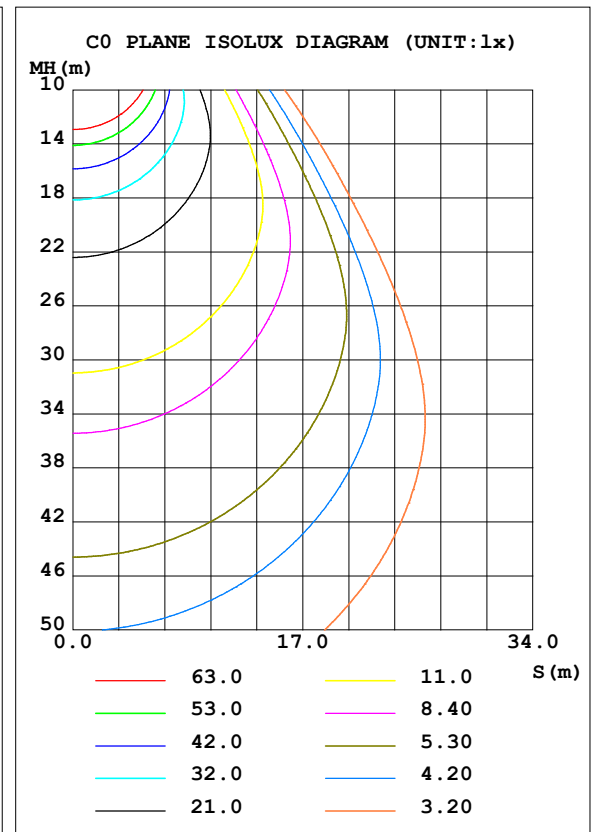
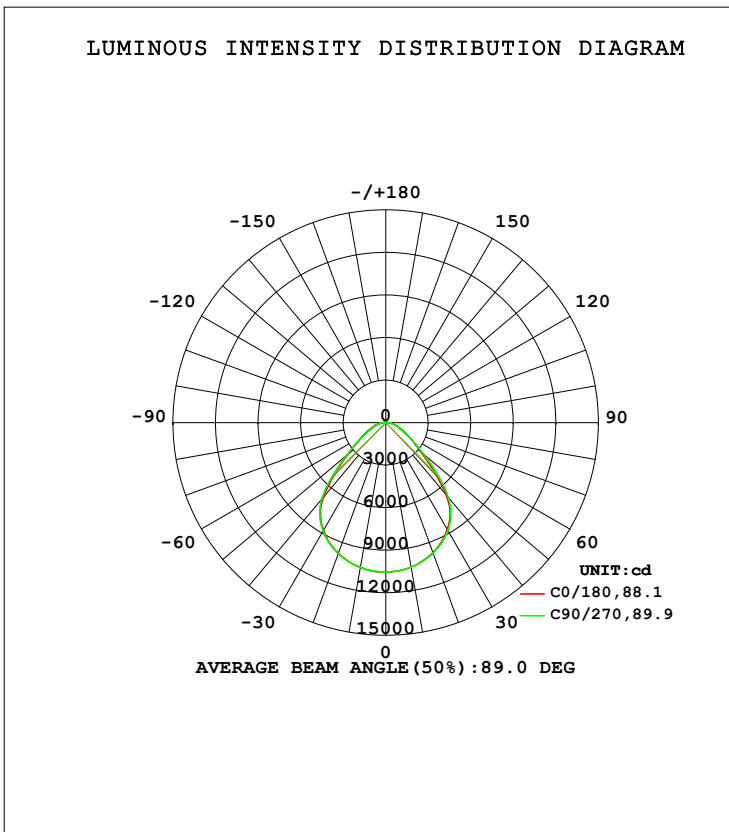


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm		
NAME: ASD-WHB5A-A160DAC-20EM-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.36*0.25m	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 137.72 lm/W			
MODEL		I _{max} (cd)	10546	S/MH (C0/180)	1.24
NOMINAL POWER (W)	160	LOR (%)	99.4	S/MH (C90/270)	1.24
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	21781	<input type="checkbox"/> UP, DN (C0-180)	0.5, 48.8
NOMINAL FLUX (lm)	21911.9	CIE CLASS	DIRECT	<input type="checkbox"/> UP, DN (C180-360)	0.5, 49.6
LAMPS INSIDE	1	<input type="checkbox"/> up (%)	1.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	120	<input type="checkbox"/> down (%)	98.4	CIBSE SHR MAX	1.30



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 15DEG
 Operators: lianghaizhu
 Test Date: 2022-12-31

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:

mm	C0	C45	C90	C135	C180	C225	C270	C315	mm	□ zone	□ total	%lum, lamp
10	1034	1033	1035	1036	1037	1039	1037	1032	0- 10	997.1	997.1	4.58,4.55
20	975.2	973.5	978.4	982.1	981.0	985.8	982.6	973.8	10- 20	2856	3853	17.7,17.6
30	869.3	868.0	877.4	883.7	879.5	888.4	884.3	869.1	20- 30	4302	8155	37.4,37.2
40	661.9	663.2	686.1	698.5	683.8	707.4	702.2	667.6	30- 40	4968	13123	60.3,59.9
50	331.2	330.9	354.1	365.7	352.2	371.7	367.1	334.9	40- 50	3928	17051	78.3,77.8
60	175.7	162.9	166.0	180.5	185.3	180.8	171.8	166.8	50- 60	2228	19279	88.5,88
70	97.71	93.92	90.75	102.9	103.7	102.8	92.38	95.90	60- 70	1292	20571	94.4,93.9
80	43.40	44.23	46.88	51.98	48.84	52.52	48.13	44.90	70- 80	764.4	21335	98,97.4
90	0.7294	0.7558	0.7625	0.9290	0.8243	0.9747	0.7729	0.7842	80- 90	234.3	21570	99,98.4
100	1.195	1.247	1.245	1.162	1.247	1.244	1.310	1.331	90-100	10.65	21580	99.1,98.5
110	1.939	2.002	2.014	1.887	2.032	2.024	2.114	2.128	100-110	17.06	21597	99.2,98.6
120	2.884	2.954	2.976	2.819	2.979	2.962	3.079	3.081	110-120	24.54	21622	99.3,98.7
130	3.939	3.994	4.039	3.858	4.054	4.004	4.155	4.128	120-130	31.23	21653	99.4,98.8
140	4.931	4.985	5.023	4.872	5.086	5.027	5.165	5.131	130-140	35.00	21688	99.6,99
150	5.827	5.901	5.928	5.800	6.025	5.993	6.110	6.083	140-150	34.41	21722	99.7,99.1
160	6.813	6.863	6.914	6.727	7.040	6.957	7.107	7.076	150-160	29.68	21752	99.9,99.3
170	7.769	7.756	7.816	7.653	7.912	7.825	7.962	7.894	160-170	20.86	21773	100,99.4
180	8.311	8.224	8.308	8.209	8.317	8.227	8.313	8.207	170-180	7.662	21781	100,99.4
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

Conical surface Flux(90deg): 15334 lm

%lum = 70.4%

%lamp = 70.0%

Conical surface Flux(120deg): 19279 lm

%lum = 88.5%

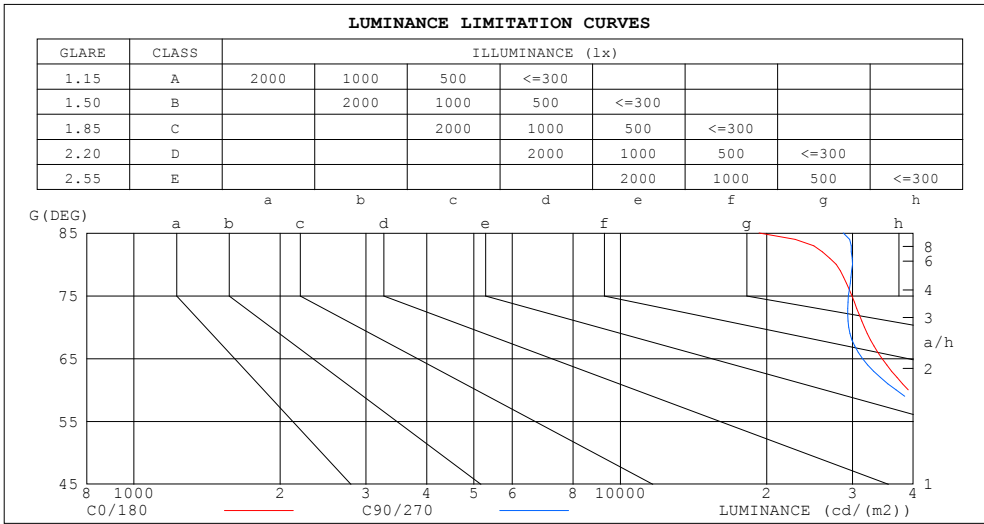
%lamp = 88.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

□ 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:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm		
NAME: ASD-WHB5A-A160DAC-20EM-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.36*0.25m	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	19283	28717
80	27769	29995
75	29927	29446
70	31744	29482
65	34513	31455
60	39055	36880
55	46095	46577
50	57243	61202
45	75073	81074

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

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:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm		
NAME: ASD-WHB5A-A160DAC-20EM-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.36*0.25m	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	.255 .145 .046	.248 .142 .045	.235 .135 .043	.222 .128 .041	.211 .122 .039	
2.0	.243 .133 .041	.237 .131 .040	.225 .125 .039	.215 .120 .038	.205 .116 .036	
3.0	.229 .122 .036	.223 .120 .036	.213 .115 .035	.203 .112 .034	.195 .108 .033	
4.0	.214 .111 .033	.210 .110 .032	.200 .106 .032	.192 .103 .031	.184 .100 .030	
5.0	.201 .102 .030	.197 .101 .029	.189 .098 .029	.181 .096 .028	.174 .093 .028	
6.0	.189 .095 .027	.185 .093 .027	.178 .091 .026	.171 .089 .026	.165 .087 .026	
7.0	.178 .088 .025	.174 .087 .025	.168 .085 .024	.162 .083 .024	.156 .081 .024	
8.0	.167 .082 .023	.164 .081 .023	.159 .079 .023	.153 .078 .022	.148 .076 .022	
9.0	.158 .077 .021	.156 .076 .021	.150 .074 .021	.145 .073 .021	.141 .071 .021	
10.0	.150 .072 .020	.147 .071 .020	.143 .070 .020	.138 .069 .020	.134 .067 .019	

<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	.197 .197 .197	.168 .168 .168	.115 .115 .115	.066 .066 .066	.021 .021 .021	
1.0	.183 .163 .145	.157 .140 .125	.107 .096 .086	.062 .056 .050	.020 .018 .016	
2.0	.172 .139 .111	.148 .119 .096	.101 .083 .067	.058 .048 .039	.019 .016 .013	
3.0	.163 .121 .087	.140 .104 .075	.096 .072 .053	.056 .042 .031	.018 .014 .010	
4.0	.155 .107 .070	.133 .093 .061	.092 .065 .043	.053 .038 .025	.017 .012 .008	
5.0	.148 .096 .059	.127 .083 .051	.087 .058 .036	.051 .034 .021	.016 .011 .007	
6.0	.141 .088 .050	.121 .076 .043	.084 .053 .031	.048 .031 .018	.016 .010 .006	
7.0	.135 .081 .043	.116 .070 .038	.080 .049 .027	.046 .029 .016	.015 .009 .005	
8.0	.129 .075 .038	.111 .065 .033	.077 .046 .024	.045 .027 .014	.014 .009 .005	
9.0	.123 .070 .034	.106 .061 .030	.074 .043 .021	.043 .025 .013	.014 .008 .004	
10.0	.118 .066 .031	.102 .057 .027	.071 .040 .019	.041 .024 .012	.013 .008 .004	

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

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:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm										
NAME: ASD-WHB5A-A160DAC-20EM-3500K					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: ASD LIGHTING CORP					SUR.:0.36*0.25m			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	25.4	26.7	25.6	26.9	27.1	25.4	26.7	25.7	26.9	27.1
3H	26.1	27.3	26.4	27.5	27.8	26.0	27.2	26.3	27.5	27.7
4H	26.4	27.5	26.7	27.8	28.1	26.3	27.5	26.6	27.7	28.0
6H	26.7	27.8	27.0	28.0	28.3	26.6	27.7	27.0	28.0	28.3
8H	26.8	27.8	27.1	28.1	28.4	26.8	27.8	27.1	28.1	28.4
12H	26.8	27.8	27.2	28.1	28.4	26.9	27.9	27.2	28.2	28.5
4H 2H	25.5	26.7	25.8	26.9	27.2	25.6	26.7	25.9	27.0	27.2
3H	26.5	27.4	26.8	27.7	28.1	26.4	27.4	26.7	27.7	28.0
4H	26.9	27.8	27.3	28.2	28.5	26.9	27.8	27.3	28.1	28.4
6H	27.4	28.2	27.8	28.5	28.9	27.3	28.1	27.7	28.5	28.9
8H	27.5	28.3	27.9	28.6	29.0	27.5	28.3	28.0	28.7	29.1
12H	27.6	28.3	28.0	28.7	29.1	27.7	28.4	28.1	28.8	29.2
8H 4H	27.1	27.8	27.5	28.2	28.6	27.0	27.8	27.5	28.2	28.6
6H	27.7	28.3	28.1	28.7	29.1	27.7	28.3	28.1	28.7	29.1
8H	27.9	28.4	28.4	28.9	29.3	27.9	28.5	28.4	28.9	29.4
12H	28.0	28.5	28.5	28.9	29.4	28.2	28.6	28.6	29.1	29.6
12H 4H	27.1	27.8	27.5	28.2	28.6	27.0	27.7	27.5	28.1	28.5
6H	27.7	28.2	28.2	28.7	29.2	27.7	28.2	28.2	28.7	29.1
8H	28.0	28.4	28.5	28.9	29.4	28.0	28.5	28.5	28.9	29.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.7					+ 0.6 / - 0.7				
1.5H	+ 0.6 / - 0.5					+ 0.6 / - 0.5				
2.0H	+ 1.2 / - 0.7					+ 1.4 / - 0.8				

CIE Pub.117, 21912 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 10.7)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

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:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm		
NAME: ASD-WHB5A-A160DAC-20EM-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.36*0.25m	Shielding Angle:

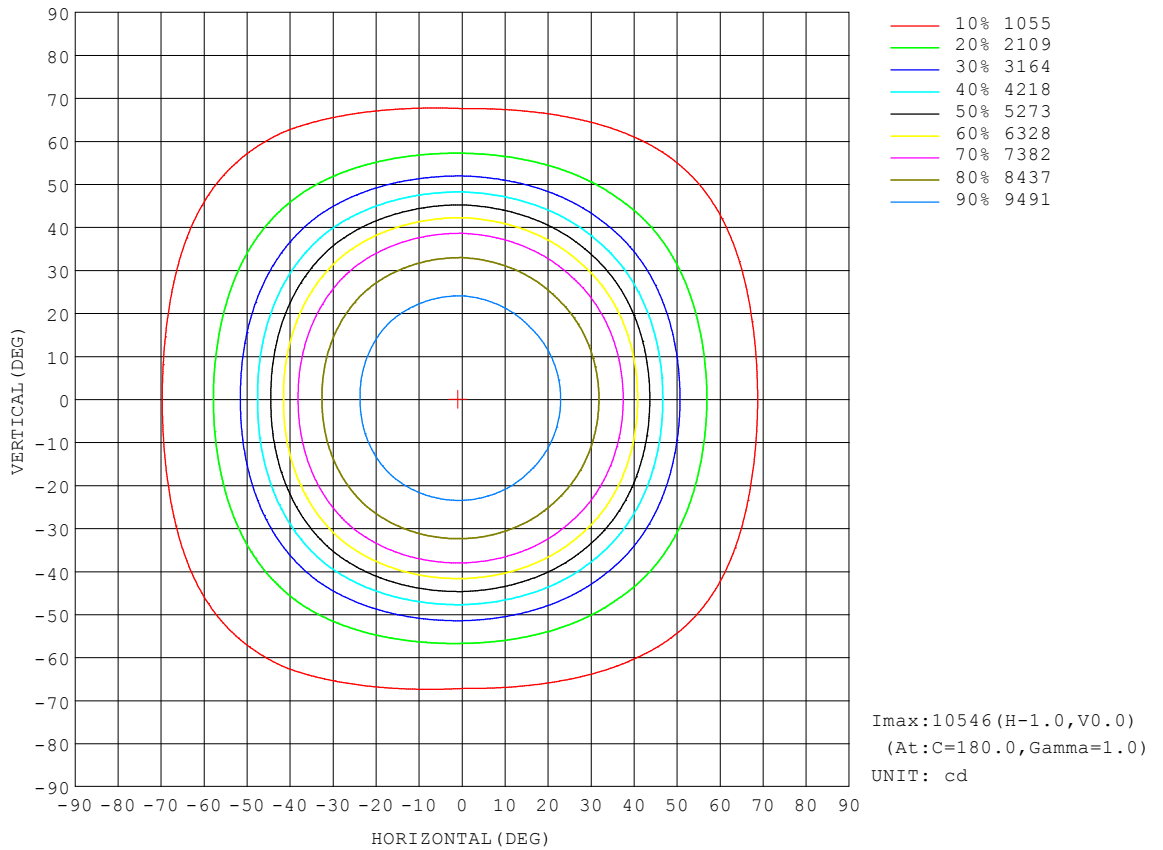
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	66	56	51	66	56	50	65	56	50	45
0.80	76	66	60	75	66	60	73	65	60	54
1.00	84	74	69	82	74	68	80	75	68	62
1.25	90	81	76	88	81	75	86	79	74	68
1.50	94	86	81	92	85	80	90	83	79	72
2.00	99	93	88	98	91	87	94	89	85	78
2.50	102	96	91	100	95	90	97	92	88	81
3.00	105	100	95	103	98	94	99	95	92	84
4.00	108	104	100	106	102	98	102	98	96	87
5.00	110	106	103	108	104	101	103	100	98	89
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:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

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:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm		
NAME: ASD-WHB5A-A160DAC-20EM-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.36*0.25m	Shielding Angle:

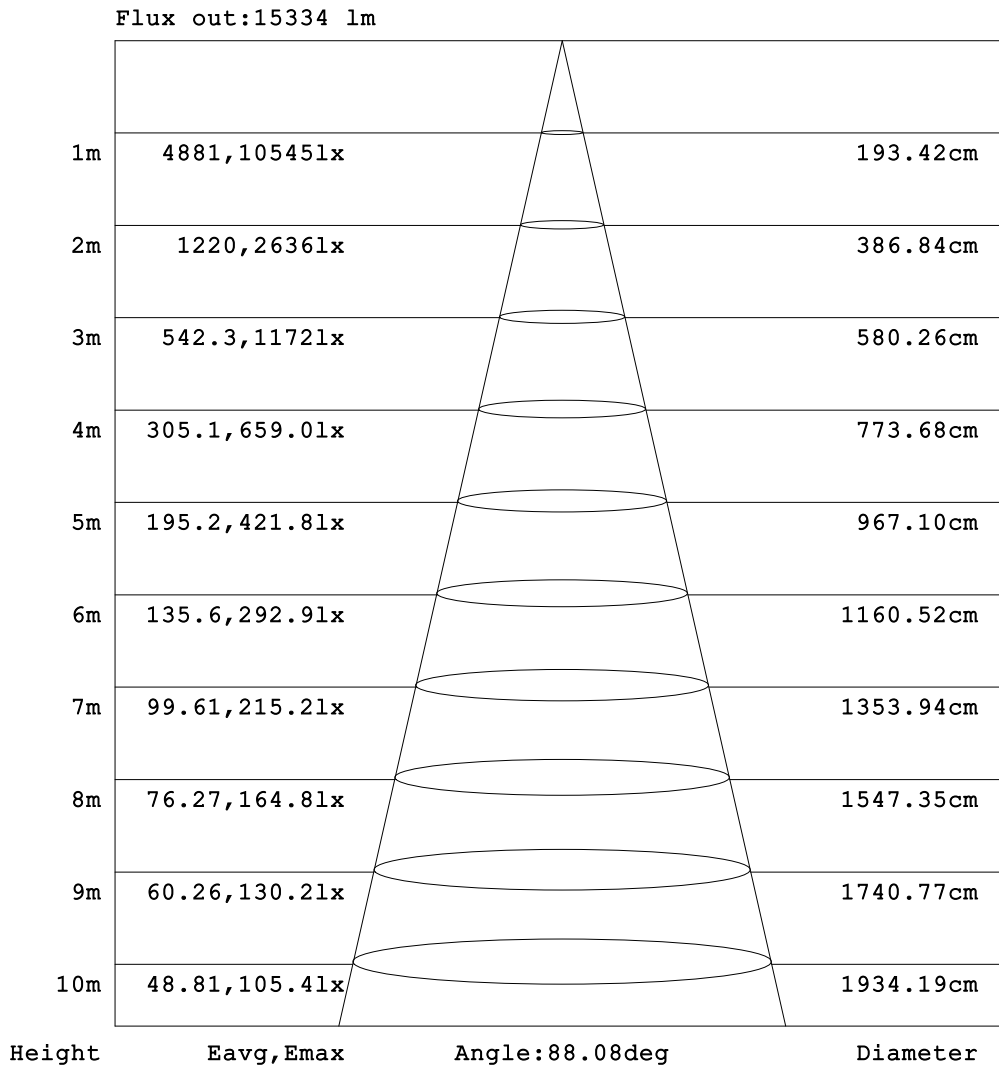


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

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:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm		
NAME: ASD-WHB5A-A160DAC-20EM-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.36*0.25m	Shielding Angle:

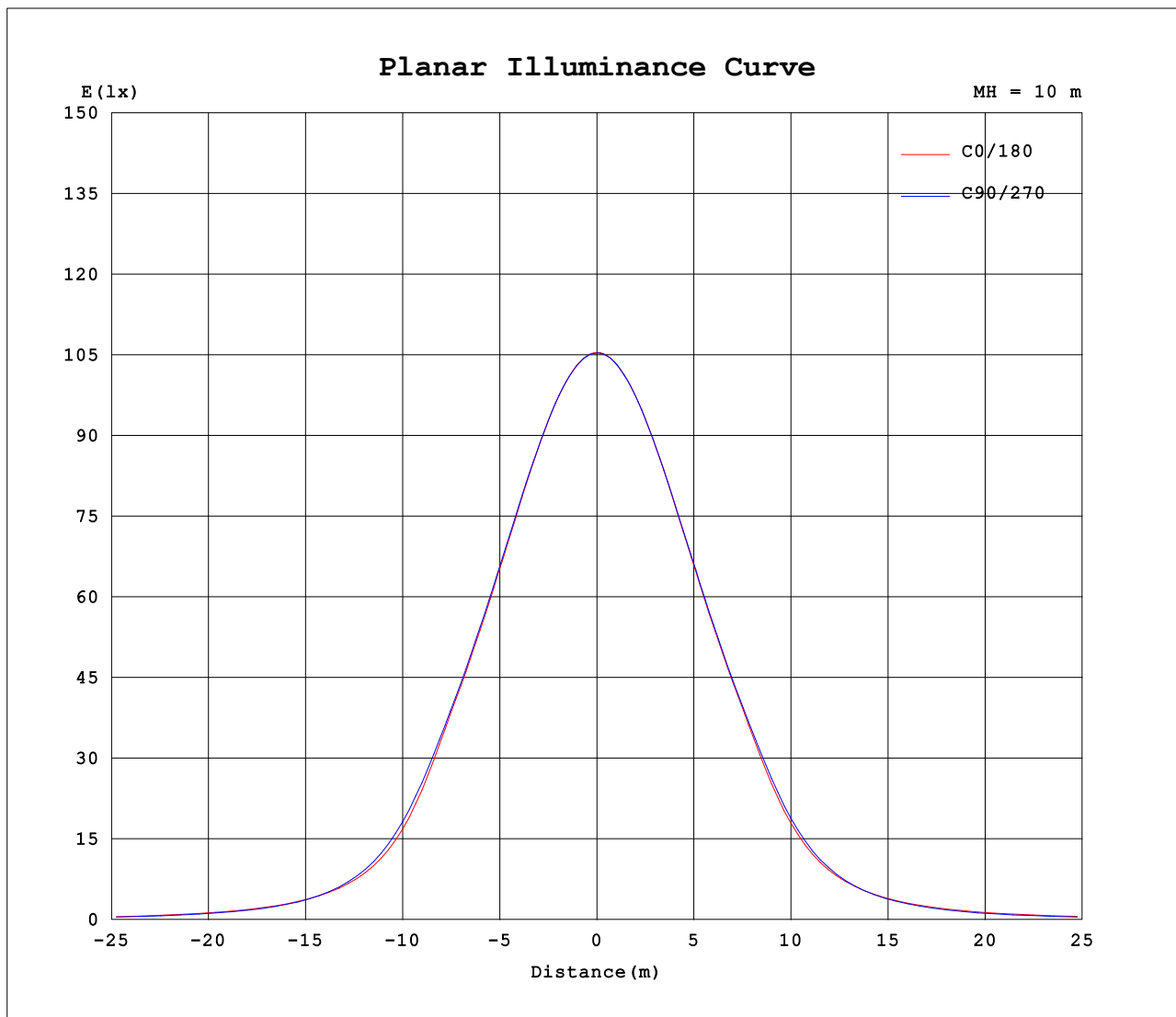


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

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:15DEG
Operators:lianghaizhu
Test Date:2022-12-31

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:120.3V I:1.341A P:158.2W PF:0.9966 Freq:59.98Hz Lamp Flux:21911.9x1 lm		
NAME: ASD-WHB5A-A160DAC-20EM-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.36*0.25m	Shielding Angle:

Table--1

UNIT: x10cd

C (DEG) □ (DEG)	0	45	90	135	180	225	270	315										
0	1054	1054	1054	1053	1054	1054	1054	1053										
5	1049	1048	1048	1049	1051	1051	1050	1047										
10	1034	1033	1035	1036	1037	1039	1037	1032										
15	1010	1008	1011	1014	1014	1017	1014	1008										
20	975	974	978	982	981	986	983	974										
25	929	928	935	939	937	943	940	928										
30	869	868	877	884	880	888	884	869										
35	792	788	801	810	805	815	811	790										
40	662	663	686	698	684	707	702	668										
45	478	482	516	529	508	538	534	488										
50	331	331	354	366	352	372	367	335										
55	238	229	240	253	252	256	249	233										
60	176	163	166	181	185	181	172	167										
65	131	122	120	134	138	133	122	125										
70	97.7	93.9	90.7	103	104	103	92.4	95.9										
75	69.7	69.5	68.6	77.6	75.6	77.8	69.9	70.5										
80	43.4	44.2	46.9	52.0	48.8	52.5	48.1	44.9										
85	15.1	16.9	22.5	26.0	20.8	26.3	24.3	18.0										
90	0.73	0.76	0.76	0.93	0.82	0.97	0.77	0.78										
95	0.93	0.97	0.96	0.90	0.95	0.95	1.00	1.02										
100	1.20	1.25	1.24	1.16	1.25	1.24	1.31	1.33										
105	1.54	1.59	1.60	1.49	1.62	1.61	1.69	1.71										
110	1.94	2.00	2.01	1.89	2.03	2.02	2.11	2.13										
115	2.39	2.45	2.47	2.33	2.48	2.47	2.58	2.59										
120	2.88	2.95	2.98	2.82	2.98	2.96	3.08	3.08										
125	3.41	3.48	3.50	3.34	3.51	3.48	3.61	3.61										
130	3.94	3.99	4.04	3.86	4.05	4.00	4.15	4.13										
135	4.46	4.50	4.55	4.37	4.60	4.52	4.68	4.64										
140	4.93	4.99	5.02	4.87	5.09	5.03	5.17	5.13										
145	5.38	5.45	5.47	5.36	5.56	5.53	5.64	5.62										
150	5.83	5.90	5.93	5.80	6.03	5.99	6.11	6.08										
155	6.31	6.38	6.41	6.25	6.52	6.47	6.60	6.57										
160	6.81	6.86	6.91	6.73	7.04	6.96	7.11	7.08										
165	7.31	7.34	7.41	7.22	7.52	7.44	7.59	7.54										
170	7.77	7.76	7.82	7.65	7.91	7.83	7.96	7.89										
175	8.13	8.09	8.15	8.01	8.22	8.11	8.22	8.14										
180	8.31	8.22	8.31	8.21	8.32	8.23	8.31	8.21										

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:15DEG
 Operators:lianghaizhu
 Test Date:2022-12-31

□ 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: