# Certificate of compliance

| | |
|---|---|
| **Applicant:** | **Renac Power Technology Co., Ltd.**<br>Block C-12, No. 20 Datong Road, Comprehensive Bonded Zone, Suzhou Hi-Tech District, Suzhou<br>**China** |
| **Product:** | **Photovoltaic inverter** |
| **Model:** | **R3-12K, R3-10K, R3-10K-A, R3-8K, R3-6K, R3-5K, R3-4K** |

**Applied rules and standards:**

**IEC 61683:1999, EN 61683:2000, DIN EN 61683:2000**
Photovoltaic systems – Power conditioners – Procedure for measuring efficiency
**IEC 60068-2-1:2007**
Environmental testing – Part 2-1: Tests – Test A: Cold
**IEC 60068-2-2:2007**
Environmental testing – Part 2-2: Tests – Test B: Dry heat
**IEC 60068-2-14:2009**
Environmental testing – Part 2-14: Tests – Test N: Change of temperature
**IEC 60068-2-27:2008**
Part 2-27: Tests – Test Ea and guidance: Shock
**IEC 60068-2-64:2008**
Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance
**IEC 60068-2-30:2005**
Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12h + 12 h cycle)

At the time of issue of this certificate, the safety concept of an aforementioned representative product corresponds to the valid safety specifications for the specified use in accordance with regulations.

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|---|---|---|---|
| **Report number:** | **ABRE-ESH-P24090121-1**<br>**ABRE-ESH-P24090121-2** | **Certification Program:** | **NSOP-0032-DEU-ZE-V10** |
| **Certificate number:** | **U24-1064** | **Date of issue:** | **2024-11-20** |

**Certification body**

Domenik Koll
Head of Energy Systems Germany

**Accreditation**

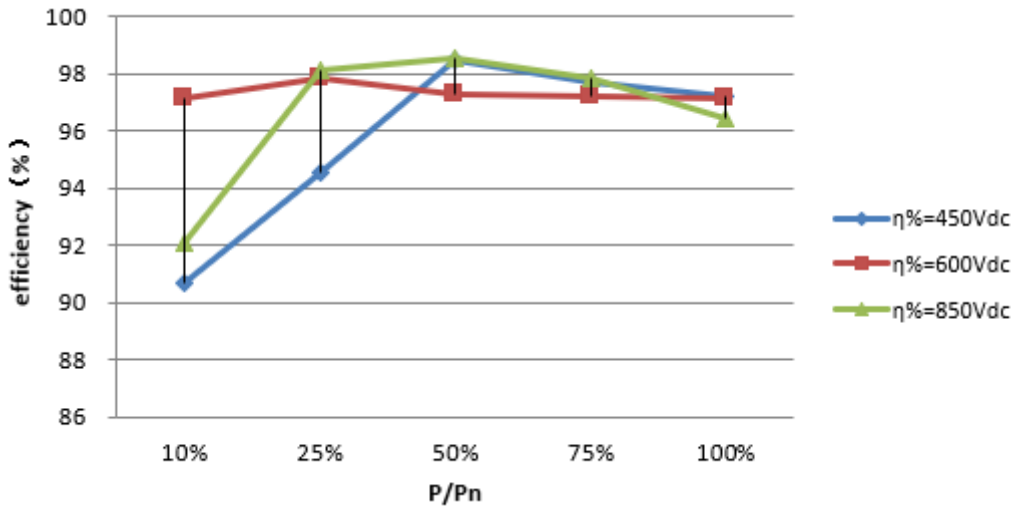
DAkkS Deutsche Akkreditierungsstelle D-ZE-12024-01-00

| **Type Approval and declaration of compliance with the requirements of IEC 61683, EN 50530.** | | | | |
|---|---|---|---|---|
| **Manufacturer** | **Renac Power Technology Co., Ltd.**<br>Block C-12, No. 20 Datong Road, Comprehensive Bonded Zone, Suzhou Hi-Tech District, Suzhou<br>**China** | | | |
| | | | | |
| **Product type** | Photovoltaic inverter | | | |
| | | | | |
| **Static converter model** | **R3-12K** | **R3-10K** | **R3-10K-A** | **R3-8K** |
| **Input DC (photovoltaic)** | | | | |
| MPP voltage range [V] | 140-1000 | 140-1000 | 140-1000 | 140-1000 |
| Max. input voltage [V] | 1100 | 1100 | 1100 | 1100 |
| Max. input current [A] | 16/16 | 16/16 | 16/16 | 16/16 |
| **Output AC** | | | | |
| Rated AC voltage [V] | 3L/N/PE, 220/380, 230/400, 50/60Hz | 3L/N/PE, 220/380, 230/400, 50/60Hz | 3L/N/PE, 220/380, 230/400, 50/60Hz | 3L/N/PE, 220/380, 230/400, 50/60Hz |
| Max. output current [A] | 20,0 | 16,7 | 15,2 | 13,4 |
| Nom. converter output ($P_{NINV}$) [W] | 12000 | 10000 | 10000 | 8000 |
| Max. apparent power [VA] | 13200 | 11000 | 10000 | 8800 |
| | | | | |
| **Static converter model** | **R3-6K** | **R3-5K** | **R3-4K** | -- |
| **Input DC (photovoltaic)** | | | | |
| MPP voltage range [V] | 140-1000 | 140-1000 | 140-1000 | -- |
| Max. input voltage [V] | 1100 | 1100 | 1100 | -- |
| Max. input current [A] | 16/16 | 16/16 | 16/16 | -- |
| **Output AC** | | | | |
| Rated AC voltage [V] | 3L/N/PE, 220/380, 230/400, 50/60Hz | 3L/N/PE, 220/380, 230/400, 50/60Hz | 3L/N/PE, 220/380, 230/400, 50/60Hz | -- |
| Max. output current [A] | 10,0 | 8,4 | 6,7 | -- |
| Nom. converter output ($P_{NINV}$) [W] | 6000 | 5000 | 4000 | -- |
| Max. apparent power [VA] | 6600 | 5500 | 4400 | -- |
| | | | | |

**Efficiency measurement conditions test results**

**R3-4K**

| Input voltage [Vdc] | | Power in [W] | | | | |
|---|---|---|---|---|---|---|
| | | **10%** | **25%** | **50%** | **75%** | **100%** |
| | | 400 | 1000 | 2000 | 3000 | 4000 |
| | | **η in [%]** | | | | |
| **$V_{min}$** | 450 | 90,65 | 94,57 | 98,49 | 97,67 | 97,23 |
| **$V_{nominal}$** | 600 | 97,13 | 97,86 | 97,25 | 97,20 | 97,10 |
| **$V_{max\ (90\%\ MPPT)}$** | 850 | 92,09 | 98,08 | 98,53 | 97,84 | 96,45 |




**Note:**

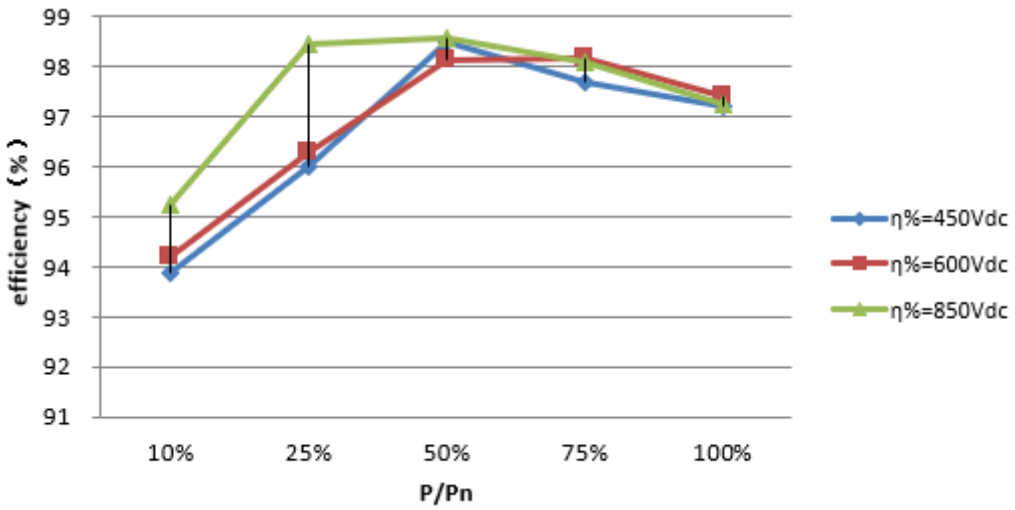
Internal power consumption via auxilary input in standby: 16W (Input: 0V, 0A; Output: 230V, 69,7mA)

Internal power consumption via auxilary input at maximum output power: 1,4W

**Efficiency measurement conditions test results**

**R3-5K**

| Input voltage [Vdc] | | Power in [W] | | | | |
|---|---|---|---|---|---|---|
| | | **10%** | **25%** | **50%** | **75%** | **100%** |
| | | 500 | 1250 | 2500 | 3750 | 5000 |
| | | **η in [%]** | | | | |
| $V_{min}$ | 450 | 93,89 | 95,99 | 98,49 | 97,70 | 97,21 |
| $V_{nominal}$ | 600 | 94,20 | 96,30 | 98,11 | 98,15 | 97,40 |
| $V_{max\ (90\%\ MPPT)}$ | 850 | 95,22 | 98,43 | 98,55 | 98,09 | 97,25 |




**Note:**

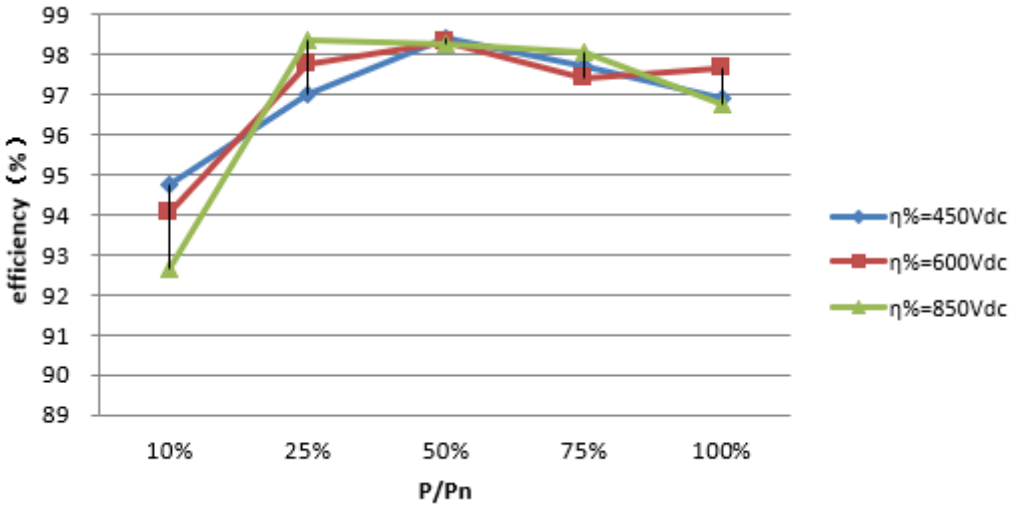
Internal power consumption via auxilary input in standby: 16W (Input: 0V, 0A; Output: 230V, 69,7mA)

Internal power consumption via auxilary input at maximum output power: 1,4W

**Efficiency measurement conditions test results**

**R3-6K**

| Input voltage [Vdc] | | Power in [W] | | | | |
|---|---|---|---|---|---|---|
| | | **10%** | **25%** | **50%** | **75%** | **100%** |
| | | 600 | 1500 | 3000 | 4500 | 6000 |
| | | **η in [%]** | | | | |
| **$V_{min}$** | 450 | 94,73 | 97,00 | 98,42 | 97,71 | 96,92 |
| **$V_{nominal}$** | 600 | 94,05 | 97,75 | 98,31 | 97,40 | 97,67 |
| **$V_{max\ (90\%\ MPPT)}$** | 850 | 92,66 | 98,36 | 98,27 | 98,06 | 96,74 |




**Note:**

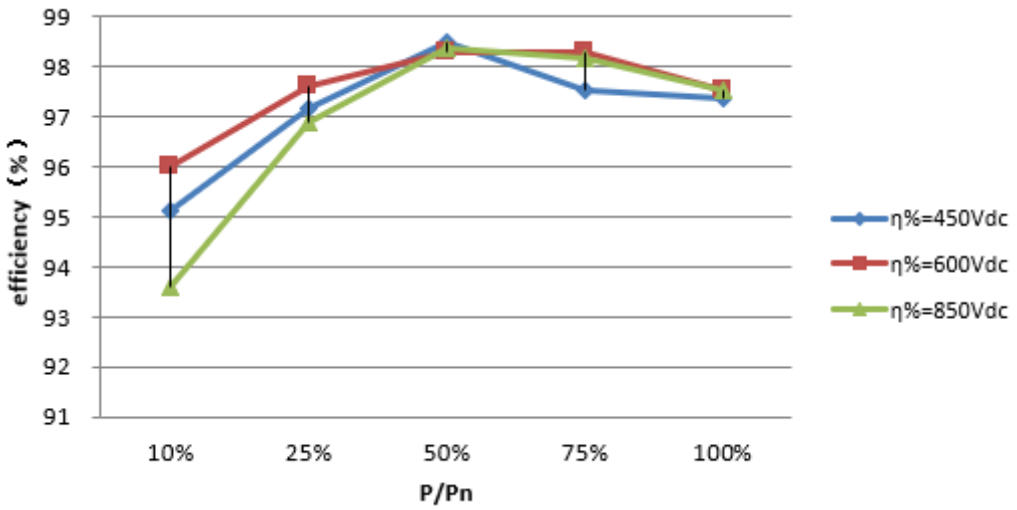
Internal power consumption via auxilary input in standby: 16W (Input: 0V, 0A; Output: 230V, 69,7mA)

Internal power consumption via auxilary input at maximum output power: 1,4W

**Efficiency measurement conditions test results**

**R3-8K**

| Input voltage [Vdc] | | Power in [W] | | | | |
|---|---|---|---|---|---|---|
| | | **10%** | **25%** | **50%** | **75%** | **100%** |
| | | 800 | 2000 | 4000 | 6000 | 8000 |
| | | **η in [%]** | | | | |
| $V_{min}$ | 450 | 95,12 | 97,16 | 98,49 | 97,54 | 97,36 |
| $V_{nominal}$ | 600 | 95,98 | 97,60 | 98,28 | 98,28 | 97,51 |
| $V_{max\ (90\%\ MPPT)}$ | 850 | 93,58 | 96,88 | 98,37 | 98,16 | 97,53 |




**Note:**

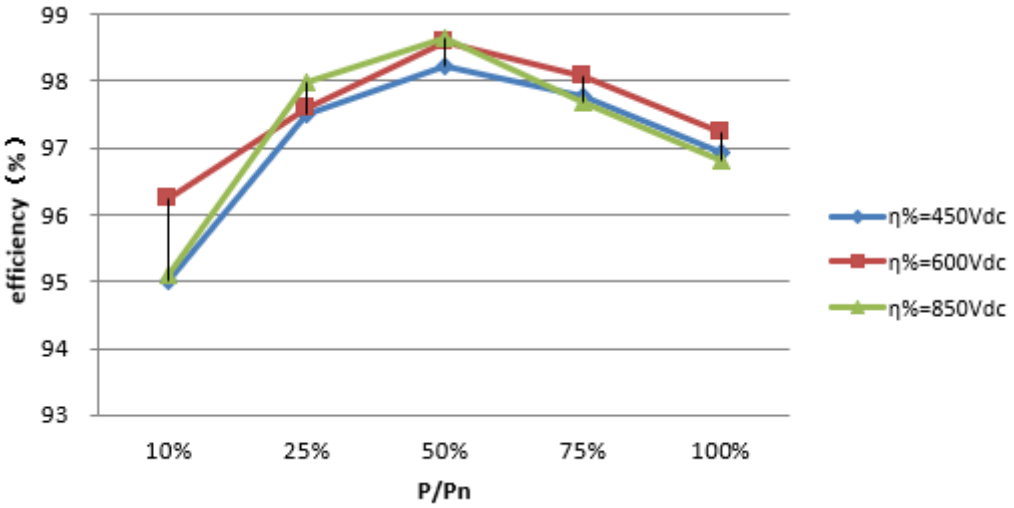
Internal power consumption via auxilary input in standby: 16W (Input: 0V, 0A; Output: 230V, 69,7mA)

Internal power consumption via auxilary input at maximum output power: 1,4W

**Efficiency measurement conditions test results**

**R3-10K**

| Input voltage [Vdc] | | Power in [W] | | | | |
|---|---|---|---|---|---|---|
| | | **10%** | **25%** | **50%** | **75%** | **100%** |
| | | 1000 | 2500 | 5000 | 7500 | 10000 |
| | | **η in [%]** | | | | |
| **$V_{min}$** | 450 | 95,01 | 97,51 | 98,22 | 97,78 | 96,92 |
| **$V_{nominal}$** | 600 | 96,23 | 97,60 | 98,58 | 98,06 | 97,22 |
| **$V_{max\ (90\%\ MPPT)}$** | 850 | 95,10 | 97,98 | 98,65 | 97,67 | 96,81 |




**Note:**

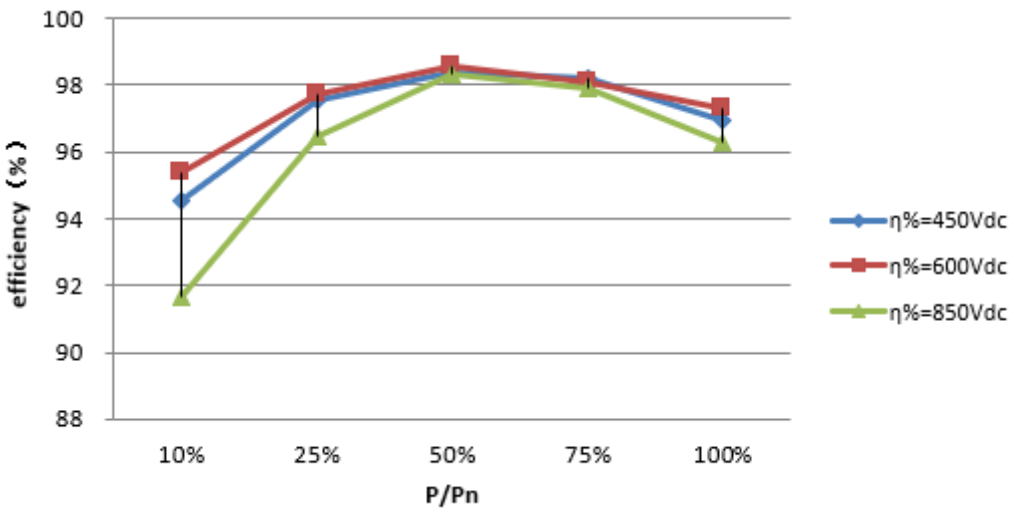
Internal power consumption via auxilary input in standby: 16W (Input: 0V, 0A; Output: 230V, 69,7mA)

Internal power consumption via auxilary input at maximum output power: 1,4W

**Efficiency measurement conditions test results**

**R3-10K-A**

| Input voltage [Vdc] | | Power in [W] | | | | |
|---|---|---|---|---|---|---|
| | | **10%** | **25%** | **50%** | **75%** | **100%** |
| | | 1000 | 2500 | 5000 | 7500 | 10000 |
| | | **η in [%]** | | | | |
| $V_{min}$ | 450 | 94,52 | 97,54 | 98,38 | 98,23 | 96,97 |
| $V_{nominal}$ | 600 | 95,38 | 97,74 | 98,58 | 98,06 | 97,30 |
| $V_{max\ (90\%\ MPPT)}$ | 850 | 91,67 | 96,48 | 98,30 | 97,91 | 96,26 |




**Note:**

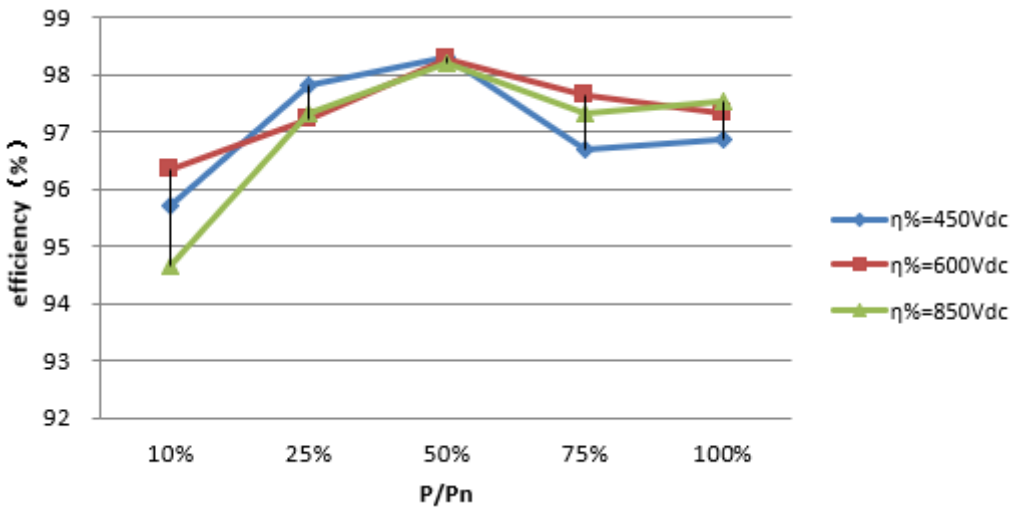
Internal power consumption via auxilary input in standby: 16W (Input: 0V, 0A; Output: 230V, 69,7mA)

Internal power consumption via auxilary input at maximum output power: 1,4W

**Efficiency measurement conditions test results**

**R3-12K**

| Input voltage [Vdc] | | Power in [W] | | | | |
|---|---|---|---|---|---|---|
| | | **10%** | **25%** | **50%** | **75%** | **100%** |
| | | 1200 | 3000 | 6000 | 9000 | 12000 |
| | | **η in [%]** | | | | |
| **$V_{min}$** | 450 | 95,70 | 97,80 | 98,29 | 96,69 | 96,86 |
| **$V_{nominal}$** | 600 | 96,33 | 97,22 | 98,27 | 97,63 | 97,31 |
| **$V_{max\ (90\%\ MPPT)}$** | 850 | 94,67 | 97,33 | 98,18 | 97,33 | 97,54 |




**Note:**

Internal power consumption via auxilary input in standby: 16W (Input: 0V, 0A; Output: 230V, 69,7mA)

Internal power consumption via auxilary input at maximum output power: 1,4W