



Konformitätsnachweis für Erzeugungseinheiten

Hersteller **FRONIUS International GmbH**
Günter Fronius Straße 1, 4600 Wels-Thalheim
AUSTRIA

Erzeugungseinheit **Netzgekoppelter Photovoltaikwechselrichter**

| Typ Erzeugungseinheit | Nennwirkleistung | Nennscheinleistung | Bemessungsspannung |
|-----------------------|------------------|--------------------|---------------------|
| SYMO 3.0-3-S | 3000 W | 3000 VA | 3/N/PE AC 400/230 V |
| SYMO 3.7-3-S | 3700 W | 3700 VA | |
| SYMO 4.5-3-S | 4500 W | 4500 VA | |

Weitere Informationen Die Typen der Erzeugungseinheit sind bezüglich des Erzeugungs- und Einspeiseverhaltens identisch aufgebaut.

Siehe Anlage

Firmwareversion SymoPS V0.0.5.8 ; RECERBO V0.1.1.4 ; SymoFIL V0.0.3.6;

Netzanschlussregel VDE-AR-N 4105:2011-08
Erzeugungsanlagen am Niederspannungsnetz -
Technische Mindestanforderungen für Anschluss und Parallelbetrieb
von Erzeugungsanlagen am Niederspannungsnetz

Prüfgrundlage DIN VDE V 0124-100 (VDE V 0124-100):2012-07
Netzintegration von Erzeugungsanlagen - Niederspannung -
Prüfanforderungen an Erzeugungseinheiten vorgesehen zum
Anschluss und Parallelbetrieb am Niederspannungsnetz

Prüfbericht 5001204-3971-0004/186824 vom 2013-09-23

ID Nummer 40038445

Dieser Konformitätsnachweis bestätigt, dass die oben bezeichneten Erzeugungseinheiten den Anforderungen der Netzanschlussregel VDE-AR-N 4105:2011-08 und der Norm DIN VDE V 0124-100 (VDE V 0124-100):2012-07 erfüllt.

- Nachweis zulässiger Netzurückwirkungen
- Nachweis des Symmetrieverhaltens von Drehstromumrichter-Einheiten
- Nachweis des Verhalten der Erzeugungseinheit am Netz

Dieser Konformitätsnachweis beinhaltet folgende Angaben:

- technische Daten der Erzeugungseinheit, der eingesetzten Hilfseinrichtungen und der verwendeten Softwareversion;
- den schematischen Aufbau der Erzeugungseinheit;
- zusammengefasste Angaben zu den Eigenschaften der Erzeugungseinheit (Wirkungsweise).

Dieser Konformitätsnachweis berechtigt nicht zur Nutzung eines markenrechtlich geschützten Zeichens des VDE.

VDE Prüf- und Zertifizierungsinstitut GmbH
Zertifizierungsstelle

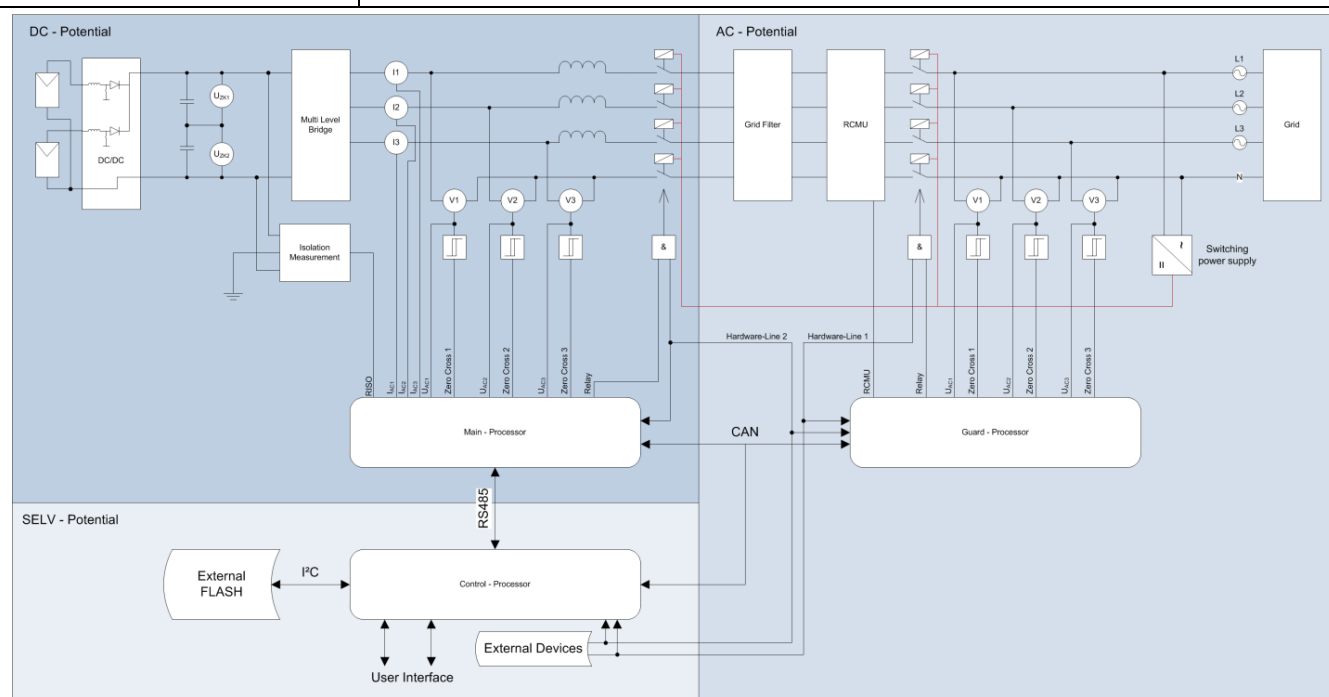
28.04.2014

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Beschreibung der Erzeugungseinheit

| | | | |
|-----------------------|--|--------------|--------------|
| Hersteller | FRONIUS International GmbH Günter Fronius Straße 1 4600 Wels-Thalheim AUSTRIA | | |
| Typ Erzeugungseinheit | Netzgekoppelter Photovoltaikwechselrichter | | |
| Bemessungswerte | SYMO 3.0-3-S | SYMO 3.7-3-S | SYMO 4.5-3-S |
| Nennwirkleistung | 3000 W | 3700 W | 4500 W |
| Nennscheinleistung | 3000 VA | 3700 VA | 4500 VA |
| Bemessungsspannung | 3/N/PE AC 400/230 V | | |
| Firmware Version | SymoPS V0.0.5.8 ; RECERBO V0.1.1.4 ; SymoFIL V0.0.3.6; | | |
| Messzeitraum | 08.07.2013 bis 23.07.2013 | | |


Schematischer Aufbau der Erzeugungseinheit (EZE)

Die Modelle **Fronius SYMO 3.0-3-S**, **SYMO 3.7-3-S** und **SYMO 4.5-3-S** sind bezüglich des Erzeugungs- und Einspeiseverhaltens identisch aufgebaut. Sie unterscheiden sich nur in der Softwarebegrenzung der maximalen Wirkleistung.

Die Prüfungen wurden am Typ **Fronius SYMO 4.5-3-S** durchgeführt und sind stellvertretend für die Geräte **Fronius SYMO 3.0-3-S, SYMO 3.7-3-S und SYMO 4.5-3-S** gültig.

Wirkleistung; DIN VDE V 0124-100:2012-07; 5.3.2.1

| | |
|---------------------------------------|-----------|
| Maximale Wirkleistung $P_{E_{max}}$ | -4,574 kW |
| Maximale Scheinleistung $S_{E_{max}}$ | 4,587 kVA |

Blindleistungsbezug; DIN VDE V 0124-100:2012-07; 5.3.2.1

| | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
| Wirkleistung P / Pn [%] | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| Maximale möglicher $\cos \varphi$ untererregt | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | -0,701 |
| Maximale möglicher $\cos \varphi$ übererregt | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | -0,695 |

Einhaltung eines fest vorgegeben Verschiebungsfaktor $\cos \varphi$ DIN VDE V 0124-100:2012-07; 5.3.6.1

| | | | | | |
|---------------------------------|----------------------|----------------------|--------|----------------------|----------------------|
| Vorgabe in der Anlagesteuerung | -0,900 _{üb} | -0,950 _{üb} | -1,000 | -0,950 _{un} | -0,900 _{un} |
| Messwert an den Klemmen der EZE | -0,895 | N/A | N/A | N/A | -0,901 |

Blindleistungsübergangsfunktion – Standard- $\cos \varphi$ (P)-Kennlinie; DIN VDE V 0124-100:2012-07; 5.3.6.4

| | | | | | | | | | | |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Wirkleistung P / Pn [%] | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| $\cos \varphi$ | -1,000 | -1,000 | -1,000 | -1,000 | -1,000 | -0,982 | -0,965 | -0,947 | -0,929 | -0,909 |

Die Standard- $\cos \varphi$ -(P)-Kennlinie wird eingehalten

Schalthandlungen; Schnelle Spannungsänderungen; DIN VDE V 0124-100:2012-07; 5.1.2

| | | |
|---|------------------------------------|-------|
| Einschalten ohne Vorgabe (zum Primärenergieträgers) | k_i | 0,94 |
| Ungünstigster Fall | k_i | 1,08 |
| Einschalten bei Nennbedingungen (des Primärenergie-trägers) | k_i | 1,06 |
| Ausschalten bei Nennleistung | k_i | 1,13 |
| Schlechtester Wert aller Schaltvorgänge | $k_{i_{max}}$ | 1,13 |
| Flicker (worst case) | Netzimpedanzwinkel ψ_k : | 32° |
| | Anlagenflickerbeiwert c_{ψ} : | 27,41 |

Oberschwingungsmessungen (Harmonics) nach EN 61000-3-12 und VDE-AR-N 4105:2011-08 Anhang F.3 (Phase L1);

| Harmonic Order | I_H_mean | I_H_max | I_H_mean | (Average/Ref Fund) ² | n*(Average/Ref Fund) ² | I_H_max | Stage 1 Limit (EN 61000-3-12) | PASS /FAIL |
|----------------|----------|---------|----------|---------------------------------|-----------------------------------|---------|-------------------------------|------------|
| | (A) | (A) | (%H01) | | | (%H01) | | |
| 1 | 6.6183 | 6.6439 | 100.00% | | | 100.00% | Inf% | N/A |
| 2 | 0.0355 | 0.0585 | 0.54% | 3.46E-05 | | 0.89% | 4.00% | P |
| 3 | 0.0642 | 0.0743 | 0.97% | 9.49E-05 | | 1.12% | 21.60% | P |
| 4 | 0.0142 | 0.0239 | 0.22% | 5.47E-06 | | 0.36% | 2.00% | P |
| 5 | 0.0935 | 0.1007 | 1.41% | 2.00E-04 | | 1.52% | 10.70% | P |
| 6 | 0.008 | 0.0152 | 0.12% | 1.79E-06 | | 0.23% | 1.30% | P |
| 7 | 0.0351 | 0.0447 | 0.53% | 2.85E-05 | | 0.67% | 7.20% | P |
| 8 | 0.0058 | 0.0138 | 0.09% | 9.21E-07 | | 0.21% | 1.00% | P |
| 9 | 0.0509 | 0.0548 | 0.77% | 5.93E-05 | | 0.83% | 3.80% | P |
| 10 | 0.0048 | 0.0108 | 0.07% | 6.30E-07 | | 0.16% | 0.80% | P |
| 11 | 0.0378 | 0.0452 | 0.57% | 3.28E-05 | | 0.68% | 3.10% | P |
| 12 | 0.004 | 0.0082 | 0.06% | 4.35E-07 | | 0.12% | 0.70% | P |
| 13 | 0.0423 | 0.0497 | 0.64% | 4.11E-05 | | 0.75% | 2.00% | P |
| 14 | 0.0037 | 0.0089 | 0.06% | 3.88E-07 | 5.43E-06 | 0.14% | Inf% | N/A |
| 15 | 0.0293 | 0.0325 | 0.44% | 1.96E-05 | 2.93E-04 | 0.49% | Inf% | N/A |
| 16 | 0.0032 | 0.0071 | 0.05% | 2.70E-07 | 4.33E-06 | 0.11% | Inf% | N/A |
| 17 | 0.0308 | 0.0356 | 0.47% | 2.17E-05 | 3.69E-04 | 0.54% | Inf% | N/A |
| 18 | 0.0028 | 0.0062 | 0.04% | 2.15E-07 | 3.86E-06 | 0.09% | Inf% | N/A |
| 19 | 0.0179 | 0.0206 | 0.27% | 7.33E-06 | 1.39E-04 | 0.31% | Inf% | N/A |
| 20 | 0.0026 | 0.0048 | 0.04% | 1.90E-07 | 3.80E-06 | 0.07% | Inf% | N/A |
| 21 | 0.0182 | 0.0198 | 0.28% | 7.61E-06 | 1.60E-04 | 0.30% | Inf% | N/A |
| 22 | 0.0022 | 0.0041 | 0.03% | 1.31E-07 | 2.89E-06 | 0.06% | Inf% | N/A |
| 23 | 0.0099 | 0.0131 | 0.15% | 2.27E-06 | 5.22E-05 | 0.20% | Inf% | N/A |
| 24 | 0.0021 | 0.0038 | 0.03% | 1.26E-07 | 3.03E-06 | 0.06% | Inf% | N/A |
| 25 | 0.0128 | 0.0147 | 0.19% | 3.76E-06 | 9.41E-05 | 0.22% | Inf% | N/A |
| 26 | 0.0021 | 0.004 | 0.03% | 1.25E-07 | 3.25E-06 | 0.06% | Inf% | N/A |
| 27 | 0.0023 | 0.0041 | 0.04% | 1.37E-07 | 3.70E-06 | 0.06% | Inf% | N/A |
| 28 | 0.0018 | 0.0036 | 0.03% | 8.66E-08 | 2.42E-06 | 0.05% | Inf% | N/A |
| 29 | 0.0094 | 0.0118 | 0.14% | 2.06E-06 | 5.96E-05 | 0.18% | Inf% | N/A |
| 30 | 0.002 | 0.0038 | 0.03% | 1.06E-07 | 3.18E-06 | 0.06% | Inf% | N/A |
| 31 | 0.0064 | 0.0079 | 0.10% | 9.31E-07 | 2.89E-05 | 0.12% | Inf% | N/A |
| 32 | 0.002 | 0.0038 | 0.03% | 1.09E-07 | 3.50E-06 | 0.06% | Inf% | N/A |
| 33 | 0.0034 | 0.0046 | 0.05% | 2.75E-07 | 9.07E-06 | 0.07% | Inf% | N/A |
| 34 | 0.0017 | 0.0034 | 0.03% | 8.09E-08 | 2.75E-06 | 0.05% | Inf% | N/A |
| 35 | 0.0086 | 0.0105 | 0.13% | 1.72E-06 | 6.02E-05 | 0.16% | Inf% | N/A |
| 36 | 0.0019 | 0.0037 | 0.03% | 9.45E-08 | 3.40E-06 | 0.06% | Inf% | N/A |
| 37 | 0.0043 | 0.0059 | 0.07% | 4.33E-07 | 1.60E-05 | 0.09% | Inf% | N/A |
| 38 | 0.0018 | 0.0035 | 0.03% | 9.01E-08 | 3.42E-06 | 0.05% | Inf% | N/A |
| 39 | 0.0074 | 0.0086 | 0.11% | 1.25E-06 | 4.86E-05 | 0.13% | Inf% | N/A |
| 40 | 0.0016 | 0.0031 | 0.03% | 7.02E-08 | 2.81E-06 | 0.05% | Inf% | N/A |
| THD(%) | | | | 2.40% | | | 23.00% | P |
| PWHD(%) | | | | | 3.70% | | 23.00% | P |

Oberschwingungsmessungen (Harmonics) nach EN 61000-3-12 und VDE-AR-N 4105:2011-08 Anhang F.3 (Phase L2);

| Harmonic Order | I_H_mean | I_H_max | I_H_mean | (Average/Ref Fund) ² | n*(Average/Ref Fund) ² | I_H_max | Stage 1 Limit (EN 61000-3-12) | PASS /FAIL |
|----------------|----------|---------|----------|---------------------------------|-----------------------------------|---------|-------------------------------|------------|
| | (A) | (A) | (%H01) | | | (%H01) | | |
| 1 | 6.6788 | 6.7038 | 100.00% | | | 100.00% | Inf% | N/A |
| 2 | 0.0321 | 0.0508 | 0.48% | 2.46E-05 | | 0.76% | 4.00% | P |
| 3 | 0.0178 | 0.0368 | 0.27% | 8.60E-06 | | 0.55% | 21.60% | P |
| 4 | 0.0107 | 0.024 | 0.16% | 2.83E-06 | | 0.36% | 2.00% | P |
| 5 | 0.0358 | 0.0449 | 0.54% | 2.89E-05 | | 0.67% | 10.70% | P |
| 6 | 0.0065 | 0.0136 | 0.10% | 1.02E-06 | | 0.20% | 1.30% | P |
| 7 | 0.0305 | 0.0387 | 0.46% | 2.10E-05 | | 0.58% | 7.20% | P |
| 8 | 0.0049 | 0.0146 | 0.07% | 6.23E-07 | | 0.22% | 1.00% | P |
| 9 | 0.0051 | 0.0139 | 0.08% | 6.46E-07 | | 0.21% | 3.80% | P |
| 10 | 0.0046 | 0.0167 | 0.07% | 5.63E-07 | | 0.25% | 0.80% | P |
| 11 | 0.0138 | 0.0225 | 0.21% | 4.34E-06 | | 0.34% | 3.10% | P |
| 12 | 0.0033 | 0.0101 | 0.05% | 2.88E-07 | | 0.15% | 0.70% | P |
| 13 | 0.0108 | 0.0163 | 0.16% | 2.65E-06 | | 0.24% | 2.00% | P |
| 14 | 0.0037 | 0.0128 | 0.06% | 3.58E-07 | 5.01E-06 | 0.19% | Inf% | N/A |
| 15 | 0.0038 | 0.0129 | 0.06% | 3.76E-07 | 5.65E-06 | 0.19% | Inf% | N/A |
| 16 | 0.003 | 0.0124 | 0.05% | 2.55E-07 | 4.08E-06 | 0.19% | Inf% | N/A |
| 17 | 0.0074 | 0.0145 | 0.11% | 1.24E-06 | 2.11E-05 | 0.22% | Inf% | N/A |
| 18 | 0.0022 | 0.0092 | 0.03% | 1.24E-07 | 2.24E-06 | 0.14% | Inf% | N/A |
| 19 | 0.0065 | 0.0085 | 0.10% | 9.52E-07 | 1.81E-05 | 0.13% | Inf% | N/A |
| 20 | 0.0021 | 0.0043 | 0.03% | 1.16E-07 | 2.33E-06 | 0.07% | Inf% | N/A |
| 21 | 0.0031 | 0.0052 | 0.05% | 2.23E-07 | 4.68E-06 | 0.08% | Inf% | N/A |
| 22 | 0.0018 | 0.0035 | 0.03% | 8.09E-08 | 1.78E-06 | 0.05% | Inf% | N/A |
| 23 | 0.007 | 0.0092 | 0.10% | 1.11E-06 | 2.54E-05 | 0.14% | Inf% | N/A |
| 24 | 0.0015 | 0.0031 | 0.02% | 5.82E-08 | 1.40E-06 | 0.05% | Inf% | N/A |
| 25 | 0.0057 | 0.0074 | 0.09% | 7.30E-07 | 1.83E-05 | 0.11% | Inf% | N/A |
| 26 | 0.0017 | 0.0034 | 0.03% | 7.02E-08 | 1.83E-06 | 0.05% | Inf% | N/A |
| 27 | 0.0035 | 0.0052 | 0.05% | 2.76E-07 | 7.44E-06 | 0.08% | Inf% | N/A |
| 28 | 0.0014 | 0.0028 | 0.02% | 5.15E-08 | 1.44E-06 | 0.04% | Inf% | N/A |
| 29 | 0.0064 | 0.0087 | 0.10% | 9.42E-07 | 2.73E-05 | 0.13% | Inf% | N/A |
| 30 | 0.0014 | 0.003 | 0.02% | 5.17E-08 | 1.55E-06 | 0.05% | Inf% | N/A |
| 31 | 0.0043 | 0.0056 | 0.06% | 4.14E-07 | 1.28E-05 | 0.08% | Inf% | N/A |
| 32 | 0.0015 | 0.0031 | 0.02% | 5.69E-08 | 1.82E-06 | 0.05% | Inf% | N/A |
| 33 | 0.0035 | 0.0053 | 0.05% | 2.79E-07 | 9.22E-06 | 0.08% | Inf% | N/A |
| 34 | 0.0013 | 0.0027 | 0.02% | 4.44E-08 | 1.51E-06 | 0.04% | Inf% | N/A |
| 35 | 0.0055 | 0.008 | 0.08% | 7.11E-07 | 2.49E-05 | 0.12% | Inf% | N/A |
| 36 | 0.0014 | 0.0029 | 0.02% | 5.04E-08 | 1.81E-06 | 0.04% | Inf% | N/A |
| 37 | 0.0032 | 0.0046 | 0.05% | 2.35E-07 | 8.68E-06 | 0.07% | Inf% | N/A |
| 38 | 0.0013 | 0.0025 | 0.02% | 4.16E-08 | 1.58E-06 | 0.04% | Inf% | N/A |
| 39 | 0.0035 | 0.0047 | 0.05% | 2.83E-07 | 1.11E-05 | 0.07% | Inf% | N/A |
| 40 | 0.0011 | 0.0025 | 0.02% | 3.27E-08 | 1.31E-06 | 0.04% | Inf% | N/A |
| THD(%) | | | | 1.00% | | | 23.00% | P |
| PWHD(%) | | | | | 1.50% | | 23.00% | P |

Oberschwingungsmessungen (Harmonics) nach EN 61000-3-12 und VDE-AR-N 4105:2011-08 Anhang F.3 (Phase L3);

| Harmonic Order | I_H_mean | I_H_max | I_H_mean | (Average/Ref Fund) ² | n*(Average/Ref Fund) ² | I_H_max | Stage 1 Limit (EN 61000-3-12) | PASS /FAIL |
|----------------|----------|---------|----------|---------------------------------|-----------------------------------|---------|-------------------------------|------------|
| | (A) | (A) | (%H01) | | | (%H01) | | |
| 1 | 6.6437 | 6.6646 | 100.00% | | | 100.00% | Inf% | N/A |
| 2 | 0.0268 | 0.0486 | 0.40% | 1.86E-05 | | 0.73% | 4.00% | P |
| 3 | 0.0177 | 0.0252 | 0.27% | 7.30E-06 | | 0.38% | 21.60% | P |
| 4 | 0.0103 | 0.0207 | 0.16% | 2.65E-06 | | 0.31% | 2.00% | P |
| 5 | 0.0431 | 0.0515 | 0.65% | 4.23E-05 | | 0.77% | 10.70% | P |
| 6 | 0.0065 | 0.014 | 0.10% | 1.14E-06 | | 0.21% | 1.30% | P |
| 7 | 0.0239 | 0.0306 | 0.36% | 1.30E-05 | | 0.46% | 7.20% | P |
| 8 | 0.0044 | 0.0085 | 0.07% | 4.95E-07 | | 0.13% | 1.00% | P |
| 9 | 0.0049 | 0.0117 | 0.07% | 6.10E-07 | | 0.18% | 3.80% | P |
| 10 | 0.0033 | 0.0089 | 0.05% | 2.88E-07 | | 0.13% | 0.80% | P |
| 11 | 0.0147 | 0.019 | 0.22% | 4.98E-06 | | 0.29% | 3.10% | P |
| 12 | 0.0037 | 0.0095 | 0.06% | 3.42E-07 | | 0.14% | 0.70% | P |
| 13 | 0.0097 | 0.0137 | 0.15% | 2.18E-06 | | 0.21% | 2.00% | P |
| 14 | 0.0027 | 0.0077 | 0.04% | 1.93E-07 | 2.70E-06 | 0.12% | Inf% | N/A |
| 15 | 0.0033 | 0.0078 | 0.05% | 2.70E-07 | 4.05E-06 | 0.12% | Inf% | N/A |
| 16 | 0.0025 | 0.0074 | 0.04% | 1.62E-07 | 2.59E-06 | 0.11% | Inf% | N/A |
| 17 | 0.0067 | 0.0109 | 0.10% | 1.03E-06 | 1.74E-05 | 0.16% | Inf% | N/A |
| 18 | 0.0023 | 0.0055 | 0.03% | 1.37E-07 | 2.46E-06 | 0.08% | Inf% | N/A |
| 19 | 0.0072 | 0.0092 | 0.11% | 1.18E-06 | 2.24E-05 | 0.14% | Inf% | N/A |
| 20 | 0.0018 | 0.0037 | 0.03% | 7.88E-08 | 1.58E-06 | 0.06% | Inf% | N/A |
| 21 | 0.0023 | 0.004 | 0.04% | 1.29E-07 | 2.71E-06 | 0.06% | Inf% | N/A |
| 22 | 0.0017 | 0.0036 | 0.03% | 7.04E-08 | 1.55E-06 | 0.05% | Inf% | N/A |
| 23 | 0.0057 | 0.0072 | 0.09% | 7.39E-07 | 1.70E-05 | 0.11% | Inf% | N/A |
| 24 | 0.0018 | 0.0035 | 0.03% | 8.06E-08 | 1.93E-06 | 0.05% | Inf% | N/A |
| 25 | 0.008 | 0.0106 | 0.12% | 1.47E-06 | 3.67E-05 | 0.16% | Inf% | N/A |
| 26 | 0.0015 | 0.0029 | 0.02% | 5.58E-08 | 1.45E-06 | 0.04% | Inf% | N/A |
| 27 | 0.0017 | 0.0035 | 0.03% | 7.18E-08 | 1.94E-06 | 0.05% | Inf% | N/A |
| 28 | 0.0014 | 0.0031 | 0.02% | 4.72E-08 | 1.32E-06 | 0.05% | Inf% | N/A |
| 29 | 0.0049 | 0.0067 | 0.07% | 5.50E-07 | 1.60E-05 | 0.10% | Inf% | N/A |
| 30 | 0.0015 | 0.0027 | 0.02% | 5.58E-08 | 1.68E-06 | 0.04% | Inf% | N/A |
| 31 | 0.0067 | 0.0089 | 0.10% | 1.04E-06 | 3.24E-05 | 0.13% | Inf% | N/A |
| 32 | 0.0014 | 0.0028 | 0.02% | 5.20E-08 | 1.66E-06 | 0.04% | Inf% | N/A |
| 33 | 0.0016 | 0.0033 | 0.03% | 6.58E-08 | 2.17E-06 | 0.05% | Inf% | N/A |
| 34 | 0.0014 | 0.0028 | 0.02% | 4.81E-08 | 1.63E-06 | 0.04% | Inf% | N/A |
| 35 | 0.0036 | 0.0056 | 0.06% | 3.12E-07 | 1.09E-05 | 0.08% | Inf% | N/A |
| 36 | 0.0013 | 0.0028 | 0.02% | 4.25E-08 | 1.53E-06 | 0.04% | Inf% | N/A |
| 37 | 0.0059 | 0.0083 | 0.09% | 7.94E-07 | 2.94E-05 | 0.13% | Inf% | N/A |
| 38 | 0.0013 | 0.003 | 0.02% | 4.46E-08 | 1.69E-06 | 0.05% | Inf% | N/A |
| 39 | 0.0015 | 0.0028 | 0.02% | 5.76E-08 | 2.24E-06 | 0.04% | Inf% | N/A |
| 40 | 0.0012 | 0.0031 | 0.02% | 3.83E-08 | 1.53E-06 | 0.05% | Inf% | N/A |
| THD(%) | | | | 1.00% | | | 23.00% | P |
| PWHD(%) | | | | | 1.50% | | 23.00% | P |