IVG Thermography Report 2025

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Accreditation: ISO/IEC 17025:2017

This document presents the verified thermographic performance of the IVG Smart Max prefilled pod device, quantifying coil temperature stability, dry-hit prevention, and power response consistency under controlled laboratory conditions.

Executive Summary

A total of 50 IVG Smart Max units were tested to evaluate mesh coil heat uniformity and dry-hit reduction rates. Infrared thermography was used to capture temperature gradients under both Eco and Boost operation modes. Results indicate a significant improvement in coil temperature stability, reducing dry-hit incidence from 18% to 5%. Boost mode raised average surface temperature to 220°C ±5°C, achieving a ~40% faster ramp-up compared to baseline devices (mean 1.2 s).

Methodology & Test Setup

Testing was performed in a controlled environment (22°C, 45% RH). Each unit underwent a continuous-use simulation with alternating Eco and Boost cycles for 300 draws. Infrared imaging was captured using a FLIR E95 thermal camera at 30 FPS. All instruments were calibrated under ISO/IEC 17025:2017 requirements. Data analysis focused on thermal uniformity, ramp-up time, and dry-hit detection.

Results & Thermographic Analysis

Parameter	Eco Mode	Boost Mode	Competitor Average
Avg. Coil Temp (°C)	198 ± 4	220 ± 5	207 ± 6
Ramp-up Time (s)	1.2	0.72	1.18
Dry-Hit Incidence (%)	5	5	18
Thermal Uniformity (%)	93	95	82

Across all samples, SS316L mesh coils maintained a consistent heat profile with minimal thermal hotspots. The dry-hit prevention improved significantly, attributed to the mesh geometry's rapid heat diffusion and uniform wicking. Comparative analysis revealed a 15% better uniformity and 40% faster heating performance relative to traditional wire coils.

Discussion & Conclusion

The IVG Smart Max demonstrated stable performance under all test conditions. SS316L mesh material showed superior resistivity control, supporting consistent output voltage regulation. Under continuous Boost cycles, no signs of overheating or thermal degradation were detected. These findings validate Smart Max as a benchmark for thermally efficient prefilled pod devices in 2025.

References

[1] ISO/IEC 17025:2017 — General requirements for the competence of testing and calibration laboratories.
[2] IEC 60335 — Safety standards for electrical appliances.
[3] IVG Internal Thermal Stability Study, 2025.
[4] VapeLab UK Independent Validation Report, #VL2025-SM-UK.