	se models with lo	wer speed and	same physical	FFB1248EH				
Available for these models with lower speed and same physical structure. All model may be followed by Rxx or Fxx series				FFB1248SH				
suffixes. This test report applies to FFB120x120x25.4mm				FFB1248VH				
series as the right table FFB124 Representative Test P/N :FFB1248EH-F00								
•			F00					
Equipment: 1			On/Off Cycles: Every 500 hours					
\bigcirc L ₁₀ Exp	ectancy:	70,000	hours mini	mum @ fan r	ated voltage a	_	erature of 4	0℃
According to t	the equation f	for Weibul	l distribut	tion,	MTTF ≒	$7 \times L10 =$	490,000	hours
And we rely o	n a zero failu	re Weibull t	est strategy a	and accelerated	d testing techni	que, to deterr	nine	
the total test ti	me (t) for ve	rifying the a	bove life est	imation by the	e equations,			
	()			•	$A_{\rm F}$, and $A_{\rm F} = 2$	(Ts-Tu)/10		
where (B) i	s Poisson dist			,	r of r equal to (
,					i of i equal to t) and		
the decimal co	infidence leve	el of c equal	to 0.90(90%	o), and				
Stress/Elevated	Unstress	Acceleration	Quantity of	Poisson Distribution	Required test time with zero	Actual test time with zero	Verified MTTF	Verified L ₁
Temperature	Temperature	Factor	Test Devices	Factor	failure	failure	40 ℃	40 ℃
Ts (°C)	Tu (℃)	$A_{\rm F}$	n (pcs)	$\mathbf{B}_{\mathbf{r};\mathbf{c}}$	t (hours)	t (hours)	(hours)	(hours)
60	40	4.00	56	2.303	6,956	6,956.0	490,031	70,004
T4 D					,	,	,	,
Test Progress	} .			1				
Date for Tes	t Beginning		or Test	Cu	rrent Test Sta	tus	Current Total Test	
		Terminati	on (at least)				Time (hours)	
					In process	7		
2003/7/1	5:00 PM	2004/7/13	3 4:33 PM	In process			Termination 695	
					requested)			
Herewith , we co	ould assume as r	ight on the bas	is of above tes	t result.	Temperature	Acceleration	Estimated	
Besides, if the ac		-			for MTTF	Factor	MTTF	Estimated
fans' L ₁₀ expecta	•	e			Estimation (°C)		(hours)	
			means Mean Time To Failures, it should be used in a non-repairable system					
setting. Now we show the MTTF in our life report, that's because we will not repair the failed fans during life experiment. MTBF : means Mean Time					25	11.31	(nours) 1,386,017	L ₁₀ (hours)
-	-	experiment. M	TBF : means N	ause we will not Iean Time	25	11.31 8.00		
Between failures	, it should be us	experiment. M ed in a repaira	TBF : means N ble system sett	ause we will not Iean Time ing. Basically ,	25 30		1,386,017	198,002
Between failures	, it should be us	experiment. M ed in a repaira	TBF : means N ble system sett	ause we will not Iean Time ing. Basically ,	25 30 40	8.00 4.00	1,386,017 980,062 490,031	198,002 140,009 70,004
-	, it should be us	experiment. M ed in a repaira	TBF : means N ble system sett	ause we will not Iean Time ing. Basically ,	25 30 40 50	8.00 4.00 2.00	1,386,017 980,062 490,031 245,015	140,009 70,004 35,002
Between failures	, it should be us to MTTF , they	experiment. M ed in a repaira v use same for	TBF: means N ble system sett mula to work	ause we will not Iean Time ing. Basically , out a life data.	25 30 40	8.00 4.00	1,386,017 980,062 490,031	198,002 140,009 70,004
Between failures MTBF is equal () Fan permissio	, it should be us to MTTF , they n criteria for	experiment. M ed in a repaira v use same for the measure	TBF: means N ble system sett mula to work ment after te	ause we will not Iean Time ing. Basically , out a life data.	25 30 40 50	8.00 4.00 2.00	1,386,017 980,062 490,031 245,015	198,002 140,009 70,004 35,002
Between failures MTBF is equal t) Fan permissio 1. For current	, it should be us to MTTF, they n criteria for t, the limit is 1	experiment. M ed in a repaira use same for the measure less than spe	TBF: means N ble system sett mula to work ment after te cc.(max.).	ause we will not Iean Time ing. Basically , out a life data. est :	25 30 40 50	8.00 4.00 2.00	1,386,017 980,062 490,031 245,015	198,002 140,009 70,004 35,002
Between failures MTBF is equal ()	, it should be us to MTTF, they n criteria for t, the limit is I the allowable	experiment. M ed in a repaira v use same for the measure less than spe e descrease is	TBF: means N ble system sett mula to work ment after te ec.(max.). s less than 1	ause we will not Aean Time ing. Basically , out a life data. est : 5%.	25 30 40 50	8.00 4.00 2.00	1,386,017 980,062 490,031 245,015 122,508	198,002 140,009 70,004 35,002 17,501
Between failures MTBF is equal () Fan permissio 1. For current 2. For speed,	, it should be us to MTTF, they n criteria for t, the limit is I the allowable	experiment. M ed in a repaira v use same for the measure less than spe e descrease is	TBF: means N ble system sett mula to work ment after te ec.(max.). s less than 1	ause we will not Aean Time ing. Basically , out a life data. est : 5%.	25 30 40 50 60	8.00 4.00 2.00 1.00	1,386,017 980,062 490,031 245,015 122,508	198,002 140,009 70,004 35,002
Between failures MTBF is equal () Fan permissio 1. For current 2. For speed,	, it should be us to MTTF, they n criteria for t, the limit is I the allowable	experiment. M ed in a repaira v use same for the measure less than spe e descrease is	TBF: means N ble system sett mula to work ment after te ec.(max.). s less than 1	ause we will not Aean Time ing. Basically , out a life data. est : 5%.	25 30 40 50	8.00 4.00 2.00 1.00	1,386,017 980,062 490,031 245,015 122,508	198,002 140,009 70,004 35,002 17,501
Between failures MTBF is equal () Fan permissio 1. For current 2. For speed,	, it should be us to MTTF, they n criteria for t, the limit is I the allowable	experiment. M ed in a repaira y use same for the measure less than speces than speces or function	TBF : means N ble system sett mula to work ment after te ec.(max.). s less than 1 (max.). + 3	ause we will not Aean Time ing. Basically , out a life data. est : 5%.	25 30 40 50 60	8.00 4.00 2.00 1.00 estult	1,386,017 980,062 490,031 245,015 122,508	198,002 140,009 70,004 35,002 17,501 Accept Reject

DC FAN LIFE EXPERIMENT REPORT

74

INC.

ELECTRONICS.

DELTA

Note: The test sample equivalent to STD, Part number: FFB1248EH-F00.



DC FAN FUNCTION TEST RECORD FOR LIFE EXPERIMENT

	for these models								
structure A	for these models	s with lower spee	ed and same phy	ysical	FFB1248EH				
structure. All model may be followed by Rxx or Fxx series suffixes. This					FFB1248SH FFB1248VH				
est report a	applies to FFB1	20x120x25.4mi	n series as the 1	right table	FFB1248VH FFB1248HH				
Requi	irad Tast	Data fa	r Tost	Data f	or Test	Sampla	Failure	Current T	atal Tast
Required Test Date for Test					Sample				
Time (hrs)Beginning		0	Termination		Size (pcs):	(pcs):	Time (hrs)		
6,956 2003/7/1 5:00 PM			2004/7/13 4:33 PM		56	0	6956.0		
Representative Test P/N :FFB1248EH-F00					Current T	Current Test Status		 In process (exceed requested) 	Terminatio
Equipme	ent: 1.Oven: l	E24-F0036					On/Off Cyc	les: Every 500	hours
			Test Data	Between In	nitial Test a	nd Final Te	est		
Sample	Initial Test	Final Test	Deviation	Initial Test	Final Test	Deviation	Initial Test	Final Test	Deviatio
<u>^</u>	Current Spec.	Current Spec.		Speed Spec.	Speed Spec.		Noise Check.	Noise Spec.	
No.	(A) 0.38Max.	(A) 0.38Max.	(%)	(RPM) 3800-4200	(RPM) 3800-4200	(%)	(dBA) 60.4Max	(dBA) 60.4Max	(%)
1	0.33	0.31	-6.1	4032	4048	0.4	OK OK	57.5	
2	0.33	0.31	-0.1	4032	4048	0.4	OK OK	57.4	
3	0.31	0.33	-2.9	4041	4074	-0.4	OK OK	58.1	
4	0.34	0.33	-3.0	4030	4040	-0.4	OK OK	58.0	
5	0.33	0.32	0.0	4072	4038	0.2	OK OK	57.3	
6	0.33	0.33	0.0	4049	4039	0.2	OK OK	57.5	
7	0.32	0.32	0.0	4027	4042	0.4	OK OK	57.5	
8	0.33	0.33	3.1	4079	4096	-0.3	OK OK		
<u> </u>	0.32	0.33	0.0	4070	4036	0.3	OK OK	57.5 57.7	
9 10	0.31	0.31	-3.0	4014	4028	0.5	OK OK	57.4	
10			0.0			-1.5			
11	0.32	0.32	0.0	4072	4012	-1.3	OK OK	57.6	
12	0.32	0.32	0.0	4049	4046	-0.1	OK OK	57.8	
13	0.33	0.33	-3.0	4067	4066	-0.5	OK OK	57.5	
14	0.33	0.32	-3.0	4092	4072 4064	-0.3	OK OK	57.6 57.3	
16	0.32		0.0	4067 4011		0.1	OK OK		
		0.32	0.0		4017			58.1	
17	0.33	0.33	0.0	4049	4032	-0.4	OK	57.8	
18 19	0.31	0.31	-3.1	4036	4070	0.8	OK	57.3	
20	0.32	0.31	-5.1	4030	4030	-3.0	OK	57.3	
20	0.33	0.33	0.0	4086	3965	-0.3	OK OK	58.1	
21	0.32	0.32	-3.1	4072	4061 4060	0.5	OK OK	58.0	
22	0.32	0.31	-5.1	4040		-0.4	OK OK	57.4	
	0.33	0.33		4043	4027		OK	58.3	
24 25	0.33	0.33	0.0	4017 4072	4019 4037	0.0	OK OK	57.4	
	0.32	0.32	0.0	4072	4037	-0.9	OK OK	57.5	
26 27	0.32	0.32		4069	4062	-0.2	OK OK	57.5	
27	0.32	0.31	-3.1 0.0	4095	4080	-0.4	OK OK	57.2	
	0.31	0.31					OK OK	57.4	
29 30	0.32	0.32	0.0	4049 4072	4074 4071	0.6	OK OK	57.3	
30	0.32	0.32	0.0	4072	4071 4067	0.0	OK OK	58.0	
31	0.32	0.32	0.0	4035	4067	0.8	OK OK	57.6	
32	0.32	0.32		4067	4086	0.5	OK OK	57.4	
33	0.33	0.33	0.0	4023	4031 4047	0.2	OK OK	57.3 58.2	
35	0.34	0.32	-5.9	4020	4047	-1.1	OK OK	58.2 57.9	
22	0.35			+03/	4012	-1,1	UK	31.7	
QE File No. Time-out for function test or others (hours			Issued Date		Reported By		Approved By		
DG03FNL076		2116.00		2004/7/13 5:00 PM		Huiling.Fu		Even.Liu	



DC FAN FUNCTION TEST RECORD

FOR LIFE EXPERIMENT

Available for these models with lower speed and same physical structure. All model may be followed by Rxx or Fxx series suffixes. This test report applies to FFB120x120x25.4mm series as the right table					FFB1248EH FFB1248SH FFB1248VH FFB1248HH				
Required Test Time (hrs)			Date for Test Beginning		Date for Test Termination		Failure (pcs):	Current Total Test Time (hrs)	
6,956 2003/7/1 5:00 PM				2004/7/13 4:33 PM		56	0	6956.0	
Represen	tative Test F	P/N :FFB124	8EH-F00		Current T	Test Status	In process	In process (exceed requested)	• Termination
Equipme	nt: 1.Oven: I	E24-F0036					On/Off Cyc	les: Every 500	hours
			Test Dat	a Between l	nitial Test a	and Final T	est		
	Initial Test	Final Test		Initial Test	Final Test	Deviation	Initial Test	Final Test	Deviation
Sample	Current Spec.	Current Spec.	Deviation	Speed Spec.	Speed Spec.		Noise Check.	Noise Spec.	
No.	(A)	(A)	(%)	(RPM)	(RPM)	(%)	(dB A)	(dB A)	(%)
	0.38Max.	0.38Max.		3800-4200	3800-4200		60.4Max	60.4Max	. ,
36	0.32	0.32	0.0	4074	4012	-1.5	OK	58.0	
37	0.32	0.31	-3.1	4025	4078	1.3	OK	57.5	
38	0.32	0.31	-3.1	4060	4082	0.5	OK	57.4	
39	0.32	0.32	0.0	4076	4065	-0.3	OK	57.4	
40	0.33	0.31	-6.1	4053	4068	0.4	OK	58.1	
41	0.33	0.33	0.0	4076	4069	-0.2	OK	58.3	
42	0.33	0.33	0.0	4039	4058	0.5	OK	57.5	
43	0.33	0.33	0.0	4094	4090	-0.1	OK	57.4	
44	0.32	0.31	-3.1	3993	4045	1.3	OK	57.6	
45	0.33	0.33	0.0	4017	4019	0.0	OK	57.9	
46	0.32	0.32	0.0	4042	4039	-0.1	OK	58.1	
47	0.32	0.32	0.0	4004	4067	1.6	OK	57.7	
48	0.32	0.32	0.0	4079	4071	-0.2	OK	58.0	
49	0.31	0.31	0.0	4053	4041	-0.3	OK	57.5	
50	0.32	0.31	-3.1	4072	4032	-1.0	OK	57.4	
51	0.31	0.32	3.2	4024	4023	0.0	OK	57.6	
52	0.33	0.33	0.0	4014	4072	1.4	OK	57.9	
53	0.33	0.33	0.0	4086	4069	-0.4	ОК	58.1	
54	0.33	0.33	0.0	4094	4037	-1.4	ОК	58.0	
55	0.33	0.32	-3.0	4028	4038	0.2	OK	57.4	
56	0.32	0.32	0.0	4029	4017	-0.3	OK	57.9	
X-Bar	0.324	0.321	-	4050.5	4049.9	-		57.67	-
σ	0.007	0.008	-	25.810	25.002	-		0.308	-
QE File No. function		out for n test or Issue s (hrs)		d Date Repor		ted By	Approv	Approved By	
DG03FNL076 21		2116	.00 2004/7/13 5		3 5:00 PM	Huiling.Fu		Even.Liu	