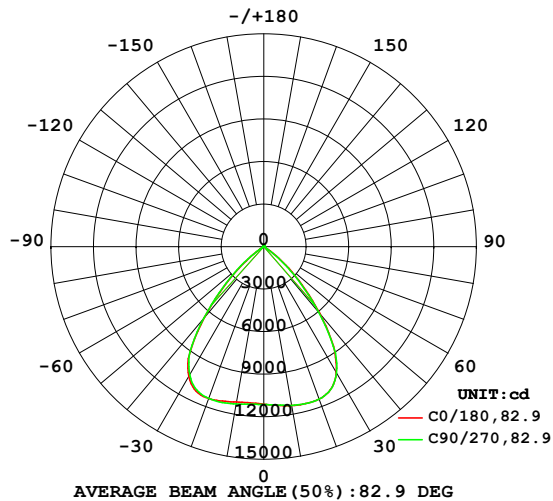


LUMINAIRE PHOTOMETRIC TEST REPORT

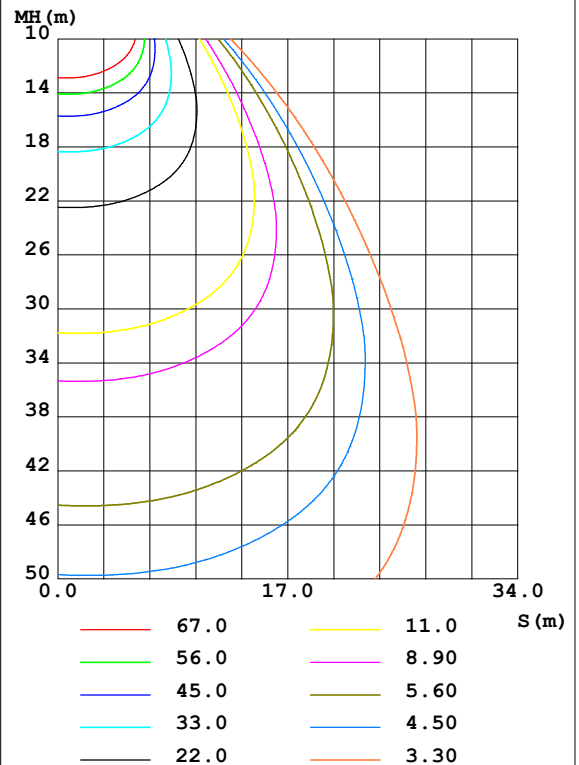
Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm		
NAME: H17-RAL-120W-4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:0.23	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 159.39 lm/W			
MODEL		Imax(cd)	11488	S/MH(C0/180)	1.20
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	1.21
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	18796	□ UP,DN(C0-180)	0.5,48.8
NOMINAL FLUX(lm)	18796.3	CIE CLASS	DIRECT	□ UP,DN(C180-360)	0.5,50.2
LAMPS INSIDE	1	□ up(%)	1.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	□ down(%)	99.0	CIBSE SHR MAX	1.25

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.1DEG
Operators:Marvin Ma
Test Date:2022-09-01

□ Range: 0 - 180DEG
□ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.364
Humidity:56%
Test Distance:6.500m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

°	C0	C45	C90	C135	C180	C225	C270	C315	°	□ zone	□ total	%lum, lamp
10	1138	1140	1136	1125	1113	1114	1126	1138	0- 10	1070	1070	5.69,5.69
20	1144	1145	1144	1145	1140	1140	1139	1143	10- 20	3230	4300	22.9,22.9
30	1023	1014	1026	1057	1058	1065	1046	1027	20- 30	5121	9421	50.1,50.1
40	614.2	579.5	601.5	646.9	649.6	686.8	657.3	613.7	30- 40	5379	14800	78.7,78.7
50	202.7	182.0	185.3	200.4	196.4	216.7	212.1	193.3	40- 50	3041	17842	94.9,94.9
60	16.17	13.47	13.89	15.45	14.94	18.14	19.11	17.53	50- 60	652.4	18494	98.4,98.4
70	4.183	3.689	3.799	4.033	3.994	4.856	5.545	5.086	60- 70	80.53	18575	98.8,98.8
80	1.408	1.321	1.304	1.328	1.244	1.490	1.677	1.585	70- 80	28.32	18603	99,99
90	0.2774	0.2910	0.2853	0.2817	0.2555	0.2326	0.2288	0.2446	80- 90	7.555	18611	99,99
100	0.6318	0.6577	0.6562	0.6127	0.5731	0.5294	0.5407	0.5670	90-100	4.399	18615	99,99
110	1.368	1.391	1.403	1.297	1.263	1.161	1.223	1.247	100-110	9.615	18625	99.1,99.1
120	2.477	2.457	2.520	2.329	2.321	2.150	2.309	2.277	110-120	17.79	18642	99.2,99.2
130	3.786	3.653	3.835	3.520	3.659	3.358	3.636	3.502	120-130	26.66	18669	99.3,99.3
140	4.970	4.842	5.005	4.706	4.917	4.570	4.957	4.722	130-140	32.72	18702	99.5,99.5
150	5.908	6.043	5.998	5.962	5.975	5.904	5.995	6.073	140-150	33.91	18736	99.7,99.7
160	7.099	7.194	7.233	7.100	7.175	7.122	7.201	7.308	150-160	30.19	18766	99.8,99.8
170	8.441	8.405	8.515	8.338	8.472	8.369	8.508	8.522	160-170	22.01	18788	100,100
180	9.260	9.127	9.264	9.176	9.250	9.137	9.260	9.188	170-180	8.366	18796	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

Conical surface Flux(90deg): 16672 lm

%lum = 88.7%

%lamp = 88.7%

Conical surface Flux(120deg): 18494 lm

%lum = 98.4%

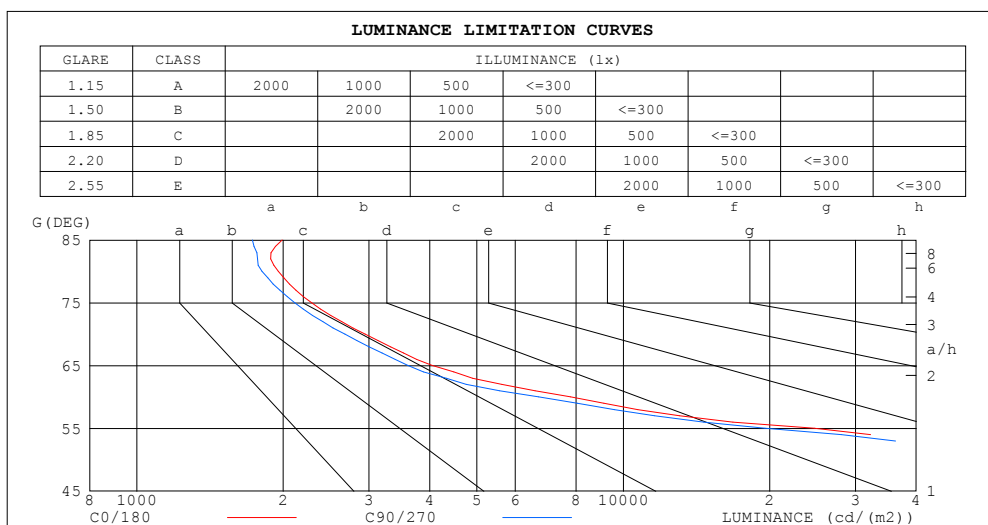
%lamp = 98.4%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Marvin Ma
 Test Date:2022-09-01

□ Range: 0 - 180DEG
 □ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.364
 Humidity:56%
 Test Distance:6.500m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm		
NAME: H17-RAL-120W-4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:0.23	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1989	1727
80	1954	1810
75	2289	2113
70	2947	2677
65	4047	3608
60	7793	6694
55	24704	19536
50	75996	69451
45	131145	125560

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.1DEG
Operators:Marvin Ma
Test Date:2022-09-01

☐ Range: 0 - 180DEG
☐ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.364
Humidity:56%
Test Distance:6.500m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm					
NAME: H17-RAL-120W-4K			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.: RAB LIGHTING INC			SUR.:0.23		Shielding Angle:

<input type="checkbox"/> cc	80%			70%			50%			30%			10%			0	
<input type="checkbox"/> w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
<input type="checkbox"/> fc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.202	.115	.036	.194	.111	.035	.181	.104	.033	.169	.097	.031	.158	.091	.029		
2.0	.196	.108	.033	.190	.105	.032	.179	.099	.031	.168	.094	.030	.159	.090	.028		
3.0	.189	.100	.030	.183	.098	.030	.174	.094	.029	.164	.090	.028	.156	.086	.027		
4.0	.181	.094	.028	.176	.092	.027	.167	.089	.026	.159	.086	.026	.152	.082	.025		
5.0	.172	.088	.025	.168	.086	.025	.161	.084	.025	.154	.081	.024	.147	.079	.024		
6.0	.165	.082	.024	.161	.081	.023	.154	.079	.023	.148	.077	.023	.142	.075	.022		
7.0	.157	.078	.022	.154	.077	.022	.148	.075	.022	.142	.073	.021	.137	.071	.021		
8.0	.150	.073	.021	.147	.072	.020	.142	.071	.020	.136	.069	.020	.132	.068	.020		
9.0	.143	.069	.019	.141	.069	.019	.136	.067	.019	.131	.066	.019	.127	.064	.019		
10.0	.137	.066	.018	.135	.065	.018	.130	.064	.018	.126	.063	.018	.122	.061	.018		

<input type="checkbox"/> cc	80%			70%			50%			30%			10%			0
<input type="checkbox"/> w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
<input type="checkbox"/> fc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.198	.198	.198	.169	.169	.169	.116	.116	.116	.066	.066	.066	.021	.021	.021	
1.0	.180	.165	.151	.154	.141	.130	.106	.097	.090	.061	.056	.052	.019	.018	.017	
2.0	.167	.140	.117	.143	.121	.101	.098	.083	.071	.057	.049	.041	.018	.016	.013	
3.0	.157	.121	.093	.134	.105	.081	.092	.073	.057	.053	.042	.034	.017	.014	.011	
4.0	.148	.107	.076	.127	.093	.066	.087	.065	.047	.050	.038	.028	.016	.012	.009	
5.0	.140	.096	.064	.120	.083	.055	.083	.058	.039	.048	.034	.023	.015	.011	.008	
6.0	.133	.087	.054	.115	.075	.047	.079	.053	.033	.046	.031	.020	.015	.010	.007	
7.0	.127	.080	.047	.110	.069	.041	.076	.049	.029	.044	.029	.017	.014	.009	.006	
8.0	.122	.074	.041	.105	.064	.036	.073	.045	.025	.042	.027	.015	.014	.009	.005	
9.0	.117	.069	.037	.101	.060	.032	.070	.042	.023	.041	.025	.014	.013	.008	.004	
10.0	.112	.065	.033	.097	.056	.029	.067	.040	.021	.039	.023	.012	.013	.008	.004	

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Marvin Ma
 Test Date:2022-09-01

☐ Range: 0 - 180DEG
☐ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.364
 Humidity:56%
 Test Distance:6.500m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm											
NAME: H17-RAL-120W-4K						TYPE:		WEIGHT:			
SPEC.:						DIM.:		SERIAL No.:			
MFR.: RAB LIGHTING INC						SUR.:0.23		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	25.6	26.7	25.8	26.9	27.1	25.4	26.6	25.7	26.8	27.0	
	3H	25.4	26.4	25.7	26.6	26.9	25.3	26.3	25.6	26.5	26.7
	4H	25.3	26.2	25.6	26.5	26.7	25.2	26.1	25.5	26.4	26.6
	6H	25.2	26.1	25.5	26.4	26.6	25.1	26.0	25.4	26.2	26.5
	8H	25.1	26.0	25.5	26.3	26.6	25.0	25.9	25.4	26.2	26.5
	12H	25.1	25.9	25.4	26.2	26.5	25.0	25.8	25.3	26.1	26.4
4H	2H	25.3	26.3	25.6	26.5	26.8	25.2	26.1	25.5	26.4	26.6
	3H	25.1	25.9	25.5	26.2	26.5	25.0	25.8	25.3	26.1	26.4
	4H	25.0	25.8	25.4	26.1	26.4	24.9	25.6	25.3	26.0	26.3
	6H	24.9	25.6	25.3	25.9	26.3	24.8	25.5	25.2	25.8	26.2
	8H	24.9	25.5	25.3	25.8	26.2	24.8	25.4	25.2	25.7	26.1
	12H	24.8	25.4	25.3	25.8	26.2	24.7	25.3	25.1	25.7	26.1
8H	4H	24.9	25.5	25.3	25.8	26.2	24.8	25.4	25.2	25.7	26.1
	6H	24.8	25.3	25.2	25.7	26.1	24.7	25.2	25.1	25.6	26.0
	8H	24.7	25.2	25.2	25.6	26.1	24.6	25.0	25.1	25.5	25.9
	12H	24.7	25.0	25.2	25.5	26.0	24.6	24.9	25.1	25.4	25.9
12H	4H	24.8	25.4	25.3	25.8	26.2	24.7	25.3	25.1	25.7	26.1
	6H	24.7	25.2	25.2	25.6	26.1	24.6	25.0	25.1	25.5	25.9
	8H	24.7	25.0	25.2	25.5	26.0	24.6	24.9	25.1	25.4	25.9
Variations with the observer position at spacings:											
S = 1.0H	+ 2.5 / -12.6					+ 2.5 / -13.1					
1.5H	+ 3.4 / -10.5					+ 3.5 / -10.7					
2.0H	+ 6.3 / -14.0					+ 6.3 / -14.0					

CIE Pub.117, 18796 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 10.2$)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Marvin Ma
 Test Date:2022-09-01

☐ Range: 0 - 180DEG
☐ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.364
 Humidity:56%
 Test Distance:6.500m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm		
NAME: H17-RAL-120W-4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:0.23	Shielding Angle:

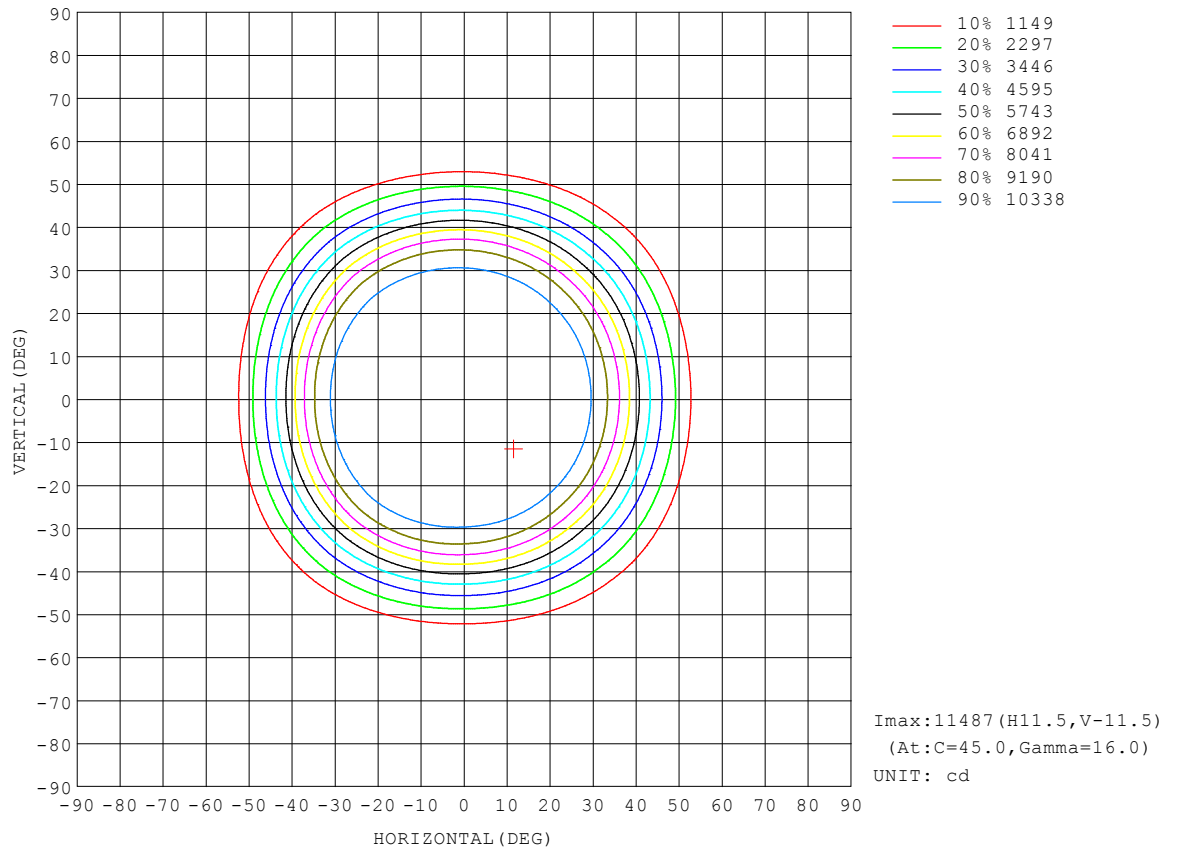
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	78	70	65	77	70	65	76	69	65	60
0.80	87	79	75	86	79	75	85	78	74	70
1.00	93	86	82	92	86	82	91	86	81	76
1.25	99	92	88	97	92	88	95	90	87	82
1.50	102	96	92	101	95	92	98	94	90	85
2.00	106	101	97	104	100	96	101	98	95	89
2.50	108	103	100	106	102	99	103	99	97	90
3.00	110	106	102	108	104	101	104	101	99	92
4.00	112	109	106	110	107	104	106	104	102	94
5.00	113	110	108	111	109	106	107	105	103	95
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.1DEG
 Operators: Marvin Ma
 Test Date: 2022-09-01

☐ Range: 0 - 180DEG
☐ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.364
 Humidity: 56%
 Test Distance: 6.500m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm		
NAME: H17-RAL-120W-4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:0.23	Shielding Angle:

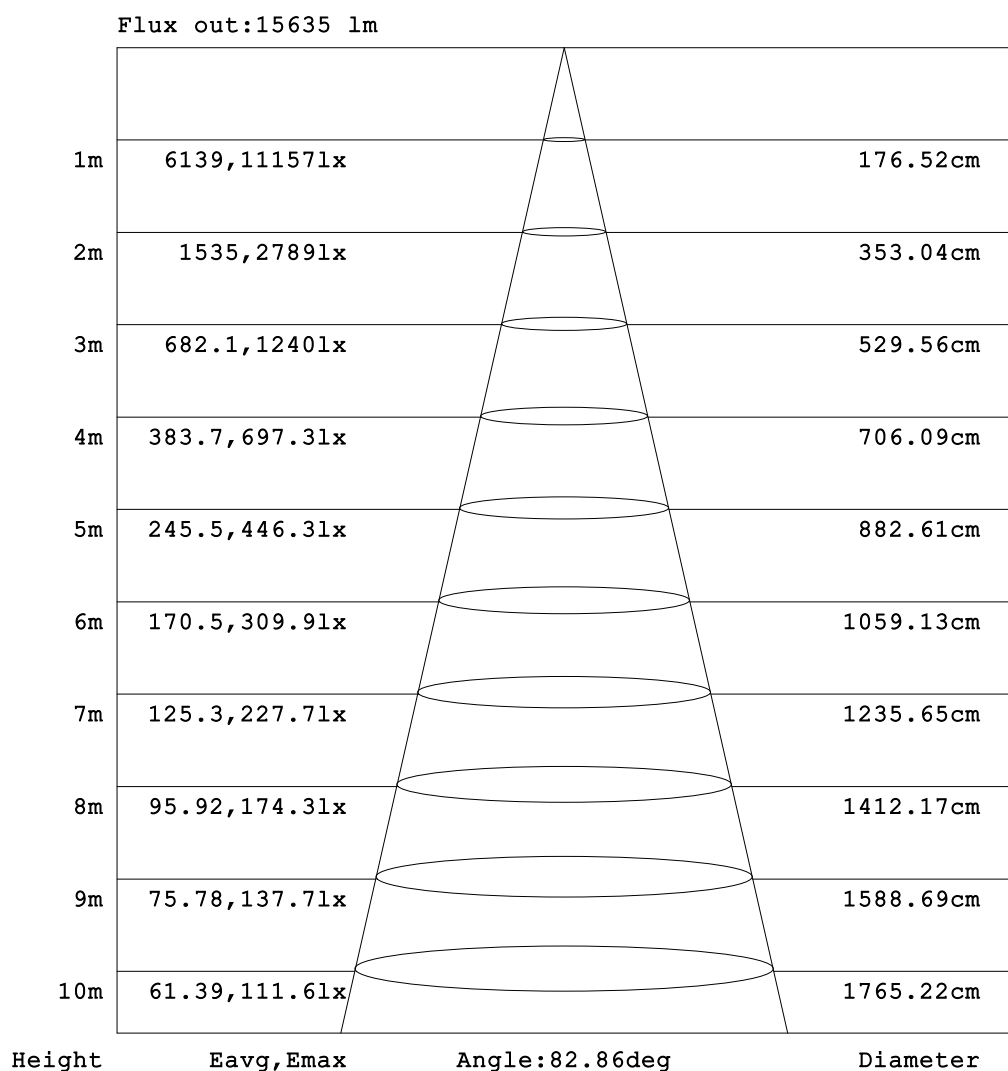


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.1DEG
Operators:Marvin Ma
Test Date:2022-09-01

☐ Range: 0 - 180DEG
☐ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.364
Humidity:56%
Test Distance:6.500m [K=1.0000]
Remarks:

AAI Figure

Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm		
NAME: H17-RAL-120W-4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:0.23	Shielding Angle:

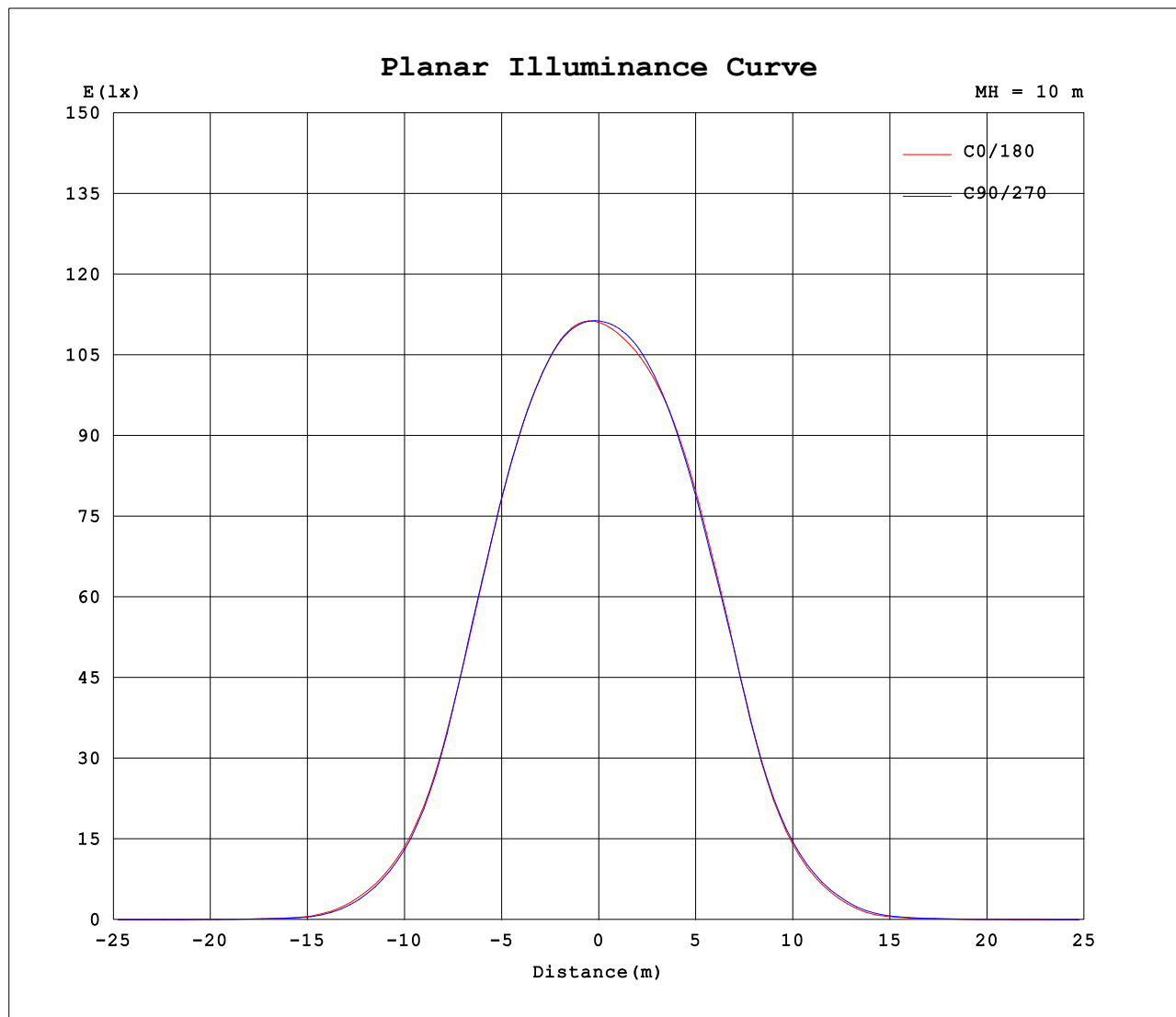


Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.1DEG
 Operators: Marvin Ma
 Test Date: 2022-09-01

☐ Range: 0 - 180DEG
☐ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.364
 Humidity: 56%
 Test Distance: 6.500m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.1DEG
Operators: Marvin Ma
Test Date: 2022-09-01

☐ Range: 0 - 180DEG
☐ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.364
Humidity: 56%
Test Distance: 6.500m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.6V I:0.9802A P:117.9W PF:0.9977 Freq:59.98Hz Lamp Flux:18796.3x1 lm		
NAME: H17-RAL-120W-4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: RAB LIGHTING INC	SUR.:0.23	Shielding Angle:

Table--1

UNIT: ×10cd

C (DEG) □ (DEG)	0	45	90	135	180	225	270	315										
0	1111	1113	1113	1115	1111	1113	1113	1115										
5	1123	1125	1121	1115	1106	1108	1116	1125										
10	1138	1140	1136	1125	1113	1114	1126	1138										
15	1146	1148	1146	1138	1128	1129	1137	1146										
20	1144	1145	1144	1145	1140	1140	1139	1143										
25	1114	1114	1114	1128	1127	1127	1117	1113										
30	1023	1014	1026	1057	1058	1065	1046	1027										
35	858	833	857	905	908	937	910	871										
40	614	579	601	647	650	687	657	614										
45	385	359	368	395	397	424	410	378										
50	203	182	185	200	196	217	212	193										
55	58.8	43.9	46.5	53.4	48.8	63.9	61.1	56.9										
60	16.2	13.5	13.9	15.4	14.9	18.1	19.1	17.5										
65	7.10	6.11	6.33	6.71	6.70	8.14	9.16	8.45										
70	4.18	3.69	3.80	4.03	3.99	4.86	5.54	5.09										
75	2.46	2.23	2.27	2.39	2.31	2.80	3.20	2.95										
80	1.41	1.32	1.30	1.33	1.24	1.49	1.68	1.58										
85	0.72	0.66	0.62	0.64	0.53	0.62	0.69	0.69										
90	0.28	0.29	0.29	0.28	0.26	0.23	0.23	0.24										
95	0.41	0.43	0.43	0.41	0.38	0.35	0.35	0.37										
100	0.63	0.66	0.66	0.61	0.57	0.53	0.54	0.57										
105	0.94	0.98	0.98	0.91	0.87	0.80	0.83	0.86										
110	1.37	1.39	1.40	1.30	1.26	1.16	1.22	1.25										
115	1.88	1.89	1.92	1.78	1.75	1.62	1.72	1.73										
120	2.48	2.46	2.52	2.33	2.32	2.15	2.31	2.28										
125	3.13	3.06	3.18	2.92	2.99	2.75	2.96	2.89										
130	3.79	3.65	3.84	3.52	3.66	3.36	3.64	3.50										
135	4.43	4.24	4.48	4.12	4.34	3.97	4.33	4.12										
140	4.97	4.84	5.01	4.71	4.92	4.57	4.96	4.72										
145	5.43	5.50	5.50	5.40	5.44	5.27	5.48	5.44										
150	5.91	6.04	6.00	5.96	5.98	5.90	5.99	6.07										
155	6.45	6.58	6.56	6.49	6.54	6.52	6.56	6.68										
160	7.10	7.19	7.23	7.10	7.18	7.12	7.20	7.31										
165	7.80	7.84	7.92	7.74	7.86	7.77	7.88	7.95										
170	8.44	8.41	8.51	8.34	8.47	8.37	8.51	8.52										
175	8.93	8.85	8.99	8.83	8.92	8.83	8.97	8.96										
180	9.26	9.13	9.26	9.18	9.25	9.14	9.26	9.19										

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.1DEG
 Operators:Marvin Ma
 Test Date:2022-09-01

□ Range: 0 - 180DEG
 □ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.364
 Humidity:56%
 Test Distance:6.500m [K=1.0000]
 Remarks: