

HFG04 Harmonic and Flicker Signal Source

For IEC / EN 61000-3-2 Harmonic Current and IEC / EN 61000-3-3 Measurement-System Verification

HFG04 provides repeatable harmonic load patterns and controlled flicker disturbances for checking harmonic and flicker measurement systems. It supports steady-state and fluctuating multi-harmonic load modes, harmonic content up to the 40th harmonic from 50 Hz to 2 kHz, plus 1 Hz and 8.33 Hz flicker disturbance modes for EMC laboratory verification.



HFG04 front panel and load connection side

Key Specifications

Item	Specification
Model	HFG04
Primary use	Verification of harmonic and flicker analyzers and measurement systems
Harmonic reference	IEC / EN 61000-3-2; GB/T 17625.1
Flicker reference	IEC / EN 61000-3-3; GB/T 17625.2
Harmonic modes	Steady-state and fluctuating multi-harmonic load modes
Harmonic range	Up to the 40th harmonic, 50 Hz to 2 kHz
Flicker modes	1 Hz and 8.33 Hz disturbance modes
Device power	DC 12 V, 2 A
Dimensions / Weight	160 x 330 x 250 mm; 5.2 kg

Additional Product Views



Top angle

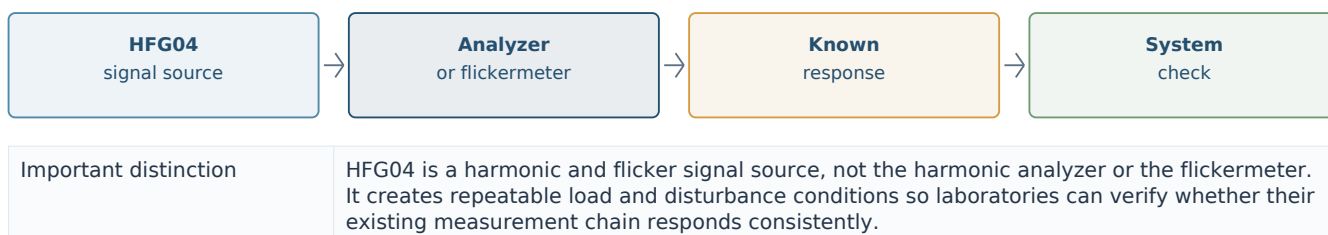


Left angle



Right angle

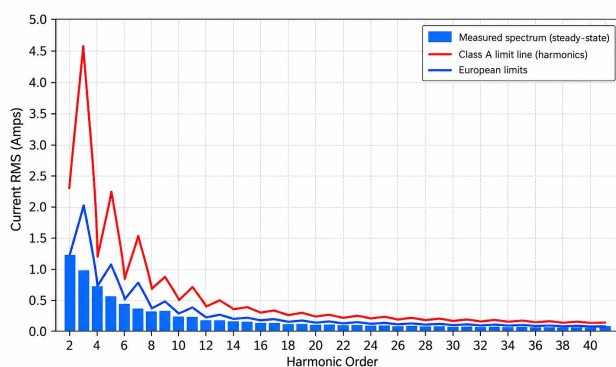
Verification Role



Harmonic Verification

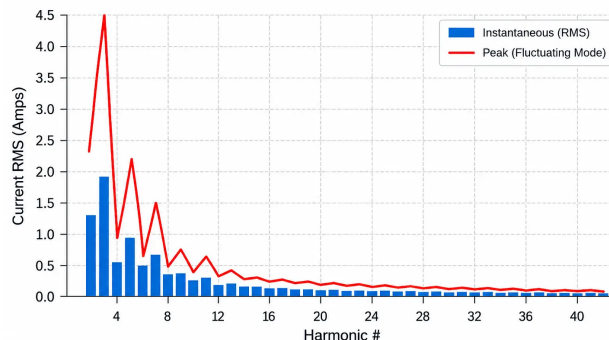
Mode	THC	I-THD	I RMS	Power Factor	Example result
HARMONIC SS	1.977 A	136.8%	2.483 A	0.420	IEC 61000-3-2 Class A example: Fail
HARMONIC FLUCT	1.844 A	62.4%	4.122 A	0.752	Dynamic verification example

Steady-State Harmonic Spectrum – HFG04 Harmonic and Flicker Signal Source
Harmonic content up to the 40th harmonic (Class A limit line and European limits)



Steady-state harmonic spectrum to 40th harmonic

HFG04 Harmonic and Flicker Signal Source
Fluctuating-Mode Harmonic Spectrum (Typical)

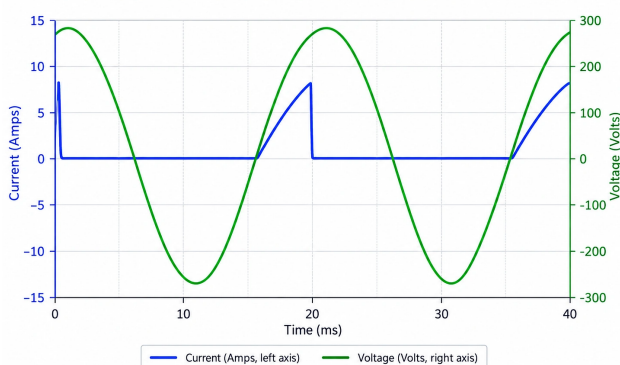


Test result: **Fail** | Worst harmonics H2 – 90.0% of 150% limit, H2 – 139.1% of 100% limit

Fluctuating harmonic spectrum

Steady-State Harmonic Mode Waveforms

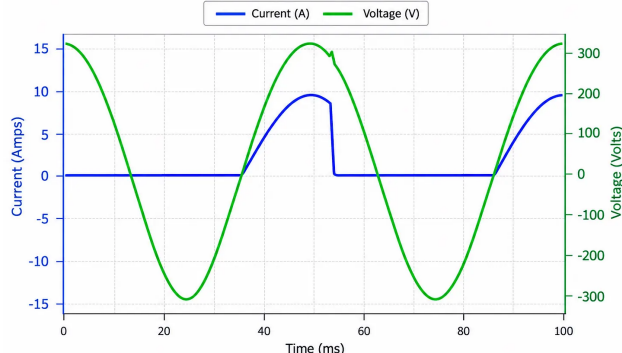
Current and voltage waveforms – HFG04 Harmonic and Flicker Signal Source



Steady-state current / voltage waveform

Fluctuating Harmonic Mode Waveform

Typical current and voltage output from the HFG04 Harmonic and Flicker Signal Source



Fluctuating current / voltage waveform

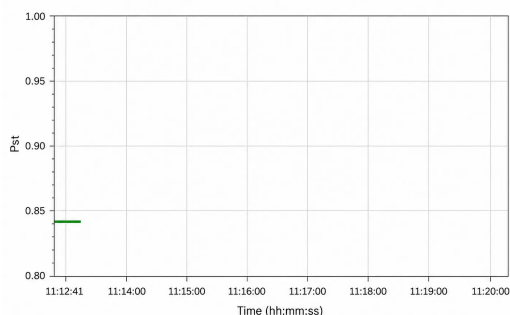
These examples show intentionally distinguishable harmonic verification conditions. They are useful for measurement-chain checks and should not be treated as fixed guaranteed HFG04 output values for every laboratory setup.

Flicker Verification

Disturbance	Vrms	Highest dmax	Pst	Plt	Example status
1 Hz	229.18 V	1.25%	0.839	0.366	Pass example
8.33 Hz	227.35 V	0.74%	1.384	0.605	Pst fail example

Pst Response Under 1 Hz Flicker Condition

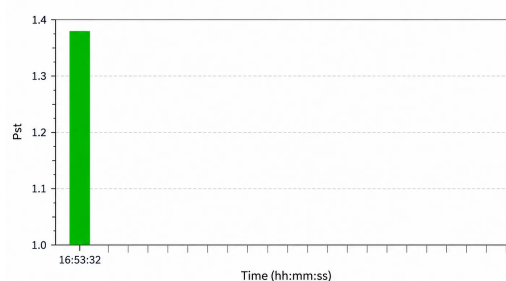
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1 Hz Pst response

Pst Response Under 8.33 Hz Flicker Condition

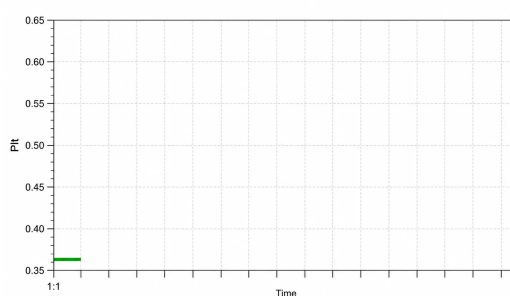
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8.33 Hz Pst response

Plt Response under 1 Hz Flicker Condition

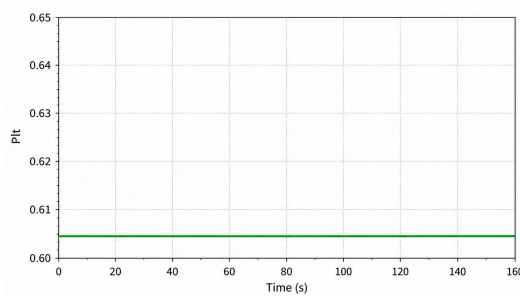
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1 Hz Plt response

Plt Response under 8.33 Hz Flicker Condition

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8.33 Hz Plt response

Typical Laboratory Use

Use case	Engineering value
Intermediate system checks	Repeat an established HFG04 condition between formal calibration intervals to monitor measurement-system consistency.
After maintenance or changes	Compare response before and after analyzer repair, software updates, hardware replacement, wiring changes or relocation.
Troubleshooting abnormal results	Use known harmonic and flicker conditions to separate instrument/setup behavior from the EUT under test.
System comparison	Apply the same condition to two measurement systems to identify response differences under controlled setup assumptions.

Ordering check: confirm the required standard edition, verification procedure, analyzer or flickermeter model, connection method, report requirement, calibration documentation and acceptance criteria before final configuration.