


<b>Test Report No.:</b> PV200319E02	
<b>Client</b>	
Name :	ABLEREX ELECTRONICS CO., LTD.
Address :	1F, No. 3, Lane 7, Paokao Rd., Hsintien 23144, New Taipei City, Taiwan
<b>Test Item :</b>	Grid-tied photovoltaic inverter
<b>Identification :</b>	ES3075KBN, ES3075KBS, ES3075KBI, ES3075KBA, ES3066KBN, ES3066KBS, ES3066KBI, ES3066KBA, ES3063KBN, ES3063KBS, ES3063KBI, ES3063KBA, ES3060KBN, ES3060KBS, ES3060KBI, ES3060KBA, PM-3075KBNGT, PM-3075KBSGT, PM-3075KBIGT, PM-3075KBAGT, PM-3066KBNGT, PM-3066KBSGT, PM-3066KBIGT, PM-3066KBAGT, PM-3063KBNGT, PM-3063KBSGT, PM-3063KBIGT, PM-3063KBAGT, PM-3060KBNGT, PM-3060KBSGT, PM-3060KBIGT, PM-3060KBAGT
<b>Testing laboratory</b>	
Name :	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Address :	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
<b>Test specification</b>	
Standard :	IEEE 519:2014
<b>Test Result :</b>	The test item passed.
<b>Prepared By :</b>	
	2020-04-06
Signature	Date
Issac Chen	
Senior Engineer	
<b>Approved By:</b>	
	2020-04-06
Signature	Date
Edward Chiueh	
Technical Manager	
<b>Other Aspects:</b>	
The completed test report includes the following documents: IEEE 519:2014 report (42 pages)	



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

TEST REPORT	
IEEE 519:2014	
IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems	
Report reference No. ....	PV200319E02
Tested by (printed name and signature) .....	See cover sheet
Approved by (printed name and signature) .....	See cover sheet
Date of issue .....	See cover sheet
Testing Laboratory Name .....	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Address.....	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Testing location.....	Bureau Veritas Consumer Product Services Limited, Taoyuan Branch
Address.....	No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City, Taiwan
Applicant's Name .....	ABLEREX ELECTRONICS CO., LTD.
Address .....	1F, No. 3, Lane 7, Paokao Rd., Hsintien 23144, New Taipei City, Taiwan
Test specification	
Standard .....	IEEE 519:2014
Non-standard test method .....	None
Test Report Form No. ....	IEEE 519:2014_A
Master TRF .....	Bureau Veritas Consumer Product Services GmbH
Copyright © Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch	
Test item description .....	Grid-tied photovoltaic inverter
Trademark .....	
Model / Type .....	ES3075KBN, ES3075KBS, ES3075KBI, ES3075KBA, PM-3075KBNGT, PM-3075KBSGT, PM-3075KBIGT, PM-3075KBAGT
Ratings.....	See below
PV Array Input DC voltage range [V]:	250-1000 Vdc
PV Array Input DC current [A] .....	26 A x 4
Output AC voltage [V] .....	277/480 Vac
Output AC current [A] .....	91 A x 3
Output power [kVA] .....	75 kVA

Model / Type .....	ES3066KBN, ES3066KBS, ES3066KBI, ES3066KBA, PM-3066KBNGT, PM-3066KBSGT, PM-3066KBIGT, PM-3066KBAGT
<b>Ratings</b> .....	See below
PV Array Input DC voltage range [V]:	250-1000 Vdc
PV Array Input DC current [A] .....	26 A x 4
Output AC voltage [V] .....	277/480 Vac
Output AC current [A] .....	79.5 A x 3
Output power [kVA] .....	66 kVA
Model / Type .....	ES3063KBN, ES3063KBS, ES3063KBI, ES3063KBA, PM-3063KBNGT, PM-3063KBSGT, PM-3063KBIGT, PM-3063KBAGT
<b>Ratings</b> .....	See below
PV Array Input DC voltage range [V]:	250-1000 Vdc
PV Array Input DC current [A] .....	26 A x 4
Output AC voltage [V] .....	220/380 Vac, 230/400 Vac
Output AC current [A] .....	91.3 A x 3
Output power [kVA] .....	63 kVA
Model / Type .....	ES3060KBN, ES3060KBS, ES3060KBI, ES3060KBA, PM-3060KBNGT, PM-3060KBSGT, PM-3060KBIGT, PM-3060KBAGT
<b>Ratings</b> .....	See below
PV Array Input DC voltage range [V]:	250-1000 Vdc
PV Array Input DC current [A] .....	26 A x 4
Output AC voltage [V] .....	220/380 Vac, 230/400 Vac
Output AC current [A] .....	91 A x 3
Output power [kVA] .....	60 kVA

Copy of marking plate

**太陽能變流器**  
**型號: ES3075KBN**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 75 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 91 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

**太陽能變流器**  
**型號: ES3075KBS**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 75 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 91 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

**太陽能變流器**  
**型號: ES3075KBI**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 75 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 91 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

**太陽能變流器**  
**型號: ES3075KBA**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 75 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 91 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

**太陽能變流器**  
**型號: ES3066KBN**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 66 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 79.5 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

**太陽能變流器**  
**型號: ES3066KBS**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 66 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 79.5 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

**太陽能變流器**  
**型號: ES3066KBI**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 66 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 79.5 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

**太陽能變流器**  
**型號: ES3066KBA**  
P/N : XXXXXXXXXXXXX

直流輸入  
電壓: 200~1000 Vdc  
電流: 26 Amp x 4  
最大功率點範圍: 200~1000 Vdc

額定交流輸出  
功率: 66 kVA  
功率因數: 0.8超前~0.8落後  
電壓: 480 Vac  
電流: 79.5 Amp x 3  
頻率: 60 Hz

保護等級: I  
侵入保護: IP66

嘉正綠源電子股份有限公司  
ABLEREX ELECTRONICS CO., LTD.

**PC**  
E-S-EMC  
V31004-BSMI

S/N : MA3C013000001

<p>太陽能變流器 型號: ES3063KBN</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>	<p>太陽能變流器 型號: ES3063KBS</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>
<p>太陽能變流器 型號: ES3063KBI</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>	<p>太陽能變流器 型號: ES3063KBA</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>
<p>太陽能變流器 型號: ES3060KBN</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>	<p>太陽能變流器 型號: ES3060KBS</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>
<p>太陽能變流器 型號: ES3060KBI</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>	<p>太陽能變流器 型號: ES3060KBA</p> <p>P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p>臺正維順電子股份有限公司 ABLEREX ELECTRONICS CO., LTD.</p> <p> V31054-BSMI</p> <p>S/N : MA3C013000001</p>



<p>太陽能變流器 型號: PM-3075KBNGT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 75 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>	<p>太陽能變流器 型號: PM-3075KB5GT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 75 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>
<p>太陽能變流器 型號: PM-3075KBIGT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 75 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>	<p>太陽能變流器 型號: PM-3075KBAGT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 75 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>
<p>太陽能變流器 型號: PM-3066KBNGT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 66 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 79.5 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>	<p>太陽能變流器 型號: PM-3066KB5GT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 66 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 79.5 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>
<p>太陽能變流器 型號: PM-3066KBIGT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 66 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 79.5 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>	<p>太陽能變流器 型號: PM-3066KBAGT P/N: XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率點追蹤範圍: 200~1000 Vdc</p> <p>額定交流輸出 功率: 66 kVA 功率因數: 0.8超前~0.8落後 電壓: 480 Vac 電流: 79.5 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p>  <p>S/N: MA3C0130000001</p>

<p><b>太陽能變流器</b> 型號: PM-3063KBNGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>	<p><b>太陽能變流器</b> 型號: PM-3063KBSGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>
<p><b>太陽能變流器</b> 型號: PM-3063KBIGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>	<p><b>太陽能變流器</b> 型號: PM-3063KBAGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 63 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91.3 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>
<p><b>太陽能變流器</b> 型號: PM-3060KBNGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>	<p><b>太陽能變流器</b> 型號: PM-3060KBSGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>
<p><b>太陽能變流器</b> 型號: PM-3060KBIGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>	<p><b>太陽能變流器</b> 型號: PM-3060KBAGT P/N : XXXXXXXXXXXXX</p> <p>直流輸入 電壓: 200~1000 Vdc 電流: 26 Amp x 4 最大功率追蹤範圍: 200~1000 Vdc</p> <p>穩定交流輸出 功率: 60 kVA 功率因數: 0.8超前~0.8落後 電壓: 380 / 400 Vac 電流: 91 Amp x 3 頻率: 60 Hz</p> <p>保護等級: I 侵入保護: IP66</p> <p> </p> <p>S/N : MA3C013000001</p>



**History Sheet:**

Name	Date	Comment	Revision
Issac Chen	2020-04-06	Initial report was written	Empty

**Address of the manufacturer sites:**

**1) Ablerex Electronics (SUZHOU) Co., Ltd.**



No. 36 Wang Wu Road, Wu Zhong District Suzhou, 215128, P.R. China

**2) Ablerex Electronics Co., Ltd.**

No. 1-1, Gongye Rd., Pingtung City, Pingtung Country 90049, Taiwan

<b>Particulars:</b>																															
Equipment mobility .....	Permanent connection																														
Operating condition .....	Continuous																														
Class of equipment .....	Class I																														
<b>Test case verdicts:</b>																															
Test case does not apply to the test object .....	<b>N/A</b>																														
Test item does meet the requirement .....	<b>P(ass)</b>																														
Test item does not meet the requirement .....	<b>F(ail)</b>																														
<b>Testing:</b>																															
Date of receipt of test item .....	2020-03-19																														
Date(s) of performance of test .....	2020-03-24																														
<p><b>General remarks:</b></p> <p>The test result presented in this report relate only to the object(s) tested.          This report shall not be reproduced, except in full, without the written approval of the applicant.          Throughout this report a point is used as the decimal separator.</p> <p><b>Model Differences:</b></p> <p>All models are identical in software except power derating by software settings.          All models are identical in hardware except following descriptions:</p> <table border="1"> <thead> <tr> <th>Model</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ES3075KBN, PM-3075KBNGT</td> <td>Standard Model</td> </tr> <tr> <td>ES3075KBS, PM-3075KBSGT</td> <td>SPD installed</td> </tr> <tr> <td>ES3075KBI, PM-3075KBIGT</td> <td>Smart Cloud Module installed</td> </tr> <tr> <td>ES3075KBA, PM-3075KBAGT</td> <td>SPD &amp; Smart Cloud Module installed</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Model</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ES3066KBN, PM-3066KBNGT</td> <td>Standard Model</td> </tr> <tr> <td>ES3066KBS, PM-3066KBSGT</td> <td>SPD installed</td> </tr> <tr> <td>ES3066KBI, PM-3066KBIGT</td> <td>Smart Cloud Module installed</td> </tr> <tr> <td>ES3066KBA, PM-3066KBAGT</td> <td>SPD &amp; Smart Cloud Module installed</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Model</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ES3063KBN, PM-3063KBNGT</td> <td>Standard Model</td> </tr> <tr> <td>ES3063KBS, PM-3063KBSGT</td> <td>SPD installed</td> </tr> <tr> <td>ES3063KBI, PM-3063KBIGT</td> <td>Smart Cloud Module installed</td> </tr> <tr> <td>ES3063KBA, PM-3063KBAGT</td> <td>SPD &amp; Smart Cloud Module installed</td> </tr> </tbody> </table>		Model	Description	ES3075KBN, PM-3075KBNGT	Standard Model	ES3075KBS, PM-3075KBSGT	SPD installed	ES3075KBI, PM-3075KBIGT	Smart Cloud Module installed	ES3075KBA, PM-3075KBAGT	SPD & Smart Cloud Module installed	Model	Description	ES3066KBN, PM-3066KBNGT	Standard Model	ES3066KBS, PM-3066KBSGT	SPD installed	ES3066KBI, PM-3066KBIGT	Smart Cloud Module installed	ES3066KBA, PM-3066KBAGT	SPD & Smart Cloud Module installed	Model	Description	ES3063KBN, PM-3063KBNGT	Standard Model	ES3063KBS, PM-3063KBSGT	SPD installed	ES3063KBI, PM-3063KBIGT	Smart Cloud Module installed	ES3063KBA, PM-3063KBAGT	SPD & Smart Cloud Module installed
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Model	Description
ES3060KBN, PM-3060KBNGT	Standard Model
ES3060KBS, PM-3060KBSGT	SPD installed
ES3060KBI, PM-3060KBIGT	Smart Cloud Module installed
ES3060KBA, PM-3060KBAGT	SPD & Smart Cloud Module installed

Model	Brand
ES3075KBN, ES3075KBS, ES3075KBI, ES3075KBA ES3066KBN, ES3066KBS, ES3066KBI, ES3066KBA, ES3063KBN, ES3063KBS, ES3063KBI, ES3063KBA, ES3060KBN, ES3060KBS, ES3060KBI, ES3060KBA,	
PM-3075KBNGT, PM-3075KBSGT, PM-3075KBIGT, PM-3075KBAGT, PM-3066KBNGT, PM-3066KBSGT, PM-3066KBIGT, PM-3066KBAGT, PM-3063KBNGT, PM-3063KBSGT, PM-3063KBIGT, PM-3063KBAGT, PM-3060KBNGT, PM-3060KBSGT, PM-3060KBIGT, PM-3060KBAGT	

**This Test Report consists of the following documents:**

1. Test Results
2. Annex 1: Pictures of the unit
3. Annex 2: Test equipment list

4.5 (B1) Harmonic Current Limit Test							P
Test Sample: ES3075KBN							
				R	S	T	
Watts [kW]				25.45	25.29	25.50	
VA [kVA]				25.48	25.34	25.53	
Vrms [V]				277.95	277.71	277.80	
Arms [A]				91.68	91.15	91.88	
Power Factor				0.9989	0.9993	0.9993	
THD [%]				3.21	2.98	3.03	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
1st	91.68	91.15	91.88	100	100	100	--
2nd	0.24	0.24	0.18	0.26	0.26	0.2	1
3rd	0.27	0.22	0.29	0.30	0.24	0.32	4
4th	0.29	0.21	0.23	0.32	0.23	0.25	1
5th	2.28	2.14	2.02	2.51	2.35	2.22	4
6th	0.21	0.08	0.18	0.23	0.09	0.20	1
7th	1.73	1.53	1.67	1.90	1.68	1.84	4
8th	0.15	0.11	0.06	0.16	0.12	0.07	1
9th	0.09	0.08	0.09	0.10	0.09	0.10	4
10th	0.10	0.05	0.10	0.11	0.05	0.11	1
11th	0.64	0.70	0.57	0.70	0.77	0.63	2
12th	0.05	0.04	0.06	0.06	0.04	0.07	0.5
13th	0.45	0.44	0.50	0.49	0.48	0.55	2
14th	0.03	0.03	0.04	0.03	0.03	0.04	0.5
15th	0.04	0.04	0.05	0.04	0.04	0.05	2
16th	0.04	0.04	0.05	0.04	0.04	0.05	0.5
17th	0.25	0.30	0.26	0.28	0.33	0.29	1.5
18th	0.02	0.03	0.03	0.02	0.03	0.03	0.375
19th	0.22	0.22	0.25	0.24	0.24	0.27	1.5
20th	0.03	0.04	0.04	0.03	0.04	0.04	0.375
21th	0.04	0.05	0.05	0.04	0.05	0.05	1.5
22th	0.05	0.12	0.08	0.05	0.13	0.09	0.375
23th	0.14	0.17	0.16	0.15	0.19	0.18	0.6
24th	0.02	0.03	0.02	0.02	0.03	0.02	0.15
25th	0.12	0.13	0.14	0.13	0.14	0.15	0.6
26th	0.03	0.03	0.03	0.03	0.03	0.03	0.15
27th	0.02	0.03	0.03	0.02	0.03	0.03	0.6
28th	0.03	0.03	0.03	0.03	0.03	0.03	0.15
29th	0.09	0.11	0.11	0.10	0.12	0.12	0.6
30th	0.01	0.02	0.02	0.01	0.02	0.02	0.15
31th	0.08	0.09	0.09	0.09	0.10	0.10	0.6
32th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
33th	0.02	0.02	0.02	0.02	0.02	0.02	0.6
34th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
35th	0.06	0.08	0.07	0.07	0.09	0.08	0.3
36th	0.01	0.01	0.01	0.01	0.01	0.01	0.075

Test Sample: ES3075KBN							
				R	S	T	
Watts [kW]				25.45	25.29	25.50	
VA [kVA]				25.48	25.34	25.53	
Vrms [V]				277.95	277.71	277.80	
Arms [A]				91.68	91.15	91.88	
Power Factor				0.9989	0.9993	0.9993	
THD [%]				3.21	2.98	3.03	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
37th	0.06	0.07	0.06	0.07	0.08	0.07	0.3
38th	0.02	0.03	0.02	0.02	0.03	0.02	0.075
39th	0.02	0.02	0.02	0.02	0.02	0.02	0.3
40th	0.02	0.03	0.02	0.02	0.03	0.02	0.075
41th	0.04	0.05	0.05	0.04	0.05	0.05	0.3
42th	0.01	0.02	0.01	0.01	0.02	0.01	0.075
43th	0.05	0.05	0.05	0.06	0.06	0.06	0.3
44th	0.03	0.03	0.02	0.03	0.03	0.02	0.075
45th	0.05	0.04	0.02	0.05	0.04	0.02	0.3
46th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
47th	0.06	0.05	0.06	0.07	0.05	0.07	0.3
48th	0.03	0.02	0.02	0.03	0.02	0.02	0.075
49th	0.03	0.02	0.02	0.03	0.02	0.02	0.3
50th	0.02	0.01	0.01	0.02	0.01	0.01	0.075
<b>Note:</b> ISC/IL = 20 Ref. to Table 2 of the IEEE 519:2014							



Test Sample: ES3066KBN							
				R	S	T	
Watts [kW]				22.35	22.14	22.34	
VA [kVA]				22.38	22.17	22.35	
Vrms [V]				277.69	277.57	277.63	
Arms [A]				80.57	79.82	80.54	
Power Factor				0.9990	0.9992	0.9992	
THD [%]				3.35	2.93	3.52	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
1st	80.57	79.82	80.54	100	100	100	--
2nd	0.25	0.30	0.15	0.31	0.38	0.19	1
3rd	0.58	0.82	0.41	0.73	1.03	0.52	4
4th	0.28	0.26	0.23	0.35	0.33	0.29	1
5th	2.11	1.41	1.78	2.66	1.77	2.24	4
6th	0.18	0.14	0.21	0.23	0.17	0.27	1
7th	1.49	1.72	2.08	1.88	2.16	2.62	4
8th	0.14	0.12	0.10	0.18	0.15	0.12	1
9th	0.31	0.45	0.23	0.39	0.56	0.29	4
10th	0.10	0.08	0.10	0.12	0.10	0.13	1
11th	0.45	0.48	0.59	0.57	0.60	0.74	2
12th	0.07	0.07	0.09	0.09	0.09	0.11	0.5
13th	0.29	0.38	0.52	0.37	0.48	0.65	2
14th	0.05	0.04	0.04	0.06	0.05	0.05	0.5
15th	0.16	0.12	0.12	0.20	0.15	0.15	2
16th	0.05	0.04	0.06	0.06	0.05	0.07	0.5
17th	0.29	0.33	0.29	0.36	0.41	0.37	1.5
18th	0.04	0.03	0.05	0.05	0.04	0.06	0.375
19th	0.15	0.12	0.18	0.19	0.15	0.23	1.5
20th	0.02	0.02	0.03	0.03	0.03	0.04	0.375
21th	0.09	0.05	0.10	0.11	0.06	0.12	1.5
22th	0.04	0.10	0.07	0.05	0.13	0.09	0.375
23th	0.15	0.17	0.14	0.19	0.22	0.17	0.6
24th	0.02	0.03	0.03	0.03	0.04	0.04	0.15
25th	0.10	0.11	0.14	0.12	0.14	0.17	0.6
26th	0.02	0.02	0.02	0.03	0.03	0.03	0.15
27th	0.04	0.04	0.06	0.05	0.05	0.08	0.6
28th	0.02	0.02	0.02	0.03	0.03	0.03	0.15
29th	0.08	0.09	0.07	0.10	0.11	0.09	0.6
30th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
31th	0.06	0.06	0.10	0.08	0.08	0.12	0.6
32th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
33th	0.03	0.02	0.03	0.04	0.03	0.04	0.6
34th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
35th	0.04	0.05	0.04	0.05	0.06	0.05	0.3
36th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
37th	0.05	0.03	0.05	0.06	0.04	0.06	0.3
38th	0.02	0.02	0.02	0.02	0.03	0.03	0.075
39th	0.02	0.02	0.02	0.03	0.02	0.03	0.3
40th	0.02	0.02	0.02	0.02	0.02	0.03	0.075

Test Sample: ES3066KBN							
				R	S	T	
Watts [kW]				22.35	22.14	22.34	
VA [kVA]				22.38	22.17	22.35	
Vrms [V]				277.69	277.57	277.63	
Arms [A]				80.57	79.82	80.54	
Power Factor				0.9990	0.9992	0.9992	
THD [%]				3.35	2.93	3.52	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
41th	0.04	0.05	0.02	0.05	0.06	0.03	0.3
42th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
43th	0.05	0.04	0.04	0.06	0.05	0.05	0.3
44th	0.02	0.02	0.02	0.03	0.02	0.03	0.075
45th	0.06	0.03	0.03	0.07	0.04	0.04	0.3
46th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
47th	0.02	0.02	0.02	0.03	0.03	0.03	0.3
48th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
49th	0.02	0.02	0.02	0.02	0.03	0.02	0.3
50th	0.02	0.02	0.01	0.02	0.02	0.01	0.075
<b>Note:</b> ISC/IL = 20 Ref. to Table 2 of the IEEE 519:2014							

Test Sample: ES3063KBN							
				R	S	T	
Watts [kW]				21.36	21.25	21.45	
VA [kVA]				21.41	21.28	21.49	
Vrms [V]				230.92	230.80	230.87	
Arms [A]				92.62	92.15	92.96	
Power Factor				0.9990	0.9993	0.9993	
THD [%]				3.06	2.92	2.90	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
1st	92.62	92.15	92.96	100	100	100	--
2nd	0.16	0.23	0.16	0.17	0.25	0.17	1
3rd	0.24	0.26	0.37	0.26	0.28	0.41	4
4th	0.23	0.16	0.16	0.25	0.17	0.18	1
5th	2.18	2.08	1.94	2.39	2.28	2.12	4
6th	0.19	0.08	0.18	0.21	0.09	0.2	1
7th	1.59	1.46	1.63	1.74	1.6	1.78	4
8th	0.14	0.11	0.06	0.15	0.12	0.07	1
9th	0.12	0.09	0.11	0.13	0.10	0.12	4
10th	0.10	0.05	0.10	0.11	0.05	0.11	1
11th	0.58	0.66	0.55	0.64	0.72	0.6	2
12th	0.05	0.04	0.05	0.05	0.04	0.06	0.5
13th	0.39	0.37	0.45	0.43	0.41	0.49	2
14th	0.03	0.03	0.04	0.03	0.03	0.04	0.5
15th	0.04	0.05	0.05	0.04	0.05	0.05	2
16th	0.03	0.03	0.04	0.03	0.03	0.04	0.5
17th	0.22	0.26	0.24	0.24	0.28	0.26	1.5
18th	0.02	0.03	0.03	0.02	0.03	0.03	0.375
19th	0.18	0.18	0.20	0.2	0.2	0.22	1.5
20th	0.02	0.03	0.03	0.02	0.03	0.03	0.375
21th	0.03	0.05	0.04	0.03	0.05	0.04	1.5
22th	0.05	0.12	0.07	0.05	0.13	0.08	0.375
23th	0.13	0.16	0.15	0.14	0.17	0.16	0.6
24th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
25th	0.12	0.11	0.12	0.13	0.12	0.13	0.6
26th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
27th	0.02	0.02	0.03	0.02	0.02	0.03	0.6
28th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
29th	0.07	0.10	0.09	0.08	0.11	0.1	0.6
30th	0.01	0.02	0.02	0.01	0.02	0.02	0.15
31th	0.07	0.08	0.08	0.08	0.09	0.09	0.6
32th	0.01	0.02	0.02	0.01	0.02	0.02	0.15
33th	0.02	0.02	0.02	0.02	0.02	0.02	0.6
34th	0.01	0.02	0.02	0.01	0.02	0.02	0.15
35th	0.06	0.06	0.06	0.07	0.07	0.07	0.3
36th	0.01	0.01	0.01	0.01	0.01	0.01	0.075
37th	0.05	0.05	0.06	0.06	0.06	0.07	0.3
38th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
39th	0.01	0.02	0.02	0.01	0.02	0.02	0.3
40th	0.02	0.02	0.02	0.02	0.02	0.02	0.075

Test Sample: ES3063KBN							
				R	S	T	
Watts [kW]				21.36	21.25	21.45	
VA [kVA]				21.41	21.28	21.49	
Vrms [V]				230.92	230.80	230.87	
Arms [A]				92.62	92.15	92.96	
Power Factor				0.9990	0.9993	0.9993	
THD [%]				3.06	2.92	2.90	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
41th	0.04	0.05	0.05	0.04	0.05	0.05	0.3
42th	0.01	0.01	0.01	0.01	0.01	0.01	0.075
43th	0.05	0.06	0.05	0.06	0.07	0.06	0.3
44th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
45th	0.05	0.04	0.03	0.06	0.04	0.03	0.3
46th	0.01	0.01	0.01	0.01	0.01	0.01	0.075
47th	0.07	0.05	0.07	0.08	0.06	0.08	0.3
48th	0.02	0.01	0.01	0.02	0.01	0.01	0.075
49th	0.02	0.03	0.03	0.02	0.03	0.03	0.3
50th	0.01	0.01	0.01	0.01	0.01	0.01	0.075
<b>Note:</b> ISC/IL = 20 Ref. to Table 2 of the IEEE 519:2014							

Test Sample: ES3060KBN							
				R	S	T	
Watts [kW]				20.26	20.18	20.30	
VA [kVA]				20.32	20.20	20.37	
Vrms [V]				220.92	220.81	220.88	
Arms [A]				91.78	91.45	91.97	
Power Factor				0.9990	0.9992	0.9992	
THD [%]				3.11	2.89	2.89	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
1st	91.78	91.45	91.97	100	100	100	--
2nd	0.20	0.23	0.16	0.22	0.25	0.18	1
3rd	0.20	0.21	0.28	0.22	0.23	0.31	4
4th	0.24	0.18	0.18	0.26	0.2	0.2	1
5th	2.27	2.09	1.99	2.49	2.3	2.19	4
6th	0.18	0.06	0.17	0.2	0.07	0.19	1
7th	1.56	1.40	1.56	1.71	1.54	1.71	4
8th	0.13	0.10	0.06	0.14	0.11	0.07	1
9th	0.10	0.06	0.10	0.11	0.07	0.11	4
10th	0.08	0.05	0.07	0.09	0.05	0.08	1
11th	0.56	0.61	0.55	0.62	0.67	0.6	2
12th	0.05	0.04	0.05	0.05	0.04	0.06	0.5
13th	0.37	0.36	0.41	0.41	0.4	0.45	2
14th	0.03	0.03	0.03	0.03	0.03	0.03	0.5
15th	0.03	0.04	0.04	0.03	0.04	0.04	2
16th	0.03	0.03	0.04	0.03	0.03	0.04	0.5
17th	0.22	0.24	0.23	0.24	0.26	0.25	1.5
18th	0.02	0.02	0.03	0.02	0.02	0.03	0.375
19th	0.17	0.17	0.18	0.19	0.19	0.2	1.5
20th	0.02	0.03	0.03	0.02	0.03	0.03	0.375
21th	0.03	0.05	0.04	0.03	0.05	0.04	1.5
22th	0.05	0.11	0.07	0.05	0.12	0.08	0.375
23th	0.12	0.15	0.14	0.13	0.16	0.15	0.6
24th	0.02	0.03	0.02	0.02	0.03	0.02	0.15
25th	0.11	0.11	0.12	0.12	0.12	0.13	0.6
26th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
27th	0.02	0.02	0.02	0.02	0.02	0.02	0.6
28th	0.02	0.02	0.02	0.02	0.02	0.02	0.15
29th	0.07	0.09	0.09	0.08	0.1	0.1	0.6
30th	0.01	0.01	0.02	0.01	0.01	0.02	0.15
31th	0.07	0.07	0.07	0.08	0.08	0.08	0.6
32th	0.01	0.02	0.02	0.01	0.02	0.02	0.15
33th	0.01	0.02	0.02	0.01	0.02	0.02	0.6
34th	0.01	0.02	0.02	0.01	0.02	0.02	0.15
35th	0.05	0.06	0.06	0.06	0.07	0.07	0.3
36th	0.01	0.01	0.01	0.01	0.01	0.01	0.075
37th	0.05	0.05	0.06	0.06	0.06	0.07	0.3
38th	0.01	0.02	0.02	0.01	0.02	0.02	0.075
39th	0.02	0.02	0.02	0.02	0.02	0.02	0.3
40th	0.02	0.02	0.02	0.02	0.02	0.02	0.075



Test Sample: ES3060KBN							
				R	S	T	
Watts [kW]				20.26	20.18	20.30	
VA [kVA]				20.32	20.20	20.37	
Vrms [V]				220.92	220.81	220.88	
Arms [A]				91.78	91.45	91.97	
Power Factor				0.9990	0.9992	0.9992	
THD [%]				3.11	2.89	2.89	
Harmonics	Current Magnitude (A)			% of Fundamental			Harmonic Current Limits (%)
	R	S	T	R	S	T	
41th	0.05	0.05	0.05	0.05	0.05	0.05	0.3
42th	0.01	0.02	0.01	0.01	0.02	0.01	0.075
43th	0.05	0.06	0.05	0.06	0.07	0.06	0.3
44th	0.02	0.02	0.02	0.02	0.02	0.02	0.075
45th	0.06	0.04	0.04	0.07	0.04	0.04	0.3
46th	0.01	0.01	0.02	0.01	0.01	0.02	0.075
47th	0.06	0.05	0.06	0.07	0.05	0.07	0.3
48th	0.01	0.01	0.01	0.01	0.01	0.01	0.075
49th	0.03	0.03	0.03	0.03	0.03	0.03	0.3
50th	0.01	0.01	0.01	0.01	0.01	0.01	0.075
<b>Note:</b> ISC/IL = 20 Ref. to Table 2 of the IEEE 519:2014							

4.5 (B1) Harmonic Voltage Limit Test							P
Test Sample: ES3075KBN							
THD50 (%)	R	0.95	S	0.87	T	0.88	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
1st	277.85	277.71	277.80	100	100	100	--
2nd	0.08	0.08	0.06	0.03	0.03	0.02	3
3rd	0.86	0.80	0.66	0.31	0.29	0.24	3
4th	0.17	0.11	0.14	0.06	0.04	0.05	3
5th	1.33	1.25	1.19	0.48	0.45	0.43	3
6th	0.17	0.06	0.17	0.06	0.02	0.06	3
7th	1.69	1.50	1.63	0.61	0.54	0.59	3
8th	0.17	0.14	0.06	0.06	0.05	0.02	3
9th	0.33	0.22	0.25	0.12	0.08	0.09	3
10th	0.14	0.08	0.11	0.05	0.03	0.04	3
11th	0.97	1.02	0.89	0.35	0.37	0.32	3
12th	0.08	0.06	0.08	0.03	0.02	0.03	3
13th	0.72	0.69	0.78	0.26	0.25	0.28	3
14th	0.06	0.06	0.06	0.02	0.02	0.02	3
15th	0.22	0.19	0.17	0.08	0.07	0.06	3
16th	0.06	0.06	0.06	0.02	0.02	0.02	3
17th	0.39	0.44	0.42	0.14	0.16	0.15	3
18th	0.03	0.03	0.03	0.01	0.01	0.01	3
19th	0.30	0.33	0.36	0.11	0.12	0.13	3
20th	0.03	0.06	0.06	0.01	0.02	0.02	3
21th	0.06	0.08	0.08	0.02	0.03	0.03	3
22th	0.06	0.17	0.11	0.02	0.06	0.04	3
23th	0.25	0.28	0.25	0.09	0.1	0.09	3
24th	0.03	0.03	0.03	0.01	0.01	0.01	3
25th	0.19	0.19	0.22	0.07	0.07	0.08	3
26th	0.03	0.03	0.03	0.01	0.01	0.01	3
27th	0.06	0.06	0.06	0.02	0.02	0.02	3
28th	0.03	0.03	0.06	0.01	0.01	0.02	3
29th	0.14	0.17	0.17	0.05	0.06	0.06	3
30th	0.03	0.03	0.03	0.01	0.01	0.01	3
31th	0.11	0.14	0.14	0.04	0.05	0.05	3
32th	0.03	0.03	0.03	0.01	0.01	0.01	3
33th	0.03	0.03	0.03	0.01	0.01	0.01	3
34th	0.03	0.03	0.03	0.01	0.01	0.01	3
35th	0.11	0.14	0.14	0.04	0.05	0.05	3
36th	0.03	0.03	0.03	0.01	0.01	0.01	3
37th	0.11	0.14	0.14	0.04	0.05	0.05	3
38th	0.06	0.08	0.08	0.02	0.03	0.03	3
39th	0.03	0.06	0.06	0.01	0.02	0.02	3
40th	0.08	0.08	0.06	0.03	0.03	0.02	3
41th	0.08	0.11	0.11	0.03	0.04	0.04	3
42th	0.03	0.03	0.03	0.01	0.01	0.01	3

Test Sample: ES3075KBN							
THD50 (%)	R	0.95	S	0.87	T	0.88	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
43th	0.14	0.14	0.14	0.05	0.05	0.05	3
44th	0.06	0.06	0.06	0.02	0.02	0.02	3
45th	0.11	0.11	0.08	0.04	0.04	0.03	3
46th	0.06	0.06	0.06	0.02	0.02	0.02	3
47th	0.17	0.11	0.17	0.06	0.04	0.06	3
48th	0.08	0.06	0.06	0.03	0.02	0.02	3
49th	0.08	0.06	0.06	0.03	0.02	0.02	3
50th	0.06	0.03	0.03	0.02	0.01	0.01	3
<b>Note:</b>							

Test Sample: ES3066KBN							
THD50 (%)	R	0.87	S	0.82	T	0.98	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
1st	277.69	277.57	277.63	100	100	100	--
2nd	0.08	0.11	0.06	0.03	0.04	0.02	3
3rd	0.86	0.69	0.61	0.31	0.25	0.22	3
4th	0.17	0.17	0.17	0.06	0.06	0.06	3
5th	1.36	0.89	1.16	0.49	0.32	0.42	3
6th	0.17	0.11	0.19	0.06	0.04	0.07	3
7th	1.55	1.75	2.11	0.56	0.63	0.76	3
8th	0.17	0.14	0.08	0.06	0.05	0.03	3
9th	0.11	0.75	0.30	0.04	0.27	0.11	3
10th	0.11	0.11	0.11	0.04	0.04	0.04	3
11th	0.75	0.78	0.91	0.27	0.28	0.33	3
12th	0.11	0.08	0.11	0.04	0.03	0.04	3
13th	0.44	0.47	0.69	0.16	0.17	0.25	3
14th	0.06	0.06	0.06	0.02	0.02	0.02	3
15th	0.25	0.19	0.14	0.09	0.07	0.05	3
16th	0.06	0.06	0.08	0.02	0.02	0.03	3
17th	0.39	0.44	0.42	0.14	0.16	0.15	3
18th	0.06	0.06	0.06	0.02	0.02	0.02	3
19th	0.19	0.19	0.28	0.07	0.07	0.10	3
20th	0.03	0.03	0.06	0.01	0.01	0.02	3
21th	0.11	0.08	0.14	0.04	0.03	0.05	3
22th	0.06	0.14	0.11	0.02	0.05	0.04	3
23th	0.22	0.25	0.22	0.08	0.09	0.08	3
24th	0.03	0.03	0.06	0.01	0.01	0.02	3
25th	0.14	0.17	0.22	0.05	0.06	0.08	3
26th	0.03	0.03	0.06	0.01	0.01	0.02	3
27th	0.08	0.08	0.08	0.03	0.03	0.03	3
28th	0.06	0.03	0.06	0.02	0.01	0.02	3
29th	0.11	0.14	0.11	0.04	0.05	0.04	3
30th	0.03	0.03	0.03	0.01	0.01	0.01	3
31th	0.11	0.11	0.17	0.04	0.04	0.06	3
32th	0.03	0.03	0.03	0.01	0.01	0.01	3
33th	0.06	0.08	0.06	0.02	0.03	0.02	3
34th	0.03	0.03	0.03	0.01	0.01	0.01	3
35th	0.08	0.11	0.11	0.03	0.04	0.04	3
36th	0.03	0.03	0.03	0.01	0.01	0.01	3
37th	0.11	0.08	0.11	0.04	0.03	0.04	3
38th	0.06	0.06	0.08	0.02	0.02	0.03	3
39th	0.06	0.06	0.06	0.02	0.02	0.02	3
40th	0.06	0.08	0.08	0.02	0.03	0.03	3
41th	0.08	0.08	0.08	0.03	0.03	0.03	3
42th	0.03	0.03	0.03	0.01	0.01	0.01	3
43th	0.11	0.08	0.08	0.04	0.03	0.03	3
44th	0.06	0.06	0.06	0.02	0.02	0.02	3
45th	0.14	0.08	0.08	0.05	0.03	0.03	3

Test Sample: ES3066KBN							
THD50 (%)	R	0.87	S	0.82	T	0.98	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
46th	0.06	0.03	0.06	0.02	0.01	0.02	3
47th	0.08	0.06	0.06	0.03	0.02	0.02	3
48th	0.06	0.03	0.03	0.02	0.01	0.01	3
49th	0.06	0.06	0.06	0.02	0.02	0.02	3
50th	0.06	0.03	0.03	0.02	0.01	0.01	3
<b>Note:</b>							



Test Sample: ES3063KBN							
THD50 (%)	R	1.07	S	1.02	T	1.02	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
1st	230.92	230.80	230.87	100	100	100	--
2nd	0.07	0.09	0.07	0.03	0.04	0.03	3
3rd	0.94	0.90	0.74	0.41	0.39	0.32	3
4th	0.14	0.07	0.12	0.06	0.03	0.05	3
5th	1.27	1.20	1.13	0.55	0.52	0.49	3
6th	0.16	0.07	0.16	0.07	0.03	0.07	3
7th	1.47	1.33	1.50	0.64	0.58	0.65	3
8th	0.16	0.14	0.07	0.07	0.06	0.03	3
9th	0.25	0.12	0.14	0.11	0.05	0.06	3
10th	0.14	0.07	0.09	0.06	0.03	0.04	3
11th	0.85	0.92	0.78	0.37	0.40	0.34	3
12th	0.07	0.05	0.07	0.03	0.02	0.03	3
13th	0.67	0.64	0.71	0.29	0.28	0.31	3
14th	0.05	0.05	0.05	0.02	0.02	0.02	3
15th	0.23	0.23	0.18	0.10	0.10	0.08	3
16th	0.05	0.05	0.05	0.02	0.02	0.02	3
17th	0.37	0.41	0.41	0.16	0.18	0.18	3
18th	0.02	0.02	0.05	0.01	0.01	0.02	3
19th	0.30	0.28	0.32	0.13	0.12	0.14	3
20th	0.02	0.05	0.05	0.01	0.02	0.02	3
21th	0.07	0.07	0.07	0.03	0.03	0.03	3
22th	0.07	0.16	0.12	0.03	0.07	0.05	3
23th	0.21	0.25	0.23	0.09	0.11	0.1	3
24th	0.02	0.02	0.02	0.01	0.01	0.01	3
25th	0.21	0.18	0.21	0.09	0.08	0.09	3
26th	0.02	0.02	0.02	0.01	0.01	0.01	3
27th	0.05	0.05	0.07	0.02	0.02	0.03	3
28th	0.02	0.02	0.02	0.01	0.01	0.01	3
29th	0.14	0.18	0.16	0.06	0.08	0.07	3
30th	0.02	0.02	0.02	0.01	0.01	0.01	3
31th	0.14	0.14	0.14	0.06	0.06	0.06	3
32th	0.02	0.02	0.02	0.01	0.01	0.01	3
33th	0.05	0.05	0.05	0.02	0.02	0.02	3
34th	0.02	0.02	0.02	0.01	0.01	0.01	3
35th	0.09	0.12	0.12	0.04	0.05	0.05	3
36th	0.02	0.02	0.02	0.01	0.01	0.01	3
37th	0.09	0.09	0.12	0.04	0.04	0.05	3
38th	0.05	0.07	0.07	0.02	0.03	0.03	3
39th	0.02	0.05	0.05	0.01	0.02	0.02	3
40th	0.07	0.07	0.07	0.03	0.03	0.03	3
41th	0.09	0.09	0.09	0.04	0.04	0.04	3
42th	0.02	0.05	0.02	0.01	0.02	0.01	3
43th	0.14	0.16	0.14	0.06	0.07	0.06	3
44th	0.05	0.05	0.05	0.02	0.02	0.02	3
45th	0.14	0.09	0.07	0.06	0.04	0.03	3

Test Sample: ES3063KBN							
THD50 (%)	R	1.07	S	1.02	T	1.02	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
46th	0.05	0.02	0.05	0.02	0.01	0.02	3
47th	0.21	0.14	0.18	0.09	0.06	0.08	3
48th	0.05	0.02	0.05	0.02	0.01	0.02	3
49th	0.05	0.05	0.05	0.02	0.02	0.02	3
50th	0.02	0.02	0.02	0.01	0.01	0.01	3
<b>Note:</b>							

Test Sample: ES3060KBN							
THD50 (%)	R	1.12	S	1.04	T	1.05	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
1st	220.92	220.81	220.88	100	100	100	--
2nd	0.07	0.11	0.07	0.03	0.05	0.03	3
3rd	0.92	0.88	0.75	0.42	0.4	0.34	3
4th	0.13	0.09	0.11	0.06	0.04	0.05	3
5th	1.32	1.21	1.14	0.6	0.55	0.52	3
6th	0.15	0.07	0.15	0.07	0.03	0.07	3
7th	1.39	1.25	1.39	0.63	0.57	0.63	3
8th	0.13	0.13	0.07	0.06	0.06	0.03	3
9th	0.24	0.13	0.11	0.11	0.06	0.05	3
10th	0.11	0.07	0.07	0.05	0.03	0.03	3
11th	0.81	0.88	0.79	0.37	0.4	0.36	3
12th	0.07	0.04	0.07	0.03	0.02	0.03	3
13th	0.64	0.62	0.68	0.29	0.28	0.31	3
14th	0.04	0.04	0.04	0.02	0.02	0.02	3
15th	0.20	0.22	0.20	0.09	0.1	0.09	3
16th	0.04	0.04	0.04	0.02	0.02	0.02	3
17th	0.37	0.40	0.40	0.17	0.18	0.18	3
18th	0.02	0.04	0.04	0.01	0.02	0.02	3
19th	0.29	0.29	0.31	0.13	0.13	0.14	3
20th	0.02	0.04	0.04	0.01	0.02	0.02	3
21th	0.07	0.09	0.07	0.03	0.04	0.03	3
22th	0.07	0.15	0.09	0.03	0.07	0.04	3
23th	0.20	0.24	0.22	0.09	0.11	0.1	3
24th	0.02	0.02	0.02	0.01	0.01	0.01	3
25th	0.20	0.18	0.20	0.09	0.08	0.09	3
26th	0.02	0.02	0.02	0.01	0.01	0.01	3
27th	0.04	0.07	0.07	0.02	0.03	0.03	3
28th	0.02	0.02	0.02	0.01	0.01	0.01	3
29th	0.13	0.15	0.15	0.06	0.07	0.07	3
30th	0.02	0.02	0.02	0.01	0.01	0.01	3
31th	0.13	0.13	0.13	0.06	0.06	0.06	3
32th	0.02	0.02	0.02	0.01	0.01	0.01	3
33th	0.04	0.04	0.04	0.02	0.02	0.02	3
34th	0.02	0.02	0.02	0.01	0.01	0.01	3
35th	0.09	0.09	0.11	0.04	0.04	0.05	3
36th	0.02	0.02	0.02	0.01	0.01	0.01	3
37th	0.09	0.09	0.09	0.04	0.04	0.04	3
38th	0.04	0.07	0.07	0.02	0.03	0.03	3
39th	0.02	0.07	0.04	0.01	0.03	0.02	3
40th	0.07	0.07	0.07	0.03	0.03	0.03	3
41th	0.09	0.09	0.09	0.04	0.04	0.04	3
42th	0.02	0.04	0.04	0.01	0.02	0.02	3
43th	0.13	0.15	0.13	0.06	0.07	0.06	3
44th	0.04	0.04	0.04	0.02	0.02	0.02	3
45th	0.18	0.09	0.07	0.08	0.04	0.03	3
46th	0.04	0.02	0.04	0.02	0.01	0.02	3

Test Sample: ES3060KBN							
THD50 (%)	R	1.12	S	1.04	T	1.05	
Harmonics	Voltage Magnitude (V)			% of Fundamental			Harmonic Limits of Test Voltage (%)
	R	S	T	R	S	T	
47th	0.18	0.13	0.18	0.08	0.06	0.08	3
48th	0.04	0.02	0.04	0.02	0.01	0.02	3
49th	0.04	0.07	0.07	0.02	0.03	0.03	3
50th	0.02	0.04	0.02	0.01	0.02	0.01	3
<b>Note:</b>							

# **Annex 1**

## **Pictures of the unit**



**Inverter  
Enclosure front**



**Enclosure rear side**



**Enclosure Left side**



**Enclosure right side**



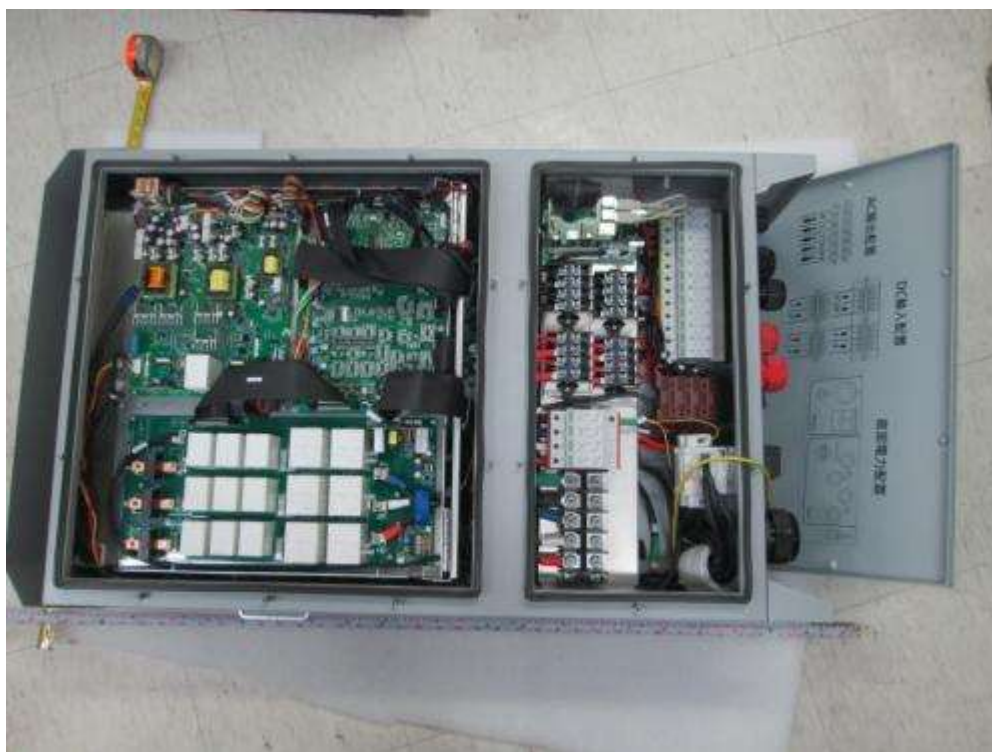
**Enclosure top side**



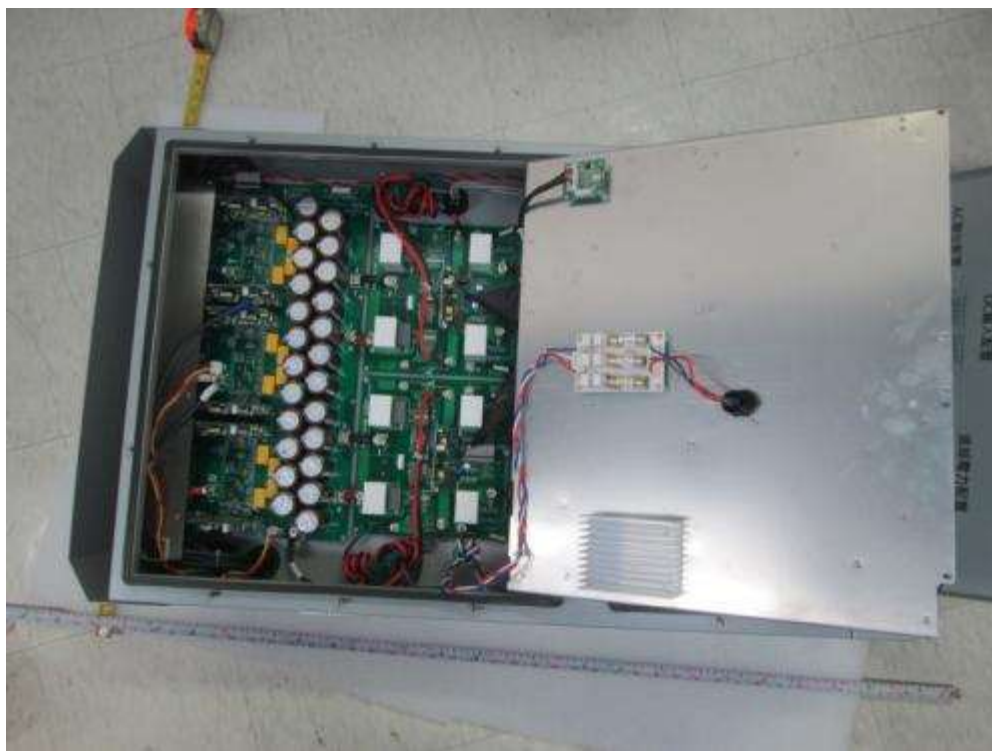
**Enclosure bottom side**



**Internal view-1**



**Internal view-2**

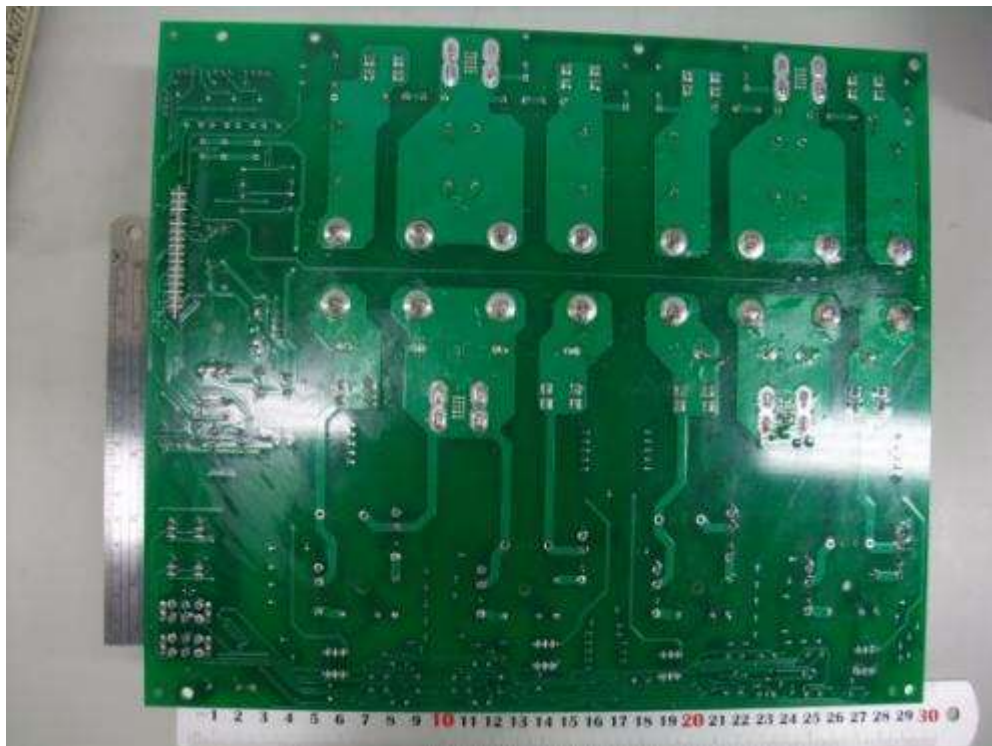




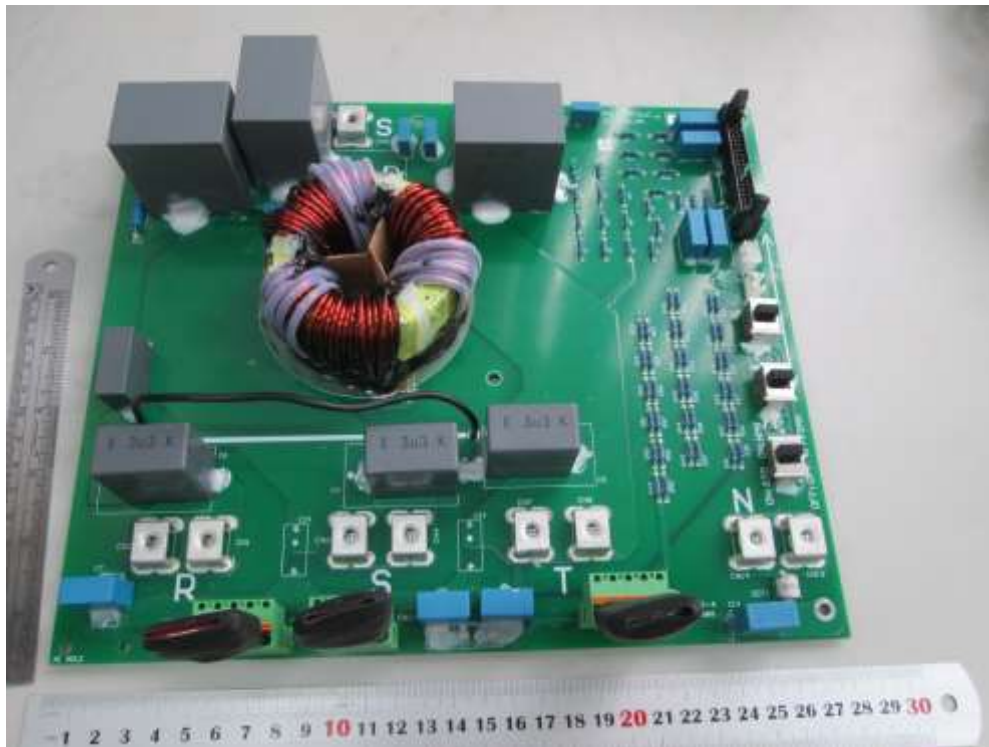
**PCB\_PVLF4 component side**



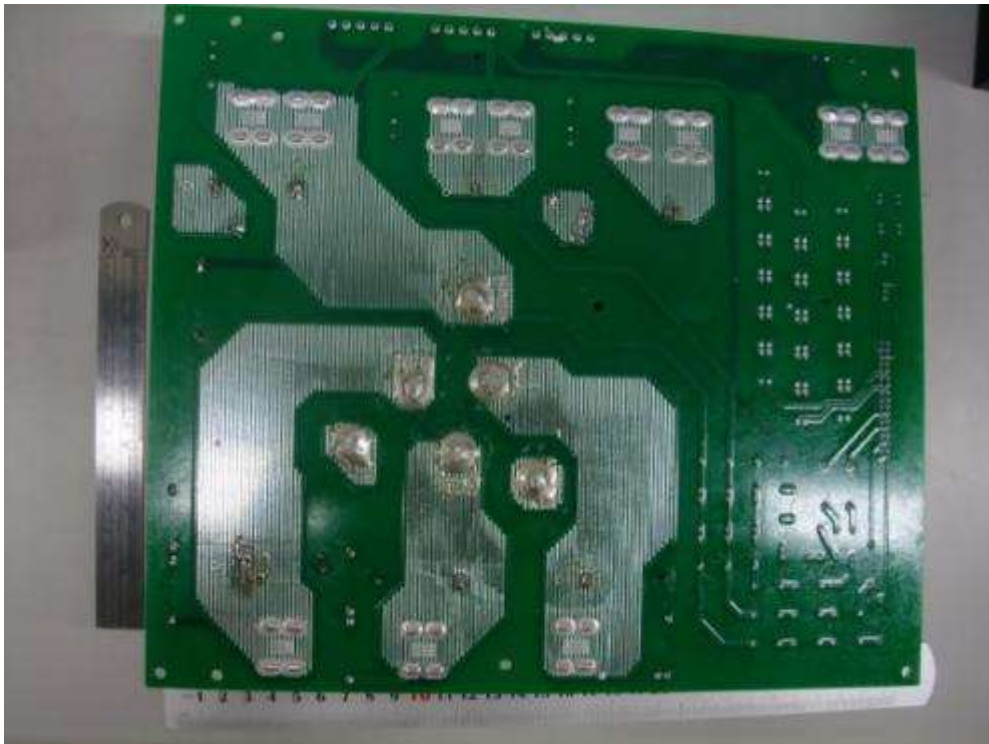
**PCB\_PVLF4 solder side**



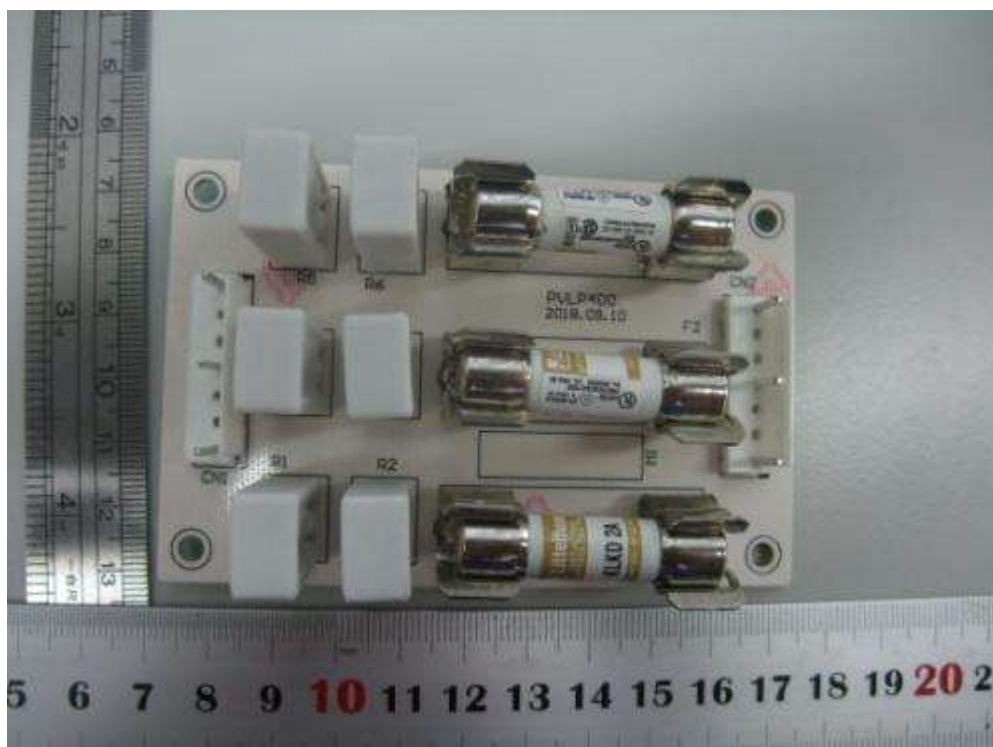
**PCB\_PVLF5 component side**



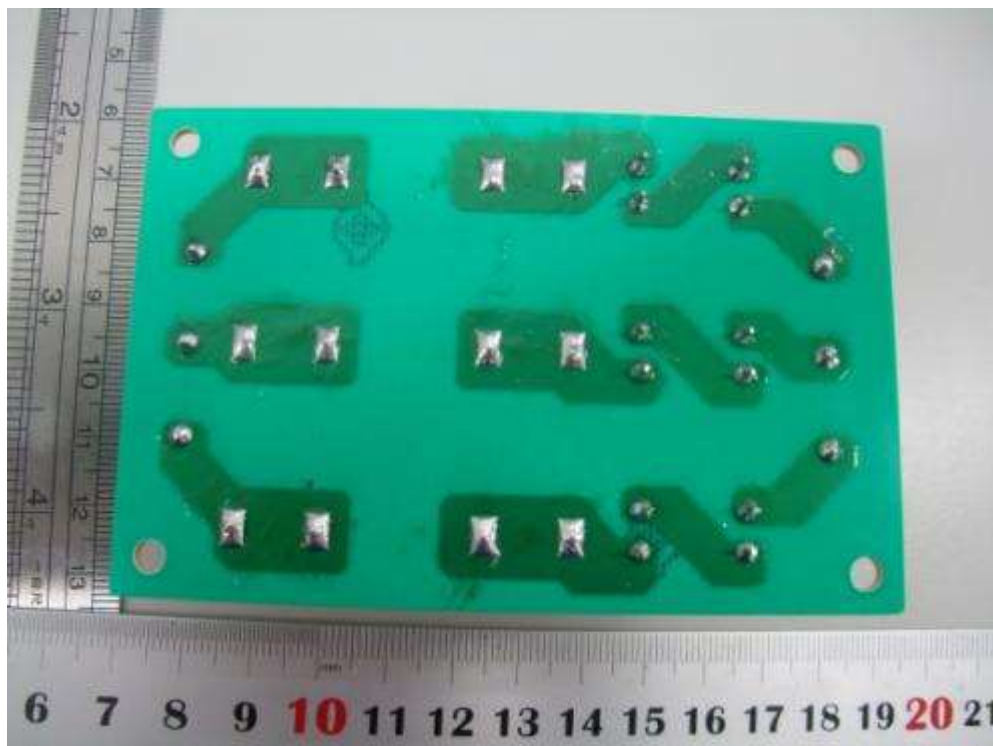
**PCB\_PVLF5 solder side**



**PCB\_PVLP4 component side**



**PCB\_PVLP4 solder side**

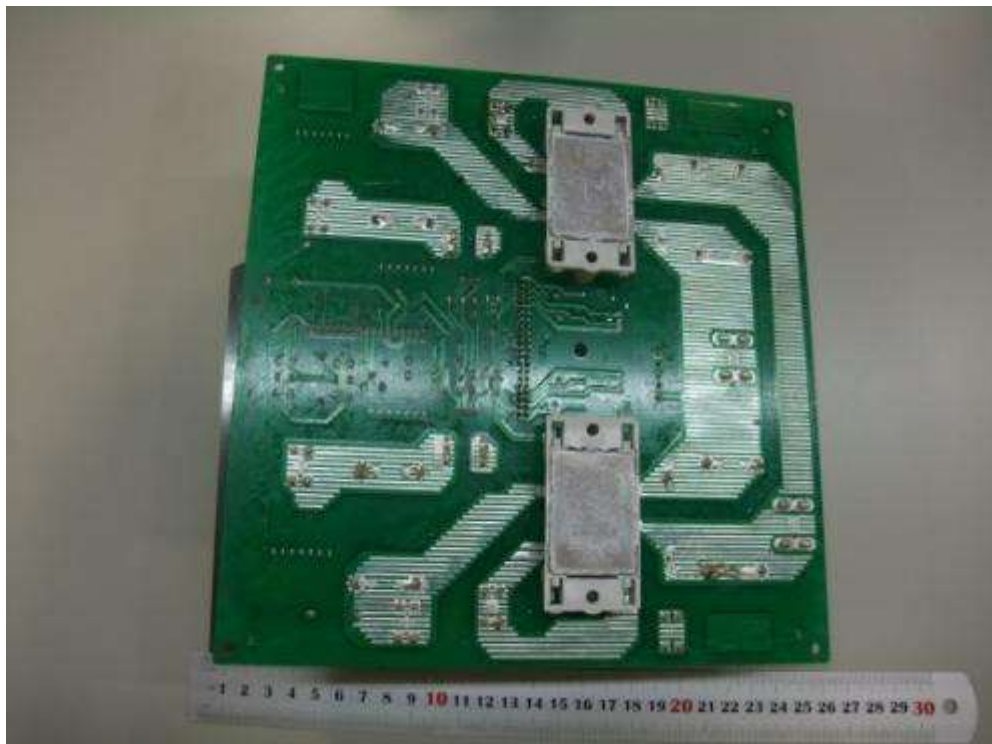




**PCB\_PVLD4 component side**

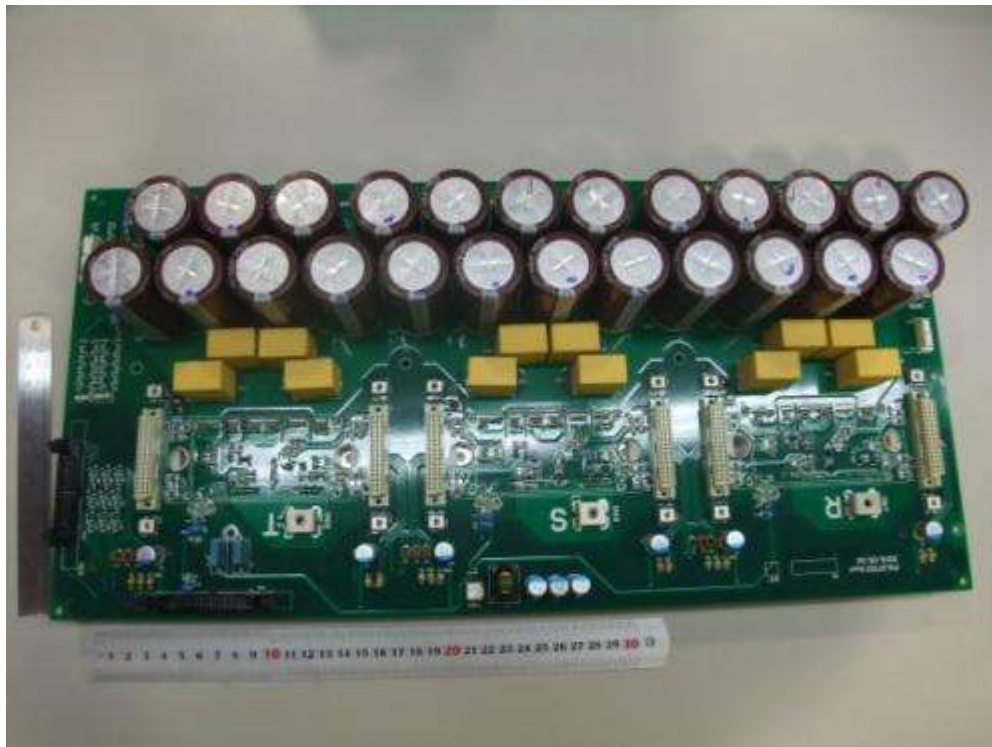


**PCB\_PVLD4 solder side**

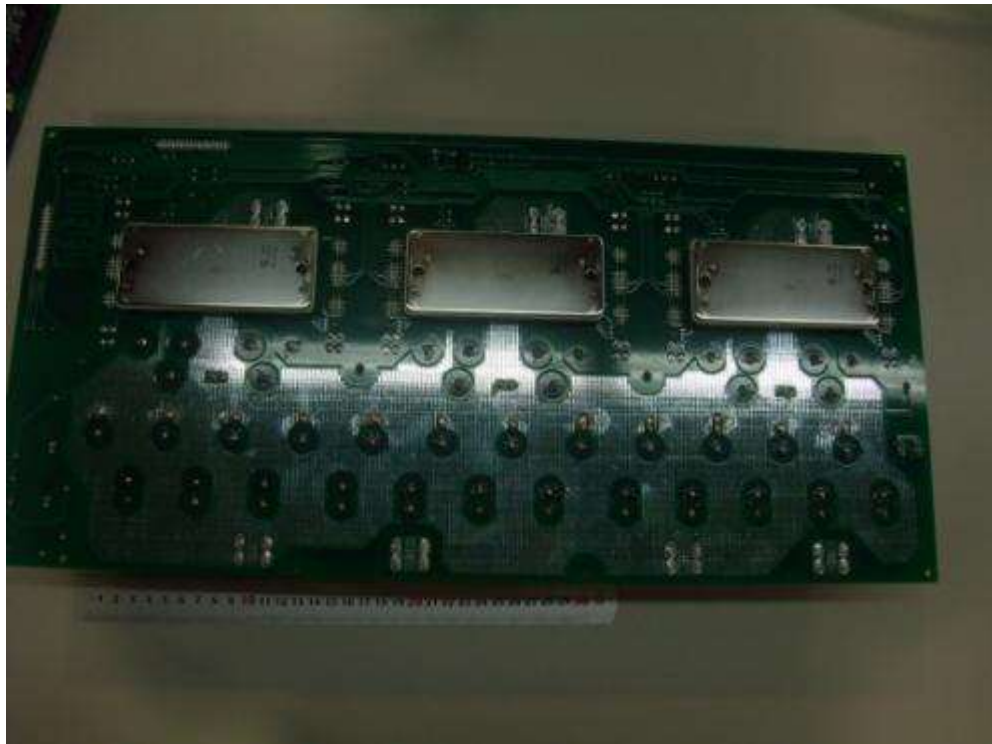




**PCB\_PVLD7 component side**



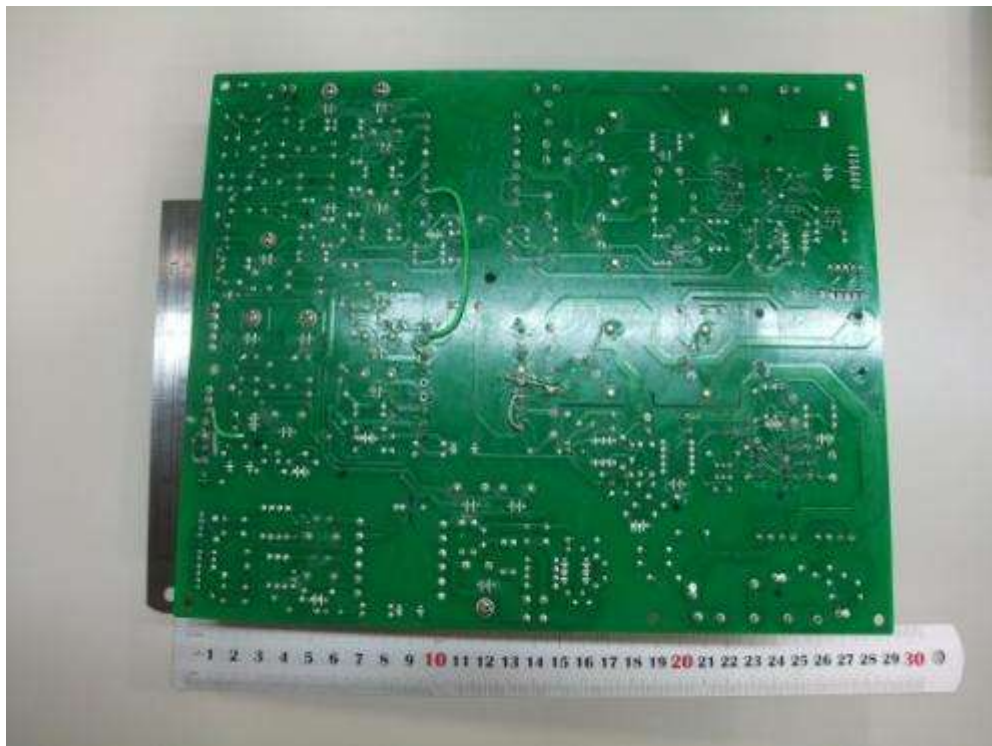
**PCB\_PVLD7 solder side**



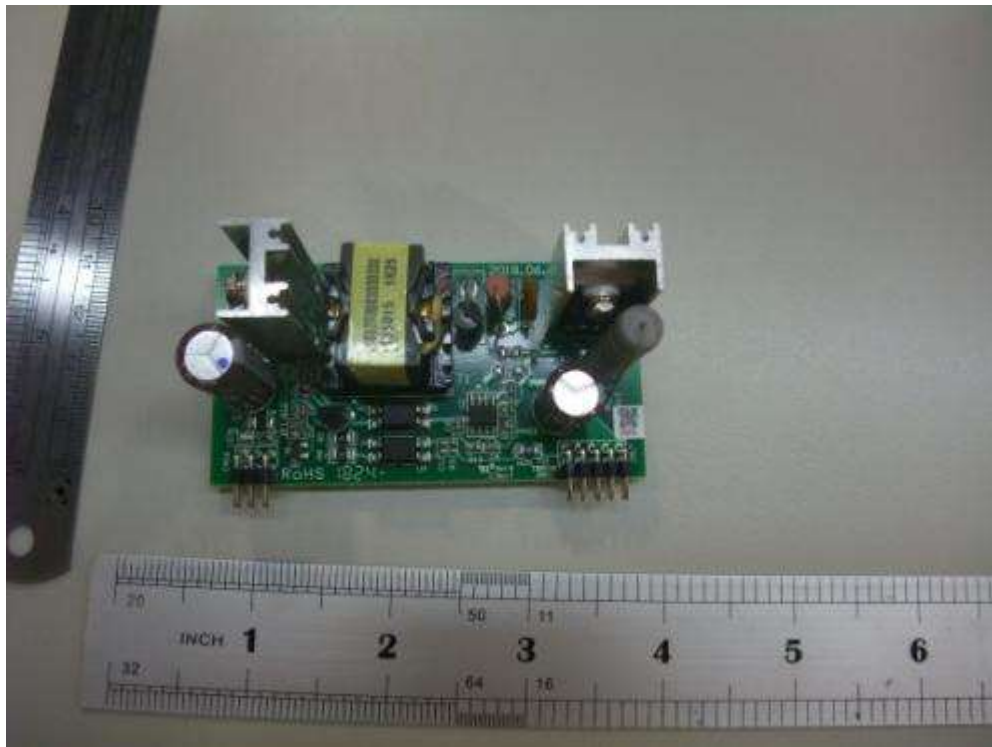
**PCB\_PVLP2 component side**



**PCB\_PVLP2 solder side**



**PCB\_PVLP1 component side**



**PCB\_PVLP1 solder side**





**PCB\_PVLF30 component side**



**PCB\_PVLF30 solder side**



## **Annex 2**

### **Test equipment list**

<b>Testing Location:</b>	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
<b>Date(s) of performance test:</b>	2020-03-24

Equipment	Manufacturer	Type	Serial No.	Last Calibration
Thermo-Hygro Meter	--	TH-05A	245	2019-05-07
Precision Power Analyzer	HIOKI	3390	100822876	2019-05-08
Current Transducer	HIOKI	6863	130302926	Combine calibration with HIOKI 3390
Current Transducer	HIOKI	6863	130302925	
Current Transducer	HIOKI	6863	130302927	
Programable DC Source	CHROMA	62150H-1000S	62150EF00074	Monitor by Power Analyzer
Programable DC Source	CHROMA	A620028	620028E00603	
Programable DC Source	CHROMA	62150H-1000S	62150EF01542	
Programable DC Source	CHROMA	A620028	620028E00591	
Programable DC Source	CHROMA	62150H-1000S	62150EF00865	
Programable DC Source	CHROMA	A620028	620028E00713	
Programable DC Source	CHROMA	62150H-1000S	62150EF00082	
Programable DC Source	CHROMA	A620028	620028E00707	
Programable AC Source	CHROMA	61860	618603800187	
Atmospheric pressure gauge	TESTO	TESTO 511	39108378	2019-06-05