PHANTEKS

Phanteks M25-120 G2

Serial Number 886523003465

Lab ID PH12000182

Certification ID FN25182

Test Result Report ID: 25FN182A

Certificate Issue Date: May 20, 2025

Scheme: PHI

Airflow Rating 



Static Pressure Rating



Aristeidis Bitziopoulos, Certification Body General Manager

SECTION A: Noise Testing Equipment

Test Environment	Hemi-Anechoic Chamber with 6 dB(A) noise floor
Conditions	25(±2) degrees Celsius, 40-50% humidity
Sound Analyzer	Bruel & Kjaer 2270-S G4 & 2250-L G4
Microphone	Bruel & Kjaer Type 4955-A
Mic Calibrator	Bruel & Kjaer Type 4231
Data Logger	Picoscope TC-08
Testing Methodology	Cybenetics Phi Fan Performance Standard

SECTION B: Fan Testing Instrument Technical Specifications

Manufacturer	Long Win Science & Technology Corporation
Model Number	LW-9266
Air Flow Rate	2.4 – 250 CFM
Accuracy of Air Flow Rate	< 3.5% INFS
Repeatability error	< 2%
Static pressure	0-20mmAq (100mmAq with the high static pressure throttle device)
Overall Dimensions	0.7 (W) x 2.2 (L) x 1.6 (H) m
Power Source	220VAC, 5A, Single Phase, 50/60Hz
Based on Standards	ISO 5801-2007, AMCA 210-0, ASHRAE 51-2007, IEC 61591-2005, GB/T 1236-200

SECTION C: PHI Performance Levels

Pressure at 25 dB(A)	P (mmAq)	1.17
Airflow at 25 dB(A)	Q (CFM)	49.81

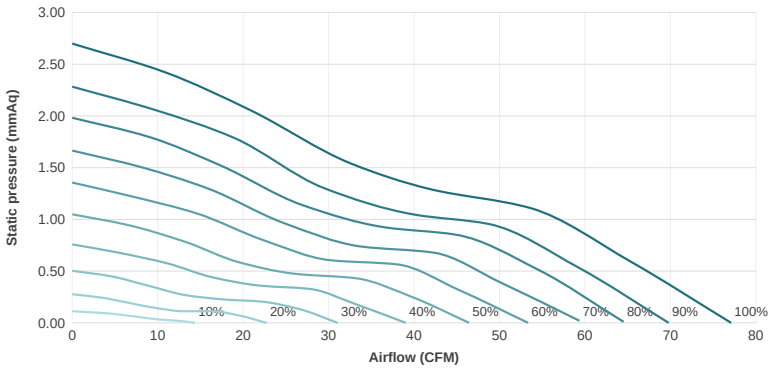
SECTION D: Information about DUT

Product Identification Details	
Brand	Phanteks
Model	M25-120 G2
Serial Number	886523003465
Product Specifications	
Manufacturer-Provided Information	
Bearing	Hydro Dynamic
Connector	PWM
Cable length (mm)	110
Daisy-chain	Cable
RGB Connector	None
RGB Daisy-chain	None
Cybenetics Measurements	
Max Speed (RPM)	1964
Max Airflow (CFM)	77.11
Max Static Pressure (mmAq)	2.70
Max Fan Noise Level (dBA)	38.00
Fan Max Current (A)	0.21
Fan Weight (gr)	164
Dimensions (W x H x D)	120mm x 120mm x 25mm
Cybenetics Testing Information	
Lab ID	PH12000182
Date of receipt	Apr 5, 2025
Testing Date	May 20, 2025
Report Issued Date	May 20, 2025
Engineer Name	Georgios Theodoros Sarimpalas

SECTION E: Long Win LW-9266 - Pressure and Airflow

PQ Chart - All Speeds

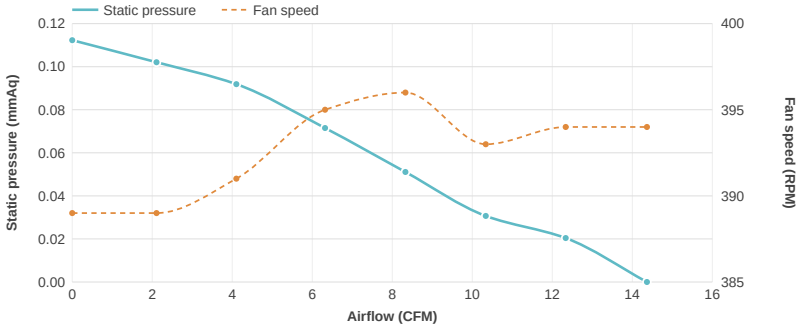
Static pressure against airflow, one curve per speed step



Speed Setting	Max Airflow (CFM)	Max Static Pressure (mmAq)	Fan Speed (RPM)	Max Power (W)
10%	14.37	0.11	389 - 396	0.10
20%	22.74	0.28	616 - 635	0.19
30%	31.07	0.50	839 - 866	0.31
40%	39.03	0.76	1037 - 1077	0.48
50%	46.45	1.05	1217 - 1271	0.70
60%	53.35	1.36	1388 - 1455	0.96
70%	59.36	1.67	1543 - 1617	1.27
80%	64.52	1.98	1676 - 1767	1.63
90%	69.80	2.28	1803 - 1893	2.02
100%	77.11	2.70	1948 - 2063	2.52

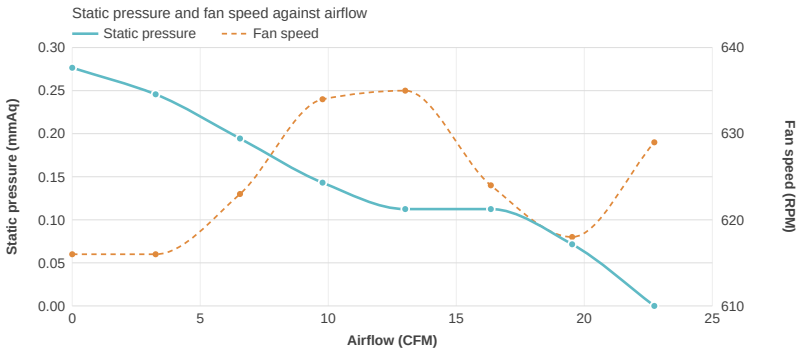
PQ Chart 10%

Static pressure and fan speed against airflow



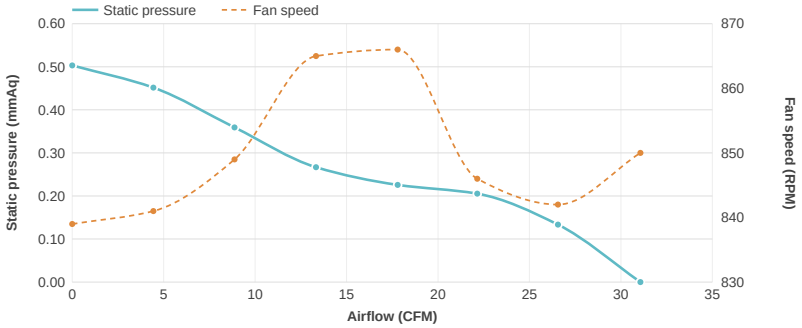
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	0.11	389	0.008	0.10
2.11	0.10	389	0.008	0.10
4.10	0.09	391	0.008	0.10
6.32	0.07	395	0.007	0.08
8.33	0.05	396	0.007	0.08
10.34	0.03	393	0.007	0.08
12.34	0.02	394	0.007	0.08
14.37	0.00	394	0.007	0.08

PQ Chart 20%



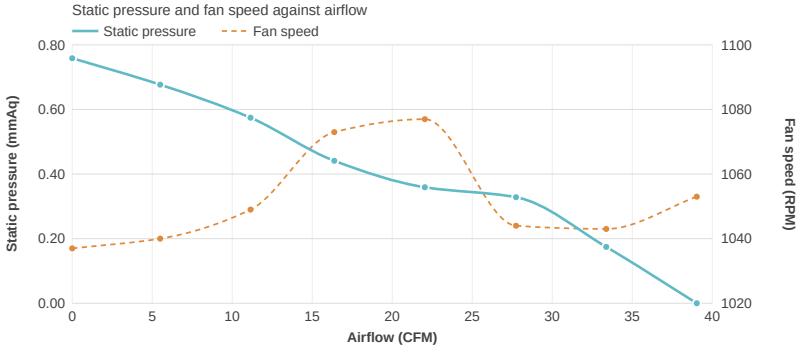
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	0.28	616	0.016	0.19
3.26	0.25	616	0.016	0.19
6.55	0.19	623	0.015	0.18
9.78	0.14	634	0.015	0.18
13.01	0.11	635	0.015	0.18
16.35	0.11	624	0.015	0.18
19.52	0.07	618	0.015	0.18
22.74	0.00	629	0.014	0.17

PQ Chart 30%



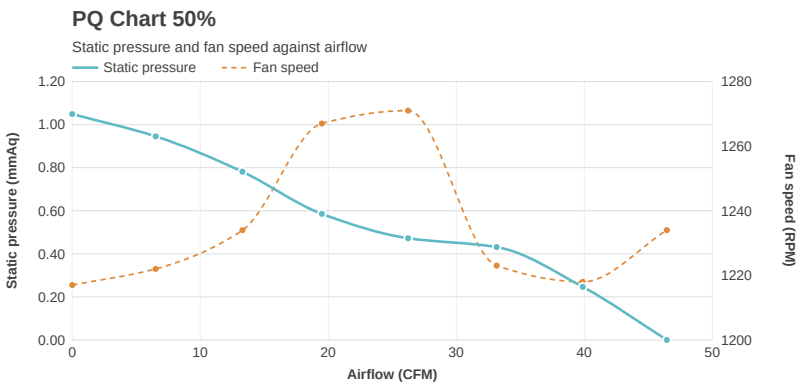
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	0.50	839	0.026	0.31
4.44	0.45	841	0.026	0.31
8.88	0.36	849	0.025	0.30
13.33	0.27	865	0.024	0.29
17.80	0.23	866	0.024	0.29
22.14	0.21	846	0.025	0.30
26.56	0.13	842	0.025	0.30
31.07	0.00	850	0.024	0.29

PQ Chart 40%



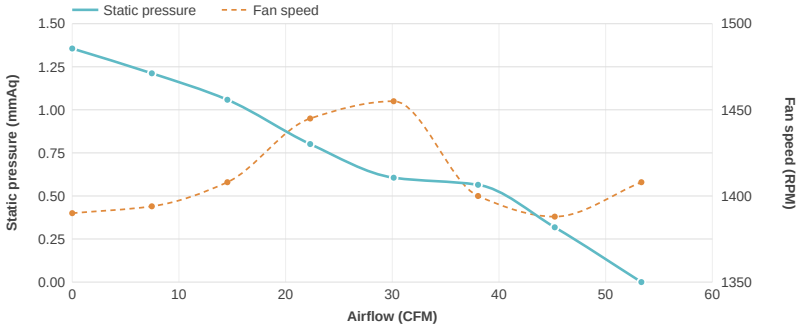
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	0.76	1037	0.040	0.48
5.50	0.68	1040	0.039	0.47
11.14	0.57	1049	0.039	0.47
16.37	0.44	1073	0.037	0.44
22.03	0.36	1077	0.037	0.44
27.74	0.33	1044	0.039	0.47
33.37	0.17	1043	0.039	0.47
39.03	0.00	1053	0.038	0.46

PQ Chart 50%



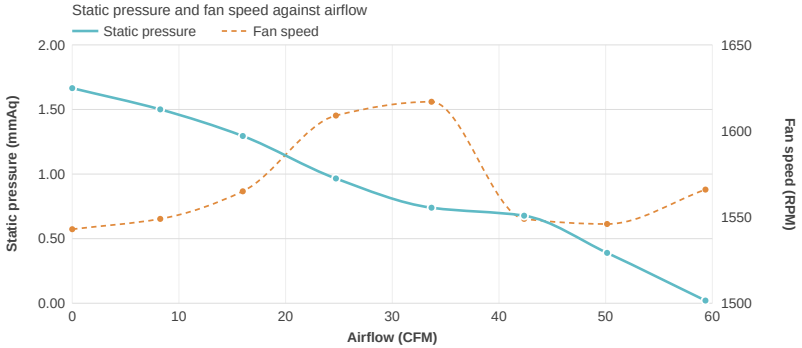
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	1.05	1217	0.058	0.70
6.52	0.95	1222	0.058	0.70
13.30	0.78	1234	0.056	0.67
19.50	0.59	1267	0.054	0.65
26.24	0.47	1271	0.054	0.65
33.15	0.43	1223	0.057	0.68
39.88	0.25	1218	0.058	0.70
46.45	0.00	1234	0.056	0.67

PQ Chart 60%



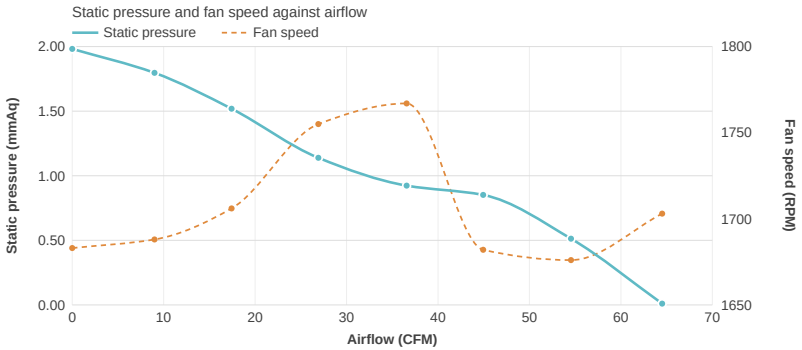
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	1.36	1390	0.080	0.96
7.46	1.21	1394	0.080	0.96
14.54	1.06	1408	0.079	0.95
22.31	0.80	1445	0.075	0.90
30.13	0.61	1455	0.074	0.89
38.04	0.56	1400	0.079	0.95
45.23	0.32	1388	0.080	0.96
53.35	-0.01	1408	0.079	0.95

PQ Chart 70%



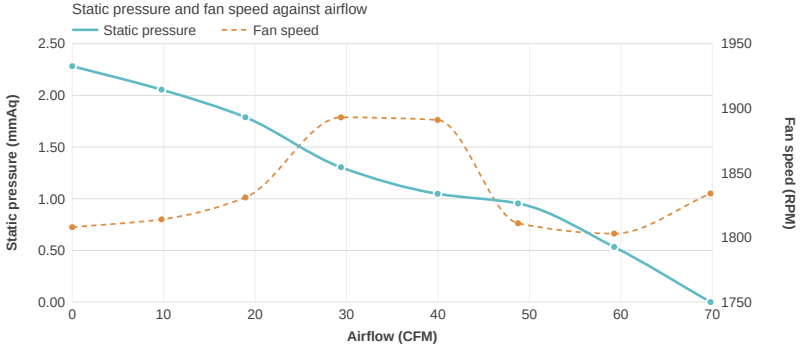
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	1.67	1543	0.106	1.27
8.25	1.50	1549	0.106	1.27
15.99	1.29	1565	0.104	1.25
24.71	0.97	1609	0.100	1.20
33.68	0.74	1617	0.099	1.19
42.36	0.68	1549	0.106	1.27
50.13	0.39	1546	0.106	1.27
59.36	0.02	1566	0.104	1.25

PQ Chart 80%



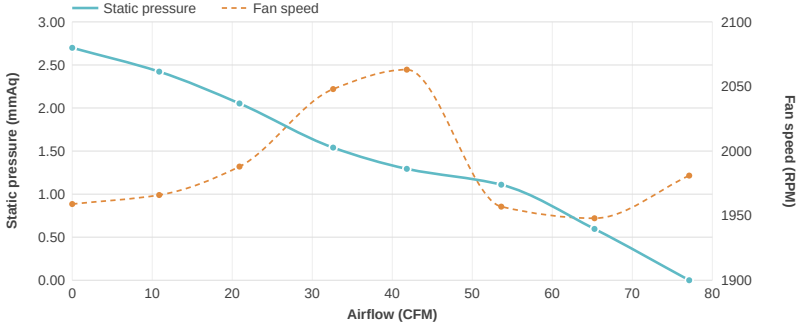
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	1.98	1683	0.136	1.63
8.99	1.80	1688	0.135	1.62
17.43	1.52	1706	0.133	1.60
26.91	1.14	1755	0.127	1.52
36.57	0.92	1767	0.126	1.51
44.94	0.85	1682	0.136	1.63
54.55	0.51	1676	0.136	1.63
64.52	0.01	1703	0.134	1.61

PQ Chart 90%



Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	2.28	1808	0.168	2.02
9.77	2.06	1814	0.167	2.00
18.94	1.79	1831	0.165	1.98
29.38	1.30	1893	0.157	1.88
39.96	1.05	1891	0.158	1.90
48.75	0.96	1811	0.167	2.00
59.26	0.53	1803	0.168	2.02
69.80	0.00	1834	0.165	1.98

PQ Chart 100%



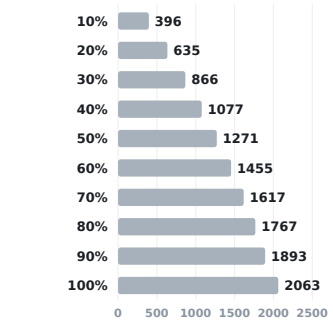
Airflow (CFM)	Static Pressure (mmAq)	Fan Speed (RPM)	Current (A)	Power (W)
0.00	2.70	1959	0.209	2.51
10.87	2.42	1966	0.208	2.50
20.90	2.05	1988	0.204	2.45
32.61	1.54	2048	0.196	2.35
41.81	1.29	2063	0.194	2.33
53.62	1.11	1957	0.208	2.50
65.27	0.60	1948	0.210	2.52
77.11	-0.04	1981	0.204	2.45

SECTION F: General Performance

RPM

Fan Speed

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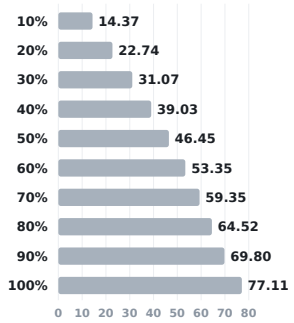


RPM · cybenetics.com

CFM Higher is better

Airflow

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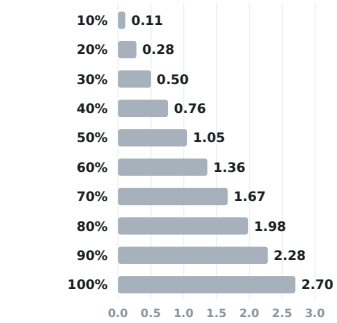


CFM · cybenetics.com

mmAq Higher is better

Static Pressure

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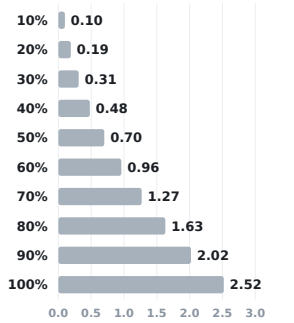


mmAq · cybenetics.com

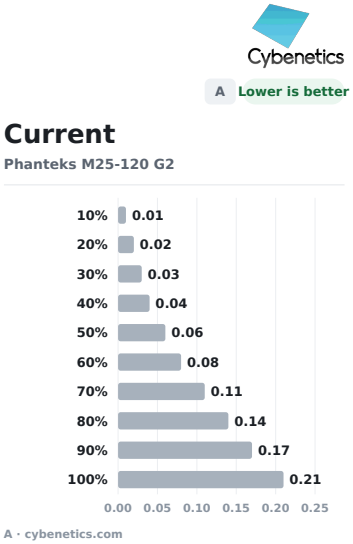
W Lower is better

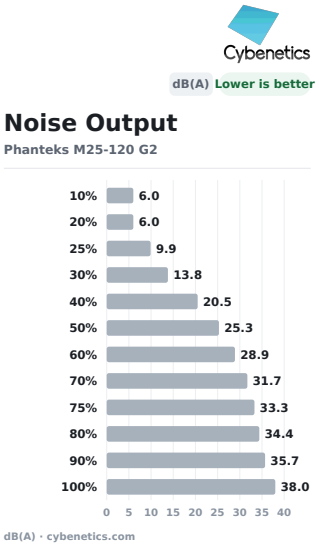
Power Consumption

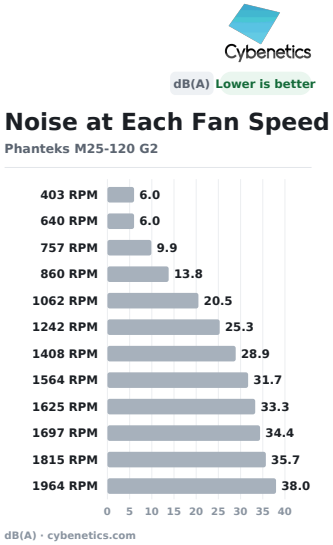
Phanteks M25-120 G2

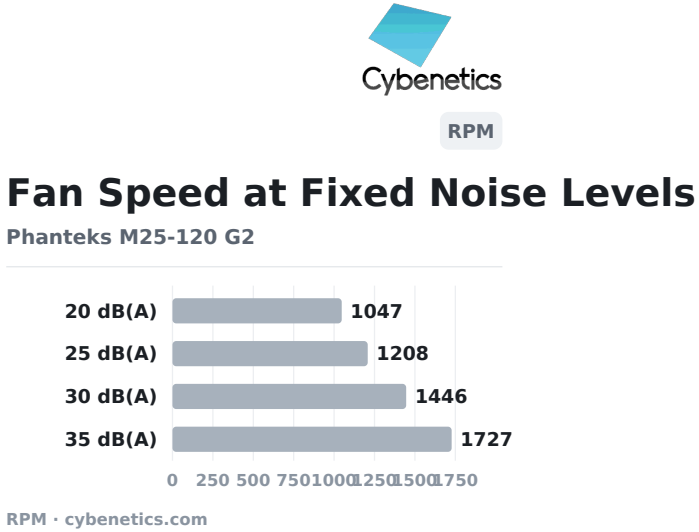


W · cybenetics.com


Cybenetics
A
Lower is better
Current
Phanteks M25-120 G2
10% 0.01
20% 0.02
30% 0.03
40% 0.04
50% 0.06
60% 0.08
70% 0.11
80% 0.14
90% 0.17
100% 0.21
0.00 0.05 0.10 0.15 0.20 0.25
A · cybenetics.com


Cybenetics
dB(A)
Lower is better
Noise Output
Phanteks M25-120 G2
10% 6.0
20% 6.0
25% 9.9
30% 13.8
40% 20.5
50% 25.3
60% 28.9
70% 31.7
75% 33.3
80% 34.4
90% 35.7
100% 38.0
0 5 10 15 20 25 30 35 40
dB(A) · cybenetics.com


Cybenetics
dB(A)
Lower is better
Noise at Each Fan Speed
Phanteks M25-120 G2
403 RPM 6.0
640 RPM 6.0
757 RPM 9.9
860 RPM 13.8
1062 RPM 20.5
1242 RPM 25.3
1408 RPM 28.9
1564 RPM 31.7
1625 RPM 33.3
1697 RPM 34.4
1815 RPM 35.7
1964 RPM 38.0
0 5 10 15 20 25 30 35 40
dB(A) · cybenetics.com


Cybenetics
RPM
Fan Speed at Fixed Noise Levels
Phanteks M25-120 G2
20 dB(A) 1047
25 dB(A) 1208
30 dB(A) 1446
35 dB(A) 1727
0 250 500 750 1000 1250 1500 1750
RPM · cybenetics.com

SECTION G: Uncertainty

Fan Performance Uncertainty Estimation

General Statement

Measurement uncertainty associated with the reported results was evaluated and estimated in accordance with JCGM 100:2008 (Guide to the Expression of Uncertainty in Measurement — GUM) and ISO/IEC 17025:2017, Clauses 7.6 and 7.2.

The uncertainty budget accounts for all significant identified contributors arising from the measurement process, instrumentation, test conditions, and operator interaction.

The reported expanded uncertainty U is obtained by multiplying the combined standard uncertainty uc by a coverage factor k = 2, corresponding to a confidence level of approximately 95 %, assuming a normal probability distribution.

Unless otherwise stated, the reported uncertainty applies only to the specific measurements performed and does not include long-term drift, aging effects, or future environmental changes.

Expanded Measurement Uncertainty by Measurement Type

Measurement	Expanded Uncertainty U (k=2, norm)
Fan Air Flow	±1.23176 % of reading (k=2) — e.g. ±3.69 CFM at 25 CFM, ±4.29 at 92 CFM, ±7.15 at 250 CFM
Fan Static Pressure	±0.6727 Pa

Air flow uncertainty is relative to the reading: $U(Q) = 2 \cdot \sqrt{[(1.8200)^2 + (0.0123176 \cdot Q)^2]}$ CFM, valid over the declared measuring range 2.4 – 250 CFM.

The reported static pressure uncertainty applies over the 0 – 20 mmAq (0 – 196.1 Pa) measuring range of the Long Win LW-9266 apparatus. The apparatus can be extended to 100 mmAq (981 Pa) with the high static pressure throttle device; the uncertainty of that extended range has not been separately verified and the value stated above does not apply to it.

Phanteks M25-120 G2





Front Rear

Cybenetics 提供自願性認證方案：電源供應器方面有 ETA（效率）、 LAMBDA（噪音）與 SAFE（安全與正確運作）；散熱產品方面有 DELTA（機殼隔音）與 PHI（風扇風量與靜壓）

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