MODEL：NES-350-48

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 240 mVp-p (Max)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	V1: 80 mVp-p (Max)	PASS
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 41V ~ 56V	I/P: 230 VAC I/P:115 VAC O/P:MIN LOAD Ta:25℃	38.730V~57.750V/230VAC 38.730V~57.750V//115VAC	PASS
3	OUTPUT VOLTAGE TOLERANCE	V1: -1.0 %~ +1.0 % (Max)	I/P: 180VAC / 264 VAC O/P:FULL/ 0% LOAD Ta:25℃	V1: -0.168%~ +0.30 %	PASS
4	LINE REGULATION	V1: -0.5 %~ +0.5 % (Max)	I/P: 180 VAC ~ 264VAC O/P:FULL LOAD Ta:25℃	V1: -0.013%~ 0.025 %	PASS
5	LOAD REGULATION	V1: -0.5 %~ +0.5 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: -0.168 %~ 0.129 %	PASS
6	SET UP TIME	230VAC/ 1000 ms (Max) 115VAC/ 1000 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/ 136.022 ms 115 VAC/ 103.151 ms	PASS
7	RISE TIME	230VAC/ 50 ms (Max) 115VAC/ 50 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/19.310ms 115 VAC/18.465ms	PASS
8	HOLD TIME	230VAC/ 20 ms (Typ) 115VAC/ 16 ms (Typ)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230 VAC/32.661ms 115 VAC/27.559ms	PASS
9	OVER/UNDERSHOOT TEST	< ±5 %	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: ±1.250%	PASS
10	DYNAMIC LOAD	V1: 4800 mVp-p	I/P: 230 VAC O/P: (1)FULL /Min LOAD 90%DUTY/1KHZ (2)FULL /Min LOAD 50%DUTY/120HZ Ta:25℃	(1) 350 mVp-p (2) 600 mVp-p	PASS

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	180 VAC ~ 264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25℃	180 V~ 264 V	PASS
			(1)I/P: LOW-LINE-3V= 177 V HIGH-LINE+15%= 300 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (2) I/P:230VAC ON: 0.5 Sec . OFF: 0.5 Sec 20MIN (AC POWER ON/OFF NO DAMAGE)	TEST: (1) OK (2) OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P: 180 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25℃	TEST: OK	PASS
3	EFFICIENCY	87.5 % (Typ)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	87.70 %	PASS
4	INPUT CURRENT	230 V/ 4 A (Typ) 115 V/ 7 A (Typ)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	I =3.396A/ 230VAC I =5.778A/ 115VAC	PASS
5	INRUSH CURRENT	230 V/ 60 A 115 V/ 40 A COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	I =45.031 A/ 230VAC I =37.750 A/ 115VAC	PASS

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	105%~ 135 % RATED OUTPUT POWER	I/P: 264 VAC I/P: 230 VAC I/P: 180 VAC O/P:TESTING Ta:25℃	118.22 %/264VAC 117.81 %/ 230VAC 118.36 %/ 180 VAC Constant Current Limiting	PASS
2	OVER VOLTAGE PROTECTION	CH1: 57.6 V~ 67.2 V	I/P: 264 VAC I/P: 230 VAC I/P: 180 VAC O/P:MIN LOAD Ta:25℃	61.5 V/264VAC 61.4 V/ 230VAC 61.3 V/ 180VAC Shut off o/p voltage, Re- power ON to recover	PASS
3	OVER TEMPERATURE PROTECTION	SPEC: TSW1= 75 ℃ ±5 ℃ O.T.P. NO DAMAGE	I/P: 230 VAC O/P:FULL LOAD	78.4 ℃/ 230 VAC O.T.P. Active Shut down o/p voltage，recovers automatically after temperature goes down	PASS
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P: FULL LOAD Ta:25℃	NO DAMAGE Constant Current Limiting	PASS

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	FAN ON/OFF CONTROL	≥ 55 ℃ FAN ON ≤ 50 ℃ FAN OFF	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	56.1 ℃ FAN ON 47.8 ℃ FAN OFF	PASS

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL： NES-350-48
1. ROOM AMBIENT BURN-IN： 2 HRS
I/P: 230 VAC O/P: 100% LOAD Ta= 32.6 ℃
2. HIGH AMBIENT BURN-IN： 2 HRS
I/P: 230 VAC O/P: 100% LOAD Ta= 50.3 ℃
<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 32.6 ℃</th><th>HIGH AMBIENT Ta= 50.3 ℃</th></tr>
<tr><td>1</td><td>LF1</td><td>LF-203</td><td>42.6℃</td><td>60.7℃</td></tr>
<tr><td>2</td><td>BD1</td><td>KBJ1008G</td><td>56.8℃</td><td>74.3℃</td></tr>
<tr><td>3</td><td>C6</td><td>680u/200V LP</td><td>41.3℃</td><td>60.0℃</td></tr>
<tr><td>4</td><td>Q1</td><td>FMH07N90E</td><td>55.7℃</td><td>76.6℃</td></tr>
<tr><td>5</td><td>T1</td><td>TF6235</td><td>62.7℃</td><td>82.3℃</td></tr>
<tr><td>6</td><td>U1</td><td>TL3845P</td><td>46.6℃</td><td>65.9℃</td></tr>
<tr><td>7</td><td>L100</td><td>TR6082</td><td>47.4℃</td><td>78.1℃</td></tr>
<tr><td>8</td><td>D100</td><td>PA905C4R</td><td>62.9℃</td><td>80.5℃</td></tr>
<tr><td>9</td><td>R100</td><td>1W 39 Ω</td><td>54.7℃</td><td>74.1℃</td></tr>
<tr><td>10</td><td>C151</td><td>10u/50V KM</td><td>41.5℃</td><td>60.8℃</td></tr>
<tr><td>11</td><td>C106</td><td>680u/63V GL</td><td>39.7℃</td><td>57.8℃</td></tr>
<tr><td>12</td><td>C155</td><td>47uF/25V KM</td><td>43.8℃</td><td>63.4℃</td></tr>
<tr><td>13</td><td>C185</td><td>10u/50V KM</td><td>47.4℃</td><td>65.5℃</td></tr>
<tr><td>14</td><td>D15</td><td>BYV26EGP</td><td>45.3℃</td><td>64.7℃</td></tr>
<tr><td>15</td><td>RTH2</td><td>10KΩ 4Φ 1%</td><td>46.8℃</td><td>68.2℃</td></tr>
</table></td><td>PASS</td></tr>
<tr><td>2</td><td>OVER LOAD BURN-IN TEST</td><td>NO DAMAGE
1 HOUR (MIN)</td><td>I/P: 230 VAC
O/P: 116.4% LOAD
Ta:25℃</td><td>TEST： OK</td><td>PASS</td></tr>
<tr><td>3</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER 2 HOUR</td><td>I/P: 264 VAC/180 VAC
O/P: 100% LOAD
Ta= -20 ℃</td><td>TEST： OK</td><td>PASS</td></tr>
<tr><td>4</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12 HOURS
IN CHAMBER ON
CONTROL 50 ℃
NO DAMAGE</td><td>I/P: 272 VAC
O/P:FULL LOAD
Ta= 50 ℃
HUMIDITY= 95 %R.H</td><td>TEST： OK</td><td>PASS</td></tr>
<tr><td>5</td><td>TEMPERATURE
COEFFICIENT</td><td>± 0.03 %(0~50℃)</td><td>I/P: 230 VAC
O/P:FULL LOAD</td><td>± 0.005 %(0~50℃)</td><td>PASS</td></tr>
<tr><td>6</td><td>STORAGE TEMPERATURE TEST</td><td colspan="2">1. Thermal shock Temperature： -40℃~ +90℃
2. Temperature change rate ：25℃ / MIN
3. Dwell time low and high temperature ： 30 MIN/EACH
4. Total test cycle：5 CYCLE
5. Input/Output condition： STATIC</td><td>TEST： OK</td><td>PASS</td></tr>
</table>

7.	THERMAL SHOCK TEST	1. Thermal shock Temperature： - 25 ℃~ + 55 ℃ 2. Temperature change rate ：25℃ / MIN 3. Dwell time low and high temperature ： 30 MIN/EACH 4. Total test cycle：10 CYCLE 5. Input/Output condition： 230VAC/Full Load 58SEC ON/2SEC OFF	TEST： OK	PASS
8	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10~500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:3G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25℃	TEST： OK	PASS
9	CAPACITOR LIFE CYCLE	SUPPOSE C106 IS THE MOST CRITICAL COMPONENT (1) I/P: 230 VAC O/P:FULL LOAD Ta= 25 ℃ LIFE TIME= 960127 HRS (2) I/P: 230 VAC O/P:FULL LOAD Ta= 50 ℃ LIFE TIME= 165093 HRS (3) I/P: 230 VAC O/P:75% LOAD Ta= 50 ℃ LIFE TIME= 192271 HRS (4) I/P: 230 VAC O/P:50% LOAD Ta= 50 ℃ LIFE TIME= 222394 HRS		PASS
10	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 234.3K HRS		PASS
11	DMTBF/Accelerated Life Test	Demonstration Mean Time Between Failure(Expected Life) : 20,000 hours @ Ta 50℃		PASS

SAFETY TEST

1	WITHSTAND VOLTAGE	I/P-FG: 1.5 KVAC/min I/P-O/P: 3.0 KVAC/min O/P-FG: 0.5 KVAC/min EN 60950	I/P-FG: 1.8 KVAC/min I/P-O/P: 3.6 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25℃	I/P-FG: 3.873 mA I/P-O/P: 3.914 mA O/P-FG: 5.01 mA NO DAMAGE	PASS
2	ISOLATION RESISTANCE	I/P-FG: 500VDC>100MΩ I/P-O/P:500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-FG: 500 VDC I/P-O/P: 500 VDC O/P-FG: 500 VDC Ta:25℃	I/P-FG: ＞9999 MΩ I/P-O/P: ＞9999 MΩ O/P-FG: ＞9999 MΩ NO DAMAGE	PASS
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ EN 60950	40 A / 2 min Ta:25℃	4 mΩ	PASS
4	LEAKAGE CURRENT	< 3.5 mA / 240VAC EN 60950	I/P: 264 VAC O/P:NO LOAD Ta:25℃	L-FG: 0.8173 mA N-FG: 0.8019 mA	PASS

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	PASS
2	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	PASS
3	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N :1KV L,N-PE:2KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25℃	CRITERIA A	PASS

COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) **Peak Voltage**	Q 1 Rated FMH07N90E : 900 V 7 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short (3)Dynamic Load 50% Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz Ta:25℃	(1) 892 V (2) 812 V (3) 768 V (4) 772 V	PASS
2	Diode **Peak Voltage**	D 100 Rated PA905C4R : 400 V 20 A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short (3)Dynamic Load 50% Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz Ta:25℃	(1) 394 V (2) 386 V (3) 394 V (4) 386 V	PASS
3	**Control IC Voltage Test**	U 1 Rated TL3845P : 30 V	I/P:High-Line +3V =267 V O/P: (1) Output Short (2)O.L.P (3)O.V.P (4)NO LOAD VR 下限 LOW LINE Ta:25℃	(1) 16.1 V (2) 16.0 V (3) 14.1 V (4) 13.9 V	PASS

2007/11/26 A50-G058

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2010/7/12	RD SAMPLE	PASS	SKY	HOWAY
2011/1/5	PRODUCT SAMPLE (**W1012I058**)	PASS	SKY	HOWAY
2011/4/29	PRODUCT SAMPLE (**W1104F045**)	PASS	SKY	HOWAY