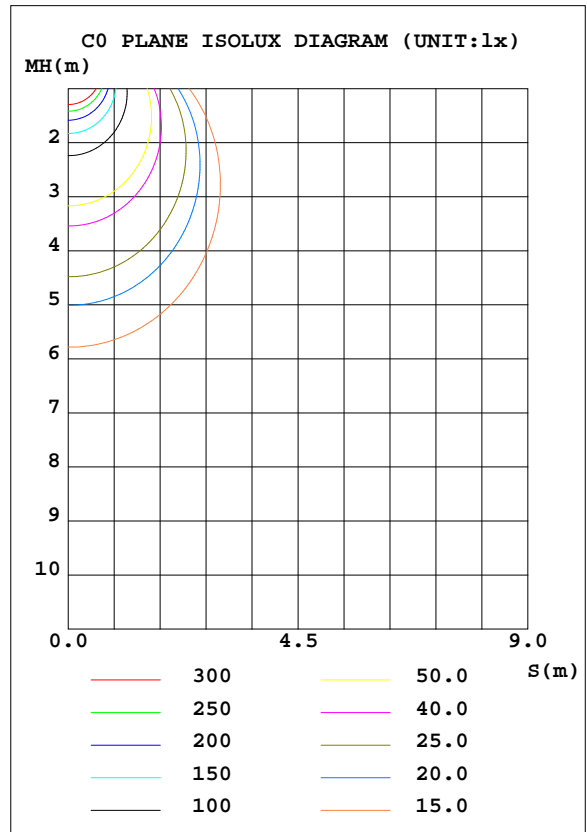
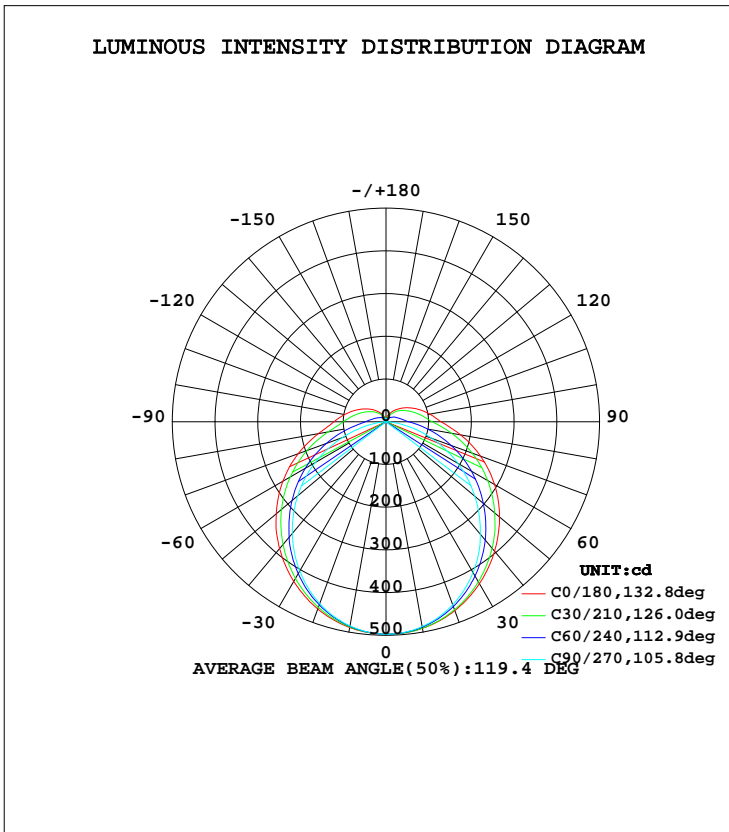


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 96.67 lm/W
MODEL	E-B20W-CC	I _{max} (cd)	497.5	S/MH(C0/180)	1.31	
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.22	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1827.0	η UP, DN(C0-180)	6.3, 44.2	
NOMINAL FLUX(lm)	1827.02	CIE CLASS	SEMI-D.	η UP, DN(C180-360)	6.1, 43.4	
LAMPS INSIDE	1	η up(%)	12.4	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	240.7	η down(%)	87.6	CIBSE SHR MAX	1.35	



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [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	490.9	489.7	486.7	487.7	489.2	487.0	485.5	488.8	0- 10	47.04	47.04	2.57,2.57
20	470.5	464.4	456.0	460.6	466.5	459.4	453.4	463.1	10- 20	134.6	181.7	9.94,9.94
30	437.6	424.7	407.8	418.7	431.8	417.2	403.6	422.6	20- 30	204.1	385.8	21.1,21.1
40	395.6	373.9	343.6	365.9	387.6	364.1	341.1	371.0	30- 40	247.6	633.4	34.7,34.7
50	346.8	314.9	271.7	304.6	335.2	303.3	269.9	312.0	40- 50	261.4	894.9	49,49
60	293.3	252.7	194.3	240.0	278.6	238.6	191.5	249.0	50- 60	246.9	1142	62.5,62.5
70	235.6	188.7	114.8	173.9	218.5	172.6	108.6	184.2	60- 70	207.9	1350	73.9,73.9
80	177.6	127.8	41.12	113.6	160.8	111.8	34.75	122.6	70- 80	152.5	1502	82.2,82.2
90	129.2	80.73	1.411	73.97	122.1	74.35	1.205	77.97	80- 90	98.32	1600	87.6,87.6
100	104.1	60.92	1.656	55.96	98.32	56.57	1.922	59.80	90-100	69.51	1670	91.4,91.4
110	83.39	47.68	2.525	42.88	77.84	43.60	2.685	46.39	100-110	52.74	1723	94.3,94.3
120	65.45	37.64	3.449	32.64	60.32	33.49	3.626	35.66	110-120	38.76	1761	96.4,96.4
130	50.14	28.53	4.395	24.61	45.47	25.66	4.583	27.78	120-130	27.31	1789	97.9,97.9
140	37.24	20.56	5.403	18.28	32.41	19.23	5.472	20.77	130-140	17.99	1807	98.9,98.9
150	26.47	14.27	6.248	13.85	22.09	14.30	6.287	14.86	140-150	10.81	1818	99.5,99.5
160	17.79	10.47	7.009	10.54	14.24	10.62	6.965	10.92	150-160	5.926	1823	99.8,99.8
170	10.87	8.534	7.590	8.403	8.652	8.375	7.517	8.590	160-170	2.764	1826	100,100
180	7.664	7.699	7.787	7.708	7.705	7.693	7.763	7.711	170-180	0.7769	1827	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

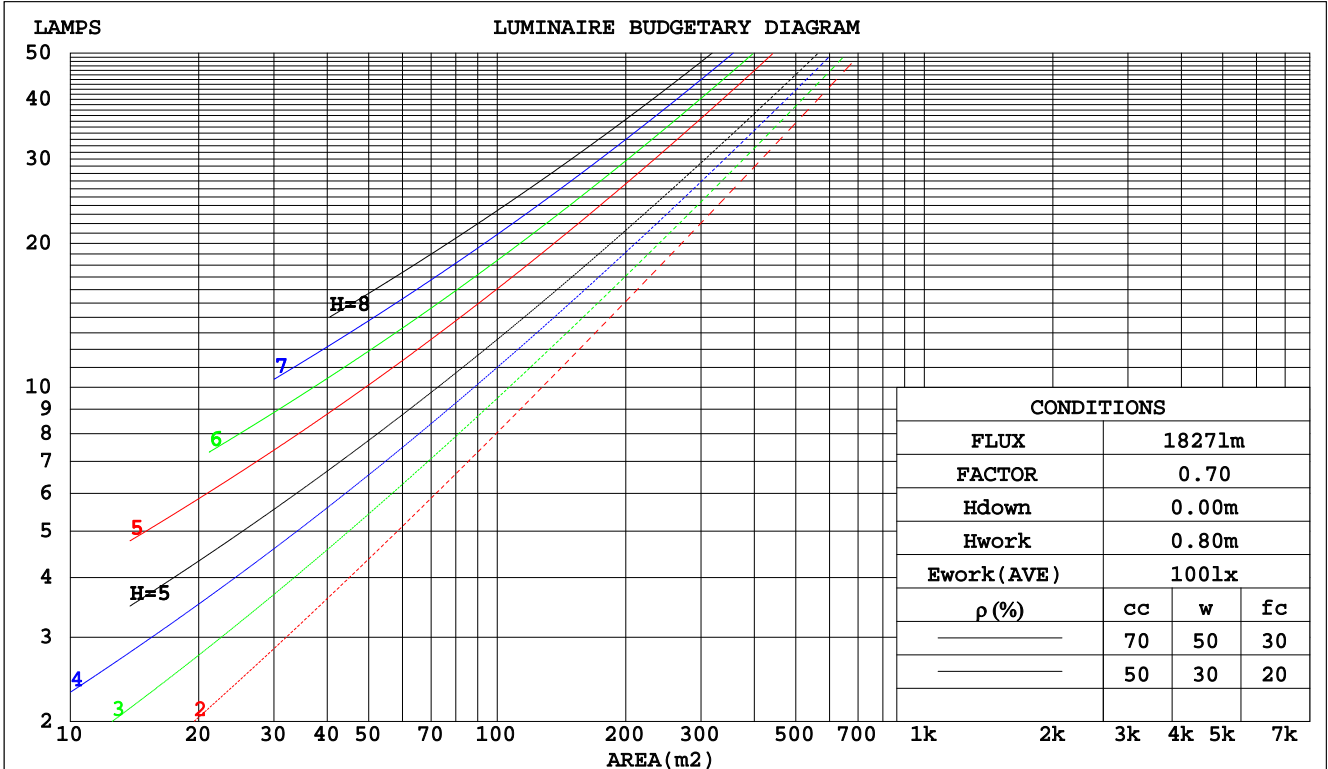
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.16	1.16	1.16	1.12	1.12	1.12	1.04	1.04	1.04	.97	.97	.97	.91	.91	.91	.88
1.0	.99	.94	.89	.95	.91	.87	.88	.85	.82	.82	.79	.77	.77	.75	.72	.69
2.0	.85	.78	.71	.82	.75	.69	.76	.71	.66	.71	.67	.63	.66	.63	.59	.56
3.0	.74	.65	.59	.72	.64	.57	.67	.60	.55	.62	.57	.52	.58	.54	.50	.47
4.0	.65	.56	.49	.63	.55	.48	.59	.52	.46	.55	.49	.44	.52	.47	.42	.40
5.0	.58	.49	.42	.56	.48	.41	.53	.45	.40	.49	.43	.38	.46	.41	.37	.34
6.0	.52	.43	.36	.51	.42	.36	.47	.40	.34	.45	.38	.33	.42	.36	.32	.30
7.0	.47	.38	.32	.46	.37	.31	.43	.36	.30	.41	.34	.29	.38	.33	.28	.26
8.0	.43	.34	.28	.42	.34	.28	.39	.32	.27	.37	.31	.26	.35	.29	.25	.23
9.0	.39	.31	.25	.38	.30	.25	.36	.29	.24	.34	.28	.24	.32	.27	.23	.21
10.0	.36	.28	.23	.35	.28	.23	.33	.27	.22	.32	.26	.21	.30	.25	.21	.19



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMAN
 Test Date: 2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.355	.202	.064	.344	.196	.062	.323	.186	.059	.305	.176	.056	.287	.166	.054	
2.0	.316	.173	.053	.306	.168	.052	.287	.160	.050	.270	.152	.047	.255	.144	.045	
3.0	.284	.151	.045	.276	.148	.044	.259	.140	.043	.244	.134	.041	.229	.127	.039	
4.0	.258	.134	.039	.250	.131	.039	.235	.125	.037	.222	.119	.036	.209	.113	.035	
5.0	.236	.120	.035	.229	.118	.034	.216	.112	.033	.203	.107	.032	.191	.102	.031	
6.0	.218	.109	.031	.211	.107	.031	.199	.102	.030	.187	.097	.029	.177	.093	.028	
7.0	.201	.100	.028	.196	.097	.028	.184	.093	.027	.174	.089	.026	.164	.085	.025	
8.0	.187	.092	.026	.182	.090	.025	.172	.086	.024	.162	.082	.024	.153	.079	.023	
9.0	.175	.085	.024	.170	.083	.023	.161	.079	.023	.152	.076	.022	.143	.073	.021	
10.0	.164	.079	.022	.160	.077	.021	.151	.074	.021	.143	.071	.020	.135	.068	.019	

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	.285	.285	.285	.244	.244	.244	.166	.166	.166	.095	.095	.095	.031	.031	.031	
1.0	.279	.251	.226	.238	.215	.195	.163	.148	.135	.094	.086	.078	.030	.028	.025	
2.0	.271	.228	.191	.232	.196	.165	.159	.136	.115	.092	.079	.068	.029	.026	.022	
3.0	.264	.211	.169	.226	.182	.146	.155	.126	.103	.090	.074	.060	.029	.024	.020	
4.0	.256	.198	.154	.220	.171	.134	.151	.119	.094	.087	.070	.056	.028	.023	.018	
5.0	.248	.188	.143	.213	.163	.125	.147	.114	.088	.085	.067	.052	.027	.022	.017	
6.0	.241	.180	.136	.207	.156	.118	.143	.109	.084	.083	.064	.050	.027	.021	.016	
7.0	.234	.173	.131	.201	.150	.114	.139	.105	.081	.081	.062	.048	.026	.020	.016	
8.0	.228	.168	.126	.196	.145	.110	.136	.102	.078	.079	.060	.047	.026	.020	.015	
9.0	.221	.163	.123	.191	.141	.107	.132	.099	.076	.077	.059	.045	.025	.019	.015	
10.0	.216	.159	.121	.186	.138	.105	.129	.097	.075	.075	.057	.045	.024	.019	.015	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm										
NAME: E-B20W-CC					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:3000K			SERIAL No.:1		
MFR.:					SUR.:0.066*0.567			PROTECTION 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	21.9	23.3	22.4	23.7	24.2	20.3	21.8	20.8	22.2	22.6
3H	24.2	25.5	24.7	26.0	26.5	21.8	23.1	22.2	23.5	24.0
4H	25.5	26.7	25.9	27.1	27.7	22.3	23.5	22.8	24.0	24.5
6H	26.8	27.9	27.3	28.4	28.9	22.7	23.8	23.2	24.3	24.8
8H	27.5	28.6	28.0	29.1	29.6	22.7	23.9	23.3	24.4	24.9
12H	28.3	29.4	28.8	29.9	30.4	22.8	23.8	23.3	24.3	24.9
4H 2H	22.5	23.7	23.0	24.2	24.7	21.3	22.5	21.8	23.0	23.5
3H	25.0	26.1	25.5	26.6	27.2	23.0	24.1	23.5	24.6	25.1
4H	26.4	27.4	27.0	27.9	28.5	23.7	24.7	24.3	25.2	25.8
6H	27.9	28.8	28.5	29.4	30.0	24.2	25.1	24.8	25.7	26.3
8H	28.8	29.6	29.3	30.2	30.8	24.4	25.2	25.0	25.8	26.4
12H	29.7	30.5	30.3	31.1	31.7	24.5	25.2	25.1	25.8	26.5
8H 4H	26.7	27.5	27.3	28.1	28.8	24.5	25.3	25.1	25.9	26.5
6H	28.5	29.2	29.1	29.8	30.5	25.3	26.0	26.0	26.6	27.3
8H	29.5	30.2	30.2	30.8	31.5	25.7	26.3	26.3	26.9	27.6
12H	30.7	31.3	31.4	31.9	32.7	25.9	26.5	26.6	27.1	27.9
12H 4H	26.7	27.5	27.3	28.1	28.8	24.7	25.5	25.3	26.1	26.7
6H	28.6	29.2	29.3	29.9	30.6	25.7	26.4	26.4	27.0	27.7
8H	29.7	30.3	30.4	30.9	31.7	26.2	26.8	26.9	27.4	28.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 1827 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.1)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

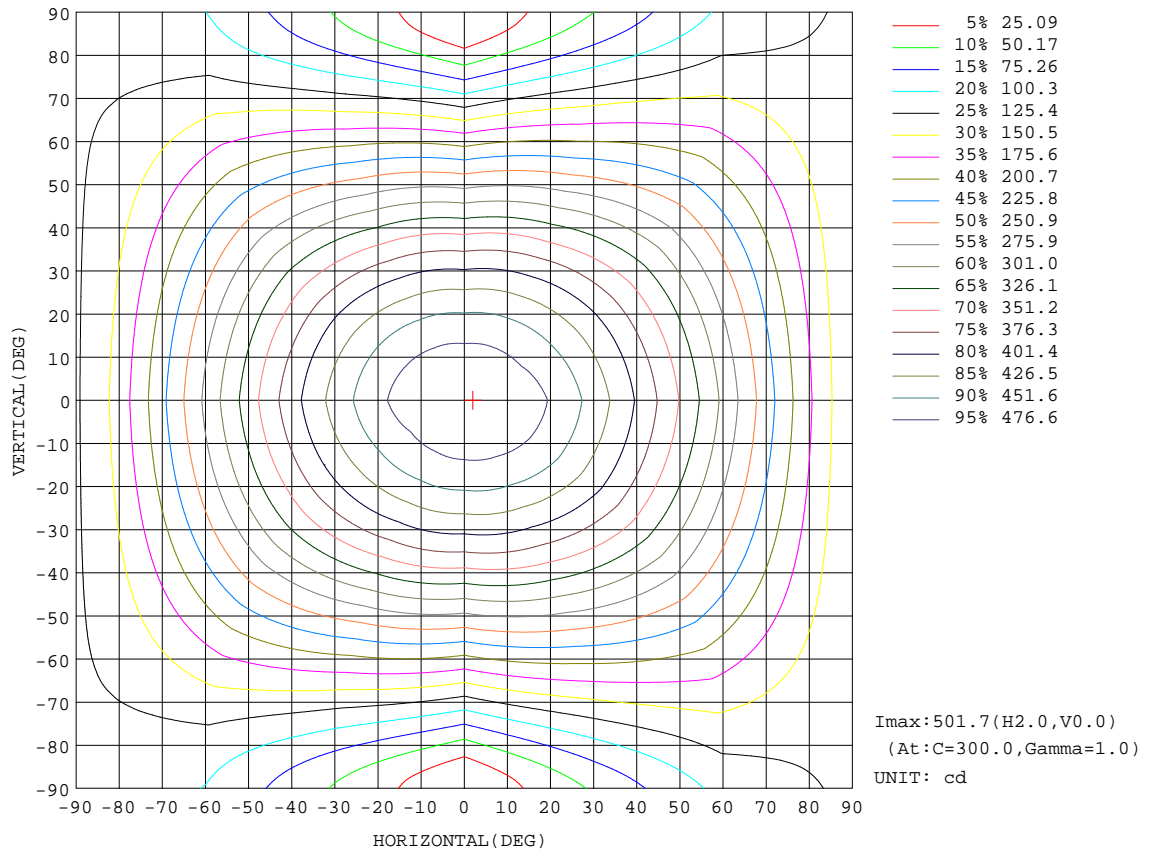
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	51	39	32	50	39	32	49	38	32	25
0.80	61	48	41	59	48	40	57	47	40	32
1.00	69	57	49	67	56	48	64	56	47	39
1.25	76	64	56	74	63	55	70	61	54	45
1.50	81	69	61	78	68	61	74	65	59	49
2.00	88	78	70	85	76	69	80	73	66	56
2.50	92	83	76	89	81	74	84	77	71	60
3.00	96	87	81	93	85	79	87	81	75	64
4.00	100	93	87	97	90	85	90	85	81	68
5.00	103	97	92	99	94	89	93	88	84	71
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

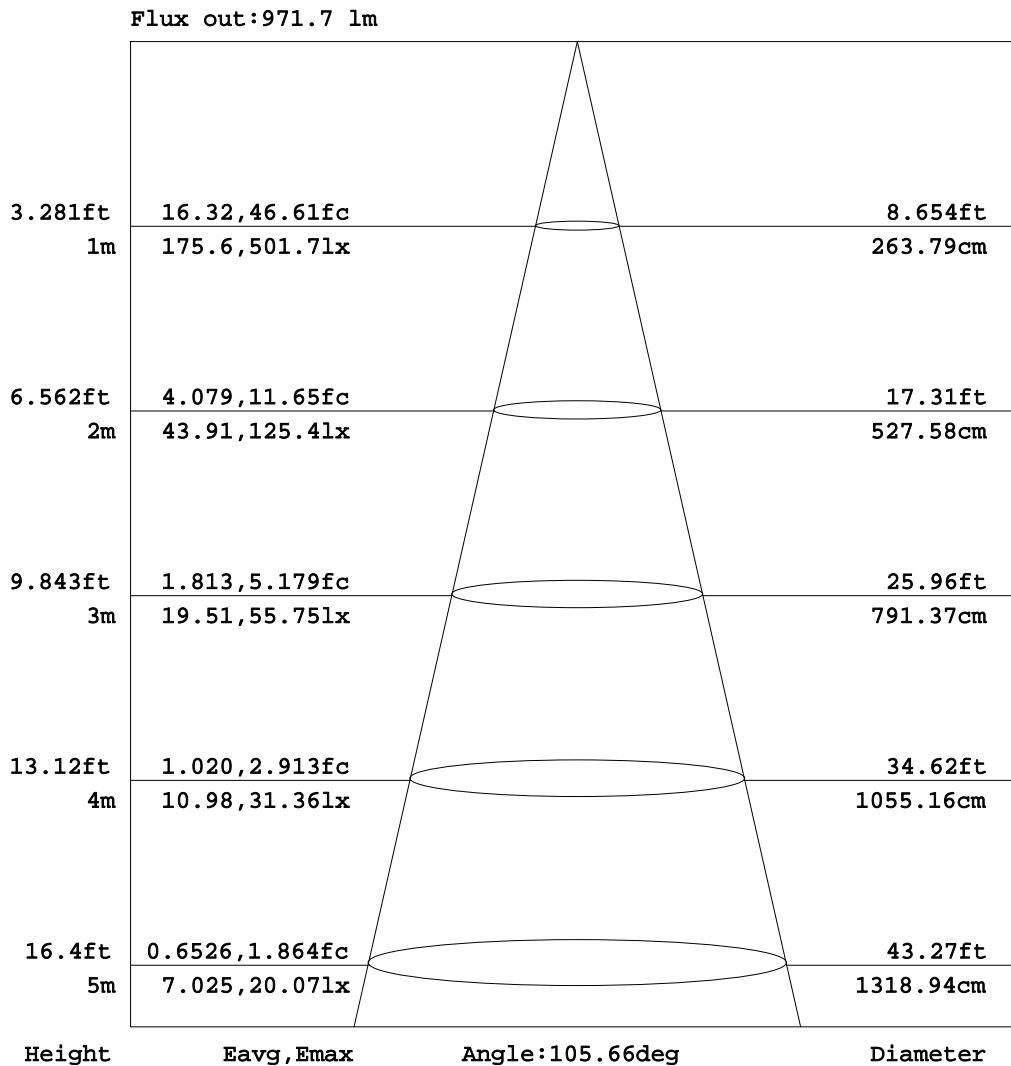


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMAN
 Test Date: 2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

AAI Figure

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:



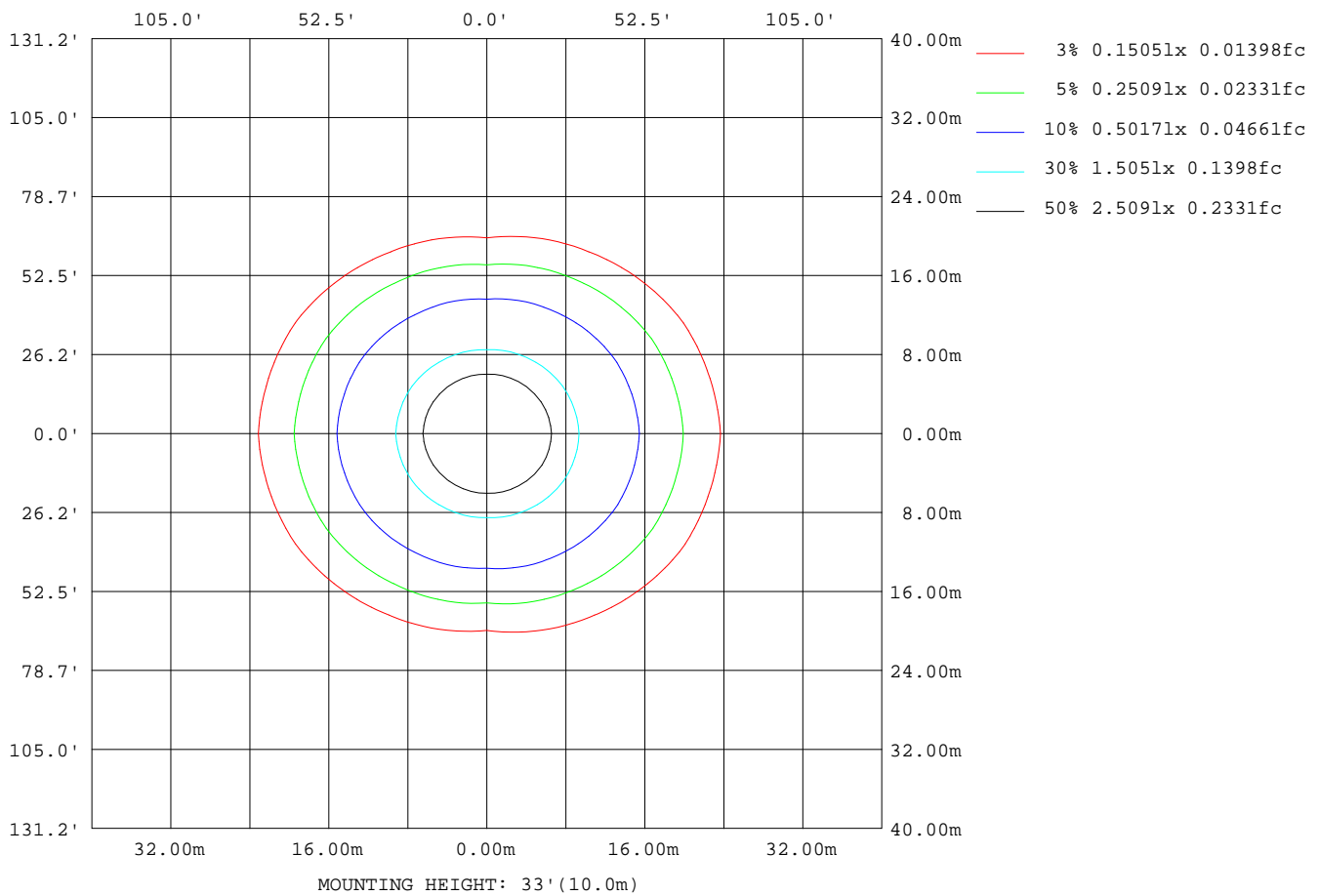
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

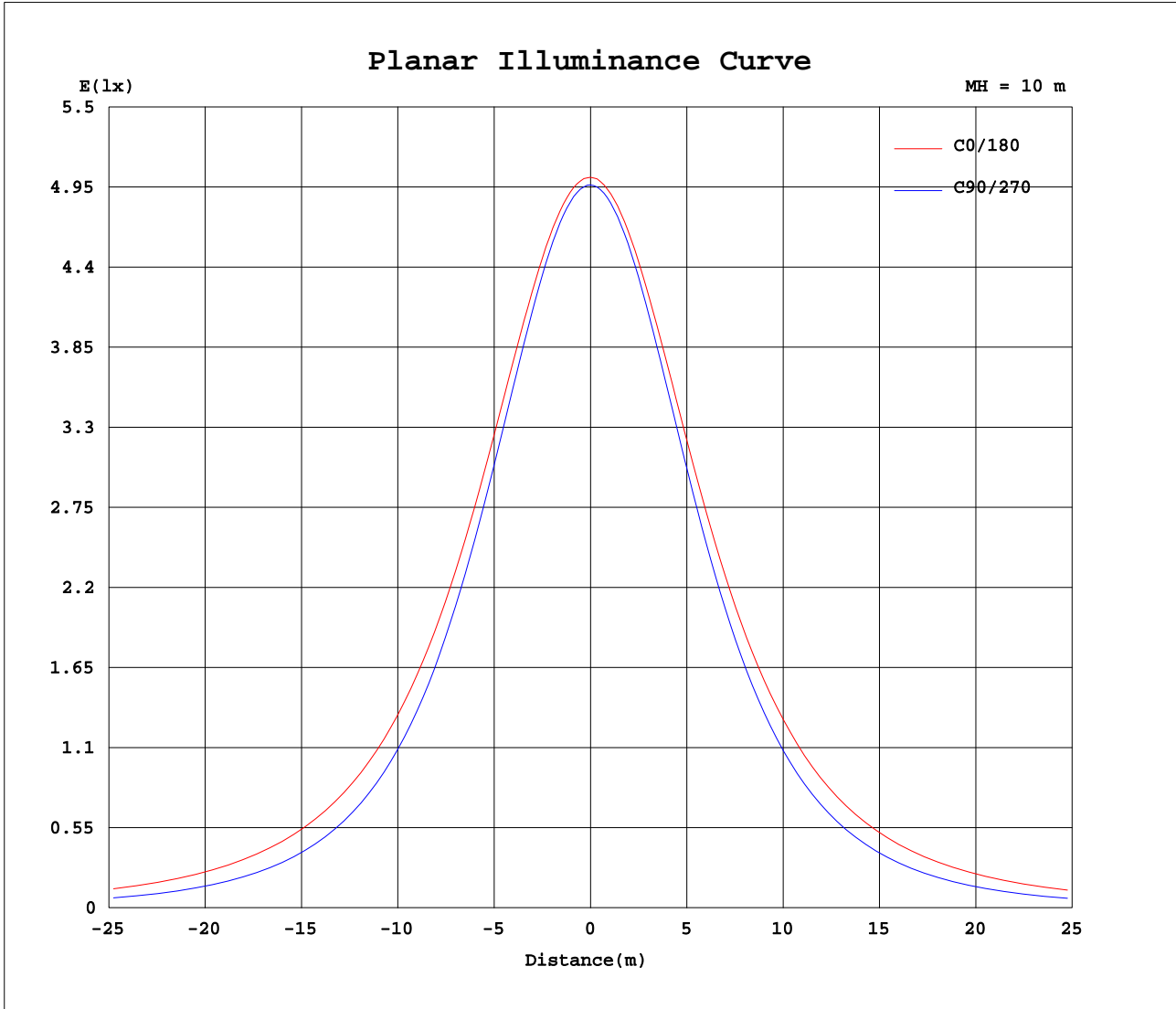
Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMAN
 Test Date: 2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.7V I:0.0830A P:18.90W PF:0.9370 Lamp Flux:1827.02x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	497	497	497	497	497	497	497	497	497	497	497	497							
5	496	496	495	495	495	495	495	495	494	494	495	496							
10	491	491	488	487	487	488	489	488	486	486	488	490							
15	483	482	477	474	474	478	480	477	474	472	476	480							
20	471	468	460	456	458	464	466	462	456	453	459	467							
25	455	452	440	434	437	446	450	444	435	430	439	450							
30	438	433	417	408	412	425	432	424	411	404	415	430							
35	417	411	390	378	385	402	411	400	383	374	388	408							
40	396	387	361	344	355	377	388	375	353	341	358	384							
45	372	361	330	309	323	349	363	348	320	306	326	358							
50	347	332	298	272	289	320	335	319	287	270	294	330							
55	321	304	264	233	255	291	307	290	253	232	260	302							
60	293	275	231	194	220	260	279	259	218	191	226	272							
65	265	245	197	155	185	229	249	228	183	149	191	242							
70	236	215	163	115	150	197	218	197	149	109	157	212							
75	206	185	130	76.2	118	167	189	166	116	69.8	124	181							
80	178	156	99.5	41.1	88.4	139	161	138	85.9	34.7	93.5	152							
85	150	130	72.9	13.3	63.6	115	137	115	62.1	8.68	67.7	126							
90	129	108	53.1	1.41	48.0	100.0	122	100	48.4	1.20	50.1	106							
95	116	95.2	43.4	1.28	39.7	88.8	110	89.1	40.3	1.49	41.8	93.9							
100	104	84.9	36.9	1.66	33.3	78.7	98.3	79.0	34.1	1.92	35.8	83.9							
105	93.4	75.6	32.0	2.14	28.4	69.5	87.7	69.9	29.2	2.32	29.3	74.8							
110	83.4	67.2	28.1	2.53	24.5	61.3	77.8	61.7	25.4	2.68	26.3	66.6							
115	74.1	59.6	25.1	2.97	21.2	53.8	68.7	54.3	22.2	3.15	23.9	58.4							
120	65.4	52.7	22.6	3.45	18.2	47.1	60.3	47.6	19.4	3.63	21.8	49.5							
125	57.5	46.4	19.3	3.92	15.8	40.9	52.6	41.5	17.1	4.10	19.6	44.5							
130	50.1	40.7	16.3	4.39	14.2	35.1	45.5	35.9	15.4	4.58	16.8	38.8							
135	43.4	35.4	14.2	4.90	12.9	29.6	38.8	30.6	14.0	5.02	14.7	33.6							
140	37.2	28.6	12.5	5.40	11.9	24.7	32.4	25.8	12.7	5.47	13.2	28.4							
145	31.6	22.7	11.3	5.83	10.9	20.7	26.8	21.8	11.6	5.90	11.8	23.1							
150	26.5	18.2	10.3	6.25	10.3	17.4	22.1	18.1	10.5	6.29	10.7	19.0							
155	21.9	14.8	9.49	6.62	9.54	14.6	17.8	15.0	9.67	6.65	9.87	15.5							
160	17.8	12.2	8.77	7.01	8.82	12.3	14.2	12.4	8.79	6.97	9.11	12.7							
165	14.3	10.2	8.51	7.33	8.35	10.1	10.5	10.3	8.33	7.30	8.54	10.5							
170	10.9	8.74	8.33	7.59	8.05	8.76	8.65	8.72	8.03	7.52	8.26	8.92							
175	8.10	8.01	8.09	7.75	7.86	8.08	7.86	8.01	7.84	7.69	8.04	8.10							
180	7.66	7.63	7.76	7.79	7.74	7.67	7.71	7.60	7.78	7.76	7.75	7.67							

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks: