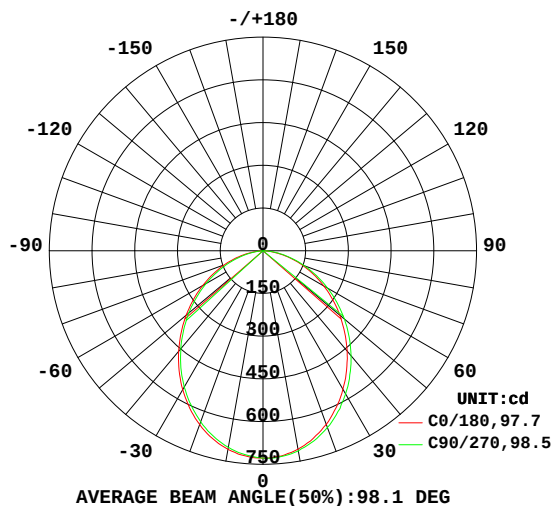


LUMINAIRE PHOTOMETRIC TEST REPORT

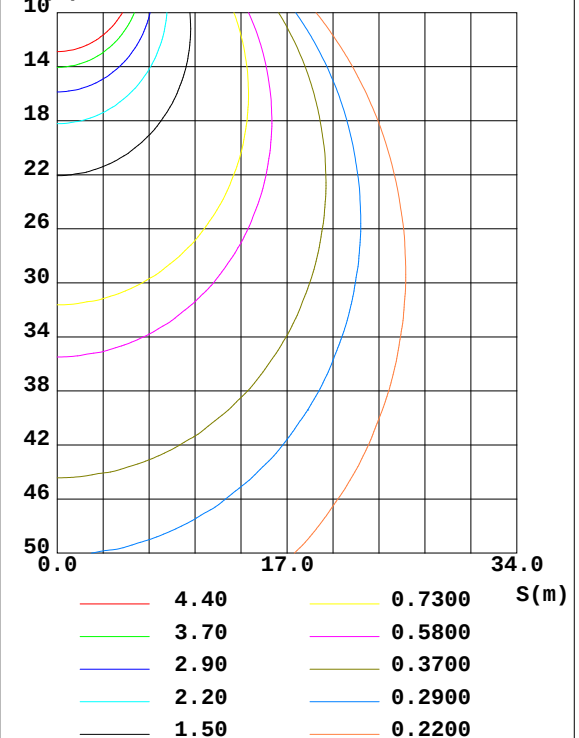
Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm		
NAME: ASD-LWS30-31D24BK	TYPE: LED	WEIGHT: N/A
SPEC.: 5000K	DIM.:	SERIAL No.: N/A
MFR.: ASD Lighting Corp	SUR.:	Shielding Angle: N/A

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 74.46 lm/W
MODEL	ASD-LWS30-31D24BK	I _{max} (cd)	730.5	S/MH(C0/180)	1.16	
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	1.14	
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	1761.2	η UP, DN(C0-180)	0.0, 51.3	
NOMINAL FLUX(lm)	1761.21	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.1, 48.6	
LAMPS INSIDE	1	η up(%)	0.2	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	120	η down(%)	99.8	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: HIGH
Temperature: 24.5DEG
Operators: John Yao
Test Date: 2025-12-23

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-R5000_V2 SYSTEM V2.0.366
Humidity: 55%
Test Distance: 26.000m [K=1.5850]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	707.4	710.4	713.7	708.9	708.2	702.3	700.6	700.8	0- 10	68.51	68.51	3.89,3.89
20	649.1	654.7	660.5	651.1	649.4	639.6	639.4	639.9	10- 20	192.1	260.6	14.8,14.8
30	561.1	571.8	580.4	567.8	563.2	552.2	552.9	551.8	20- 30	280.2	540.8	30.7,30.7
40	459.8	471.4	481.5	466.0	460.8	449.5	448.9	447.6	30- 40	321.2	862.0	48.9,48.9
50	352.1	362.5	373.5	356.9	352.2	341.5	339.7	335.4	40- 50	314.2	1176	66.8,66.8
60	245.9	253.5	261.4	248.2	244.6	234.3	231.3	229.4	50- 60	266.4	1443	81.9,81.9
70	145.9	152.4	155.3	147.5	143.5	133.6	128.0	132.5	60- 70	190.2	1633	92.7,92.7
80	53.77	66.26	62.11	61.72	52.84	50.84	40.31	50.45	70- 80	102.6	1735	98.5,98.5
90	0.3817	0.9634	3.587	0.9473	0	0.0962	3.358	0	80- 90	22.67	1758	99.8,99.8
100	0	0.0000	0.0971	0.0946	0	0.0962	0.5806	0.0428	90-100	0.3522	1758	99.8,99.8
110	0	0	0.0971	0.0946	0.1154	0.4788	0.8765	0.3487	100-110	0.1862	1759	99.9,99.9
120	0	0	0.2880	0.0946	0.3304	0.6561	1.653	0.4029	110-120	0.3001	1759	99.9,99.9
130	0	0	0.2921	0.0946	0.4607	0.7107	2.097	0.4907	120-130	0.3703	1759	99.9,99.9
140	0	0	0.6797	0.2831	0.6597	0.8656	2.317	0.6650	130-140	0.4147	1760	99.9,99.9
150	0.1878	0.4477	1.115	0.3761	1.039	1.253	2.188	1.230	140-150	0.4626	1760	99.9,99.9
160	0.3775	0.7158	1.763	0.6621	1.416	1.582	2.111	1.702	150-160	0.5007	1761	100,100
170	0.6576	1.249	2.621	1.230	1.576	1.557	2.069	1.703	160-170	0.3878	1761	100,100
180	1.321	1.635	3.202	1.609	1.510	1.539	2.039	1.704	170-180	0.1610	1761	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1022.8 lm

%lum = 58.1%

%lamp = 58.1%

Conical surface Flux(120deg): 1442.6 lm

%lum = 81.9%

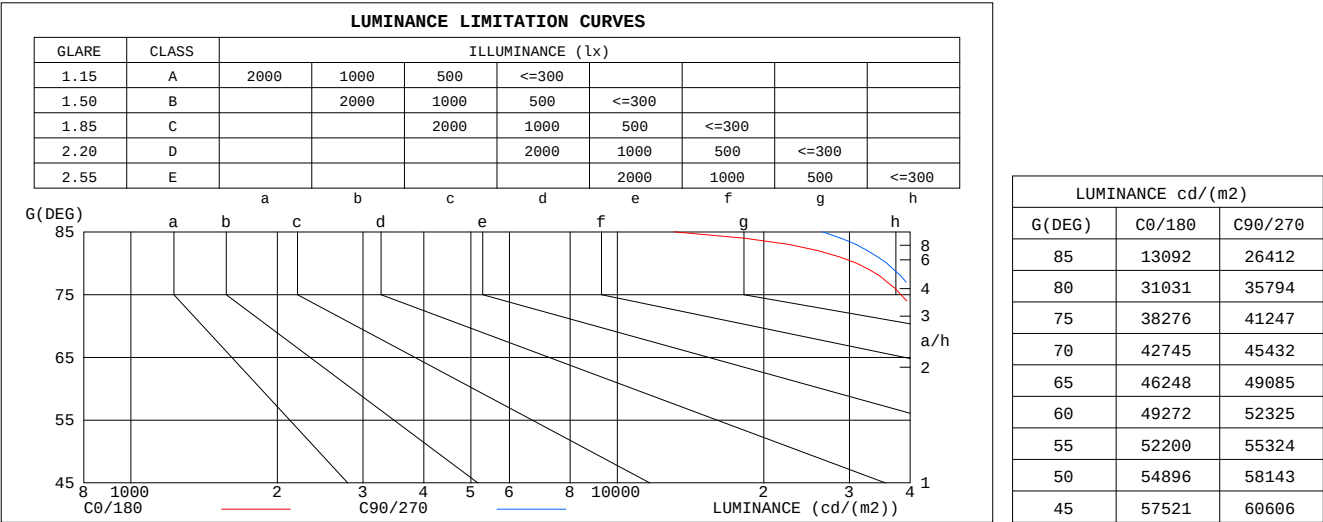
%lamp = 81.9%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:John Yao
Test Date:2025-12-23

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
Humidity:55%
Test Distance:26.000m [K=1.5850]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm		
NAME: ASD-LWS30-31D24BK	TYPE: LED	WEIGHT: N/A
SPEC.: 5000K	DIM.:	SERIAL No.: N/A
MFR.: ASD Lighting Corp	SUR.:	Shielding Angle: N/A



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.5DEG
Operators: John Yao
Test Date: 2025-12-23

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-R5000_V2 SYSTEM V2.0.366
Humidity: 55%
Test Distance: 26.000m [K=1.5850]
Remarks:

WEC AND CCEC

Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm					
NAME:ASD-LWS30-31D24BK			TYPE:LED		WEIGHT:N/A
SPEC.:5000K			DIM.:		SERIAL No.:N/A
MFR.:ASD Lighting Corp			SUR.:		Shielding Angle:N/A

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	.291	.165	.052	.284	.162	.051	.270	.155	.050	.258	.149	.048	.247	.143	.046	
2.0	.276	.151	.046	.270	.149	.046	.259	.144	.045	.248	.139	.044	.238	.135	.042	
3.0	.258	.137	.041	.252	.135	.041	.242	.131	.040	.232	.127	.039	.223	.124	.038	
4.0	.239	.124	.036	.234	.122	.036	.225	.119	.036	.217	.116	.035	.209	.113	.035	
5.0	.222	.113	.033	.218	.112	.033	.209	.109	.032	.202	.107	.032	.195	.104	.031	
6.0	.206	.103	.030	.203	.102	.029	.195	.100	.029	.189	.098	.029	.182	.096	.029	
7.0	.193	.095	.027	.189	.094	.027	.183	.092	.027	.177	.091	.026	.171	.089	.026	
8.0	.180	.088	.025	.177	.087	.025	.172	.086	.024	.166	.084	.024	.161	.083	.024	
9.0	.169	.082	.023	.167	.081	.023	.162	.080	.023	.157	.079	.022	.152	.077	.022	
10.0	.160	.077	.021	.157	.076	.021	.153	.075	.021	.148	.074	.021	.144	.072	.021	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.192	.192	.192	.164	.164	.164	.112	.112	.112	.064	.064	.064	.021	.021	.021	
1.0	.180	.158	.137	.154	.135	.118	.106	.093	.082	.061	.054	.048	.019	.017	.015	
2.0	.172	.133	.101	.147	.115	.088	.101	.079	.061	.058	.046	.036	.019	.015	.012	
3.0	.163	.116	.077	.140	.100	.067	.096	.069	.047	.056	.040	.028	.018	.013	.009	
4.0	.156	.102	.061	.134	.088	.053	.092	.062	.037	.053	.036	.022	.017	.012	.007	
5.0	.148	.092	.050	.127	.079	.043	.088	.055	.031	.051	.033	.018	.016	.011	.006	
6.0	.141	.083	.042	.121	.072	.036	.084	.050	.026	.049	.030	.015	.016	.010	.005	
7.0	.135	.076	.035	.116	.066	.031	.080	.046	.022	.046	.027	.013	.015	.009	.004	
8.0	.128	.070	.031	.110	.061	.027	.076	.043	.019	.044	.025	.011	.014	.008	.004	
9.0	.122	.065	.027	.105	.057	.024	.073	.040	.017	.043	.024	.010	.014	.008	.003	
10.0	.117	.061	.024	.101	.053	.021	.070	.037	.015	.041	.022	.009	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:John Yao
 Test Date:2025-12-23

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
 Humidity:55%
 Test Distance:26.000m [K=1.5850]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm										
NAME:ASD-LWS30-31D24BK					TYPE:LED			WEIGHT:N/A		
SPEC.:5000K					DIM.:			SERIAL No.:N/A		
MFR.:ASD Lighting Corp					SUR.:			Shielding Angle:N/A		
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	26.5	27.9	26.7	28.1	28.3	26.8	28.3	27.1	28.5	28.7
3H	27.8	29.2	28.1	29.4	29.6	28.1	29.5	28.4	29.7	30.0
4H	28.3	29.6	28.6	29.9	30.1	28.7	30.0	29.0	30.2	30.5
6H	28.7	29.9	29.0	30.1	30.4	29.0	30.2	29.4	30.5	30.8
8H	28.7	29.9	29.1	30.2	30.5	29.1	30.3	29.5	30.6	30.9
12H	28.7	29.8	29.1	30.1	30.4	29.2	30.3	29.5	30.6	30.9
4H 2H	27.1	28.3	27.4	28.6	28.9	27.3	28.6	27.6	28.8	29.1
3H	28.6	29.7	28.9	30.0	30.3	28.9	30.0	29.2	30.3	30.6
4H	29.2	30.3	29.6	30.6	30.9	29.5	30.5	29.9	30.9	31.2
6H	29.7	30.6	30.1	30.9	31.3	30.0	30.9	30.4	31.3	31.6
8H	29.8	30.6	30.2	31.0	31.4	30.2	31.0	30.6	31.4	31.8
12H	29.8	30.6	30.2	31.0	31.4	30.2	31.0	30.7	31.4	31.8
8H 4H	29.5	30.3	29.9	30.7	31.1	29.7	30.6	30.2	31.0	31.3
6H	30.1	30.8	30.5	31.2	31.6	30.4	31.1	30.8	31.5	31.9
8H	30.3	30.9	30.7	31.3	31.8	30.6	31.2	31.1	31.7	32.1
12H	30.3	30.9	30.8	31.3	31.8	30.8	31.3	31.3	31.8	32.3
12H 4H	29.5	30.3	29.9	30.7	31.1	29.8	30.5	30.2	30.9	31.3
6H	30.2	30.8	30.6	31.2	31.7	30.4	31.1	30.9	31.5	31.9
8H	30.4	30.9	30.9	31.4	31.8	30.7	31.3	31.2	31.7	32.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.1 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.3 / - 0.3				

CIE Pub.117, 1761 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 2.0$)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:John Yao
Test Date:2025-12-23

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
Humidity:55%
Test Distance:26.000m [K=1.5850]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm		
NAME:ASD-LWS30-31D24BK	TYPE:LED	WEIGHT:N/A
SPEC.:5000K	DIM.:	SERIAL No.:N/A
MFR.:ASD Lighting Corp	SUR.:	Shielding Angle:N/A

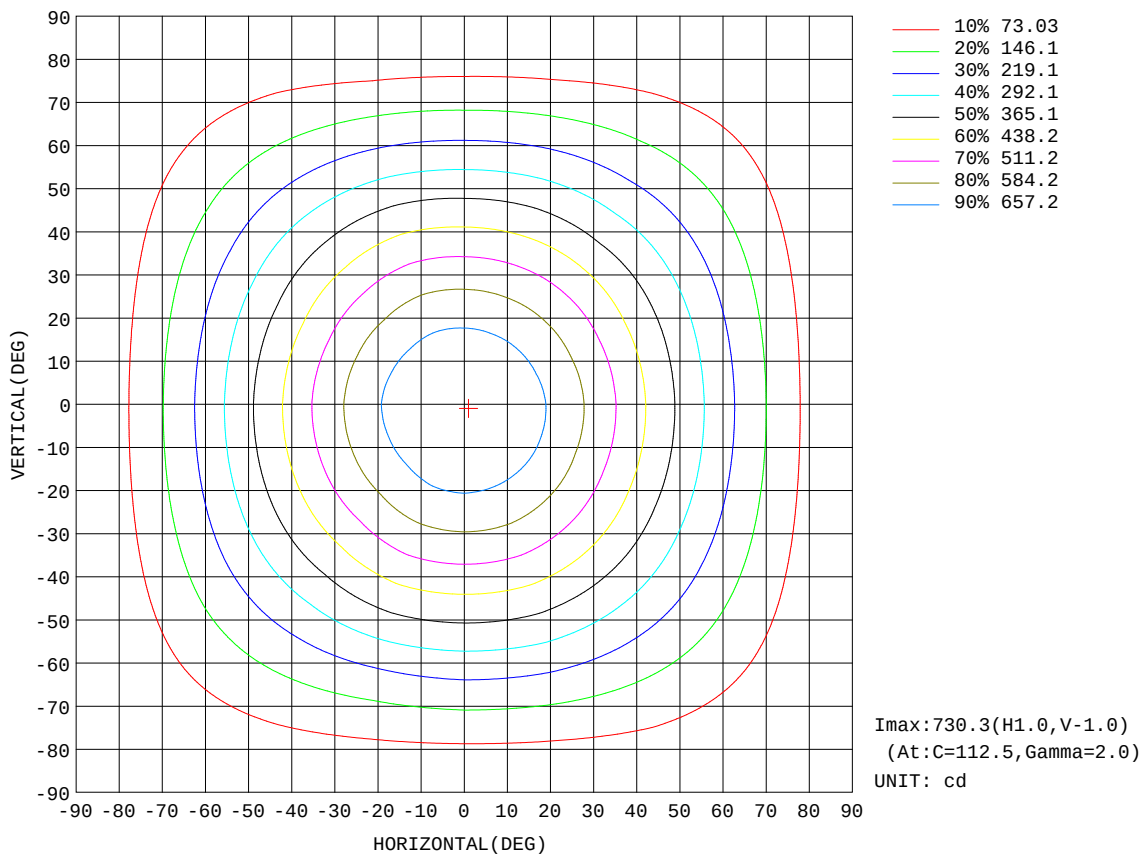
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	60	49	42	59	49	42	58	48	42	36
0.80	70	59	52	69	58	52	67	58	51	45
1.00	78	68	61	77	67	60	75	68	60	53
1.25	85	75	68	84	75	68	81	73	67	60
1.50	90	81	74	88	80	74	85	78	72	65
2.00	97	88	82	95	87	82	91	85	80	73
2.50	100	93	87	98	92	86	94	89	84	76
3.00	103	97	92	101	95	91	97	92	88	80
4.00	107	102	97	105	100	96	101	97	93	85
5.00	109	105	101	107	103	99	103	99	96	87
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:24.5DEG
 Operators:John Yao
 Test Date:2025-12-23

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
 Humidity:55%
 Test Distance:26.000m [K=1.5850]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm		
NAME:ASD-LWS30-31D24BK	TYPE:LED	WEIGHT:N/A
SPEC.:5000K	DIM.:	SERIAL No.:N/A
MFR.: ASD Lighting Corp	SUR.:	Shielding Angle:N/A

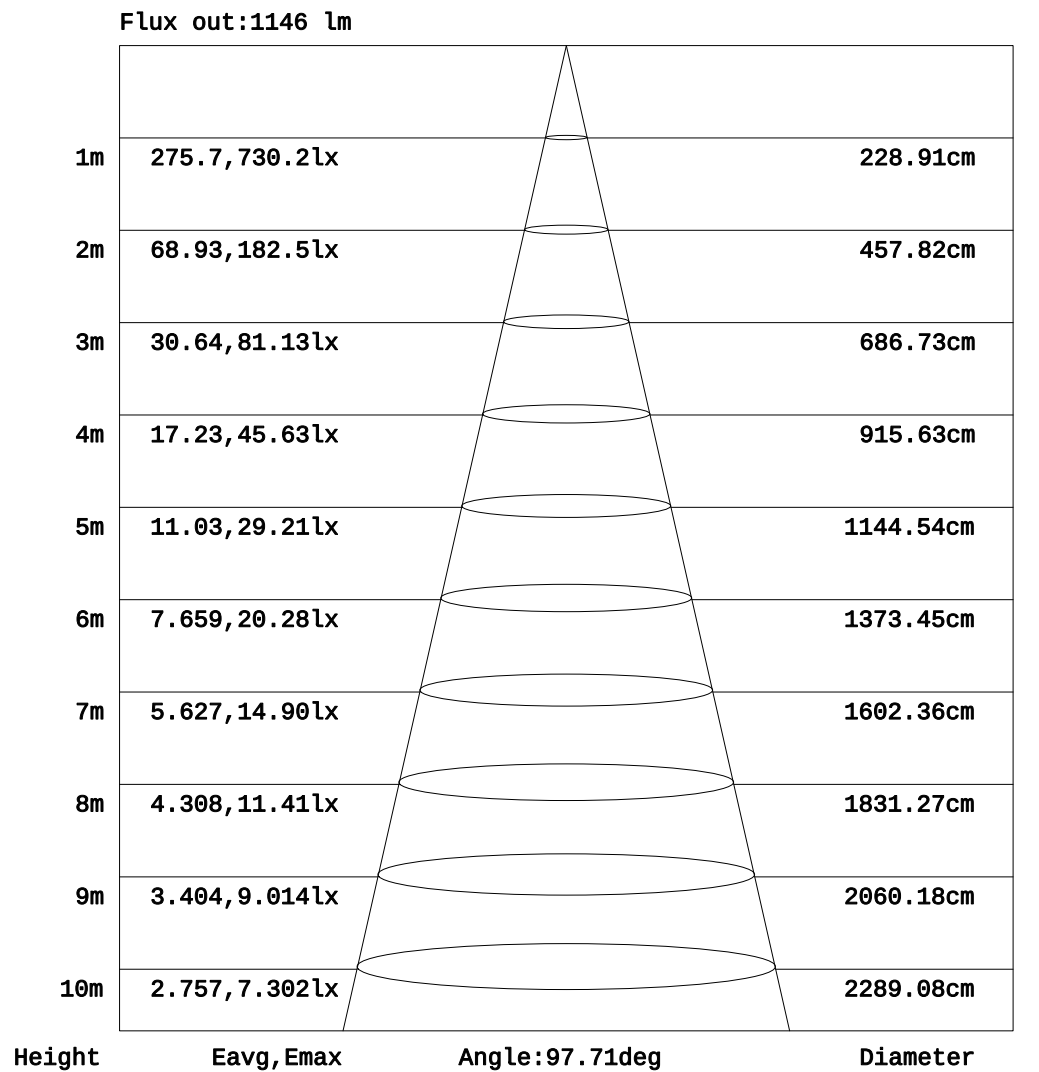


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:John Yao
Test Date:2025-12-23

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
Humidity:55%
Test Distance:26.000m [K=1.5850]
Remarks:

AAI Figure

Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm		
NAME:ASD-LWS30-31D24BK	TYPE:LED	WEIGHT:N/A
SPEC.:5000K	DIM.:	SERIAL No.:N/A
MFR.:ASD Lighting Corp	SUR.:	Shielding Angle:N/A

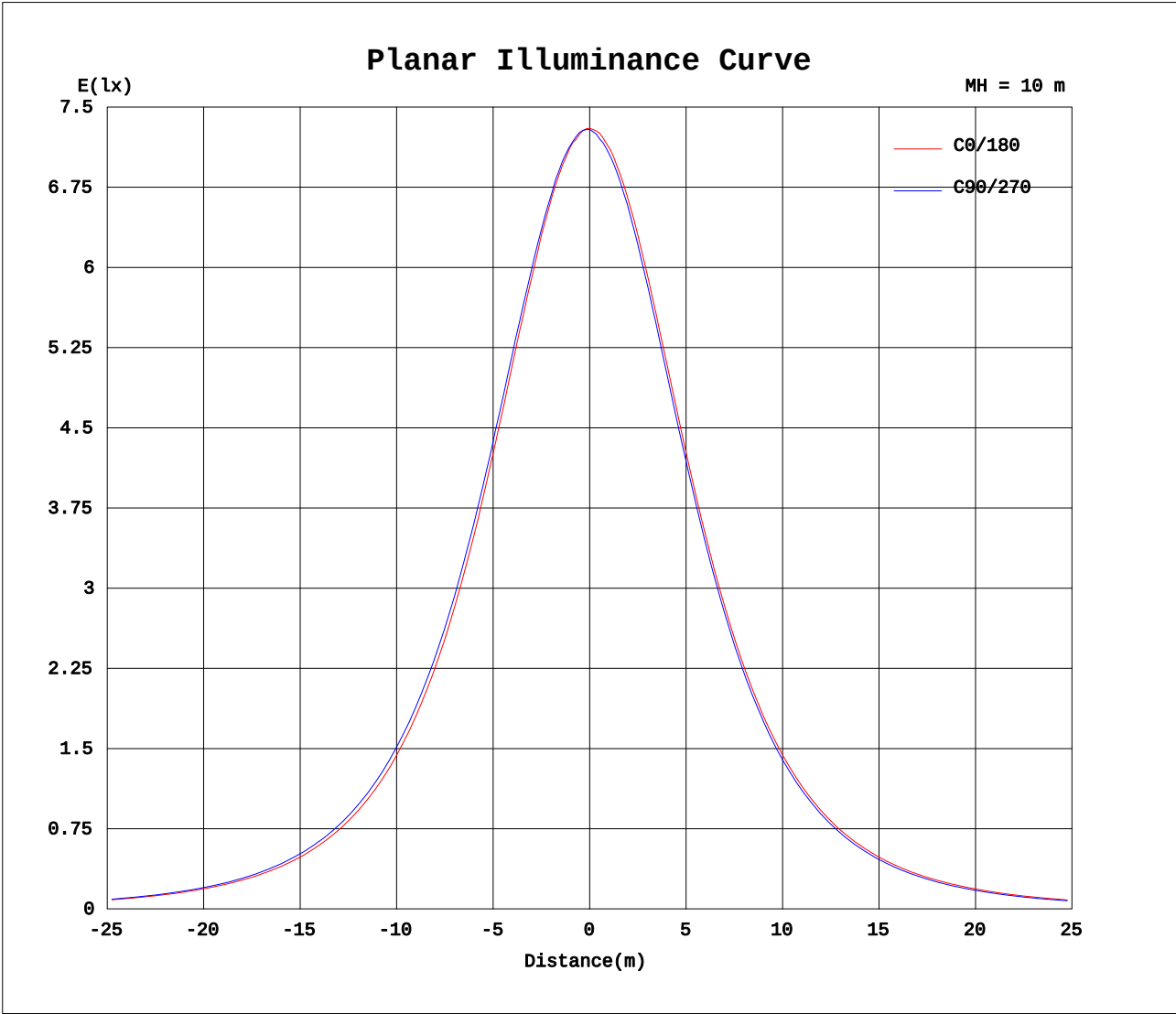


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:John Yao
 Test Date:2025-12-23

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
 Humidity:55%
 Test Distance:26.000m [K=1.5850]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:John Yao
Test Date:2025-12-23

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
Humidity:55%
Test Distance:26.000m [K=1.5850]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.03V I:0.1999A P:23.654W PF:0.9856 Freq:60.01Hz Lamp Flux:1761.21x1 lm		
NAME: ASD-LWS30-31D24BK	TYPE:LED	WEIGHT:N/A
SPEC.:5000K	DIM.:	SERIAL No.:N/A
MFR.:ASD Lighting Corp	SUR.:	Shielding Angle:N/A

Table--1

UNIT: cd

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	729	729	729	729	729	729	729	729	729	729	729	729	729	729	729	729			
5	724	724	725	726	725	727	724	725	723	722	719	721	719	720	720	722			
10	707	711	710	713	714	714	709	710	708	706	702	702	701	702	701	705			
15	682	684	688	690	691	691	684	685	683	680	676	676	674	675	675	680			
20	649	652	655	660	660	660	651	651	649	645	640	643	639	640	640	645			
25	608	612	617	622	623	623	613	612	609	603	598	604	598	599	599	603			
30	561	566	572	581	580	579	568	566	563	556	552	559	553	552	552	556			
35	512	516	523	533	532	531	517	517	514	505	502	508	503	503	502	506			
40	460	463	471	482	482	481	466	464	461	451	449	456	449	449	448	452			
45	406	409	418	429	428	427	412	410	406	397	396	401	394	396	390	398			
50	352	355	362	374	373	372	357	355	352	342	342	345	340	341	335	344			
55	299	301	307	319	317	314	302	302	298	289	287	289	285	286	282	290			
60	246	249	253	263	261	256	248	248	245	236	234	234	231	232	229	238			
65	195	198	202	208	207	199	196	197	193	185	182	181	178	180	179	188			
70	146	149	152	156	155	148	148	149	144	138	134	130	128	129	133	141			
75	98.9	104	107	107	107	102	104	102	97.4	93.5	90.8	81.9	81.6	83.2	90.2	95.4			
80	53.8	59.8	66.3	64.0	62.1	62.4	61.7	57.9	52.8	50.8	50.8	43.6	40.3	46.4	50.4	52.3			
85	11.4	17.8	27.1	30.3	23.0	28.4	23.7	15.3	10.7	9.85	13.2	13.5	11.2	15.8	12.8	10.9			
90	0.38	0.76	0.96	1.69	3.59	1.33	0.95	0.58	0.00	0.00	0.10	0.10	3.36	0.10	0.00	0.09			
95	0.19	0.19	0.38	0.45	0.20	0.38	0.38	0.19	0.00	0.00	0.10	0.19	1.44	0.19	0.00	0.00			
100	0.00	0.00	0.00	0.29	0.10	0.19	0.09	0.00	0.00	0.19	0.10	0.39	0.58	0.23	0.04	0.00			
105	0.00	0.00	0.00	0.13	0.10	0.19	0.09	0.00	0.09	0.12	0.27	0.55	0.66	0.27	0.25	0.00			
110	0.00	0.00	0.00	0.10	0.10	0.19	0.09	0.00	0.12	0.26	0.48	0.74	0.88	0.37	0.35	0.10			
115	0.00	0.00	0.00	0.10	0.10	0.19	0.09	0.00	0.22	0.39	0.62	0.91	1.17	0.45	0.37	0.28			
120	0.00	0.00	0.00	0.10	0.29	0.19	0.09	0.00	0.33	0.45	0.66	0.99	1.65	0.46	0.40	0.30			
125	0.00	0.00	0.00	0.10	0.29	0.19	0.09	0.00	0.45	0.51	0.67	0.97	1.73	0.47	0.44	0.42			
130	0.00	0.00	0.00	0.10	0.29	0.19	0.09	0.00	0.46	0.58	0.71	1.55	2.10	0.73	0.49	0.46			
135	0.00	0.00	0.00	0.10	0.39	0.19	0.09	0.00	0.57	0.64	0.78	1.57	2.23	0.87	0.55	0.48			
140	0.00	0.00	0.00	0.29	0.68	0.19	0.28	0.00	0.66	0.67	0.87	1.58	2.32	1.05	0.66	0.57			
145	0.00	0.00	0.10	0.43	0.95	0.38	0.28	0.00	0.87	0.76	1.07	1.60	2.25	1.25	0.95	0.86			
150	0.19	0.09	0.45	0.62	1.12	0.57	0.38	0.19	1.04	0.95	1.25	1.62	2.19	1.62	1.23	1.10			
155	0.28	0.38	0.67	0.77	1.36	0.94	0.57	0.38	1.32	1.33	1.59	1.63	2.13	1.69	1.51	1.43			
160	0.38	0.56	0.72	0.77	1.76	1.14	0.66	0.37	1.42	1.33	1.58	1.64	2.11	2.38	1.70	1.49			
165	0.49	0.60	0.81	1.35	1.81	1.42	0.66	0.48	1.50	1.33	1.57	1.64	2.09	3.14	1.70	1.56			
170	0.66	0.85	1.25	1.74	2.62	1.61	1.23	0.63	1.58	1.33	1.56	1.64	2.07	3.18	1.70	1.60			
175	0.85	1.33	1.56	2.13	3.11	1.68	1.45	1.05	1.60	1.33	1.54	1.64	2.05	3.22	1.70	1.62			
180	1.32	1.42	1.64	2.03	3.20	1.71	1.61	1.34	1.51	1.33	1.54	1.64	2.04	3.23	1.70	1.62			

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:John Yao
Test Date:2025-12-23

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-R5000_V2 SYSTEM V2.0.366
Humidity:55%
Test Distance:26.000m [K=1.5850]
Remarks: