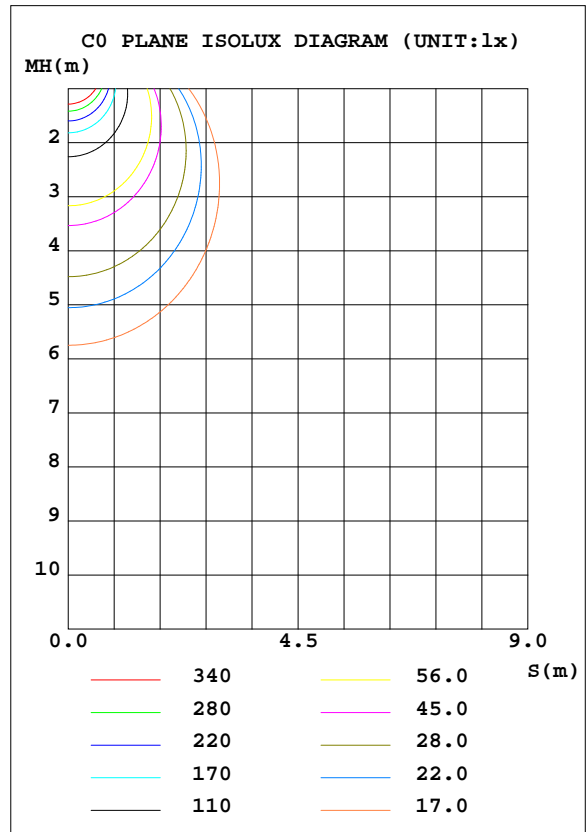
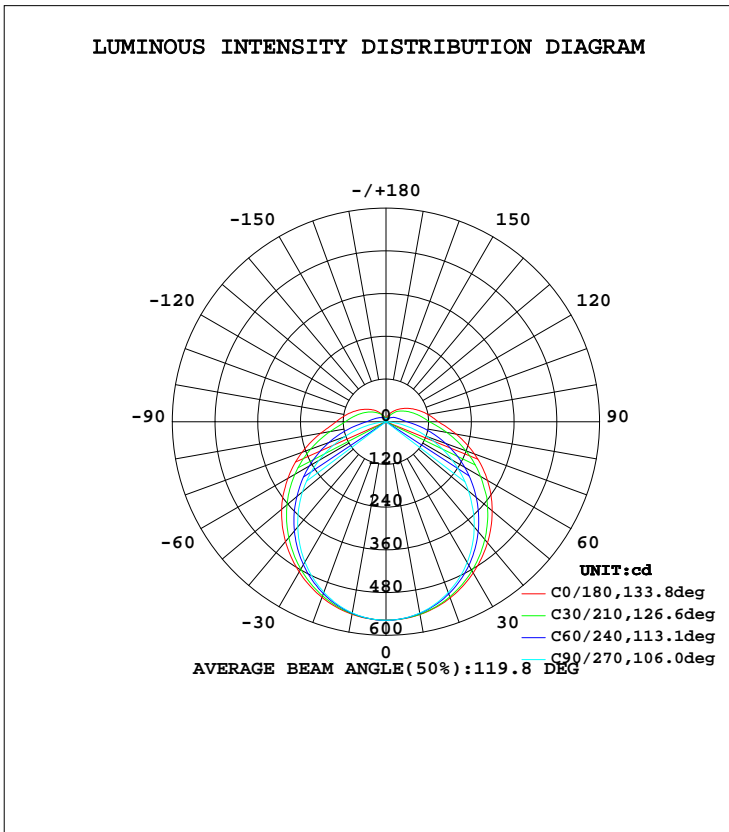


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.7V I:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 114.29 lm/W			
MODEL	E-B20W-CC	I _{max} (cd)	557.6	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)	2068.6	η UP, DN(C0-180)	6.4, 43.7
NOMINAL FLUX(lm)	2068.63	CIE CLASS	SEMI-D.	η UP, DN(C180-360)	6.3, 43.5
LAMPS INSIDE	1	η up(%)	12.7	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.7	η down(%)	87.3	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	549.8	548.0	545.4	547.1	549.2	547.0	545.3	547.9	0- 10	52.74	52.74	2.55,2.55
20	526.8	519.2	510.6	517.4	525.3	517.3	509.9	519.4	10- 20	151.0	203.8	9.85,9.85
30	490.3	474.4	456.3	471.2	487.3	471.2	455.1	474.7	20- 30	229.2	433.0	20.9,20.9
40	443.7	417.3	385.8	412.6	439.2	412.7	385.8	418.0	30- 40	278.5	711.5	34.4,34.4
50	389.3	351.9	302.5	345.1	383.0	344.8	306.4	352.2	40- 50	294.8	1006	48.6,48.6
60	329.3	280.9	214.3	272.0	318.5	272.3	217.5	281.8	50- 60	278.7	1285	62.1,62.1
70	264.4	209.0	123.8	198.5	251.0	198.2	124.1	209.1	60- 70	234.7	1520	73.5,73.5
80	199.9	141.1	43.99	130.7	185.9	129.8	41.77	141.0	70- 80	172.9	1693	81.8,81.8
90	147.4	90.96	1.551	86.06	140.6	85.31	1.938	91.27	80- 90	112.6	1805	87.3,87.3
100	119.6	69.19	1.993	65.29	113.5	64.75	2.479	69.88	90-100	80.06	1885	91.1,91.1
110	95.84	54.28	2.993	50.52	90.27	50.21	3.325	54.86	100-110	61.02	1946	94.1,94.1
120	75.25	42.75	3.959	39.22	70.39	39.11	4.310	43.16	110-120	45.19	1992	96.3,96.3
130	57.63	32.41	5.072	30.20	53.42	30.36	5.393	32.69	120-130	31.93	2024	97.8,97.8
140	42.85	23.04	6.187	23.18	38.52	23.41	6.474	24.03	130-140	21.19	2045	98.8,98.8
150	30.55	16.10	7.201	17.62	25.25	17.81	7.438	16.94	140-150	12.75	2057	99.5,99.5
160	20.51	11.85	8.064	13.20	16.50	13.05	8.195	12.34	150-160	6.996	2064	99.8,99.8
170	12.34	9.814	8.879	10.13	10.42	10.06	8.849	9.884	160-170	3.246	2068	100,100
180	8.725	9.032	9.143	9.045	8.767	9.023	9.143	9.054	170-180	0.9049	2069	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

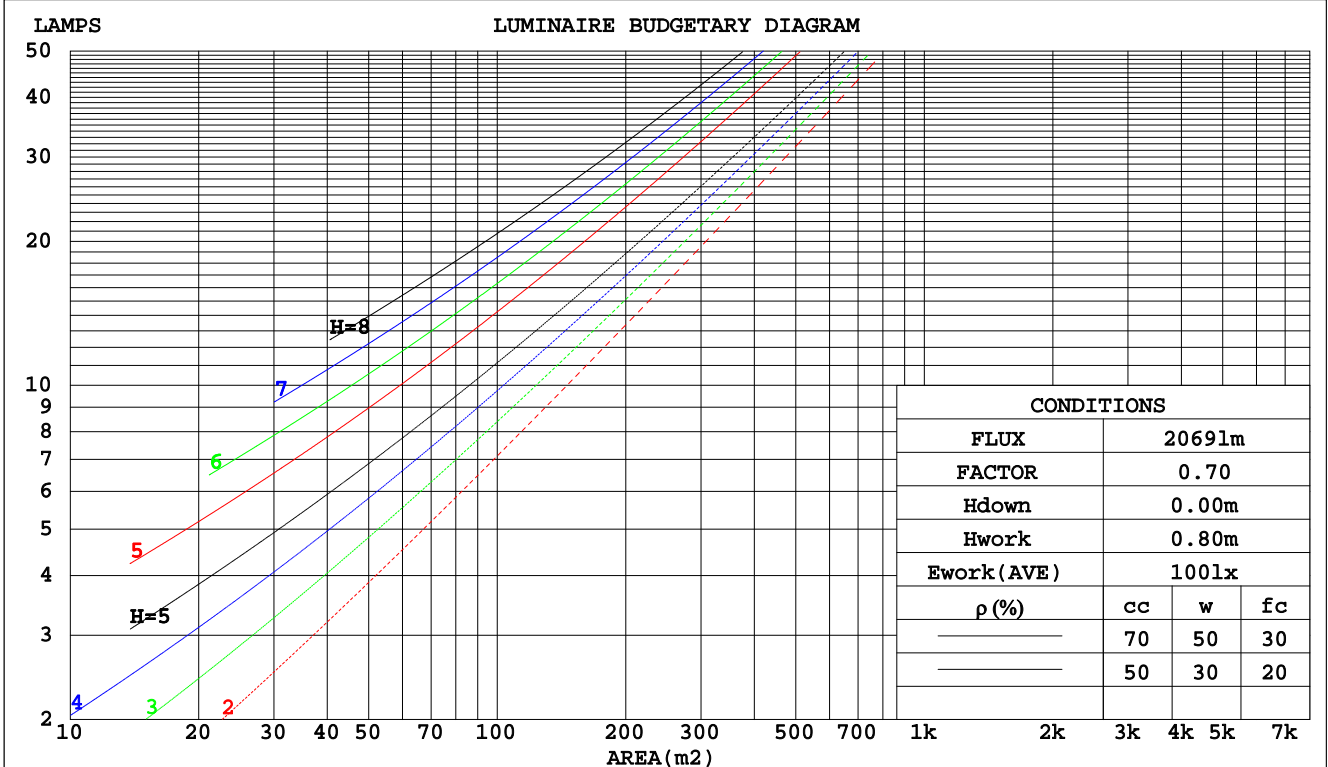
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

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:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	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	.90	.90	.90	.87
1.0	.98	.93	.89	.95	.90	.86	.88	.85	.81	.82	.79	.77	.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	.57	.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	.48	.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:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	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	.255	.144	.045	
3.0	.285	.152	.045	.276	.148	.044	.259	.140	.043	.244	.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	.161	.079	.022	.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	.287	.287	.287	.246	.246	.246	.168	.168	.168	.096	.096	.096	.031	.031	.031	
1.0	.281	.254	.229	.241	.218	.197	.165	.150	.136	.095	.087	.079	.030	.028	.026	
2.0	.274	.230	.193	.235	.198	.167	.161	.137	.117	.093	.080	.068	.030	.026	.022	
3.0	.266	.213	.171	.228	.184	.148	.157	.128	.104	.091	.075	.061	.029	.024	.020	
4.0	.259	.201	.156	.222	.173	.136	.153	.121	.096	.088	.071	.057	.028	.023	.019	
5.0	.251	.191	.146	.216	.165	.127	.148	.115	.090	.086	.068	.053	.028	.022	.018	
6.0	.244	.182	.139	.209	.158	.121	.144	.111	.085	.084	.065	.051	.027	.021	.017	
7.0	.237	.176	.133	.204	.152	.116	.141	.107	.082	.082	.063	.049	.026	.021	.016	
8.0	.230	.170	.129	.198	.148	.112	.137	.104	.080	.080	.061	.048	.026	.020	.016	
9.0	.224	.165	.126	.193	.143	.110	.134	.101	.078	.078	.060	.046	.025	.020	.015	
10.0	.218	.161	.123	.188	.140	.107	.130	.098	.076	.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:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm										
NAME: E-B20W-CC					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:4000K			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	22.3	23.7	22.7	24.1	24.5	20.6	22.0	21.1	22.4	22.9
3H	24.6	25.9	25.0	26.3	26.8	22.0	23.3	22.5	23.8	24.3
4H	25.8	27.0	26.3	27.5	28.0	22.5	23.8	23.0	24.2	24.7
6H	27.1	28.3	27.6	28.8	29.3	22.9	24.0	23.4	24.5	25.0
8H	27.8	28.9	28.3	29.4	30.0	22.9	24.0	23.5	24.5	25.1
12H	28.7	29.7	29.2	30.2	30.8	22.9	24.0	23.5	24.5	25.1
4H 2H	22.8	24.0	23.3	24.5	25.0	21.6	22.8	22.1	23.3	23.8
3H	25.3	26.4	25.9	26.9	27.5	23.2	24.3	23.7	24.8	25.4
4H	26.7	27.7	27.3	28.3	28.9	23.9	24.9	24.5	25.4	26.0
6H	28.3	29.1	28.9	29.7	30.3	24.4	25.3	25.0	25.9	26.5
8H	29.1	29.9	29.7	30.5	31.2	24.6	25.4	25.2	26.0	26.6
12H	30.1	30.8	30.7	31.4	32.1	24.7	25.4	25.3	26.0	26.7
8H 4H	27.0	27.9	27.6	28.4	29.1	24.7	25.5	25.3	26.1	26.8
6H	28.8	29.5	29.5	30.1	30.8	25.5	26.2	26.2	26.8	27.5
8H	29.9	30.5	30.5	31.1	31.8	25.9	26.5	26.5	27.1	27.8
12H	31.1	31.6	31.7	32.3	33.0	26.1	26.7	26.8	27.3	28.1
12H 4H	27.0	27.8	27.7	28.4	29.1	24.9	25.7	25.5	26.3	27.0
6H	28.9	29.6	29.6	30.2	30.9	25.9	26.6	26.6	27.2	27.9
8H	30.1	30.6	30.7	31.3	32.0	26.4	27.0	27.1	27.6	28.4
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 2069 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.5)

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:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

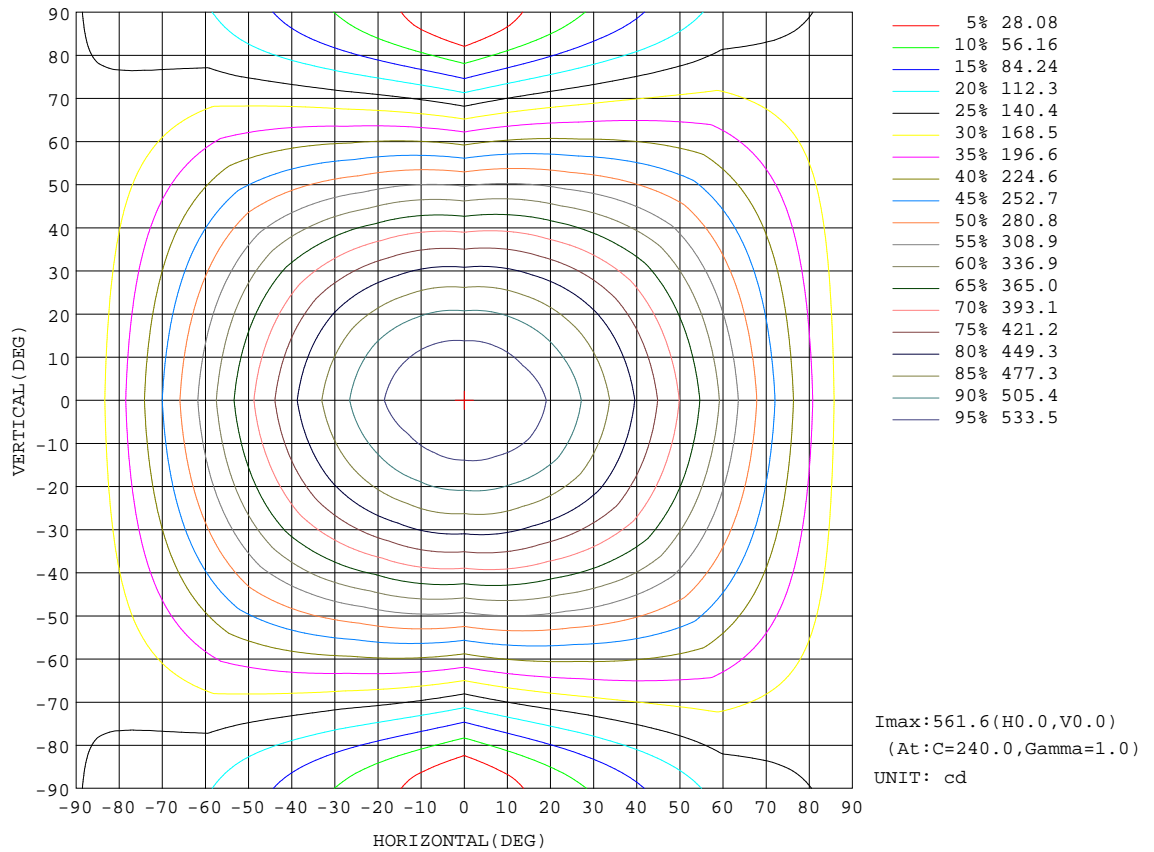
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	51	39	32	50	39	32	49	38	31	25
0.80	61	48	40	59	48	40	57	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	81	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:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:

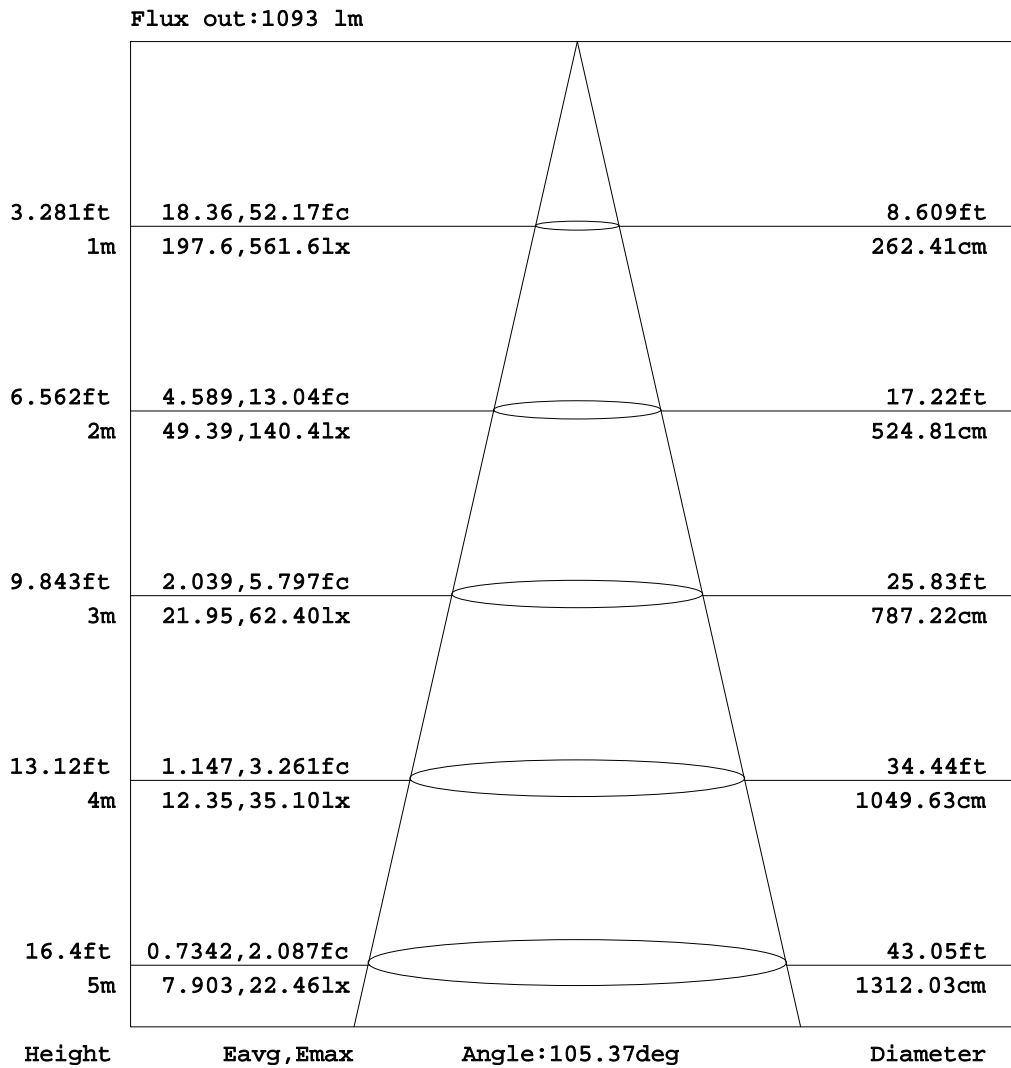


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMAN
 Test Date:2020-05-05

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:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:



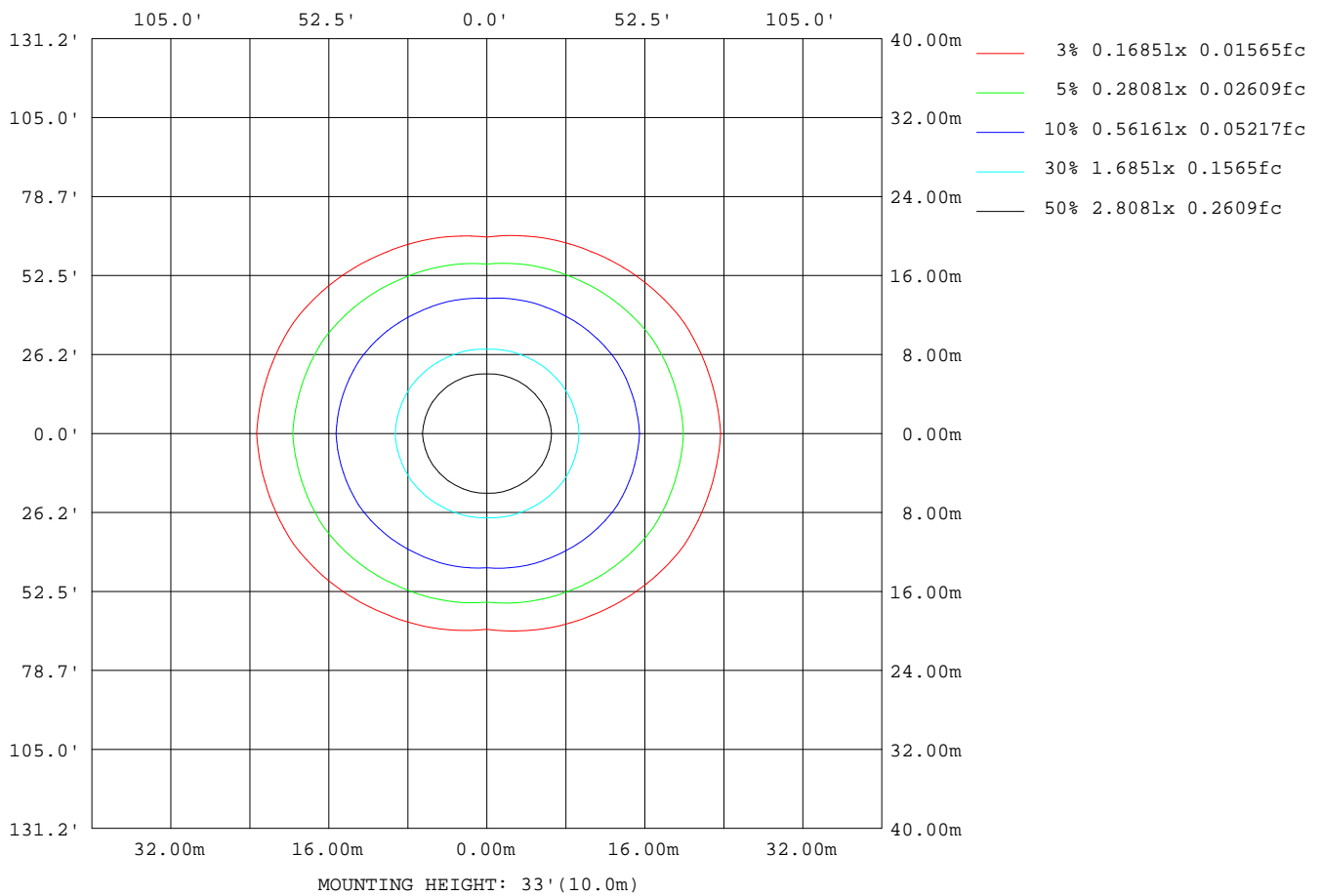
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

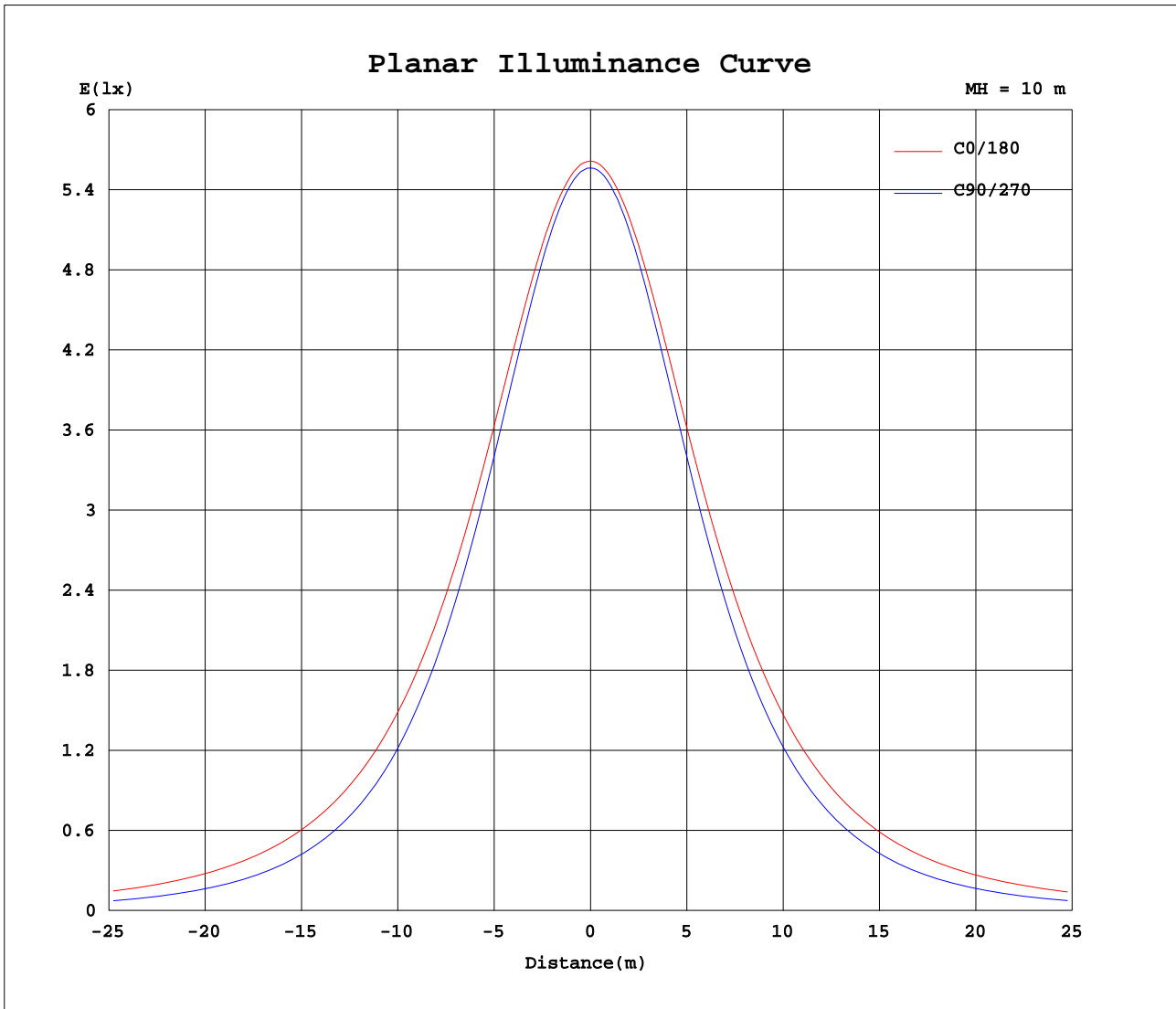
Test:U:240.7V I:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.066*0.567	PROTECTION ANGLE:



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:0.0800A P:18.10W PF:0.9300 Lamp Flux:2068.63x1 lm		
NAME: E-B20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:4000K	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	557	557	557	557	557	557	557	557	557	557	557	557							
5	556	555	555	555	554	555	555	555	555	554	555	555							
10	550	549	547	545	546	548	549	548	546	545	547	549							
15	540	538	533	531	532	537	539	536	533	530	534	538							
20	527	524	515	511	513	521	525	521	514	510	515	523							
25	510	505	492	486	490	502	508	501	491	485	493	505							
30	490	483	466	456	463	479	487	478	464	455	467	483							
35	468	459	436	423	433	454	465	453	433	422	437	458							
40	444	432	403	386	399	426	439	425	400	386	405	431							
45	417	403	368	345	363	396	412	395	365	347	370	402							
50	389	373	331	303	325	365	383	363	326	306	332	372							
55	360	340	293	259	287	330	352	330	288	263	295	340							
60	329	307	255	214	248	296	318	296	249	217	256	307							
65	297	273	217	169	209	261	285	260	210	171	217	274							
70	264	239	179	124	171	227	251	226	171	124	179	239							
75	232	206	142	81.7	134	192	217	191	134	80.9	142	206							
80	200	174	108	44.0	101	161	186	159	100.0	41.8	108	174							
85	171	145	79.6	14.2	73.6	134	159	133	72.7	12.2	79.9	144							
90	147	122	59.4	1.55	56.2	116	141	115	55.5	1.94	60.1	123							
95	133	108	48.8	1.52	46.3	103	127	102	45.8	2.10	49.7	109							
100	120	96.8	41.5	1.99	39.2	91.5	113	90.5	38.9	2.48	42.5	97.3							
105	107	86.3	36.0	2.59	33.7	81.1	101	80.3	33.5	2.86	36.9	86.8							
110	95.8	76.7	31.8	2.99	29.4	71.7	90.3	71.1	29.3	3.32	32.5	77.2							
115	85.2	68.1	28.4	3.44	25.8	63.2	79.9	62.7	25.9	3.82	28.5	68.5							
120	75.2	60.2	25.3	3.96	22.9	55.6	70.4	55.1	23.1	4.31	25.8	60.5							
125	66.1	53.1	21.5	4.50	20.4	48.5	61.5	48.2	20.8	4.82	22.9	52.1							
130	57.6	46.6	18.2	5.07	18.3	42.1	53.4	41.9	18.8	5.39	19.5	45.9							
135	49.9	40.2	15.9	5.62	16.8	36.2	45.9	36.2	17.1	5.93	17.1	39.5							
140	42.9	32.0	14.1	6.19	15.4	31.0	38.5	31.1	15.7	6.47	15.1	32.9							
145	36.4	25.4	12.7	6.70	14.0	26.2	30.9	26.5	14.4	6.98	13.5	26.6							
150	30.5	20.6	11.6	7.20	13.0	22.2	25.2	22.4	13.2	7.44	12.2	21.7							
155	25.2	16.8	10.7	7.60	12.0	18.7	20.8	18.7	12.0	7.85	11.2	17.5							
160	20.5	13.8	9.88	8.06	10.8	15.6	16.5	15.3	10.8	8.19	10.3	14.3							
165	16.4	11.4	9.79	8.57	10.1	12.8	12.5	12.5	10.1	8.55	9.72	11.8							
170	12.3	9.95	9.67	8.88	9.58	10.7	10.4	10.5	9.59	8.85	9.56	10.2							
175	9.21	9.20	9.37	9.03	9.30	9.61	8.85	9.47	9.32	9.03	9.33	9.31							
180	8.73	8.93	9.14	9.14	9.10	8.99	8.77	8.90	9.14	9.14	9.13	8.97							

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: