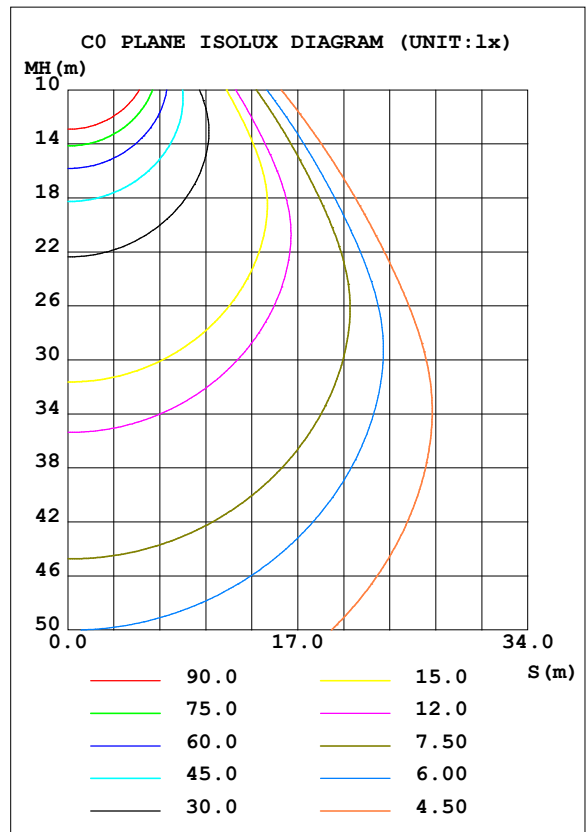
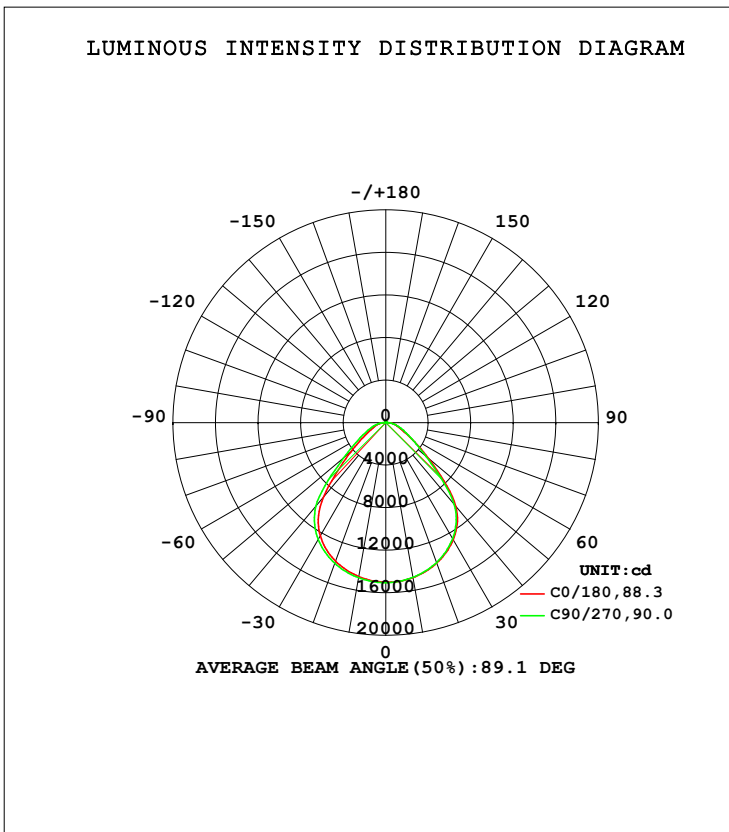


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 148.11 lm/W			
MODEL		I _{max} (cd)	15056	S/MH (C0/180)	1.22
NOMINAL POWER (W)	220	LOR (%)	100.0	S/MH (C90/270)	1.25
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	31098	<input type="checkbox"/> UP, DN (C0-180)	0.5, 49.8
NOMINAL FLUX (lm)	31097.7	CIE CLASS	DIRECT	<input type="checkbox"/> UP, DN (C180-360)	0.5, 49.3
LAMPS INSIDE	1	<input type="checkbox"/> up (%)	0.9	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	120	<input type="checkbox"/> down (%)	99.1	CIBSE SHR MAX	1.30



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 27DEG
 Operators: lianghaizhu
 Test Date: 2023-05-04

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	1479	1478	1477	1476	1470	1476	1481	1483	0- 10	1423	1423	4.57,4.57
20	1405	1401	1399	1393	1386	1397	1406	1407	10- 20	4078	5501	17.7,17.7
30	1270	1262	1259	1244	1232	1252	1270	1271	20- 30	6158	11658	37.5,37.5
40	1024	1006	999.8	950.4	909.4	968.1	1022	1020	30- 40	7133	18791	60.4,60.4
50	528.8	509.3	496.6	461.8	435.7	478.1	519.1	519.3	40- 50	5619	24410	78.5,78.5
60	245.4	245.1	259.8	229.6	205.9	234.5	268.5	252.0	50- 60	3119	27528	88.5,88.5
70	133.1	141.1	147.5	134.1	117.1	136.6	151.4	144.9	60- 70	1814	29342	94.4,94.4
80	75.14	74.92	71.99	66.06	59.01	68.00	75.03	75.46	70- 80	1101	30443	97.9,97.9
90	2.123	1.239	1.138	1.074	1.037	1.029	1.526	1.420	80- 90	368.2	30812	99.1,99.1
100	1.574	1.667	1.751	1.758	1.721	1.673	1.624	1.555	90-100	14.49	30826	99.1,99.1
110	2.565	2.686	2.818	2.829	2.773	2.694	2.641	2.527	100-110	22.71	30849	99.2,99.2
120	3.855	3.988	4.154	4.168	4.097	4.005	3.949	3.813	110-120	32.94	30882	99.3,99.3
130	5.313	5.433	5.600	5.611	5.566	5.456	5.411	5.277	120-130	42.28	30924	99.4,99.4
140	6.666	6.802	6.934	6.973	6.942	6.868	6.832	6.706	130-140	47.54	30971	99.6,99.6
150	7.900	8.042	8.161	8.203	8.261	8.162	8.133	8.012	140-150	46.80	31018	99.7,99.7
160	9.221	9.363	9.519	9.471	9.678	9.517	9.532	9.415	150-160	40.43	31059	99.9,99.9
170	10.61	10.63	10.77	10.68	10.89	10.73	10.80	10.66	160-170	28.51	31087	100,100
180	11.35	11.23	11.32	11.23	11.34	11.24	11.32	11.24	170-180	10.49	31098	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

Conical surface Flux(90deg): 21977 lm

%lum = 70.7%

%lamp = 70.7%

Conical surface Flux(120deg): 27528 lm

%lum = 88.5%

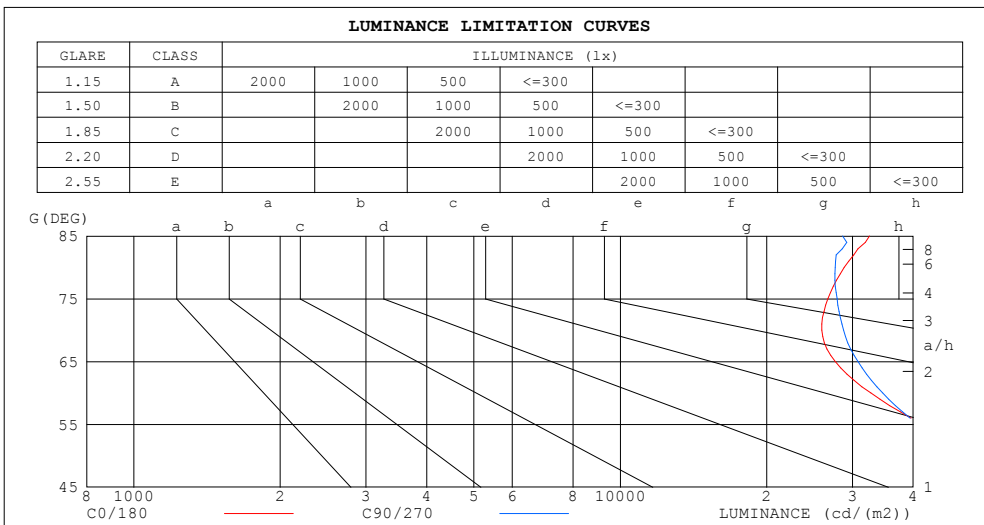
%lamp = 88.5%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

□ 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:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	32524	28642
80	28847	27640
75	26695	27896
70	25952	28760
65	27644	30789
60	32719	34634
55	41665	40936
50	54842	51508
45	72878	69359

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

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:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	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	.258 .147 .046	.251 .143 .045	.237 .136 .043	.225 .130 .042	.213 .124 .040	
2.0	.245 .134 .041	.239 .132 .041	.227 .126 .039	.216 .121 .038	.206 .117 .037	
3.0	.230 .122 .037	.225 .120 .036	.214 .116 .035	.205 .112 .034	.196 .108 .034	
4.0	.216 .112 .033	.211 .110 .033	.202 .107 .032	.193 .104 .031	.185 .101 .031	
5.0	.202 .103 .030	.198 .102 .030	.190 .099 .029	.182 .096 .029	.175 .094 .028	
6.0	.190 .095 .027	.186 .094 .027	.179 .092 .027	.172 .089 .026	.166 .087 .026	
7.0	.179 .088 .025	.175 .087 .025	.169 .085 .025	.163 .083 .024	.157 .082 .024	
8.0	.168 .082 .023	.165 .081 .023	.160 .080 .023	.154 .078 .023	.149 .076 .022	
9.0	.159 .077 .021	.156 .076 .021	.151 .075 .021	.146 .073 .021	.142 .072 .021	
10.0	.151 .072 .020	.148 .072 .020	.144 .070 .020	.139 .069 .020	.135 .068 .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	.169 .169 .169	.115 .115 .115	.066 .066 .066	.021 .021 .021	
1.0	.184 .164 .146	.157 .140 .125	.108 .097 .087	.062 .056 .050	.020 .018 .016	
2.0	.173 .139 .111	.148 .120 .096	.102 .083 .067	.059 .048 .039	.019 .016 .013	
3.0	.164 .121 .087	.141 .105 .076	.097 .073 .053	.056 .042 .031	.018 .014 .010	
4.0	.156 .107 .071	.134 .093 .061	.092 .065 .043	.053 .038 .026	.017 .012 .008	
5.0	.148 .097 .059	.127 .084 .051	.088 .058 .036	.051 .034 .021	.016 .011 .007	
6.0	.141 .088 .050	.122 .076 .043	.084 .053 .031	.049 .031 .018	.016 .010 .006	
7.0	.135 .081 .043	.116 .070 .038	.080 .049 .027	.047 .029 .016	.015 .010 .005	
8.0	.129 .075 .038	.111 .065 .033	.077 .046 .024	.045 .027 .014	.014 .009 .005	
9.0	.124 .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:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

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:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm										
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: ASD LIGHTING CORP					SUR.:0.5*0.3m			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	25.2	26.5	25.5	26.7	27.0	25.2	26.5	25.5	26.7	26.9
3H	25.8	27.0	26.1	27.2	27.5	25.9	27.1	26.2	27.3	27.6
4H	26.1	27.3	26.4	27.5	27.8	26.2	27.4	26.6	27.7	27.9
6H	26.5	27.6	26.8	27.8	28.1	26.6	27.7	26.9	27.9	28.2
8H	26.7	27.7	27.0	28.0	28.3	26.7	27.8	27.1	28.0	28.3
12H	26.8	27.8	27.2	28.1	28.4	26.8	27.8	27.2	28.1	28.4
4H 2H	25.4	26.5	25.7	26.8	27.0	25.4	26.5	25.7	26.8	27.0
3H	26.2	27.2	26.5	27.5	27.8	26.3	27.3	26.6	27.6	27.9
4H	26.7	27.6	27.1	27.9	28.3	26.8	27.7	27.2	28.0	28.4
6H	27.2	28.0	27.6	28.4	28.7	27.3	28.1	27.7	28.5	28.8
8H	27.5	28.2	27.9	28.6	29.0	27.5	28.3	27.9	28.6	29.0
12H	27.7	28.4	28.1	28.8	29.2	27.7	28.4	28.1	28.8	29.2
8H 4H	26.9	27.6	27.3	28.0	28.4	27.0	27.7	27.4	28.1	28.5
6H	27.6	28.2	28.0	28.6	29.1	27.6	28.3	28.1	28.7	29.1
8H	27.9	28.5	28.4	28.9	29.4	28.0	28.5	28.4	28.9	29.4
12H	28.3	28.8	28.8	29.2	29.7	28.3	28.7	28.8	29.2	29.7
12H 4H	26.9	27.6	27.3	28.0	28.4	27.0	27.7	27.4	28.1	28.5
6H	27.6	28.2	28.1	28.6	29.1	27.7	28.3	28.2	28.7	29.2
8H	28.1	28.5	28.6	29.0	29.5	28.1	28.5	28.6	29.0	29.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.7					+ 0.6 / - 0.7				
1.5H	+ 0.5 / - 0.5					+ 0.5 / - 0.5				
2.0H	+ 1.3 / - 0.7					+ 1.2 / - 0.7				

CIE Pub.117, 31098 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 11.9)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

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:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

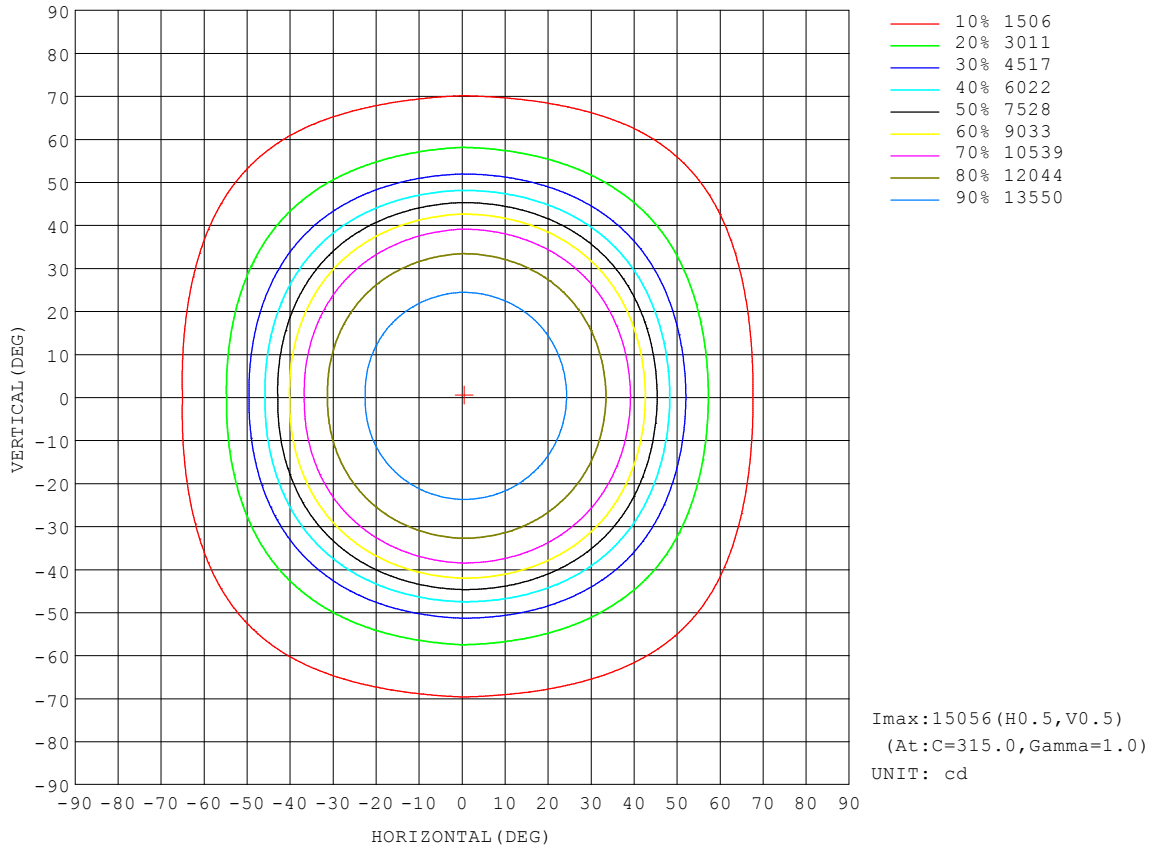
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	67	57	51	66	57	51	65	56	51	45
0.80	77	67	61	76	66	61	74	66	60	54
1.00	84	75	69	83	74	69	81	75	68	62
1.25	90	82	76	89	81	76	87	80	75	69
1.50	95	87	81	93	86	81	90	84	79	73
2.00	100	93	88	98	92	87	95	90	86	79
2.50	103	97	92	101	95	91	97	93	89	81
3.00	106	100	96	104	99	95	100	96	92	84
4.00	109	104	100	106	102	99	102	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
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:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

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:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

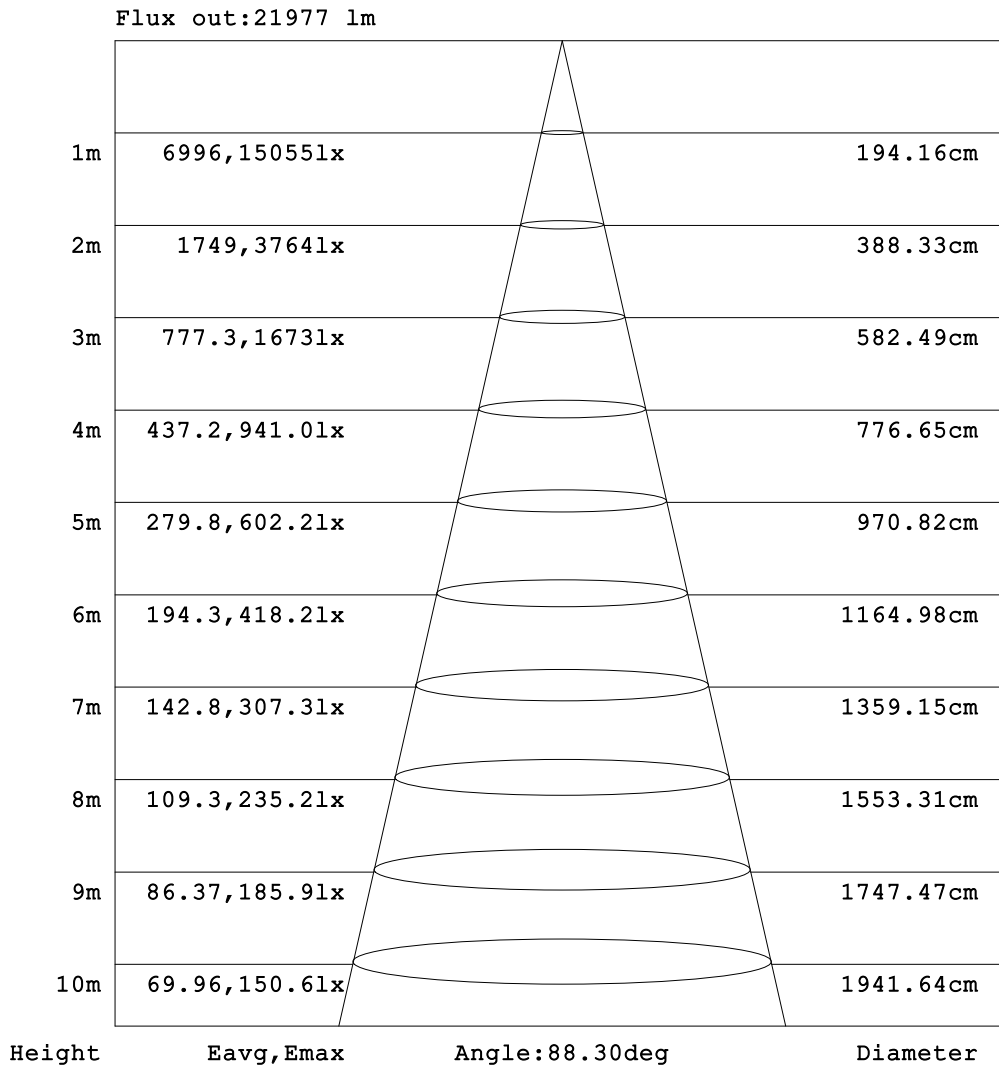


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

□ 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:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

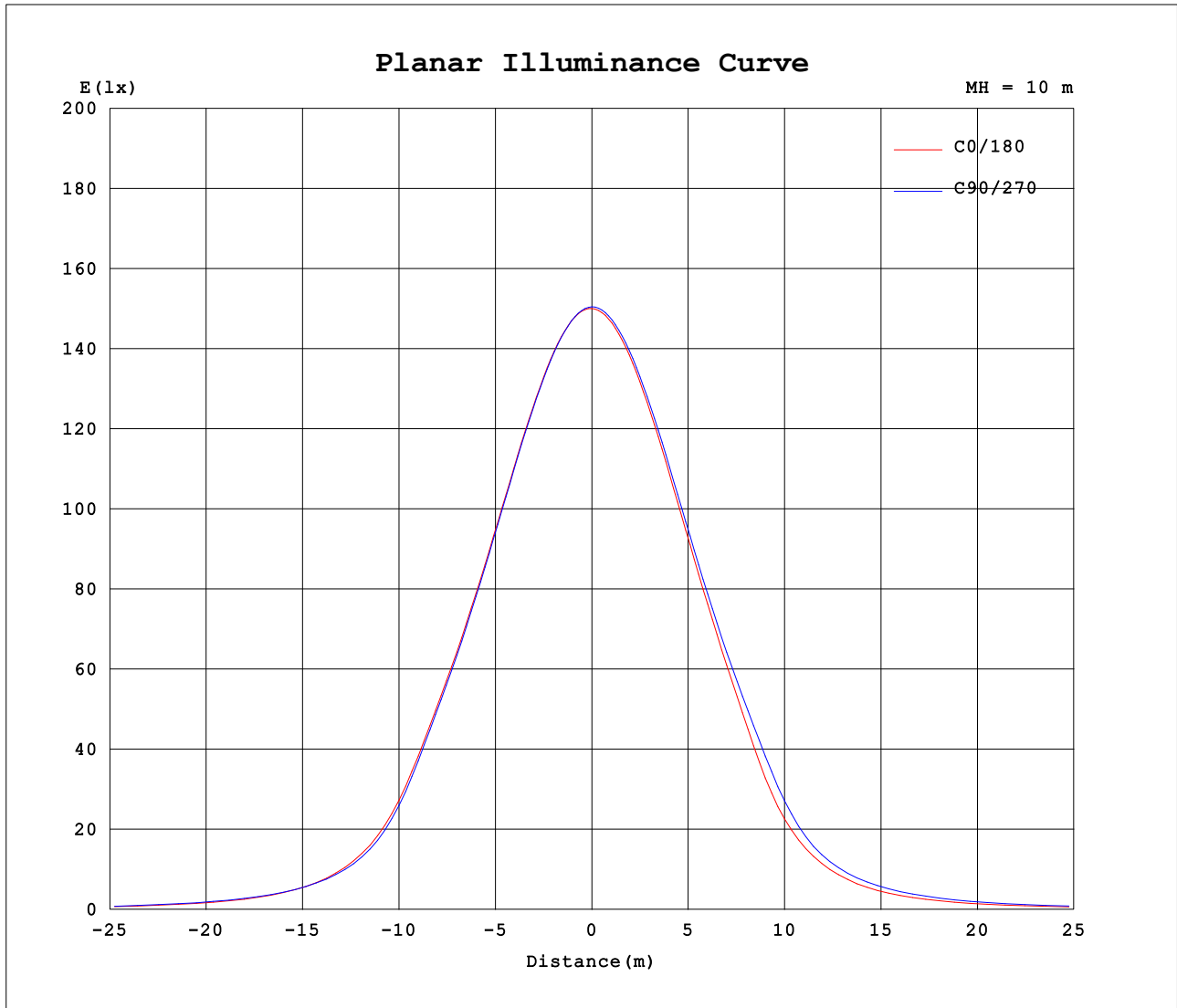


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

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: 27DEG
 Operators: lianghaizhu
 Test Date: 2023-05-04

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:121.0V I:1.740A P:210.0W PF:0.9976 Freq:59.98Hz Lamp Flux:31097.7x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

Table--1

UNIT: x10cd

C (DEG) □ (DEG)	0	45	90	135	180	225	270	315										
0	1501	1503	1505	1506	1501	1503	1505	1506										
5	1497	1497	1497	1497	1491	1496	1499	1500										
10	1479	1478	1477	1476	1470	1476	1481	1483										
15	1448	1446	1445	1442	1435	1444	1450	1452										
20	1405	1401	1399	1393	1386	1397	1406	1407										
25	1346	1340	1338	1329	1320	1335	1347	1348										
30	1270	1262	1259	1244	1232	1252	1270	1271										
35	1171	1159	1154	1128	1110	1140	1168	1169										
40	1024	1006	1000	950	909	968	1022	1020										
45	773	751	736	680	641	704	768	767										
50	529	509	497	462	436	478	519	519										
55	358	348	352	320	296	330	366	356										
60	245	245	260	230	206	235	269	252										
65	175	182	195	173	151	175	201	187										
70	133	141	148	134	117	137	151	145										
75	104	109	108	100	88.9	103	112	111										
80	75.1	74.9	72.0	66.1	59.0	68.0	75.0	75.5										
85	42.5	41.0	37.4	28.3	18.7	30.8	40.9	39.7										
90	2.12	1.24	1.14	1.07	1.04	1.03	1.53	1.42										
95	1.23	1.30	1.36	1.37	1.34	1.30	1.26	1.21										
100	1.57	1.67	1.75	1.76	1.72	1.67	1.62	1.55										
105	2.03	2.13	2.25	2.26	2.21	2.14	2.09	2.00										
110	2.56	2.69	2.82	2.83	2.77	2.69	2.64	2.53										
115	3.18	3.31	3.45	3.47	3.41	3.32	3.26	3.14										
120	3.85	3.99	4.15	4.17	4.10	4.00	3.95	3.81										
125	4.58	4.70	4.88	4.89	4.83	4.72	4.66	4.53										
130	5.31	5.43	5.60	5.61	5.57	5.46	5.41	5.28										
135	6.01	6.13	6.29	6.30	6.27	6.17	6.13	6.00										
140	6.67	6.80	6.93	6.97	6.94	6.87	6.83	6.71										
145	7.28	7.43	7.54	7.60	7.60	7.52	7.48	7.37										
150	7.90	8.04	8.16	8.20	8.26	8.16	8.13	8.01										
155	8.54	8.68	8.83	8.81	8.96	8.83	8.82	8.69										
160	9.22	9.36	9.52	9.47	9.68	9.52	9.53	9.42										
165	9.94	10.0	10.2	10.1	10.3	10.2	10.2	10.1										
170	10.6	10.6	10.8	10.7	10.9	10.7	10.8	10.7										
175	11.1	11.0	11.2	11.1	11.3	11.1	11.2	11.1										
180	11.4	11.2	11.3	11.2	11.3	11.2	11.3	11.2										

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

□ 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: