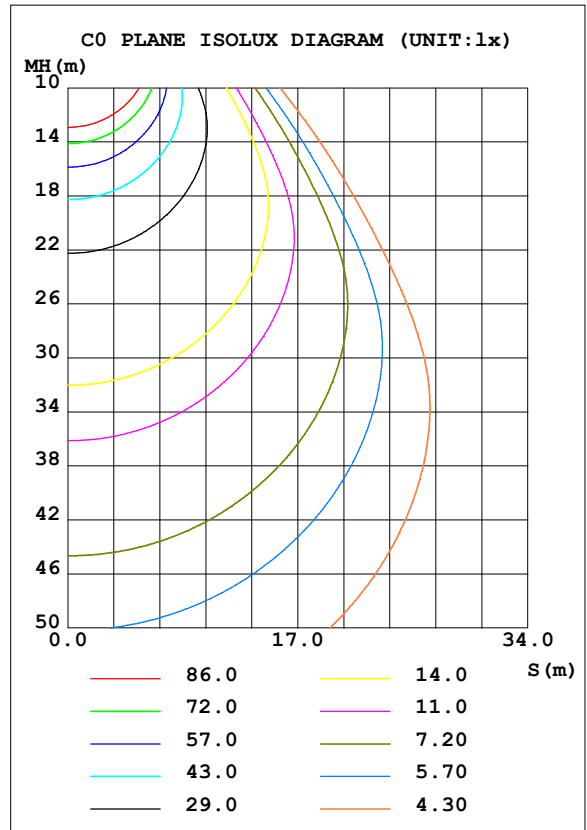
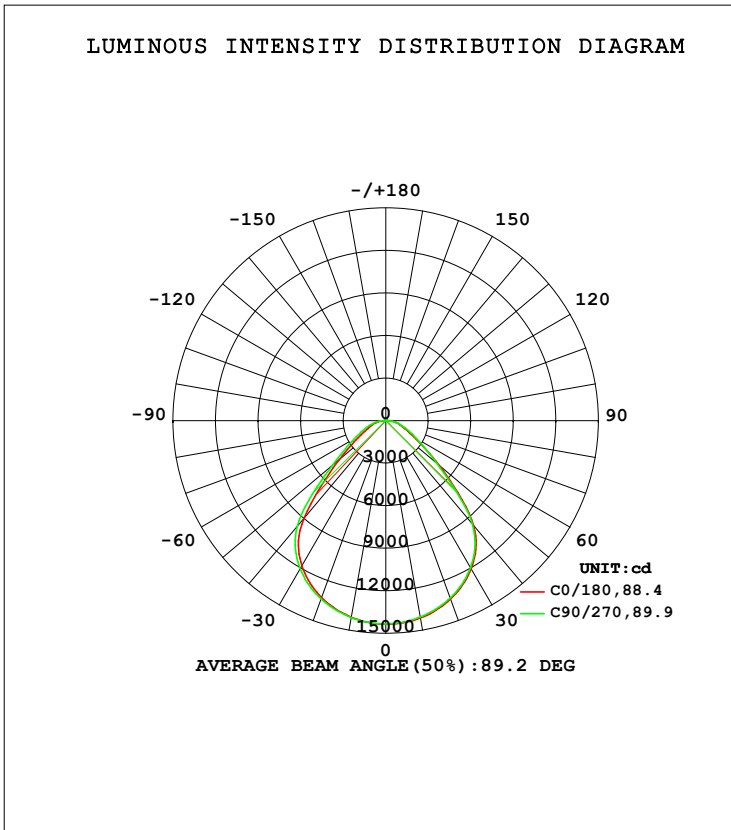


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:121.0V I:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 138.55 lm/W			
MODEL		I _{max} (cd)	14359	S/MH (C0/180)	1.23
NOMINAL POWER (W)	220	LOR (%)	100.0	S/MH (C90/270)	1.25
RATED VOLTAGE (V)	120	TOTAL FLUX (lm)	29845	<input type="checkbox"/> UP, DN (C0-180)	0.5, 49.6
NOMINAL FLUX (lm)	29845	CIE CLASS	DIRECT	<input type="checkbox"/> UP, DN (C180-360)	0.5, 49.5
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	1413	1409	1406	1404	1407	1409	1409	1409	0- 10	1356	1356	4.57,4.57
20	1338	1333	1330	1326	1327	1333	1338	1336	10- 20	3885	5242	17.7,17.7
30	1206	1198	1196	1188	1184	1197	1207	1203	20- 30	5863	11104	37.4,37.4
40	965.0	951.6	949.6	920.3	895.5	938.0	970.9	963.6	30- 40	6803	17908	60.4,60.4
50	493.3	480.9	472.5	445.7	429.3	463.6	494.1	489.6	40- 50	5369	23276	78.5,78.5
60	229.2	231.9	247.1	220.7	201.9	226.9	255.8	237.6	50- 60	2976	26252	88.5,88.5
70	125.4	134.0	140.4	128.4	113.9	131.5	144.3	137.1	60- 70	1729	27981	94.4,94.4
80	70.54	71.15	68.48	63.11	58.32	65.23	71.53	71.58	70- 80	1051	29032	97.9,97.9
90	1.632	1.169	1.095	1.017	0.9783	0.9745	1.505	1.323	80- 90	351.4	29383	99.1,99.1
100	1.535	1.608	1.669	1.664	1.621	1.585	1.547	1.492	90-100	13.79	29397	99.1,99.1
110	2.497	2.590	2.685	2.679	2.615	2.552	2.514	2.428	100-110	21.69	29419	99.2,99.2
120	3.737	3.840	3.958	3.949	3.872	3.796	3.761	3.658	110-120	31.45	29450	99.3,99.3
130	5.127	5.222	5.337	5.321	5.275	5.176	5.159	5.051	120-130	40.35	29490	99.4,99.4
140	6.413	6.524	6.608	6.616	6.595	6.521	6.516	6.410	130-140	45.36	29536	99.6,99.6
150	7.587	7.711	7.783	7.787	7.856	7.760	7.759	7.654	140-150	44.65	29580	99.7,99.7
160	8.849	8.971	9.073	8.998	9.210	9.053	9.095	8.988	150-160	38.58	29619	99.9,99.9
170	10.16	10.17	10.26	10.16	10.38	10.22	10.30	10.16	160-170	27.20	29646	100,100
180	10.84	10.72	10.79	10.70	10.85	10.71	10.80	10.69	170-180	10.00	29656	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

Conical surface Flux(90deg): 20954 lm

%lum = 70.7%

%lamp = 70.7%

Conical surface Flux(120deg): 26252 lm

%lum = 88.5%

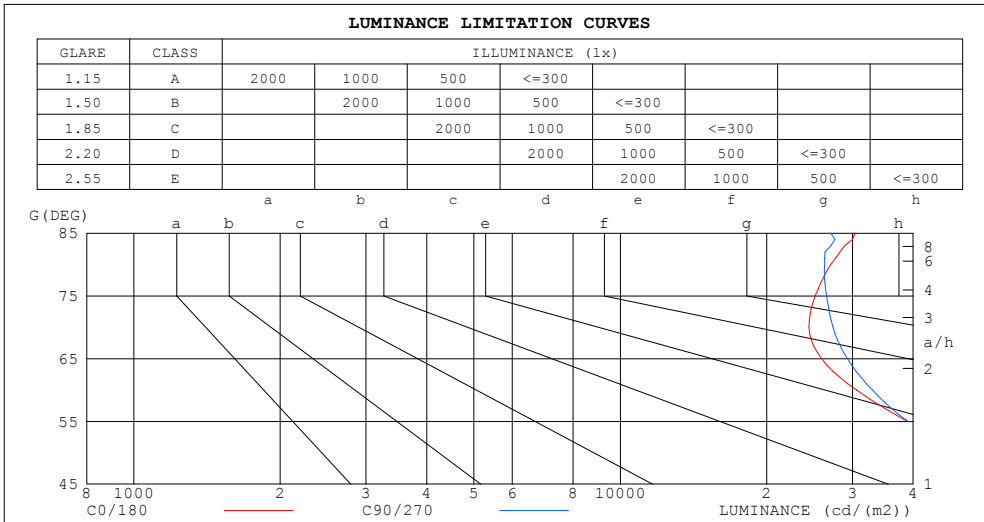
%lamp = 88.5%

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:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K	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	30405	27067
80	27082	26292
75	25150	26543
70	24435	27374
65	25916	29283
60	30556	32952
55	38884	38947
50	51167	49007
45	68155	65915

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:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K	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 .123 .037	.225 .120 .036	.214 .116 .035	.205 .112 .034	.196 .109 .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:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm										
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K					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	25.0	26.3	25.2	26.5	26.7	25.0	26.3	25.2	26.5	26.7
3H	25.5	26.7	25.8	27.0	27.2	25.7	26.9	26.0	27.1	27.4
4H	25.9	27.0	26.2	27.3	27.5	26.1	27.2	26.4	27.5	27.7
6H	26.2	27.3	26.6	27.6	27.9	26.4	27.5	26.7	27.7	28.0
8H	26.4	27.4	26.7	27.7	28.0	26.5	27.6	26.9	27.8	28.1
12H	26.5	27.5	26.9	27.8	28.2	26.6	27.6	27.0	27.9	28.2
4H 2H	25.1	26.3	25.4	26.5	26.8	25.1	26.3	25.5	26.6	26.8
3H	25.9	26.9	26.3	27.2	27.5	26.1	27.1	26.4	27.4	27.7
4H	26.4	27.3	26.8	27.7	28.0	26.6	27.5	27.0	27.8	28.2
6H	27.0	27.8	27.4	28.1	28.5	27.1	27.9	27.5	28.3	28.6
8H	27.2	28.0	27.6	28.3	28.7	27.3	28.1	27.7	28.4	28.8
12H	27.4	28.1	27.9	28.5	28.9	27.5	28.2	27.9	28.6	29.0
8H 4H	26.6	27.4	27.0	27.7	28.1	26.8	27.5	27.2	27.9	28.3
6H	27.3	27.9	27.8	28.4	28.8	27.5	28.1	27.9	28.5	28.9
8H	27.7	28.2	28.2	28.7	29.1	27.8	28.3	28.2	28.7	29.2
12H	28.1	28.5	28.5	29.0	29.5	28.1	28.5	28.6	29.0	29.5
12H 4H	26.6	27.3	27.1	27.7	28.1	26.8	27.5	27.2	27.9	28.3
6H	27.4	27.9	27.9	28.4	28.9	27.5	28.1	28.0	28.5	29.0
8H	27.8	28.3	28.3	28.7	29.2	27.9	28.4	28.4	28.8	29.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.7					+ 0.6 / - 0.6				
1.5H	+ 0.5 / - 0.5					+ 0.5 / - 0.5				
2.0H	+ 1.3 / - 0.7					+ 1.2 / - 0.6				

CIE Pub.117, 29656 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 11.8)

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:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

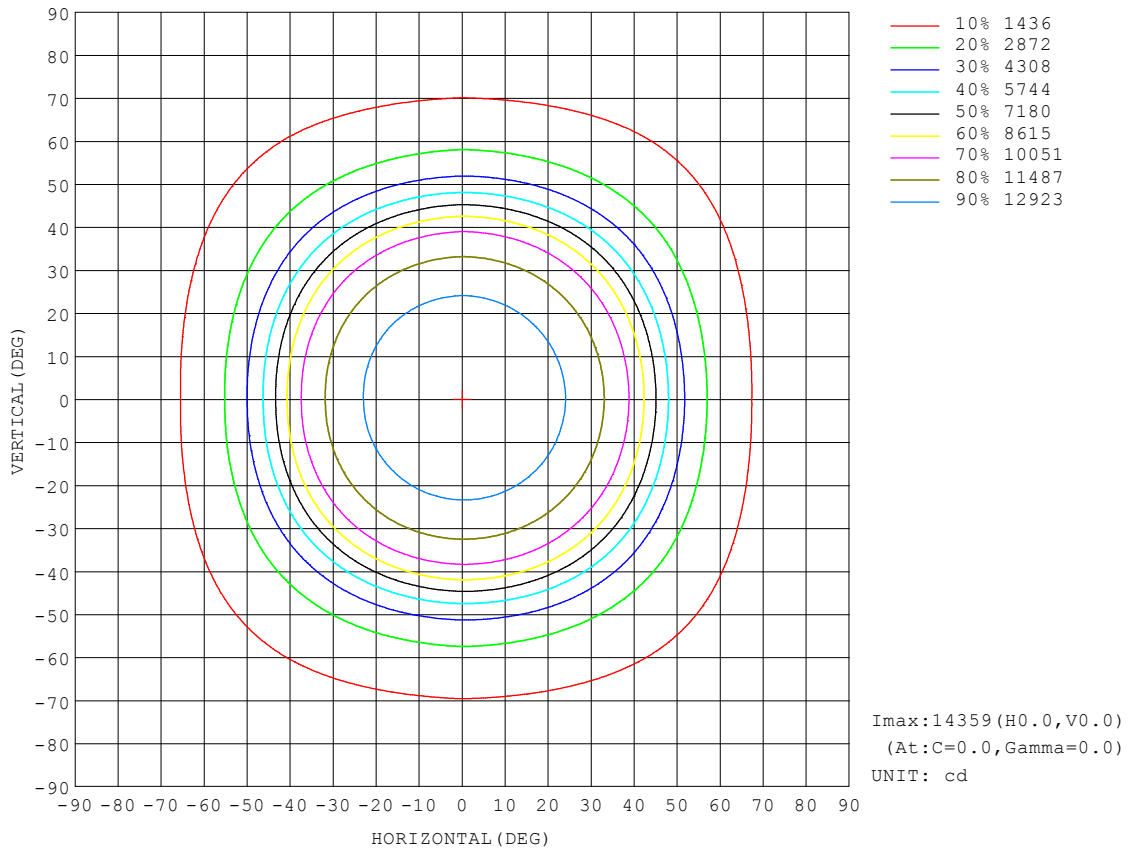
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	67	57	51	66	57	51	65	56	51	45
0.80	77	67	61	76	66	61	74	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:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

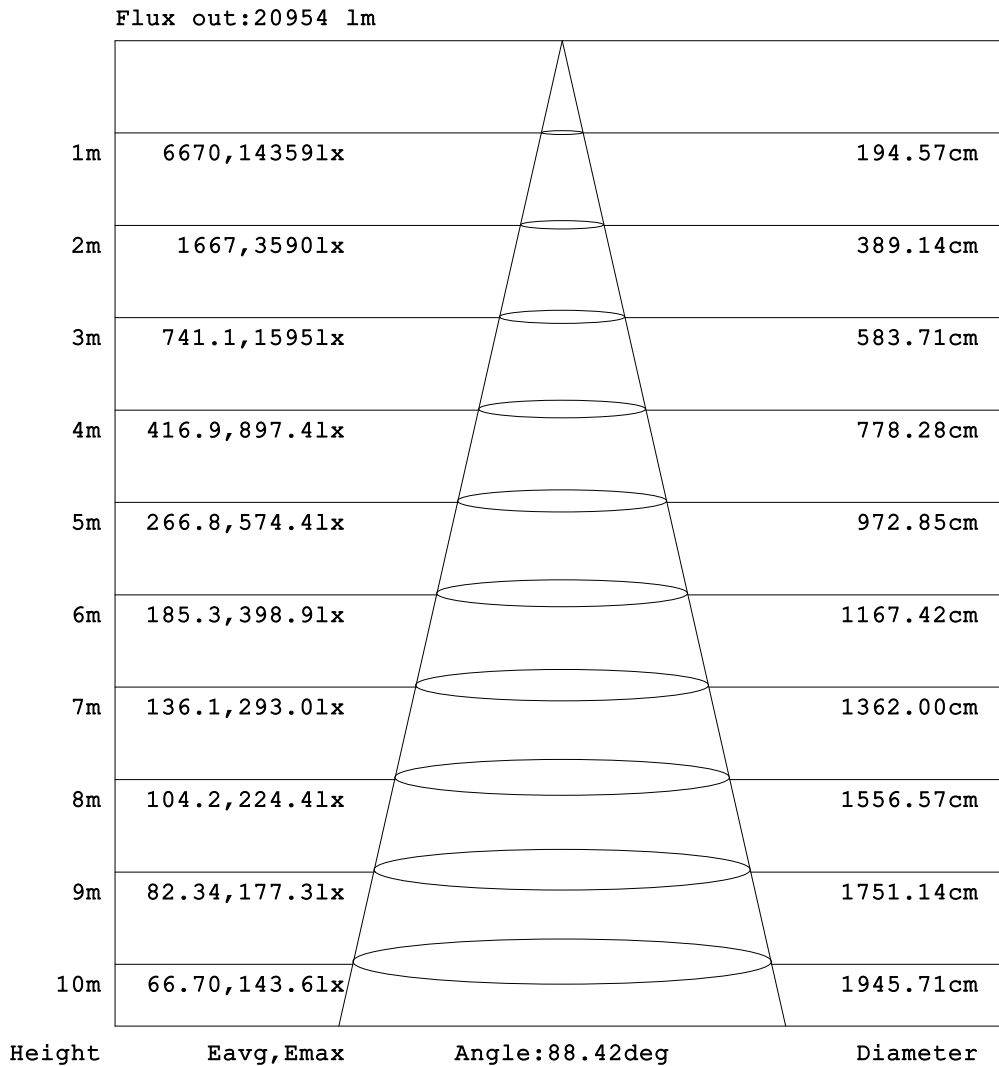


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:27DEG
 Operators:lianghaizhu
 Test Date:2023-05-04

□ 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:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: ASD LIGHTING CORP	SUR.:0.5*0.3m	Shielding Angle:

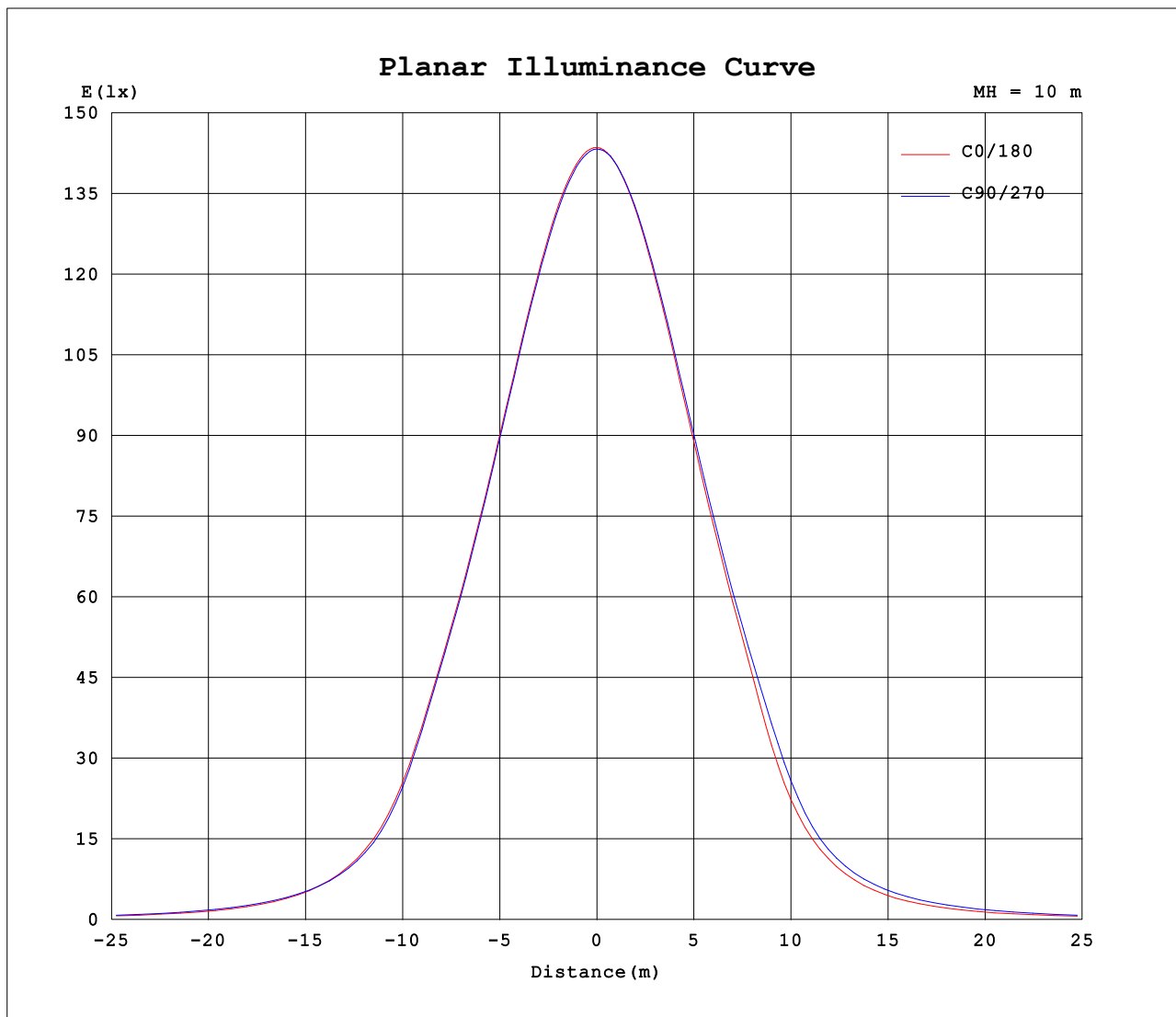


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:1.799A P:215.4 W PF:0.9977 Freq:59.98Hz Lamp Flux:29845x1 lm		
NAME: ASD-WHB5A-A220DAC-20EM-220W-3500K	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	1436	1434	1433	1432	1436	1434	1433	1432										
5	1431	1427	1425	1424	1428	1428	1427	1427										
10	1413	1409	1406	1404	1407	1409	1409	1409										
15	1382	1377	1374	1372	1374	1378	1380	1379										
20	1338	1333	1330	1326	1327	1333	1338	1336										
25	1281	1274	1272	1266	1264	1274	1281	1278										
30	1206	1198	1196	1188	1184	1197	1207	1203										
35	1108	1098	1096	1083	1076	1094	1110	1106										
40	965	952	950	920	895	938	971	964										
45	723	709	699	657	632	685	731	723										
50	493	481	473	446	429	464	494	490										
55	335	329	335	308	291	319	349	336										
60	229	232	247	221	202	227	256	238										
65	164	172	186	165	147	169	192	176										
70	125	134	140	128	114	131	144	137										
75	97.6	103	103	96.0	86.7	98.8	106	105										
80	70.5	71.2	68.5	63.1	58.3	65.2	71.5	71.6										
85	39.7	38.8	35.4	27.2	20.2	29.9	38.9	37.8										
90	1.63	1.17	1.10	1.02	0.98	0.97	1.51	1.32										
95	1.19	1.25	1.29	1.30	1.26	1.23	1.20	1.16										
100	1.53	1.61	1.67	1.66	1.62	1.58	1.55	1.49										
105	1.98	2.06	2.14	2.14	2.08	2.03	1.99	1.92										
110	2.50	2.59	2.68	2.68	2.61	2.55	2.51	2.43										
115	3.09	3.19	3.29	3.29	3.21	3.15	3.11	3.01										
120	3.74	3.84	3.96	3.95	3.87	3.80	3.76	3.66										
125	4.43	4.52	4.65	4.63	4.57	4.47	4.45	4.34										
130	5.13	5.22	5.34	5.32	5.27	5.18	5.16	5.05										
135	5.79	5.88	6.00	5.98	5.95	5.85	5.85	5.74										
140	6.41	6.52	6.61	6.62	6.60	6.52	6.52	6.41										
145	7.00	7.13	7.19	7.22	7.23	7.14	7.13	7.04										
150	7.59	7.71	7.78	7.79	7.86	7.76	7.76	7.65										
155	8.20	8.32	8.42	8.37	8.52	8.39	8.42	8.30										
160	8.85	8.97	9.07	9.00	9.21	9.05	9.10	8.99										
165	9.53	9.62	9.73	9.63	9.85	9.68	9.75	9.62										
170	10.2	10.2	10.3	10.2	10.4	10.2	10.3	10.2										
175	10.7	10.6	10.6	10.5	10.7	10.6	10.6	10.5										
180	10.8	10.7	10.8	10.7	10.8	10.7	10.8	10.7										

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: