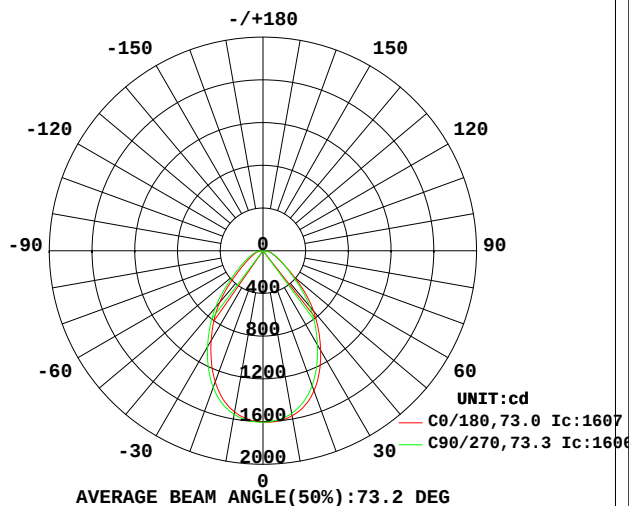


LUMINAIRE PHOTOMETRIC TEST REPORT

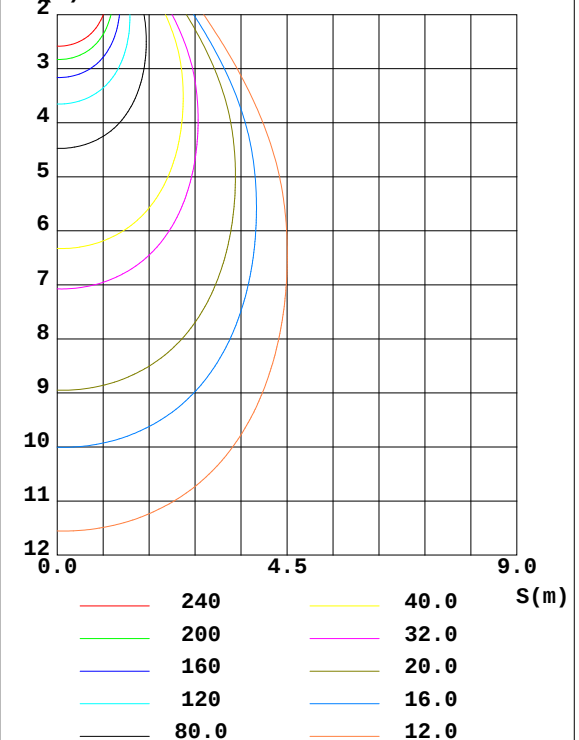
Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 112.83 lm/W			
MODEL	2835 192 4000K	I _{max} (cd)	1607	S/MH(C0/180)	0.98
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	1.03
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	2504.1	η UP, DN(C0-180)	0.0, 50.2
NOMINAL FLUX(lm)	2504.09	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.8
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	120.0	η down(%)	100.0	CIBSE SHR MAX	1.10

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-07-11

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

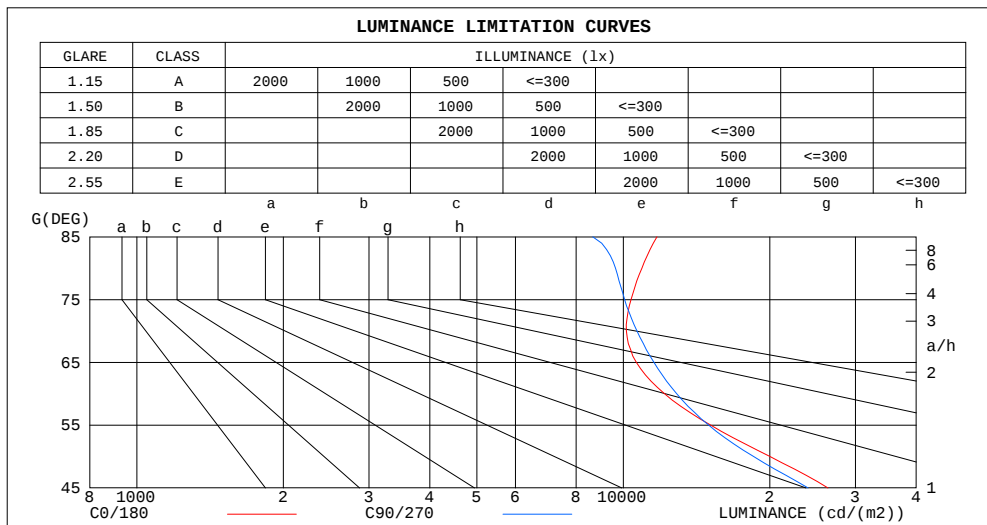
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1570	1562	1546	1533	1533	1541	1556	1568	0- 10	150.7	150.7	6.02, 6.02
20	1396	1380	1345	1310	1308	1327	1362	1392	10- 20	412.4	563.2	22.5, 22.5
30	1080	1065	1021	977.0	972.0	994.2	1039	1075	20- 30	548.9	1112	44.4, 44.4
40	737.1	725.5	684.6	640.6	631.8	649.5	693.0	731.3	30- 40	534.2	1646	65.7, 65.7
50	385.0	378.2	355.1	311.9	301.9	322.1	362.0	380.3	40- 50	391.5	2038	81.4, 81.4
60	181.9	190.5	192.0	165.1	150.0	171.0	196.0	189.0	50- 60	223.7	2261	90.3, 90.3
70	103.9	113.2	108.9	96.78	87.25	100.6	111.8	113.5	60- 70	137.1	2399	95.8, 95.8
80	56.76	56.29	49.94	41.69	39.18	43.65	51.62	56.81	70- 80	80.69	2479	99, 99
90	3.964	2.301	0.9219	0.9605	0.4181	0.4163	0.3896	2.237	80- 90	24.78	2504	100, 100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	11722	8655
80	10916	9640
75	10371	10064
70	10149	10670
65	10633	11561
60	12149	12868
55	15115	14975
50	20003	18515
45	26344	23980

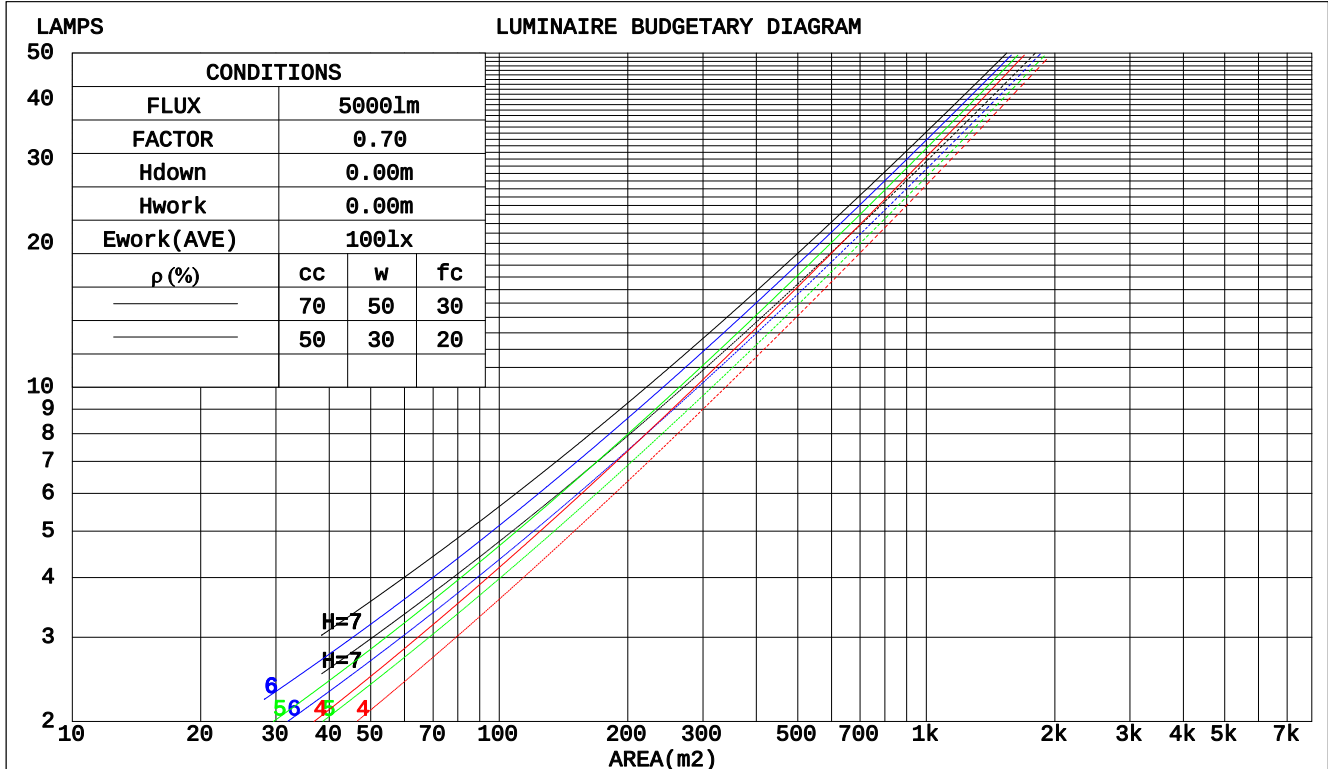
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-07-11

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	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	Coefficients of Utilization(CU)															
RCR:Room Cavity Ratio																
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	.00
1.0	1.07	1.04	1.01	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.91	.86	.95	.90	.85	.91	.87	.83	.88	.85	.82	.85	.82	.80	.78
3.0	.87	.81	.75	.86	.80	.75	.83	.78	.73	.80	.76	.72	.78	.74	.71	.69
4.0	.79	.72	.66	.78	.71	.66	.76	.70	.65	.73	.68	.64	.71	.67	.63	.62
5.0	.72	.65	.59	.71	.64	.59	.69	.63	.58	.68	.62	.58	.66	.61	.57	.55
6.0	.66	.59	.53	.66	.58	.53	.64	.57	.53	.62	.57	.52	.61	.56	.52	.50
7.0	.61	.54	.48	.60	.53	.48	.59	.53	.48	.58	.52	.48	.56	.51	.47	.46
8.0	.57	.49	.44	.56	.49	.44	.55	.48	.44	.54	.48	.44	.53	.47	.43	.42
9.0	.53	.45	.41	.52	.45	.40	.51	.45	.40	.50	.44	.40	.49	.44	.40	.38
10.0	.49	.42	.37	.49	.42	.37	.48	.41	.37	.47	.41	.37	.46	.41	.37	.35



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm									
NAME: AL5011-WHTC24S02-TS					TYPE:			WEIGHT:	
SPEC.:white RA90 3000K+5700K					DIM.:			SERIAL No.:	
MFR.:					SUR.:195mm			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	.246	.140	.044	.239	.136	.043	.226	.130	.041	.214	.123	.040	.203	.118	.038		
2.0	.234	.128	.039	.228	.125	.039	.217	.120	.037	.206	.116	.036	.197	.111	.035		
3.0	.220	.117	.035	.214	.115	.035	.205	.111	.034	.196	.107	.033	.187	.104	.032		
4.0	.206	.107	.031	.201	.105	.031	.193	.102	.031	.185	.099	.030	.177	.096	.029		
5.0	.193	.098	.029	.189	.097	.028	.182	.095	.028	.175	.092	.027	.168	.090	.027		
6.0	.182	.091	.026	.178	.090	.026	.171	.088	.026	.165	.086	.025	.159	.084	.025		
7.0	.171	.085	.024	.168	.084	.024	.162	.082	.024	.156	.080	.023	.151	.078	.023		
8.0	.161	.079	.022	.159	.078	.022	.153	.077	.022	.148	.075	.022	.144	.074	.021		
9.0	.153	.074	.021	.150	.073	.021	.146	.072	.020	.141	.071	.020	.137	.069	.020		
10.0	.145	.070	.019	.143	.069	.019	.138	.068	.019	.134	.067	.019	.130	.066	.019		

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.176	.157	.139	.150	.134	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.105	.141	.114	.091	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.155	.114	.081	.133	.098	.071	.091	.068	.050	.053	.040	.029	.017	.013	.010	
4.0	.146	.100	.065	.125	.086	.056	.086	.060	.040	.050	.035	.023	.016	.011	.008	
5.0	.138	.089	.053	.119	.077	.046	.082	.054	.032	.047	.032	.019	.015	.010	.006	
6.0	.131	.080	.044	.113	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.125	.073	.037	.107	.063	.032	.074	.045	.023	.043	.026	.014	.014	.009	.004	
8.0	.119	.067	.032	.102	.058	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.113	.062	.028	.098	.054	.024	.068	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.108	.058	.024	.093	.050	.021	.065	.035	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm											
NAME: AL5011-WHTC24S02-TS						TYPE:			WEIGHT:		
SPEC.:white RA90 3000K+5700K						DIM.:			SERIAL No.:		
MFR.:						SUR.:195mm			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		18.5	19.8	18.8	20.0	20.1	18.1	19.4	18.4	19.6	19.8
	3H	19.2	20.4	19.5	20.6	20.8	18.9	20.0	19.2	20.3	20.5
	4H	19.6	20.7	19.9	20.9	21.2	19.2	20.3	19.5	20.6	20.8
	6H	19.9	21.0	20.2	21.2	21.5	19.6	20.6	19.9	20.8	21.1
	8H	20.1	21.1	20.4	21.4	21.6	19.7	20.7	20.0	20.9	21.2
	12H	20.2	21.2	20.5	21.5	21.7	19.7	20.7	20.1	21.0	21.3
4H	2H	18.7	19.8	19.0	20.1	20.3	18.4	19.5	18.7	19.7	20.0
	3H	19.7	20.6	20.0	20.9	21.2	19.4	20.3	19.7	20.6	20.9
	4H	20.2	21.1	20.6	21.4	21.7	19.9	20.7	20.2	21.0	21.4
	6H	20.7	21.5	21.1	21.8	22.2	20.3	21.1	20.7	21.4	21.8
	8H	21.0	21.7	21.4	22.0	22.4	20.5	21.2	20.9	21.6	22.0
	12H	21.2	21.8	21.6	22.2	22.6	20.6	21.3	21.1	21.7	22.1
8H	4H	20.4	21.1	20.8	21.5	21.8	20.1	20.8	20.5	21.2	21.5
	6H	21.1	21.7	21.5	22.1	22.5	20.7	21.3	21.1	21.7	22.1
	8H	21.4	21.9	21.9	22.4	22.8	21.0	21.5	21.4	21.9	22.4
	12H	21.7	22.2	22.2	22.6	23.1	21.2	21.6	21.7	22.1	22.6
12H	4H	20.4	21.1	20.8	21.4	21.8	20.1	20.8	20.5	21.1	21.5
	6H	21.1	21.7	21.6	22.1	22.5	20.8	21.3	21.2	21.7	22.2
	8H	21.5	22.0	22.0	22.4	22.9	21.1	21.5	21.6	22.0	22.5
Variations with the observer position at spacings:											
S = 1.0H	+ 0.5 / - 0.6					+ 0.5 / - 0.6					
1.5H	+ 0.4 / - 0.5					+ 0.5 / - 0.4					
2.0H	+ 1.1 / - 0.8					+ 1.2 / - 0.6					

CIE Pub.117, 2504 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 3.2$)

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.402
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	Shielding Angle:

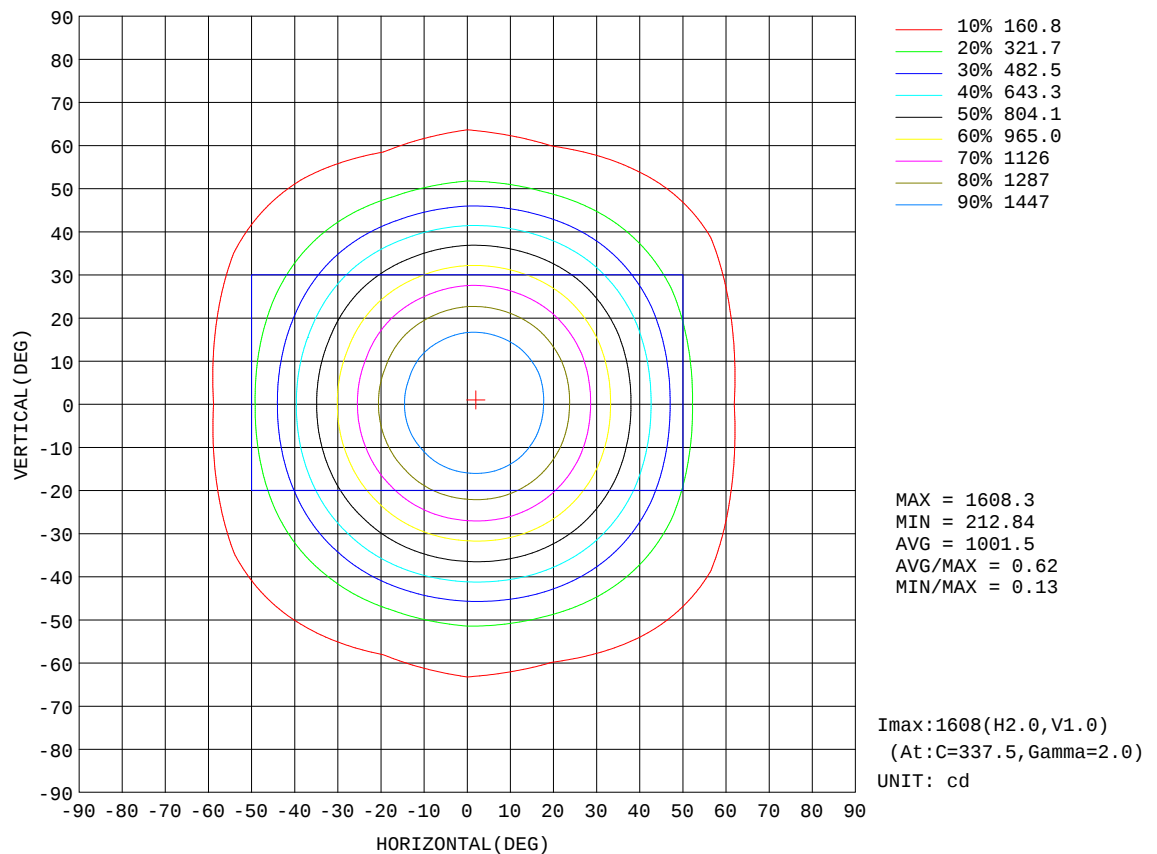
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	70	61	55	70	61	55	69	60	55	50
0.80	80	70	65	79	70	64	77	69	64	59
1.00	87	78	72	86	77	72	84	78	72	66
1.25	92	84	79	91	84	79	89	82	78	72
1.50	96	89	84	95	88	83	92	87	82	76
2.00	102	95	90	100	94	89	97	92	88	81
2.50	104	98	94	102	97	93	99	95	91	84
3.00	107	102	97	105	100	96	101	97	94	87
4.00	110	105	102	108	104	101	104	100	98	90
5.00	112	108	105	109	106	103	105	102	100	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: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	Shielding Angle:

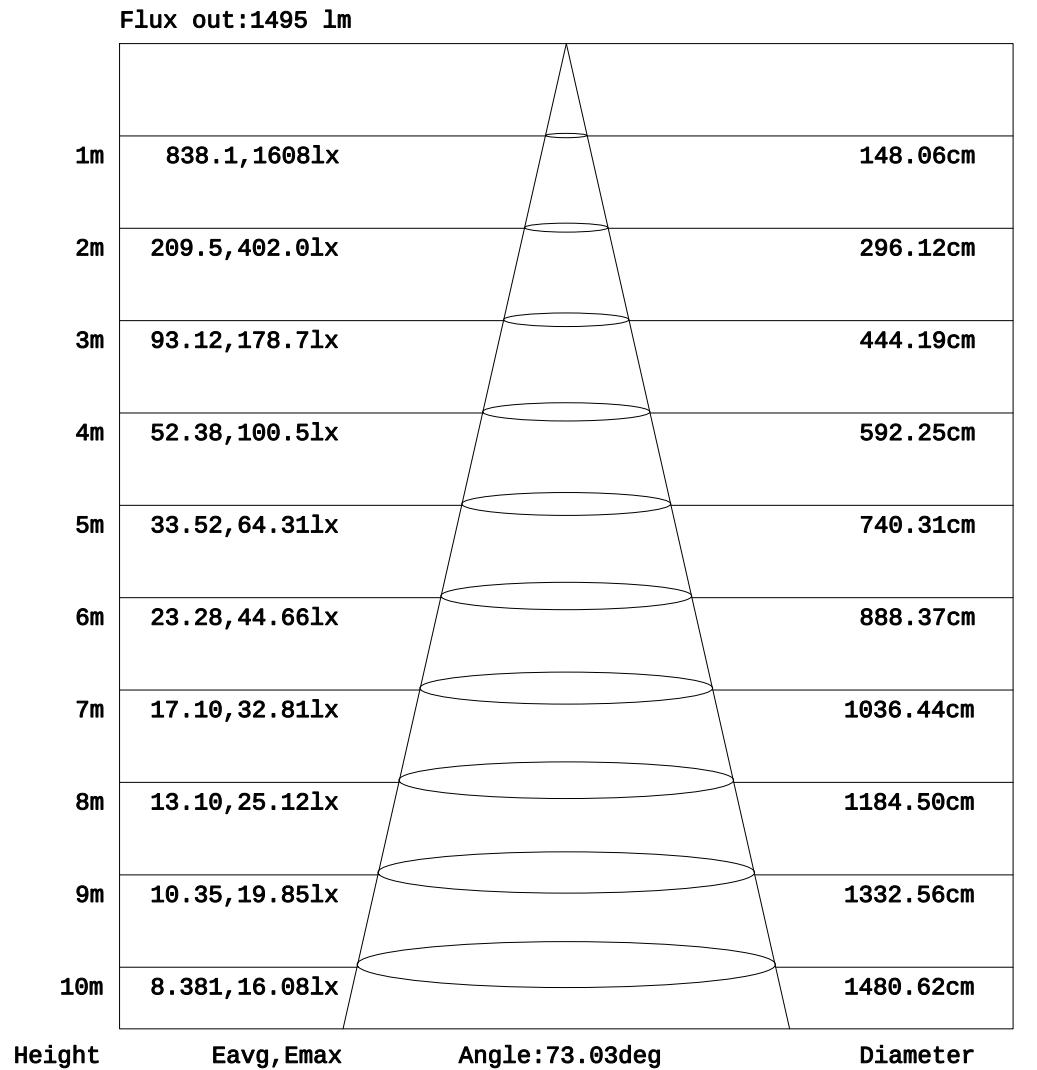


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	Shielding Angle:



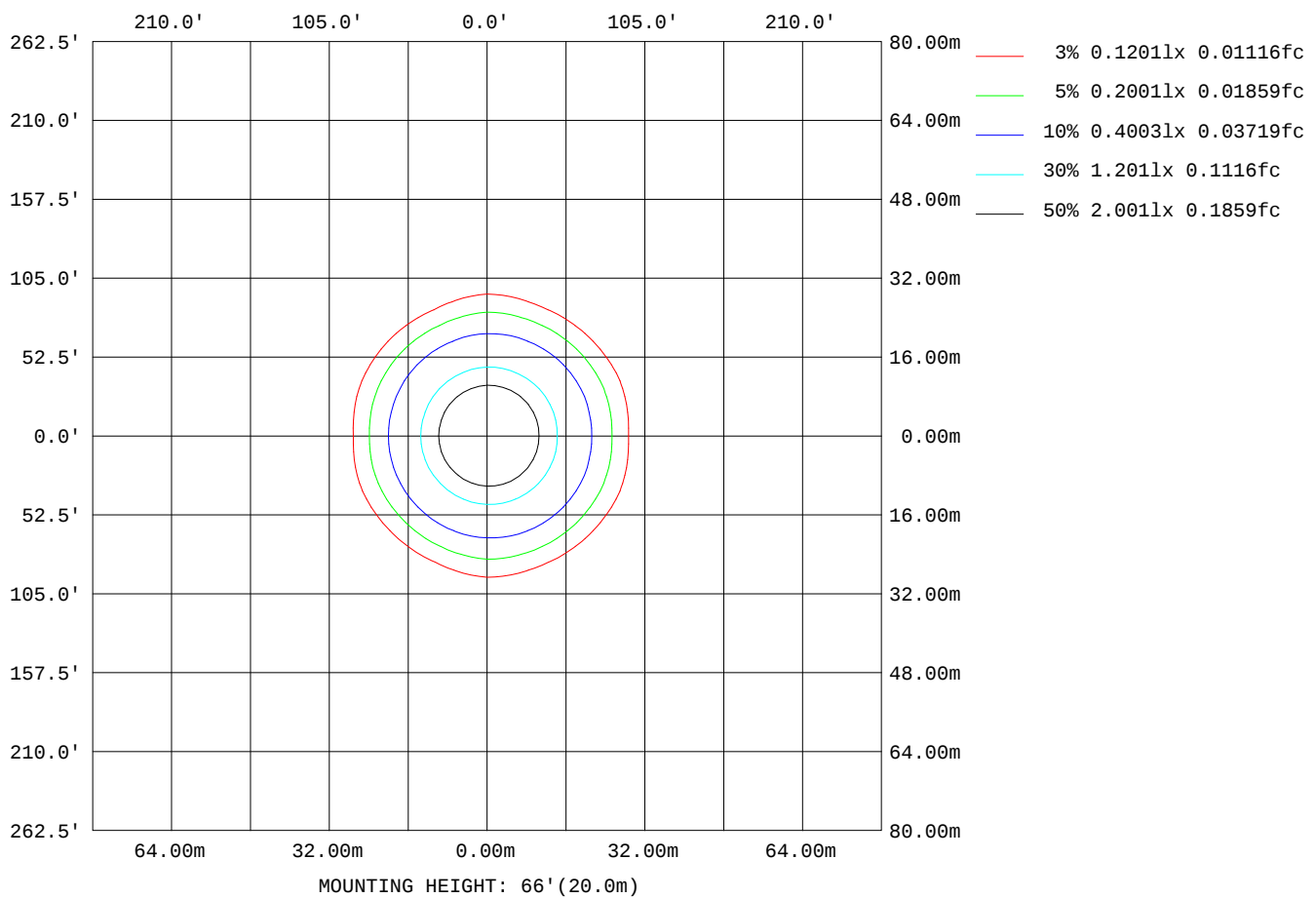
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-07-11

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:230.05V I:0.1029A P:22.194W PF:0.9375 Freq:49.99Hz Lamp Flux:2504.09x1 lm		
NAME: AL5011-WHTC24S02-TS	TYPE:	WEIGHT:
SPEC.:white RA90 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.:195mm	Shielding Angle:

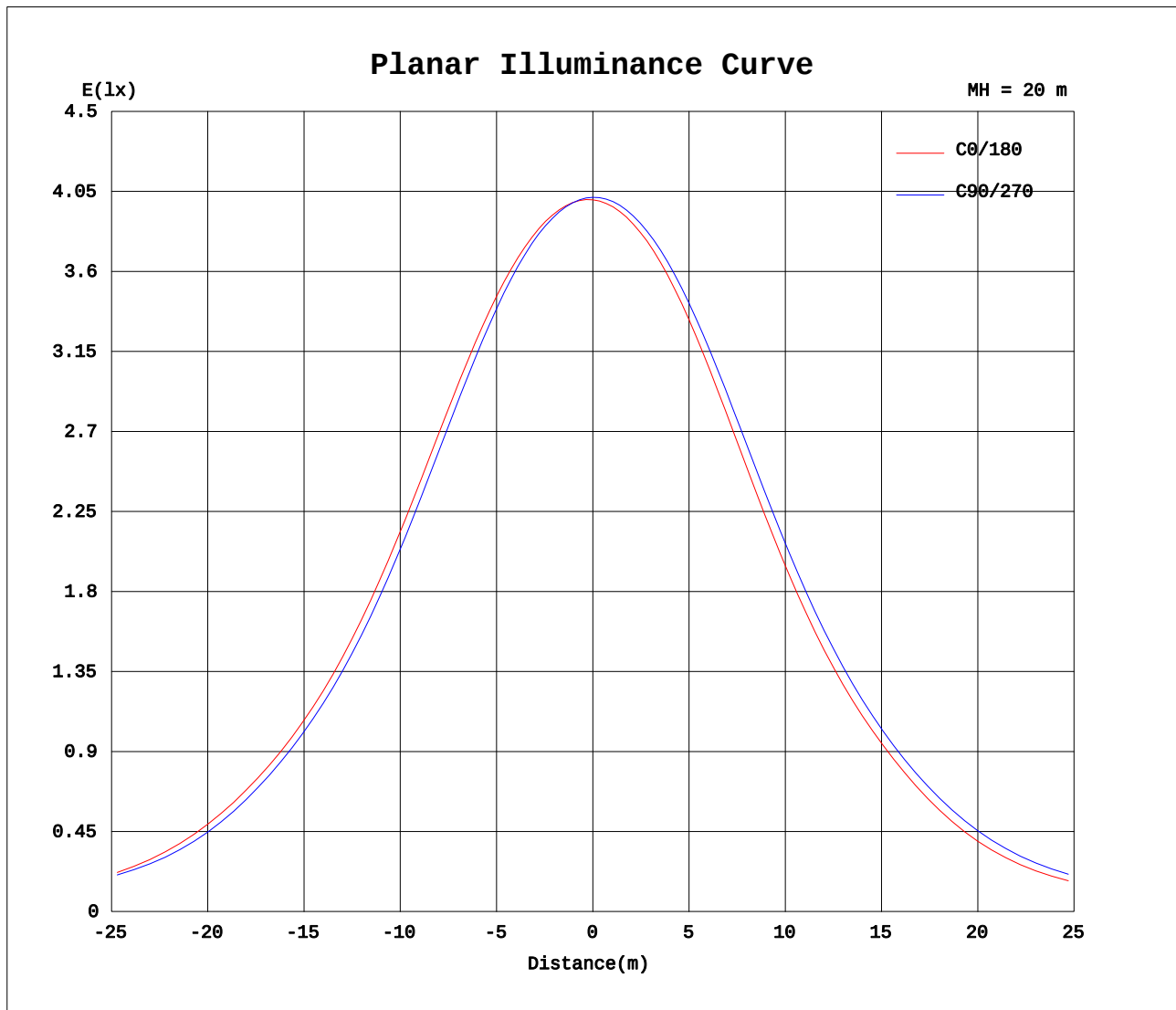
AvgL	cd/m2
L_0~180(65)av	9814
L_0~180(75)av	9343
L_0~180(85)av	8178
L_90~270(65)av	11684
L_90~270(75)av	10225
L_90~270(85)av	8727
L_45(65)av	10949
L_45(75)av	9966
L_45(85)av	8456

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-07-11

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-07-11

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

```

Range: 0 - 90DEG
Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.402
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

```