39	.33	.28	.37	.32	.27	.25
9.0	.40	.32	.27	.40	.32	.26	.38	.31	.26	.36	.30	.25	.35	.29	.25	.23
10.0	.37	.29	.24	.36	.29	.24	.35	.28	.23	.33	.27	.23	.32	.26	.22	.21



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:24.6DEG
Operators:
Test Date:2026-05-15

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000H_V1 SYSTEM V2.0.286
Humidity:46.0%
Test Distance:9.960m [K=1.0000]
Remarks:

WEC AND CCEC

r CC	80%			70%			50%			30%			10%			0
r W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r fc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.350	.199	.063	.340	.194	.062	.322	.185	.059	.306	.176	.057	.291	.168	.054	
2.0	.313	.171	.053	.304	.168	.052	.288	.160	.050	.273	.153	.048	.260	.147	.046	
3.0	.283	.150	.045	.275	.147	.044	.261	.141	.043	.247	.136	.042	.235	.130	.040	
4.0	.257	.134	.039	.250	.131	.039	.237	.126	.038	.225	.121	.037	.214	.116	.035	
5.0	.236	.120	.035	.229	.118	.034	.218	.113	.033	.207	.109	.032	.197	.105	.032	
6.0	.217	.109	.031	.212	.107	.031	.201	.103	.030	.191	.099	.029	.182	.096	.028	
7.0	.201	.099	.028	.196	.098	.028	.187	.094	.027	.178	.091	.027	.169	.088	.026	
8.0	.187	.091	.026	.183	.090	.025	.174	.087	.025	.166	.084	.024	.158	.081	.024	
9.0	.175	.085	.024	.171	.083	.023	.163	.081	.023	.155	.078	.022	.148	.075	.022	
10.0	.164	.079	.022	.160	.077	.022	.153	.075	.021	.146	.073	.021	.140	.070	.020	

r c c	80%			70%			50%			30%			10%			0
r w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r f c	20%			20%			20%			20%			20%			0
R C R	R C R:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients(CCEC)												
0.0	.251	.251	.251	.215	.215	.215	.147	.147	.147	.084	.084	.084	.027	.027	.027	
1.0	.244	.217	.193	.209	.186	.166	.143	.128	.115	.082	.074	.067	.026	.024	.022	
2.0	.237	.194	.157	.203	.167	.136	.139	.115	.095	.080	.067	.056	.026	.022	.018	
3.0	.229	.176	.135	.196	.152	.117	.135	.106	.082	.078	.062	.048	.025	.020	.016	
4.0	.221	.164	.119	.190	.141	.104	.131	.098	.073	.076	.058	.043	.024	.019	.014	
5.0	.214	.153	.109	.183	.133	.095	.126	.093	.067	.073	.054	.040	.024	.018	.013	
6.0	.206	.145	.101	.177	.126	.088	.122	.088	.062	.071	.052	.037	.023	.017	.012	
7.0	.199	.138	.096	.171	.120	.084	.118	.084	.059	.069	.050	.035	.022	.016	.012	
8.0	.193	.133	.092	.166	.115	.080	.115	.081	.057	.067	.048	.034	.022	.016	.011	
9.0	.186	.128	.088	.161	.111	.077	.111	.078	.055	.065	.046	.033	.021	.015	.011	
10.0	.181	.124	.086	.156	.107	.075	.108	.076	.053	.063	.045	.032	.020	.015	.011	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:24.6DEG
 Operators:
 Test Date:2026-05-15

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.286
 Humidity:46.0%
 Test Distance:9.960m [K=1.0000]
 Remarks:

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	23.1	24.6	23.5	24.9	25.3	21.3	22.8	21.7	23.1	23.5
3H	25.3	26.6	25.7	27.0	27.4	22.7	24.0	23.1	24.4	24.8
4H	26.4	27.7	26.9	28.1	28.5	23.2	24.4	23.6	24.8	25.3
6H	27.6	28.8	28.1	29.2	29.7	23.5	24.7	23.9	25.1	25.6
8H	28.3	29.4	28.7	29.8	30.3	23.6	24.7	24.0	25.2	25.6
12H	29.0	30.1	29.4	30.5	31.0	23.6	24.7	24.0	25.1	25.6
4H 2H	23.6	24.9	24.1	25.3	25.7	22.3	23.6	22.7	23.9	24.4
3H	26.1	27.2	26.5	27.6	28.1	23.8	25.0	24.3	25.4	25.9
4H	27.4	28.4	27.9	28.9	29.4	24.5	25.5	25.0	26.0	26.5
6H	28.8	29.7	29.3	30.2	30.7	25.0	25.9	25.5	26.4	27.0
8H	29.5	30.4	30.0	30.9	31.4	25.2	26.0	25.7	26.5	27.1
12H	30.4	31.2	30.9	31.7	32.3	25.2	26.0	25.8	26.6	27.1
8H 4H	27.6	28.5	28.2	29.0	29.6	25.3	26.1	25.8	26.6	27.2
6H	29.3	30.0	29.9	30.6	31.2	26.0	26.8	26.6	27.3	27.9
8H	30.3	30.9	30.8	31.5	32.1	26.4	27.0	26.9	27.6	28.2
12H	31.4	31.9	32.0	32.5	33.1	26.6	27.1	27.2	27.7	28.4
12H 4H	27.7	28.4	28.2	29.0	29.5	25.5	26.3	26.0	26.8	27.4
6H	29.4	30.0	30.0	30.6	31.2	26.4	27.1	27.0	27.6	28.3
8H	30.4	31.0	31.0	31.6	32.2	26.9	27.4	27.5	28.0	28.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.4				

CIE Pub.117 Corrected 4205 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.0)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:24.6DEG
 Operators:
 Test Date:2026-05-15

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.286
 Humidity:46.0%
 Test Distance:9.960m [K=1.0000]
 Remarks:

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) $k(RI) \times RCR = 5$									
$k = 0.60$	53	42	34	53	41	34	51	41	34	27
0.80	63	51	43	62	50	43	60	49	42	35
1.00	71	59	51	69	58	51	67	59	50	42
1.25	78	66	59	76	65	58	73	63	57	49
1.50	83	72	64	81	71	63	77	68	62	53
2.00	90	80	73	87	78	72	83	76	70	60
2.50	94	85	78	91	83	77	86	80	74	64
3.00	97	89	83	95	87	81	89	83	78	68
4.00	102	95	89	99	93	87	93	88	84	73
5.00	104	99	94	101	96	91	95	91	87	76
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: 24.6DEG
 Operators:
 Test Date: 2026-05-15

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System: EVERFINE G0-2000H_V1 SYSTEM V2.0.286
 Humidity: 46.0%
 Test Distance: 9.960m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Conical surface Flux(90deg):

1915.1 lm

%lum = 45.5%

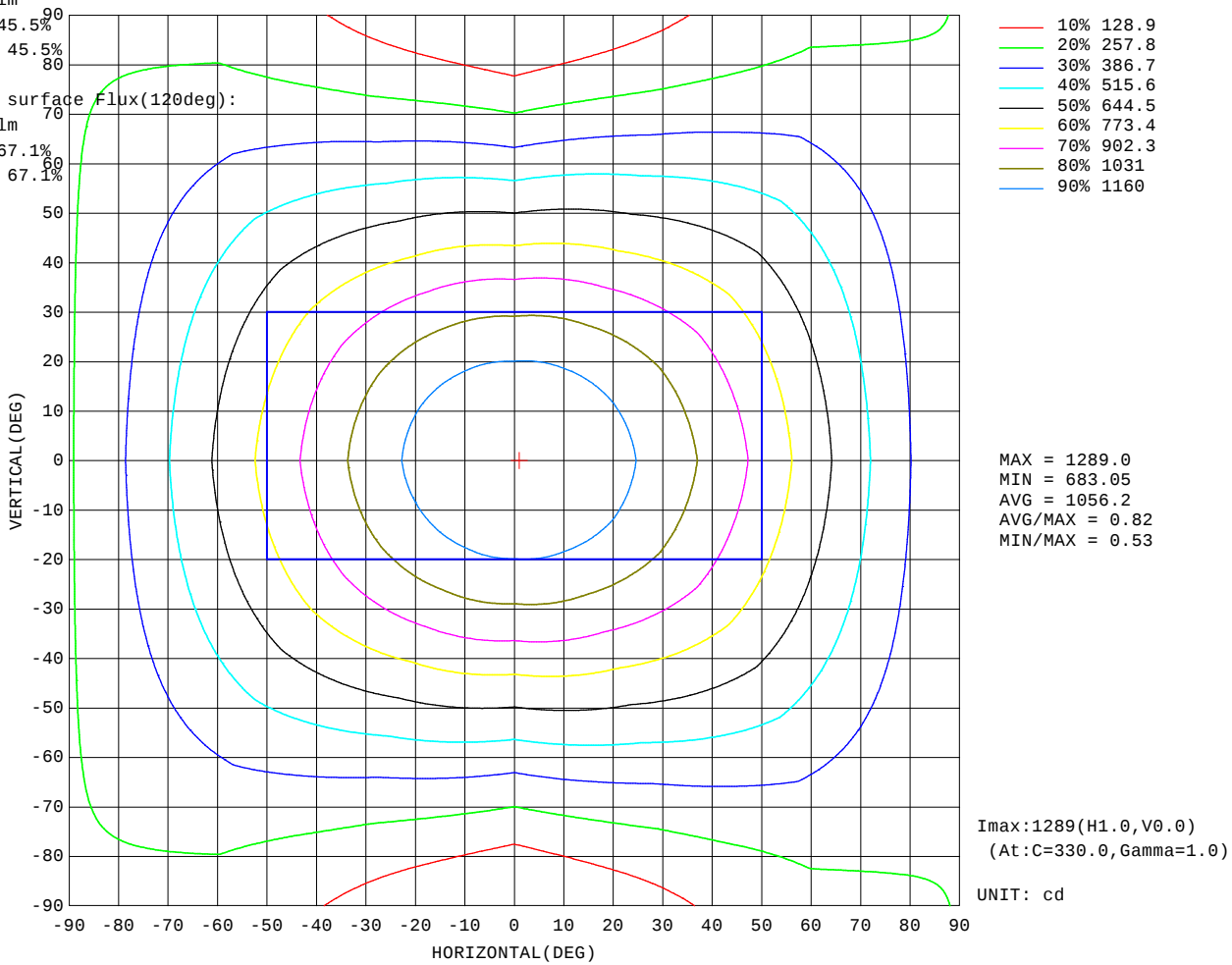
%lamp = 45.5%

Conical surface Flux(120deg):

2819.9 lm

%lum = 67.1%

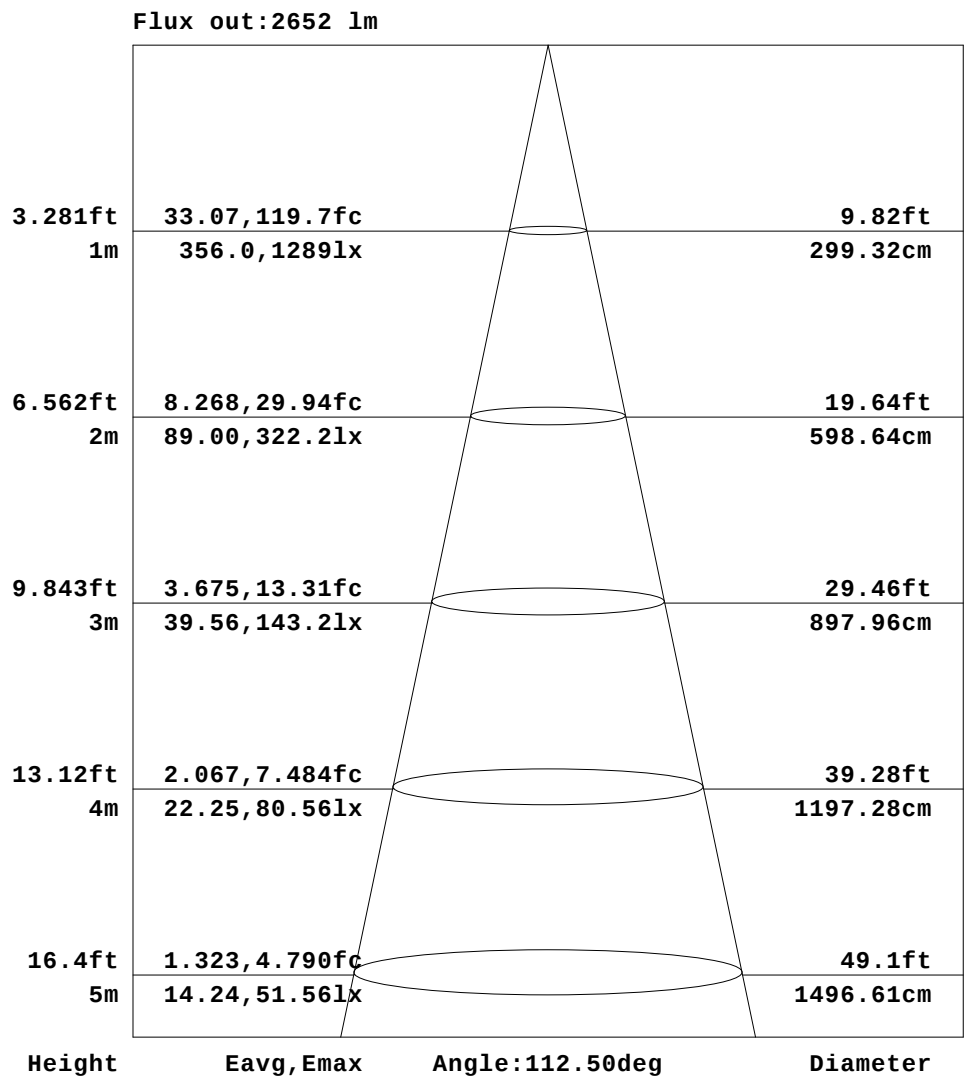
%lamp = 67.1%



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:24.6DEG
Operators:
Test Date:2026-05-15

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000H_V1 SYSTEM V2.0.286
Humidity:46.0%
Test Distance:9.960m [K=1.0000]
Remarks:

AAI Figure

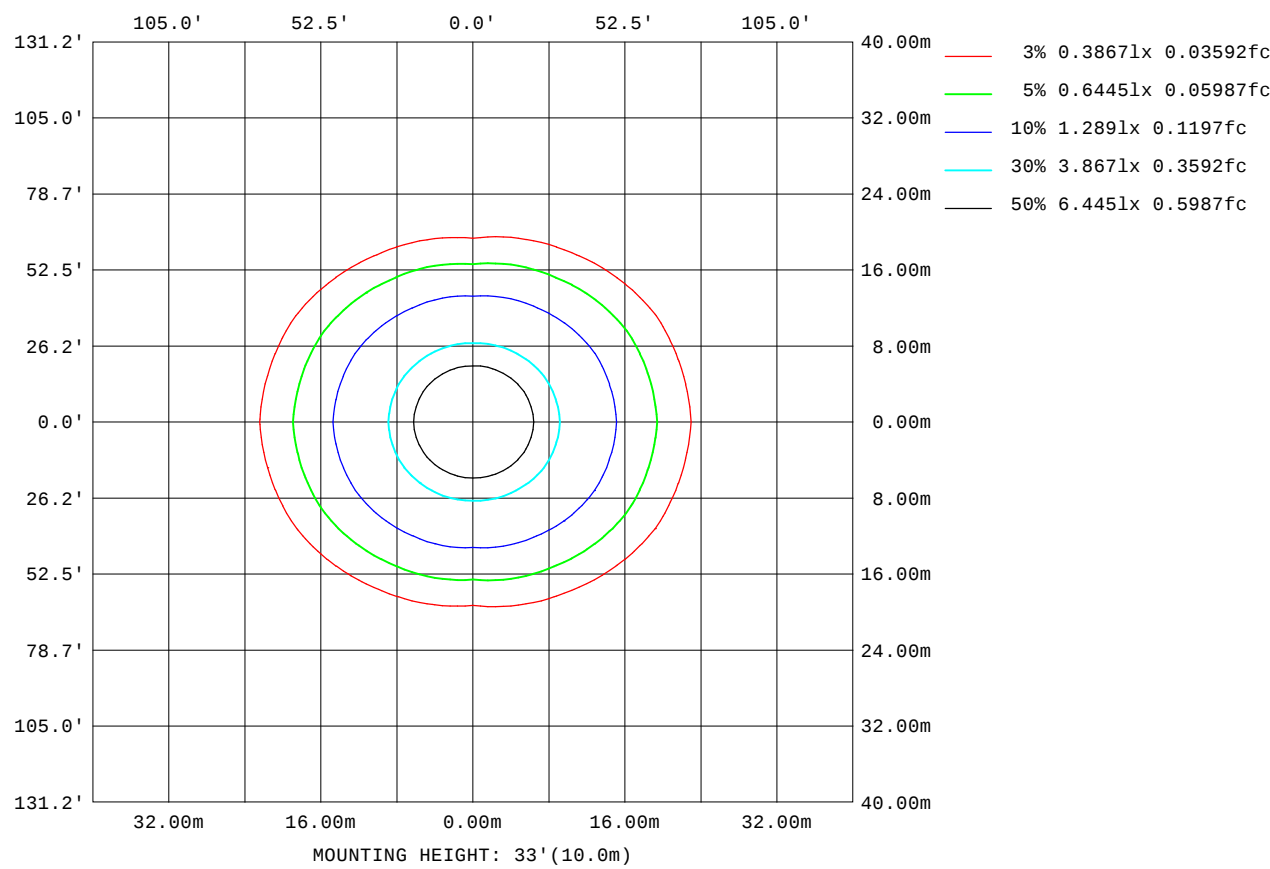


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:24.6DEG
Operators:
Test Date:2026-05-15

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000H_V1 SYSTEM V2.0.286
Humidity:46.0%
Test Distance:9.960m [K=1.0000]
Remarks:

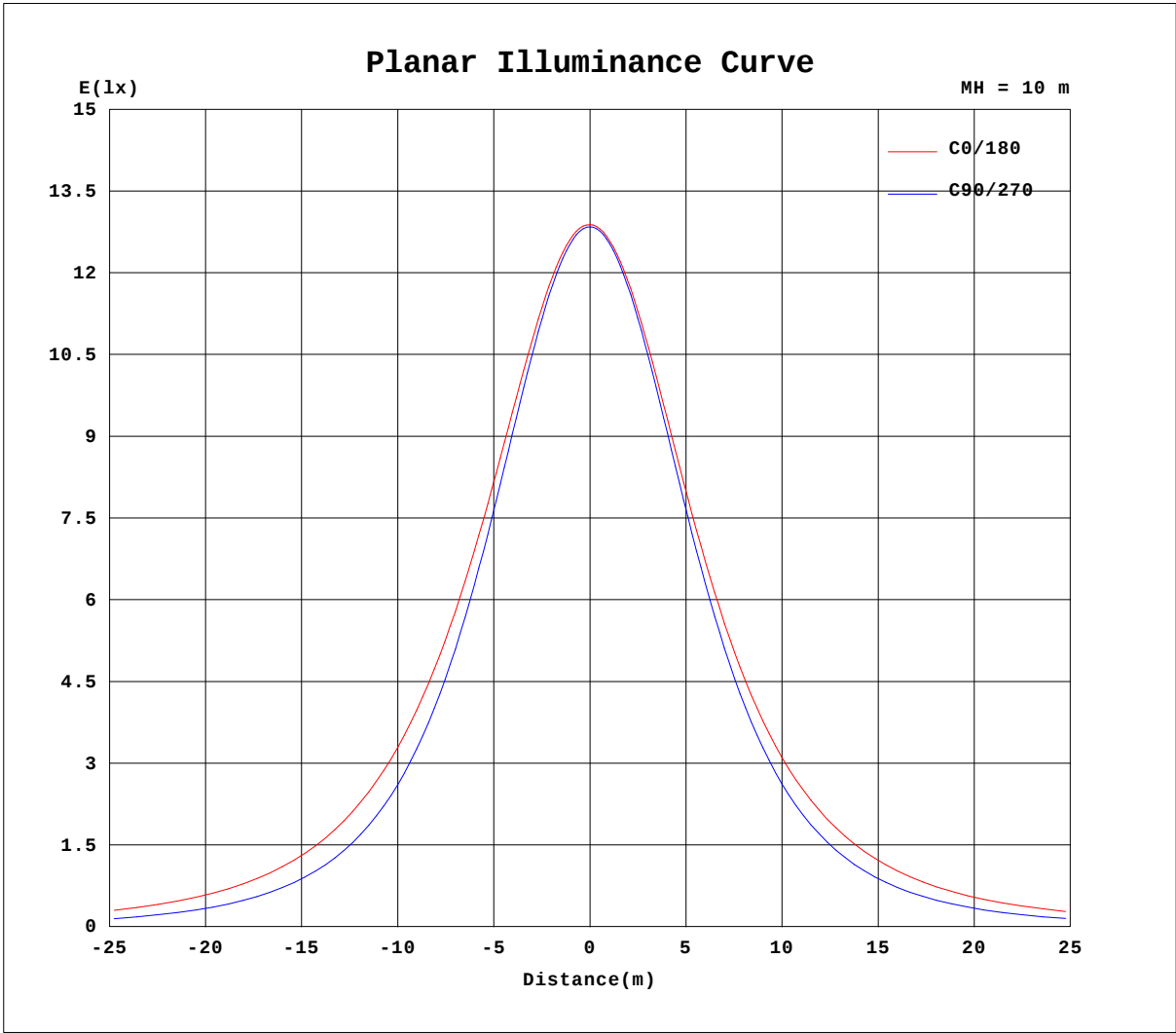
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:24.6DEG
Operators:
Test Date:2026-05-15

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000H_V1 SYSTEM V2.0.286
Humidity:46.0%
Test Distance:9.960m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:24.6DEG
Operators:
Test Date:2026-05-15

g Range: 0 - 180DEG
g Interval: 1.0DEG
Test System:EVERFINE G0-2000H_V1 SYSTEM V2.0.286
Humidity:46.0%
Test Distance:9.960m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C (DEG) g (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285						
5	1280	1280	1278	1277	1277	1277	1278	1278	1277	1278	1279	1281						
10	1263	1262	1256	1253	1253	1256	1259	1257	1255	1254	1258	1263						
15	1235	1231	1220	1213	1215	1222	1227	1223	1217	1214	1222	1232						
20	1197	1189	1170	1159	1164	1176	1184	1177	1166	1161	1174	1191						
25	1153	1139	1109	1093	1100	1120	1133	1122	1103	1094	1114	1142						
30	1104	1083	1039	1015	1027	1057	1074	1059	1031	1017	1044	1086						
35	1051	1022	961	928	947	988	1011	990	951	931	967	1025						
40	993	956	878	836	861	915	945	917	865	839	885	960						
45	930	886	792	739	773	841	876	842	777	742	799	891						
50	861	812	704	641	683	764	806	766	687	644	712	817						
55	788	735	615	543	594	687	733	689	598	546	623	741						
60	710	655	528	446	507	610	660	612	511	449	536	661						
65	629	573	442	352	423	533	585	536	427	354	450	580						
70	547	492	359	258	342	458	510	461	346	261	366	499						
75	466	414	280	171	266	386	436	388	268	174	286	420						
80	388	340	209	91.8	197	316	366	319	200	93.7	214	346						
85	319	272	147	29.2	139	256	302	259	142	30.3	152	279						
90	260	218	104	0.41	98.8	207	248	209	101	0.50	108	224						
95	213	176	78.4	0.42	75.2	169	205	171	76.5	0.45	81.6	182						
100	175	143	60.4	0.56	59.1	140	171	141	60.1	0.54	59.0	149						
105	145	118	46.8	0.62	46.9	117	144	117	47.7	0.64	49.0	123						
110	120	97.8	37.5	0.73	37.8	96.9	121	97.4	38.4	0.77	39.2	98.4						
115	99.8	79.0	28.8	0.86	30.9	80.4	101	80.8	31.3	0.90	29.5	76.5						
120	83.0	65.5	21.7	0.99	25.5	66.6	84.2	67.0	25.9	1.04	22.2	65.2						
125	69.2	53.0	16.6	1.12	21.3	55.2	70.1	55.5	21.5	1.20	16.5	53.1						
130	57.1	39.9	13.0	1.25	17.3	45.5	58.0	45.7	17.7	1.34	12.8	40.1						
135	46.4	30.4	10.3	1.39	13.4	37.3	47.6	37.5	14.9	1.47	10.0	30.2						
140	36.5	22.7	8.05	1.52	12.0	30.2	38.6	30.4	12.3	1.60	7.89	22.6						
145	28.7	17.2	6.30	1.66	9.96	23.7	30.7	23.9	10.2	1.76	6.23	16.7						
150	21.9	12.6	5.07	1.79	8.12	17.6	23.1	18.3	8.24	1.88	5.13	12.2						
155	14.9	8.97	4.23	1.91	6.24	14.1	17.5	14.2	6.52	1.99	4.34	8.72						
160	10.3	6.17	3.47	1.99	4.77	10.3	12.7	10.3	4.79	2.08	3.57	6.07						
165	6.83	4.22	2.78	2.08	3.64	6.64	8.49	6.98	3.67	2.15	2.87	4.29						
170	3.94	3.03	2.31	2.13	2.83	4.24	4.91	4.31	2.86	2.18	2.37	3.11						
175	2.32	2.25	2.16	2.18	2.37	2.70	2.61	2.74	2.37	2.20	2.21	2.31						
180	2.22	2.20	2.20	2.20	2.21	2.22	2.25	2.22	2.20	2.20	2.22	2.24						

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 24.6DEG
 Operators:
 Test Date: 2026-05-15

g Range: 0 - 180DEG
 g Interval: 1.0DEG
 Test System: EVERFINE G0-2000H_V1 SYSTEM V2.0.286
 Humidity: 46.0%
 Test Distance: 9.960m [K=1.0000]
 Remarks: