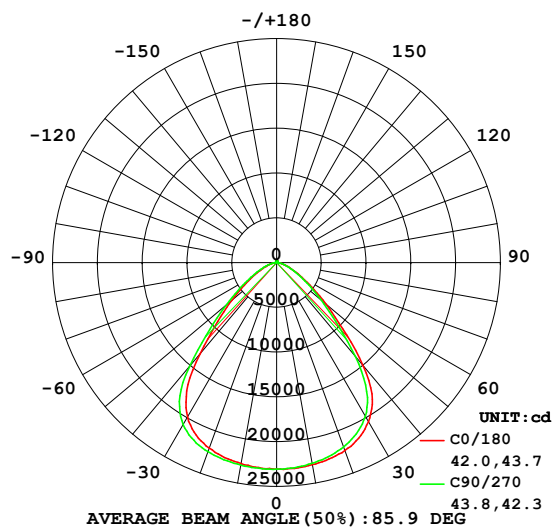


LUMINAIRE PHOTOMETRIC TEST REPORT

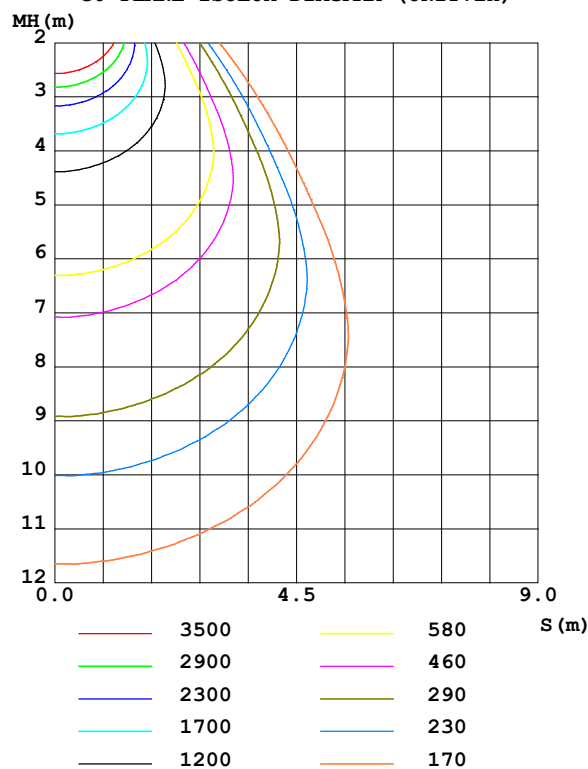
Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:Havells Lighting LLC	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 149.37 lm/W
MODEL	HL-RHB-MW-MCCT-ML2-300W	I _{max} (cd)	23109	S/MH(C0/180)	1.20	
NOMINAL POWER(W)	300	LOR(%)	100.0	S/MH(C90/270)	1.25	
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	45086	η UP,DN(C0-180)	0.2,48.8	
NOMINAL FLUX(lm)	45086.1	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.1,50.9	
LAMPS INSIDE	1	η up (%)	0.3	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	120	η down (%)	99.7	CIBSE SHR MAX	1.30	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1°C
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

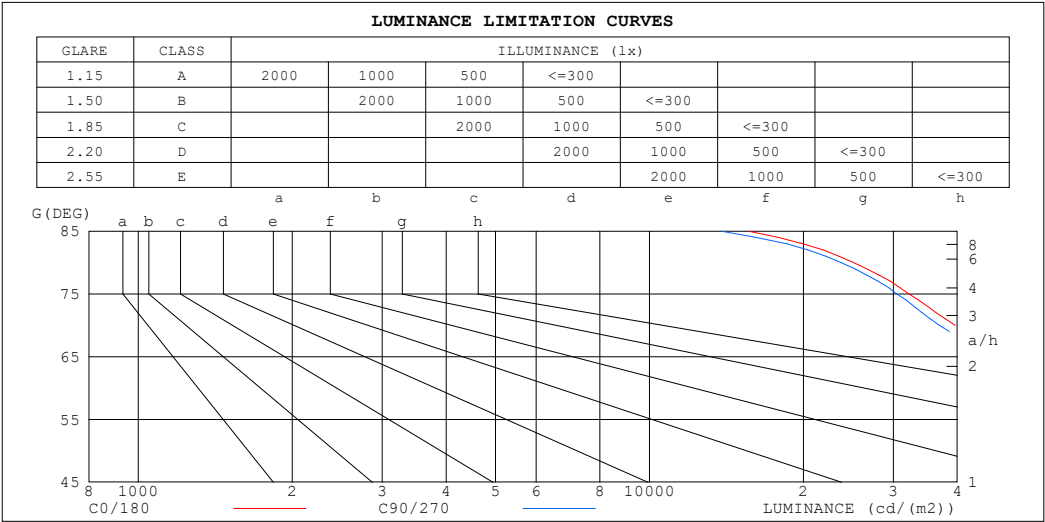
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2291	2285	2277	2271	2280	2290	2298	2294	0- 10	2192	2192	4.86,4.86
20	2234	2214	2189	2185	2204	2230	2246	2245	10- 20	6389	8581	19,19
30	2051	2020	1983	1943	1991	2058	2089	2074	20- 30	9872	18453	40.9,40.9
40	1502	1407	1369	1302	1331	1505	1515	1566	30- 40	11152	29605	65.7,65.7
50	715.3	691.1	648.6	666.9	651.4	701.9	731.8	766.7	40- 50	7888	37492	83.2,83.2
60	322.0	312.9	298.7	301.2	298.4	313.4	334.7	344.8	50- 60	4306	41799	92.7,92.7
70	135.3	130.7	126.5	126.0	125.4	131.3	144.1	145.9	60- 70	2108	43907	97.4,97.4
80	43.49	42.28	41.21	39.95	39.37	40.73	44.98	45.51	70- 80	878.9	44786	99.3,99.3
90	0.6860	0.5969	0.5942	0.6695	0.6539	0.6237	0.7114	0.7853	80- 90	170.0	44956	99.7,99.7
100	0.2725	0.2859	0.3090	0.3150	0.1828	0.1815	0.1809	0.1793	90-100	3.055	44959	99.7,99.7
110	0.6291	0.6734	0.7358	0.7427	0.2773	0.2662	0.2596	0.2595	100-110	3.606	44963	99.7,99.7
120	1.385	1.549	1.593	1.655	0.4395	0.4194	0.4129	0.4113	110-120	7.042	44970	99.7,99.7
130	2.425	2.538	2.570	2.617	0.9710	0.9151	0.9029	0.8785	120-130	12.03	44982	99.8,99.8
140	3.486	3.585	3.674	3.684	1.817	1.760	1.701	1.669	130-140	16.77	44998	99.8,99.8
150	4.640	4.728	4.811	4.795	2.879	2.849	2.778	2.791	140-150	19.99	45018	99.8,99.8
160	6.009	6.030	6.098	6.083	6.231	6.115	6.100	6.072	150-160	21.46	45040	99.9,99.9
170	10.40	10.42	10.46	10.48	23.76	23.68	23.79	23.76	160-170	27.20	45067	100,100
180	17.94	17.89	17.90	17.88	18.34	18.40	18.35	18.37	170-180	19.02	45086	100,100
DEG	LUMINOUS INTENSITY:X10cd									UNIT:lm		

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: MEDIUM
 Temperature: 28.1°C
 Operators:DAMIN
 Test Date:2025-11-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
 Humidity: 100.0%
 Test Distance:26.000m [K=0.4255]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	15656	13852
80	25072	23713
75	32209	30481
70	39599	36949
65	50181	46685
60	64468	59700
55	84373	76780
50	111400	100830
45	147900	133106

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1°C
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

```

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

```

WEC AND CCEC

Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

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	.236	.134	.042	.229	.131	.041	.216	.124	.040	.204	.118	.038	.193	.112	.036		
2.0	.229	.125	.038	.223	.123	.038	.211	.117	.036	.201	.113	.035	.191	.108	.034		
3.0	.217	.116	.035	.212	.114	.034	.202	.110	.033	.193	.106	.032	.185	.102	.032		
4.0	.205	.107	.031	.201	.105	.031	.192	.102	.030	.184	.099	.030	.177	.096	.029		
5.0	.194	.099	.029	.190	.097	.028	.182	.095	.028	.175	.092	.027	.168	.090	.027		
6.0	.183	.092	.026	.179	.091	.026	.172	.088	.026	.166	.086	.025	.160	.084	.025		
7.0	.173	.085	.024	.170	.085	.024	.164	.083	.024	.158	.081	.024	.152	.079	.023		
8.0	.164	.080	.022	.161	.079	.022	.155	.078	.022	.150	.076	.022	.145	.075	.022		
9.0	.155	.075	.021	.153	.074	.021	.148	.073	.021	.143	.072	.021	.139	.070	.020		
10.0	.147	.071	.020	.145	.070	.020	.141	.069	.019	.136	.068	.019	.132	.067	.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	.193	.193	.193	.165	.165	.165	.112	.112	.112	.065	.065	.065	.021	.021	.021		
1.0	.177	.159	.142	.152	.136	.123	.104	.094	.085	.060	.054	.049	.019	.017	.016		
2.0	.166	.134	.108	.142	.116	.093	.097	.080	.065	.056	.047	.038	.018	.015	.012		
3.0	.157	.116	.084	.134	.100	.073	.092	.070	.051	.053	.041	.030	.017	.013	.010		
4.0	.148	.102	.067	.127	.088	.058	.088	.062	.041	.051	.036	.024	.016	.012	.008		
5.0	.141	.091	.055	.121	.079	.048	.083	.055	.034	.048	.032	.020	.016	.011	.007		
6.0	.134	.083	.046	.115	.072	.040	.080	.050	.028	.046	.029	.017	.015	.010	.006		
7.0	.128	.076	.039	.110	.066	.034	.076	.046	.024	.044	.027	.014	.014	.009	.005		
8.0	.122	.070	.034	.105	.061	.029	.073	.042	.021	.042	.025	.012	.014	.008	.004		
9.0	.117	.065	.030	.101	.056	.026	.070	.040	.018	.041	.023	.011	.013	.008	.004		
10.0	.112	.061	.026	.096	.053	.023	.067	.037	.016	.039	.022	.010	.013	.007	.003		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1℃
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm											
NAME:					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.:					SUR.:			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	14.3	15.5	14.5	15.7	15.9	14.0	15.2	14.2	15.4	15.6	
	3H	14.6	15.7	14.8	16.0	16.2	14.3	15.4	14.5	15.7	15.9
	4H	14.6	15.8	15.0	16.0	16.2	14.3	15.5	14.7	15.7	15.9
	6H	14.7	15.7	15.0	16.0	16.2	14.4	15.4	14.7	15.7	15.9
	8H	14.7	15.7	15.0	15.9	16.2	14.4	15.4	14.7	15.6	15.9
	12H	14.6	15.6	15.0	15.9	16.2	14.3	15.3	14.7	15.6	15.9
4H 2H	14.3	15.4	14.6	15.7	15.9	14.1	15.2	14.4	15.4	15.7	
	3H	14.7	15.7	15.1	16.0	16.3	14.5	15.4	14.8	15.7	16.0
	4H	14.9	15.8	15.3	16.1	16.4	14.6	15.5	15.0	15.8	16.1
	6H	15.0	15.8	15.4	16.1	16.5	14.7	15.5	15.1	15.8	16.2
	8H	15.0	15.7	15.4	16.1	16.5	14.7	15.4	15.2	15.8	16.2
	12H	15.0	15.6	15.4	16.0	16.4	14.7	15.4	15.2	15.8	16.2
8H	4H	14.9	15.6	15.3	16.0	16.3	14.6	15.3	15.1	15.7	16.1
	6H	15.0	15.6	15.5	16.0	16.4	14.8	15.4	15.2	15.8	16.2
	8H	15.1	15.6	15.5	16.0	16.5	14.8	15.3	15.3	15.8	16.2
	12H	15.1	15.5	15.6	16.0	16.4	14.8	15.3	15.3	15.7	16.2
12H	4H	14.9	15.5	15.3	15.9	16.3	14.6	15.3	15.0	15.6	16.0
	6H	15.0	15.5	15.5	16.0	16.4	14.8	15.3	15.2	15.7	16.2
	8H	15.1	15.5	15.5	16.0	16.4	14.8	15.3	15.3	15.7	16.2
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 1.0 / - 1.4					+ 1.0 / - 1.5					
1.5H	+ 1.2 / - 1.1					+ 1.2 / - 0.9					
2.0H	+ 2.2 / - 1.7					+ 2.0 / - 1.6					

CIE Pub.117, 45086 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 13.2)
Area: 0.1 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1°C
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

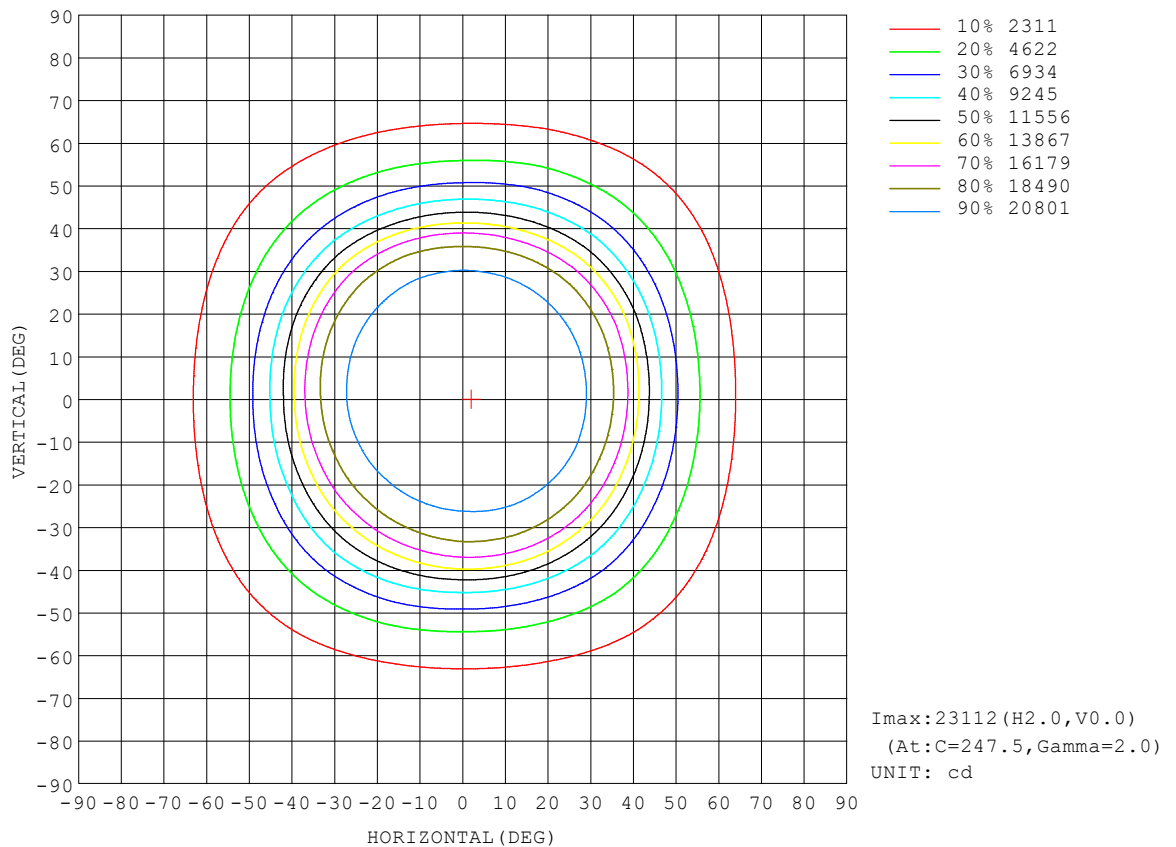
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	70	60	55	69	60	55	68	60	55	49
0.80	79	70	65	79	70	65	77	69	64	59
1.00	87	78	73	86	78	73	84	79	72	66
1.25	93	85	80	92	84	79	89	83	79	73
1.50	97	90	85	96	89	84	93	87	83	77
2.00	102	96	91	100	95	90	97	93	89	82
2.50	105	99	95	103	98	94	100	95	92	85
3.00	107	102	98	105	101	97	102	98	95	88
4.00	110	106	103	108	104	101	104	101	98	90
5.00	112	108	105	110	106	104	105	103	101	92
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1°C
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

ISOCANDELA DIAGRAM

Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

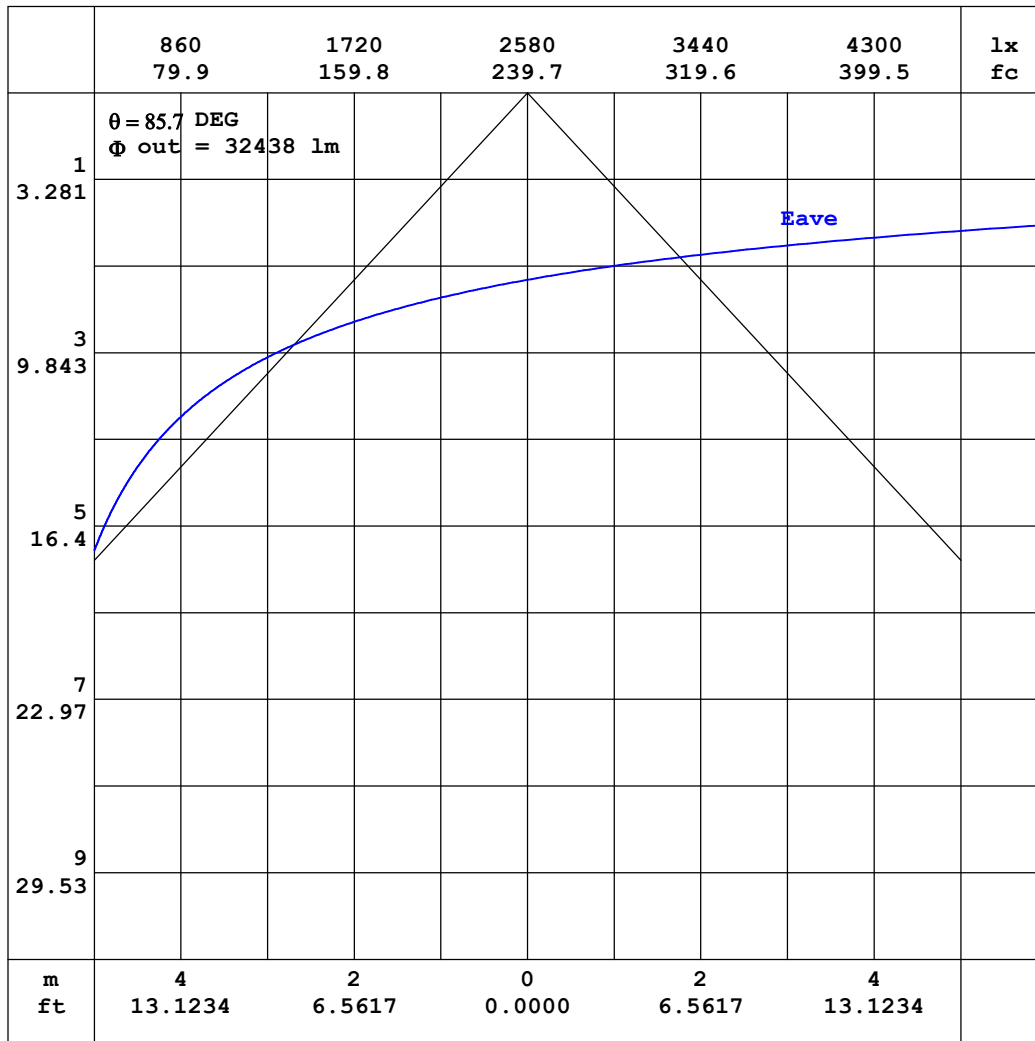


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1°C
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

AAI CURVES

Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



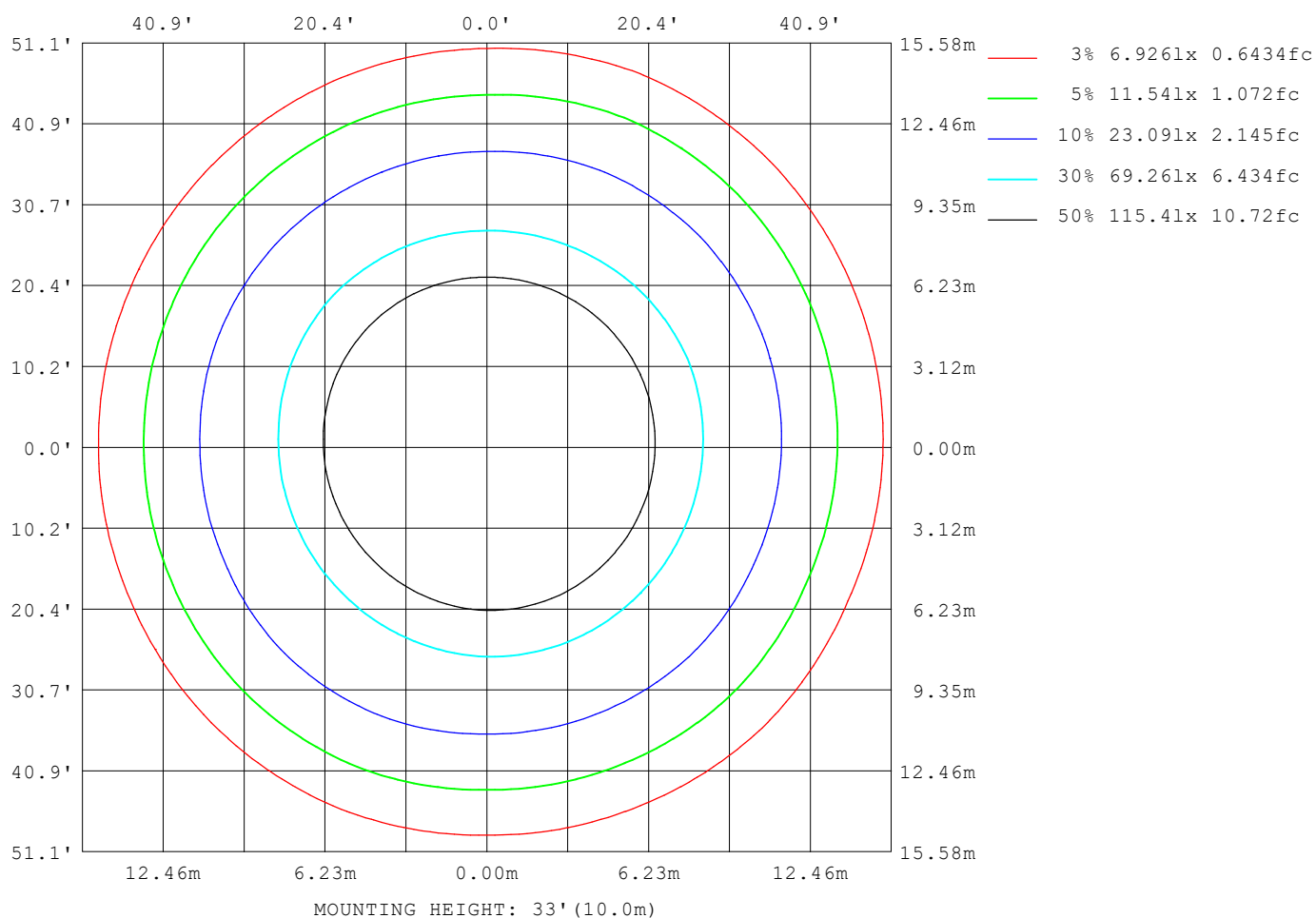
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1℃
Operators: DAMIN
Test Date: 2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance: 26.000m [K=0.4255]
Remarks:

ISOLUX DIAGRAM

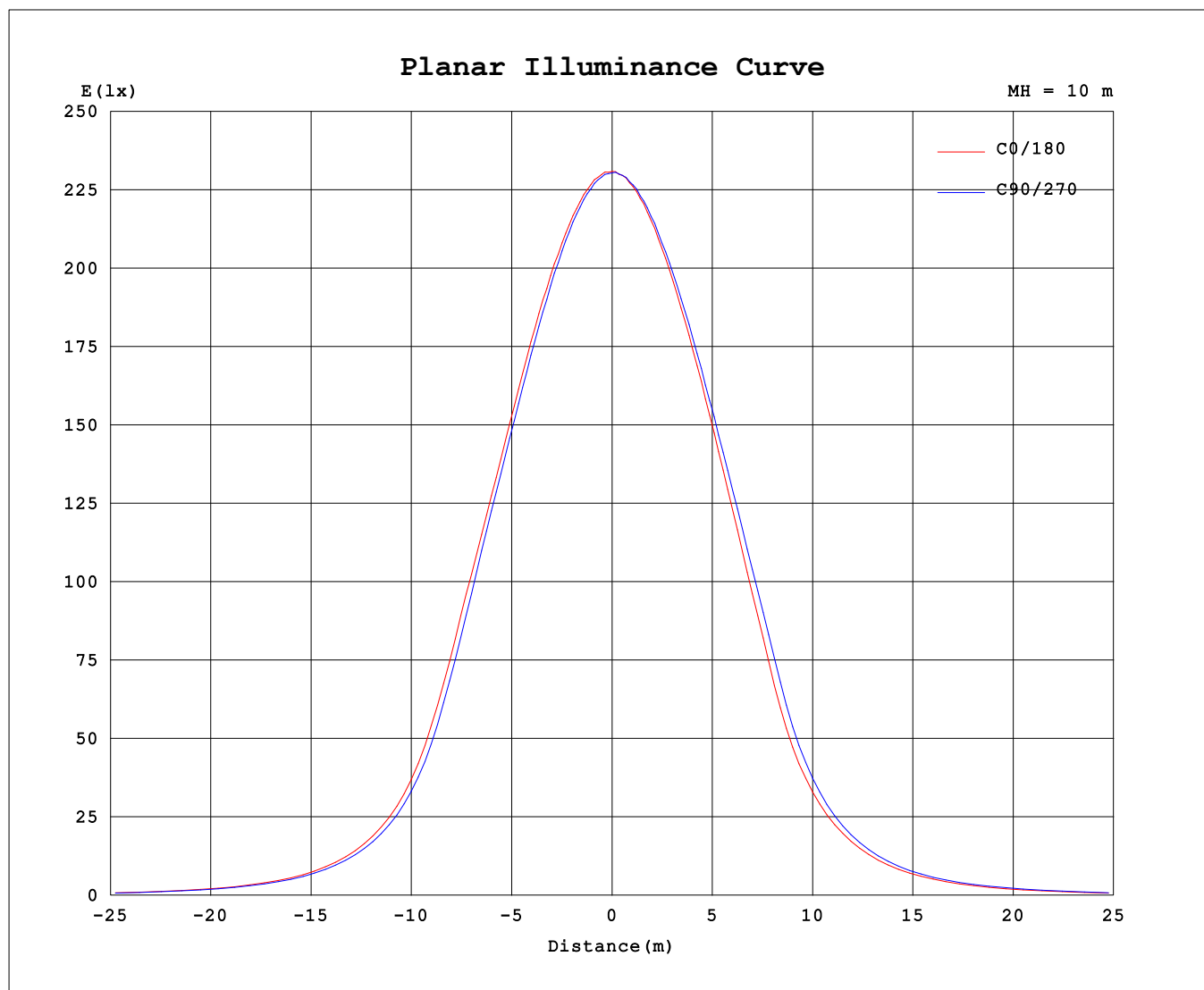
Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1°C
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1°C
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:118.45V I:2.5530A P:301.84W PF:0.9982 Freq:60.01Hz Lamp Flux:45086.1x1 lm																	
NAME:									TYPE:						WEIGHT:		
SPEC.:									DIM.:						SERIAL No.:		
MFR.:									SUR.:						Shielding Angle:		

Table--1

UNIT: X10cd

C (DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	2306	2306	2306	2306	2306	2306	2306	2306	2306	2306	2306	2306	2306	2306	2306	2306			
5	2306	2301	2298	2301	2299	2297	2293	2295	2296	2299	2305	2308	2304	2305	2305	2308			
10	2291	2285	2285	2284	2277	2271	2271	2277	2280	2281	2290	2298	2298	2295	2294	2296			
15	2268	2264	2259	2251	2241	2236	2238	2246	2252	2256	2265	2276	2279	2279	2276	2273			
20	2234	2227	2214	2201	2189	2183	2185	2193	2204	2216	2230	2240	2246	2247	2245	2241			
25	2167	2155	2139	2126	2109	2098	2093	2106	2125	2143	2164	2184	2188	2188	2181	2177			
30	2051	2035	2020	2006	1983	1957	1943	1959	1991	2024	2058	2083	2089	2084	2074	2068			
35	1864	1826	1805	1791	1754	1715	1692	1706	1750	1816	1871	1899	1894	1903	1906	1893			
40	1502	1444	1407	1397	1369	1327	1302	1296	1331	1430	1505	1514	1515	1534	1566	1567			
45	1045	1005	989	965	942	954	951	918	932	991	1032	1038	1057	1081	1109	1103			
50	715	690	691	666	649	668	667	650	651	677	702	722	732	766	767	745			
55	483	465	470	452	441	453	450	441	444	453	471	489	497	524	517	501			
60	322	311	313	303	299	301	301	296	298	303	313	328	335	350	345	333			
65	212	206	205	200	197	197	197	196	196	198	206	217	223	230	227	220			
70	135	132	131	129	126	125	126	126	125	126	131	139	144	147	146	141			
75	83.3	81.2	80.1	80.0	79.0	77.5	77.2	76.3	76.5	77.2	80.6	84.6	87.4	88.1	88.8	86.9			
80	43.5	42.4	42.3	42.0	41.2	40.1	40.0	39.3	39.4	39.6	40.7	43.3	45.0	45.2	45.5	45.1			
85	13.6	13.4	13.6	12.9	12.1	11.7	11.9	11.5	11.4	11.2	11.7	13.1	13.8	14.2	14.0	13.8			
90	0.69	0.64	0.60	0.59	0.59	0.64	0.67	0.64	0.65	0.62	0.62	0.67	0.71	0.77	0.79	0.80			
95	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.22	0.19	0.19	0.20	0.20	0.20	0.20	0.20	0.20			
100	0.27	0.28	0.29	0.30	0.31	0.32	0.32	0.31	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
105	0.41	0.42	0.44	0.46	0.47	0.49	0.48	0.47	0.21	0.21	0.21	0.21	0.21	0.21	0.20	0.20			
110	0.63	0.65	0.67	0.70	0.74	0.75	0.74	0.73	0.28	0.27	0.27	0.26	0.26	0.26	0.26	0.26			
115	0.94	0.99	1.04	1.06	1.11	1.12	1.14	1.14	0.36	0.35	0.34	0.34	0.33	0.33	0.34	0.33			
120	1.39	1.48	1.55	1.57	1.59	1.61	1.65	1.67	0.44	0.43	0.42	0.42	0.41	0.41	0.41	0.41			
125	1.91	2.00	2.06	2.09	2.09	2.12	2.16	2.15	0.65	0.63	0.61	0.61	0.60	0.60	0.60	0.59			
130	2.42	2.48	2.54	2.56	2.57	2.59	2.62	2.60	0.97	0.94	0.92	0.91	0.90	0.89	0.88	0.88			
135	2.95	2.98	3.04	3.08	3.09	3.11	3.13	3.12	1.35	1.31	1.28	1.27	1.26	1.24	1.22	1.23			
140	3.49	3.52	3.58	3.66	3.67	3.68	3.68	3.68	1.82	1.78	1.76	1.73	1.70	1.67	1.67	1.71			
145	4.06	4.08	4.15	4.23	4.26	4.25	4.23	4.25	2.25	2.24	2.22	2.19	2.15	2.13	2.14	2.20			
150	4.64	4.67	4.73	4.79	4.81	4.81	4.79	4.81	2.88	2.86	2.85	2.82	2.78	2.77	2.79	2.84			
155	5.23	5.24	5.29	5.33	5.35	5.35	5.34	5.35	3.94	3.90	3.87	3.85	3.82	3.82	3.82	3.86			
160	6.01	6.01	6.03	6.08	6.10	6.10	6.08	6.09	6.23	6.15	6.12	6.11	6.10	6.09	6.07	6.09			
165	7.49	7.49	7.50	7.56	7.57	7.56	7.55	7.57	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1			
170	10.4	10.4	10.4	10.5	10.5	10.5	10.5	10.5	23.8	23.7	23.7	23.8	23.8	23.8	23.8	23.8			
175	13.8	13.8	13.8	13.8	13.8	13.9	13.9	13.9	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6			
180	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	18.3	18.4	18.4	18.4	18.4	18.4	18.3	18.4			

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: MEDIUM
Temperature: 28.1℃
Operators:DAMIN
Test Date:2025-11-18

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.471
Humidity: 100.0%
Test Distance:26.000m [K=0.4255]
Remarks: