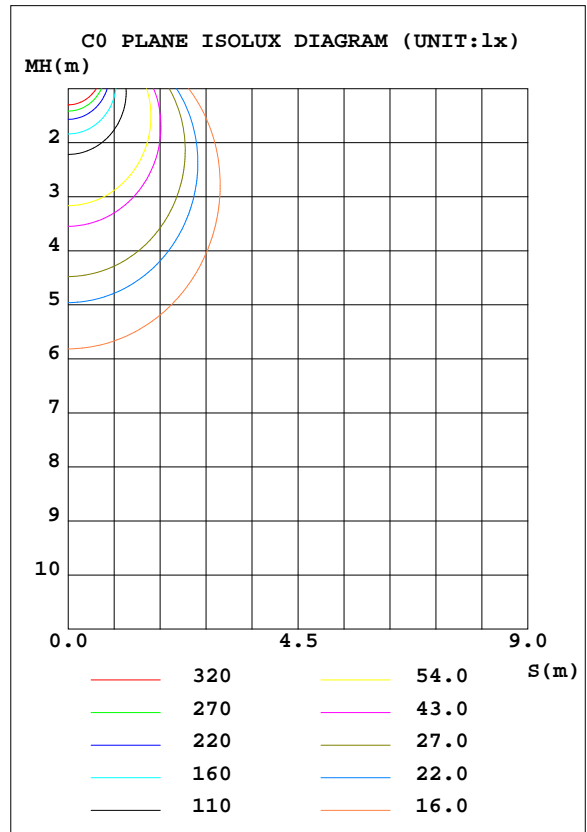
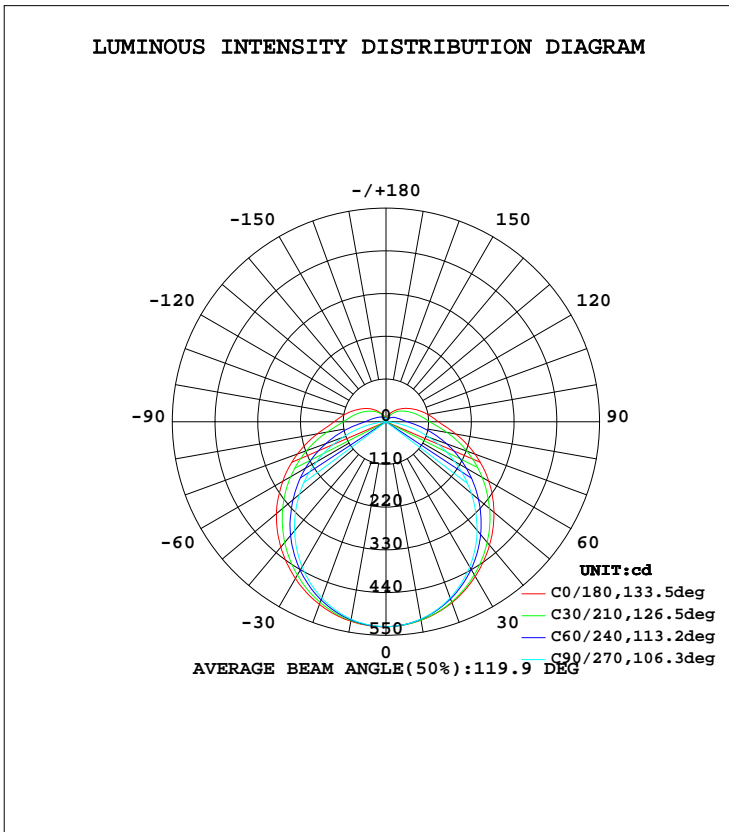


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.7V I:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.16 lm/W			
MODEL	E-B20W-CC	I _{max} (cd)	528.1	S/MH(C0/180)	1.30
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.22
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1961.5	η UP, DN(C0-180)	6.4, 43.5
NOMINAL FLUX(lm)	1961.5	CIE CLASS	SEMI-D.	η UP, DN(C180-360)	6.4, 43.7
LAMPS INSIDE	1	η up(%)	12.8	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.7	η down(%)	87.2	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	518.9	517.6	516.1	518.3	521.5	518.9	516.2	518.1	0- 10	49.92	49.92	2.55,2.55
20	495.9	489.7	482.6	490.5	500.8	492.0	483.1	490.7	10- 20	143.0	192.9	9.83,9.83
30	460.1	446.6	431.2	447.3	466.1	449.0	431.8	448.2	20- 30	217.1	410.0	20.9,20.9
40	414.7	392.3	365.2	392.3	421.1	394.0	366.5	394.1	30- 40	263.8	673.8	34.4,34.4
50	363.1	329.5	286.9	327.9	368.3	330.0	291.4	331.4	40- 50	279.3	953.1	48.6,48.6
60	305.7	262.5	203.9	259.9	307.0	261.7	207.8	264.6	50- 60	264.1	1217	62.1,62.1
70	243.9	194.1	118.9	190.7	242.6	191.6	119.4	195.7	60- 70	222.7	1440	73.4,73.4
80	182.8	129.9	41.24	127.3	179.4	125.8	41.22	130.7	70- 80	164.1	1604	81.8,81.8
90	134.9	83.52	1.788	84.04	133.4	81.93	2.060	84.93	80- 90	106.5	1711	87.2,87.2
100	109.6	63.72	2.094	64.56	108.2	63.32	2.351	65.06	90-100	75.98	1787	91.1,91.1
110	87.66	49.83	3.082	50.14	86.41	49.67	3.181	50.80	100-110	58.07	1845	94,94
120	68.73	39.31	4.120	38.97	67.93	39.02	4.092	39.76	110-120	43.09	1888	96.2,96.2
130	52.60	29.68	5.173	30.33	52.16	30.64	5.001	30.06	120-130	30.55	1918	97.8,97.8
140	39.01	20.93	6.022	23.41	37.44	23.77	5.846	22.06	130-140	20.29	1939	98.8,98.8
150	27.67	14.71	7.079	17.80	24.86	17.63	6.737	15.56	140-150	12.22	1951	99.5,99.5
160	18.72	11.01	7.940	13.30	16.52	13.10	7.444	11.32	150-160	6.682	1957	99.8,99.8
170	11.56	9.346	8.639	10.07	11.05	10.37	8.198	9.040	160-170	3.157	1961	100,100
180	8.780	8.913	8.873	8.587	8.809	8.943	8.482	8.505	170-180	0.8818	1962	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

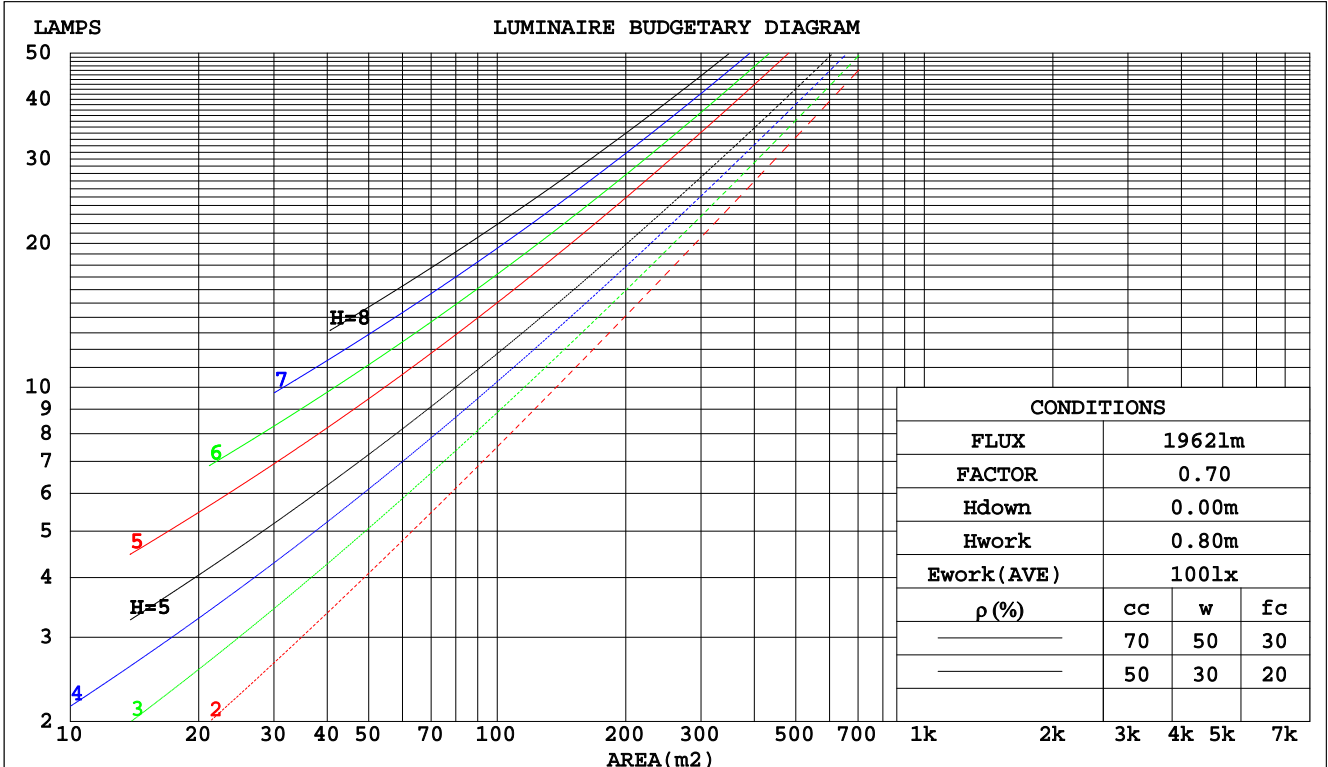
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

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:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	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%	
pw	0															
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	.90	.90	.90	.87
1.0	.98	.93	.89	.95	.90	.86	.88	.85	.81	.82	.79	.76	.76	.74	.72	.69
2.0	.85	.77	.71	.82	.75	.69	.76	.71	.66	.71	.66	.62	.66	.62	.59	.56
3.0	.74	.65	.58	.71	.63	.57	.67	.60	.54	.62	.56	.52	.58	.53	.49	.47
4.0	.65	.56	.49	.63	.55	.48	.59	.52	.46	.55	.49	.44	.51	.46	.42	.39
5.0	.58	.49	.42	.56	.47	.41	.53	.45	.39	.49	.43	.38	.46	.41	.36	.34
6.0	.52	.43	.36	.50	.42	.36	.47	.40	.34	.44	.38	.33	.42	.36	.32	.29
7.0	.47	.38	.32	.46	.37	.31	.43	.36	.30	.40	.34	.29	.38	.32	.28	.26
8.0	.43	.34	.28	.42	.33	.28	.39	.32	.27	.37	.31	.26	.35	.29	.25	.23
9.0	.39	.31	.25	.38	.30	.25	.36	.29	.24	.34	.28	.23	.32	.27	.23	.21
10.0	.36	.28	.23	.35	.28	.23	.33	.27	.22	.32	.25	.21	.30	.24	.20	.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:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	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	.356	.202	.064	.345	.197	.062	.324	.186	.059	.305	.176	.056	.287	.167	.054	
2.0	.316	.173	.053	.306	.169	.052	.288	.160	.050	.270	.152	.047	.254	.144	.045	
3.0	.285	.152	.045	.276	.148	.044	.259	.140	.043	.243	.133	.041	.229	.127	.039	
4.0	.259	.134	.040	.251	.131	.039	.235	.125	.037	.221	.119	.036	.208	.113	.034	
5.0	.237	.121	.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	.176	.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	.078	.023	
9.0	.175	.085	.024	.170	.083	.023	.160	.079	.022	.152	.076	.022	.143	.073	.021	
10.0	.164	.079	.022	.159	.077	.021	.151	.074	.021	.142	.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	.288	.288	.288	.246	.246	.246	.168	.168	.168	.096	.096	.096	.031	.031	.031	
1.0	.282	.254	.229	.241	.218	.197	.165	.150	.136	.095	.087	.079	.030	.028	.026	
2.0	.274	.231	.194	.235	.199	.168	.161	.137	.117	.093	.080	.069	.030	.026	.022	
3.0	.267	.214	.172	.229	.184	.149	.157	.128	.104	.091	.075	.062	.029	.024	.020	
4.0	.259	.201	.157	.222	.174	.136	.153	.121	.096	.088	.071	.057	.028	.023	.019	
5.0	.251	.191	.147	.216	.165	.127	.149	.115	.090	.086	.068	.053	.028	.022	.018	
6.0	.244	.183	.139	.210	.158	.121	.145	.111	.086	.084	.065	.051	.027	.021	.017	
7.0	.237	.176	.134	.204	.153	.116	.141	.107	.083	.082	.063	.049	.026	.021	.016	
8.0	.231	.171	.129	.199	.148	.113	.137	.104	.080	.080	.061	.048	.026	.020	.016	
9.0	.224	.166	.126	.193	.144	.110	.134	.101	.078	.078	.060	.047	.025	.020	.015	
10.0	.219	.162	.124	.189	.140	.108	.131	.099	.077	.076	.058	.046	.025	.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:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm										
NAME: E-B20W-CC					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:5700K			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	22.0	23.4	22.5	23.9	24.3	20.4	21.8	20.8	22.2	22.7
3H	24.3	25.6	24.8	26.1	26.6	21.8	23.1	22.3	23.5	24.0
4H	25.5	26.8	26.0	27.2	27.8	22.3	23.5	22.8	24.0	24.5
6H	26.8	28.0	27.3	28.5	29.0	22.6	23.8	23.1	24.3	24.8
8H	27.5	28.7	28.1	29.2	29.7	22.7	23.8	23.2	24.3	24.9
12H	28.3	29.4	28.9	29.9	30.5	22.7	23.8	23.2	24.3	24.9
4H 2H	22.6	23.8	23.0	24.3	24.8	21.3	22.6	21.8	23.0	23.5
3H	25.1	26.2	25.6	26.7	27.2	23.0	24.0	23.5	24.6	25.1
4H	26.5	27.5	27.0	28.0	28.6	23.7	24.6	24.2	25.2	25.8
6H	28.0	28.9	28.6	29.4	30.1	24.2	25.0	24.7	25.6	26.2
8H	28.8	29.6	29.4	30.2	30.9	24.3	25.1	24.9	25.7	26.4
12H	29.7	30.5	30.4	31.1	31.8	24.4	25.1	25.0	25.7	26.4
8H 4H	26.8	27.6	27.4	28.2	28.8	24.4	25.3	25.0	25.8	26.5
6H	28.5	29.2	29.2	29.8	30.5	25.2	25.9	25.9	26.6	27.2
8H	29.6	30.2	30.2	30.8	31.5	25.6	26.2	26.2	26.8	27.5
12H	30.8	31.3	31.4	31.9	32.7	25.8	26.3	26.5	27.0	27.7
12H 4H	26.8	27.5	27.4	28.1	28.8	24.7	25.4	25.3	26.0	26.7
6H	28.6	29.2	29.3	29.9	30.6	25.6	26.3	26.3	26.9	27.6
8H	29.8	30.3	30.4	30.9	31.7	26.1	26.7	26.8	27.3	28.0
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 1962 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.3)

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:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

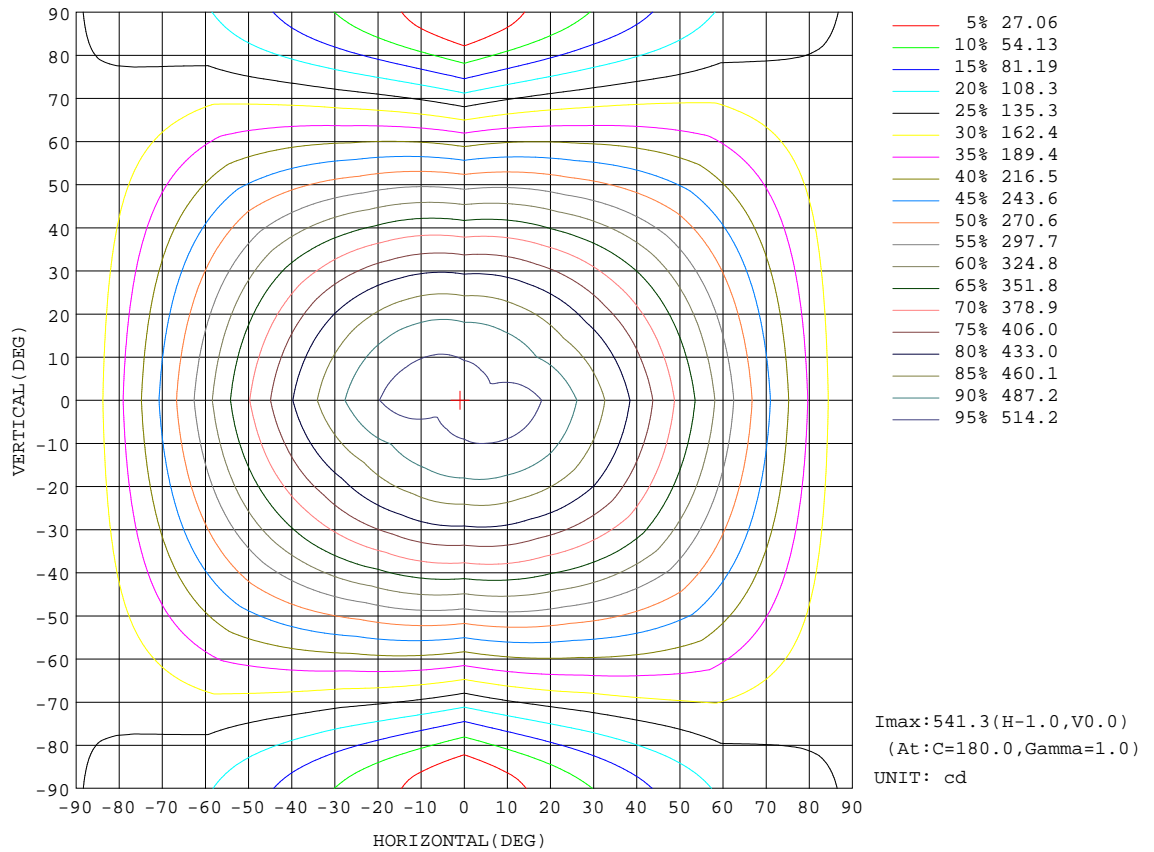
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	51	39	32	50	39	32	48	38	31	25
0.80	61	48	40	59	48	40	57	46	39	32
1.00	69	56	48	67	55	48	64	56	47	39
1.25	76	64	56	73	63	55	70	60	54	45
1.50	81	69	61	78	68	60	74	65	59	49
2.00	88	78	70	85	76	69	80	72	66	56
2.50	92	83	75	89	80	74	83	76	71	60
3.00	96	87	80	92	85	79	86	80	75	63
4.00	100	93	87	97	90	85	90	85	81	68
5.00	103	97	91	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:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

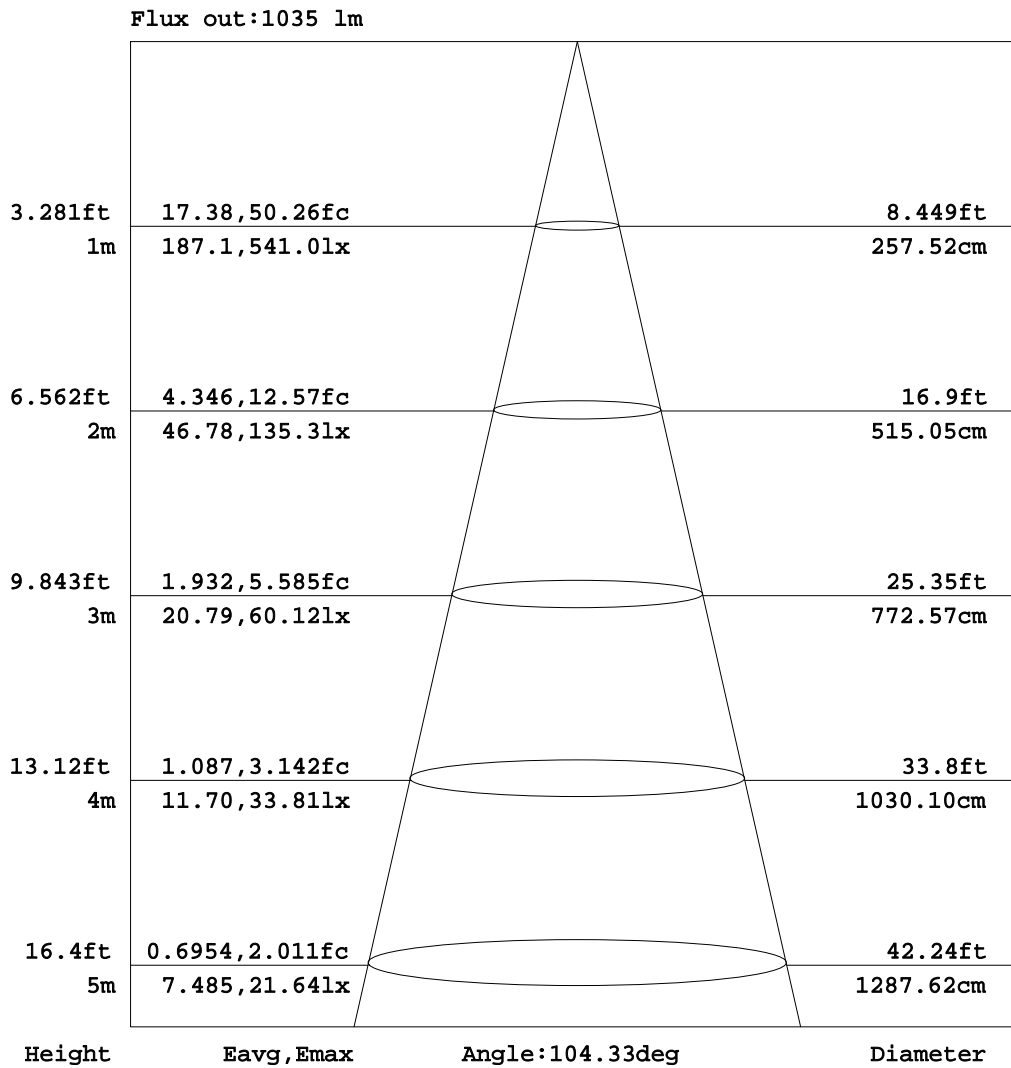


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMAN
 Test Date: 2020-05-05

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:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:



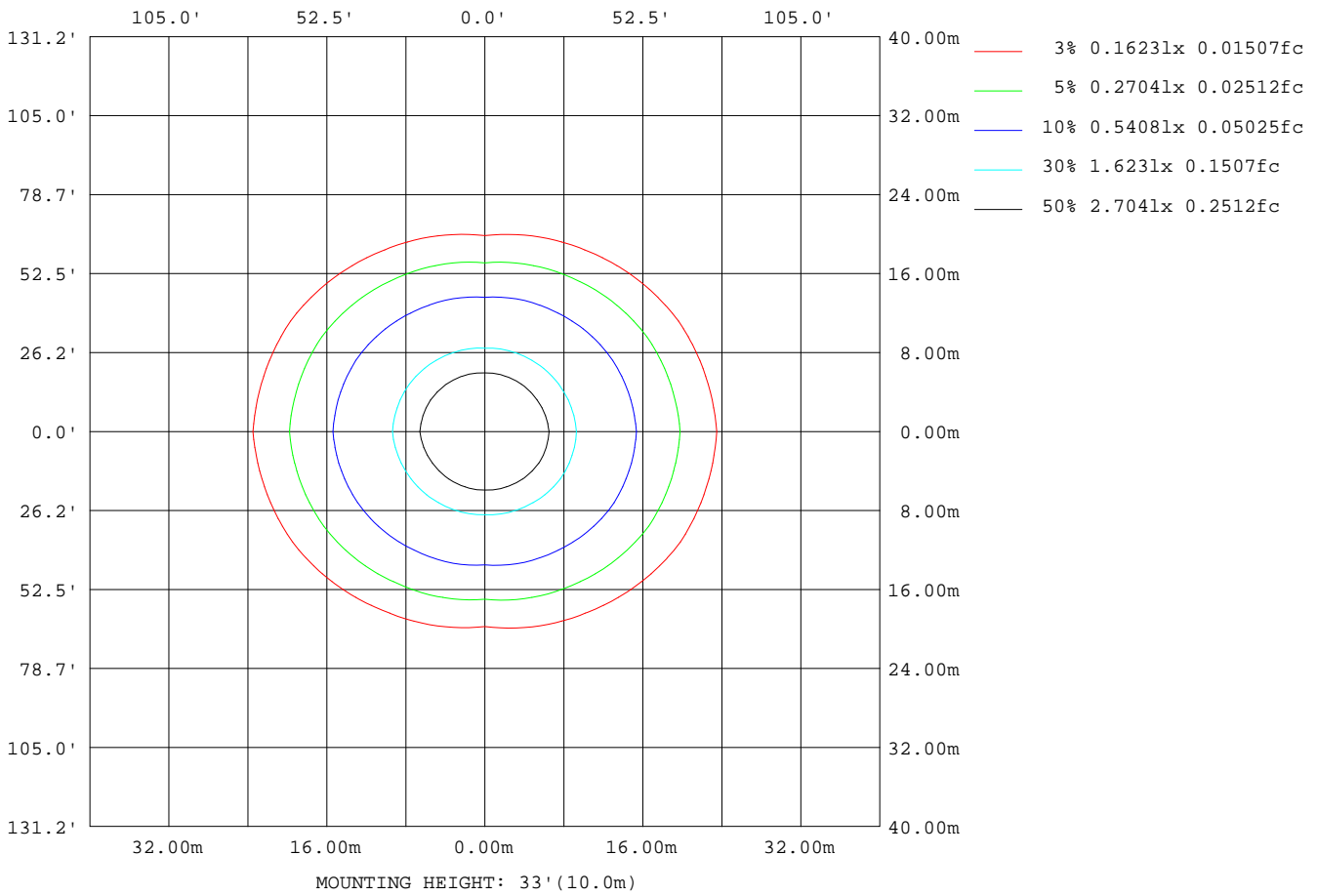
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

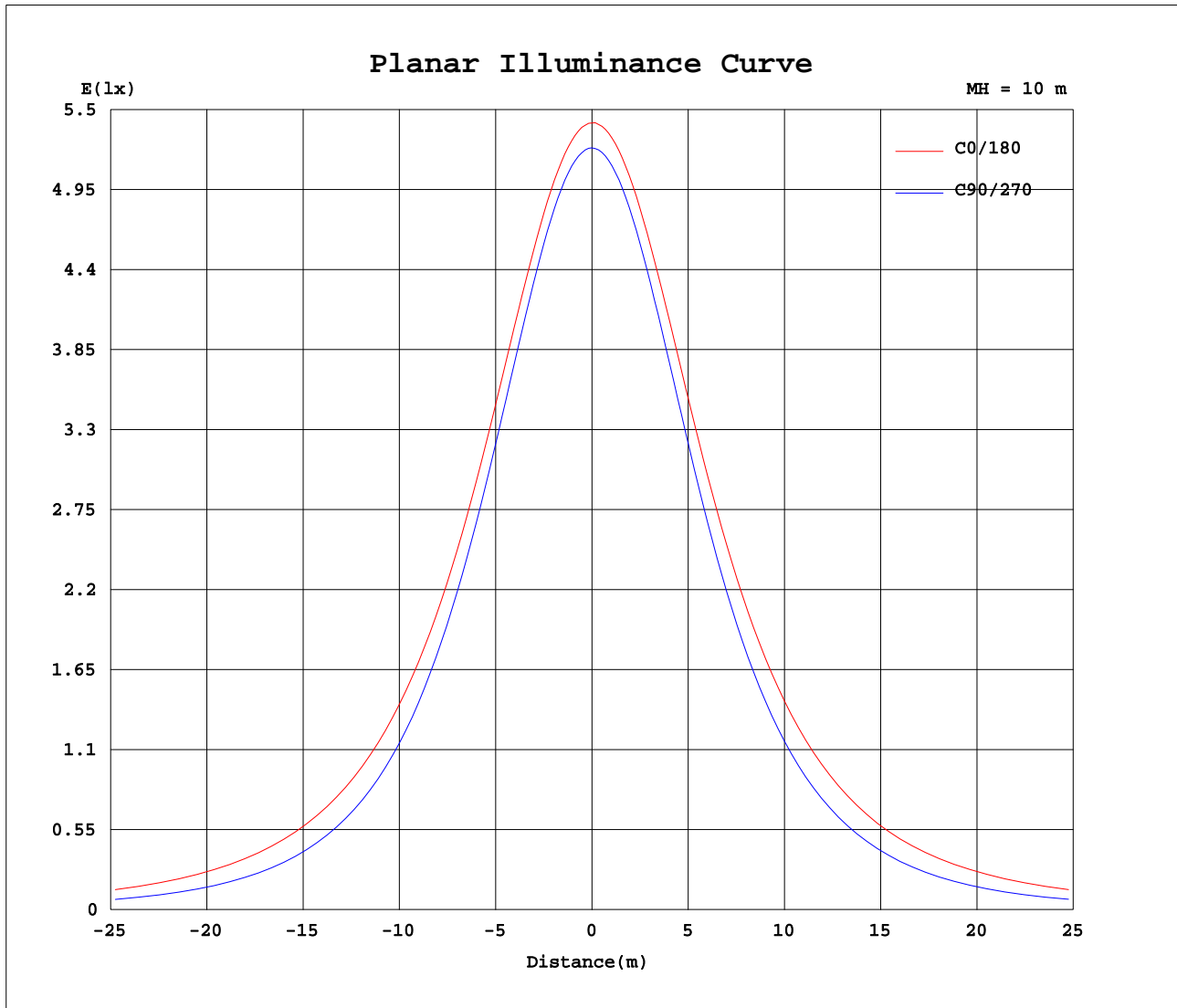
Test:U:240.7V I:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:



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:0.0850A P:19.20W PF:0.9390 Lamp Flux:1961.5x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	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	528	528	528	528	528	528	528	528	528	528	528	528							
5	525	525	525	525	525	526	527	526	526	525	525	525							
10	519	519	516	516	517	520	522	520	518	516	517	519							
15	509	508	503	502	504	509	513	510	506	502	505	508							
20	496	494	486	483	486	495	501	495	489	483	488	494							
25	479	476	464	459	464	477	485	477	467	460	466	476							
30	460	455	438	431	439	456	466	456	442	432	441	455							
35	438	431	410	400	410	432	445	432	413	400	413	432							
40	415	405	379	365	379	406	421	406	382	367	382	406							
45	390	378	346	326	344	378	396	377	348	330	348	378							
50	363	348	311	287	309	347	368	347	312	291	314	349							
55	335	317	275	246	273	316	338	316	276	251	278	319							
60	306	286	239	204	236	284	307	284	239	208	242	287							
65	275	254	203	161	199	252	275	251	202	163	205	255							
70	244	222	166	119	162	219	243	218	165	119	169	223							
75	213	190	132	77.8	128	187	210	185	130	78.3	134	191							
80	183	160	99.9	41.2	97.2	157	179	154	97.4	41.2	102	160							
85	155	133	73.0	12.9	71.3	132	152	128	70.6	12.8	74.7	133							
90	135	112	54.5	1.79	54.6	114	133	110	53.7	2.06	56.3	114							
95	122	99.7	44.9	1.75	45.6	101	120	98.1	45.3	1.87	46.8	101							
100	110	89.0	38.3	2.09	38.7	90.5	108	87.6	38.8	2.35	39.8	90.4							
105	98.3	79.2	33.2	2.60	33.4	80.4	97.0	78.3	33.4	2.76	34.4	80.5							
110	87.7	70.3	29.2	3.08	29.1	71.2	86.4	69.9	29.3	3.18	30.2	71.5							
115	77.9	62.3	26.0	3.59	25.6	62.9	76.7	62.1	26.0	3.64	26.6	63.3							
120	68.7	55.1	23.4	4.12	22.7	55.3	67.9	54.6	23.3	4.09	23.7	55.9							
125	60.4	48.5	19.4	4.64	20.6	48.3	59.9	47.8	21.1	4.54	21.1	48.1							
130	52.6	42.6	16.7	5.17	18.7	42.0	52.2	41.9	19.3	5.00	18.2	42.0							
135	45.5	36.7	14.5	5.59	17.0	36.3	44.6	36.6	17.6	5.42	15.8	36.1							
140	39.0	28.9	12.9	6.02	15.6	31.2	37.4	31.4	16.1	5.85	13.9	30.3							
145	33.0	23.2	11.6	6.58	14.2	26.7	30.3	26.3	14.7	6.30	12.4	24.6							
150	27.7	18.7	10.7	7.08	13.1	22.6	24.9	22.0	13.2	6.74	11.2	19.9							
155	22.9	15.3	9.96	7.49	12.0	18.9	20.2	18.2	12.1	7.13	10.2	16.1							
160	18.7	12.7	9.31	7.94	10.8	15.9	16.5	15.3	10.9	7.44	9.45	13.2							
165	15.1	10.6	9.24	8.28	9.99	13.2	13.8	12.9	10.3	7.81	8.89	10.8							
170	11.6	9.57	9.12	8.64	9.42	10.7	11.1	11.0	9.75	8.20	8.65	9.43							
175	9.07	9.02	8.98	8.80	9.04	9.46	9.16	9.68	9.34	8.38	8.56	8.68							
180	8.78	8.93	8.90	8.87	8.63	8.54	8.81	8.88	9.01	8.48	8.48	8.53							

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: