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H₂HUBB Official Test Report

Evaluation Introduction

This report provides a comprehensive analysis of the H₂ Respire 1000™ Hydrogen inhalation therapy device from Qlife Hydrogen Solutions. H₂HUBB classifies this device as a Household-Grade, mid-flow-rate hydrogen inhalation system. It is equipped with an hydrogen electrolytic cell utilizing a PEM/SPE membrane, ensuring the production of pure hydrogen gas with only deionized or distilled water required for operation. The device supports continuous hydrogen gas production, allowing users to extend inhalation sessions up to 8 hours. We thoroughly evaluated the system's hydrogen gas output in mL/min to verify its performance. Additionally, we assessed its safety features and operations to confirm the presence of appropriate mechanisms for safe and reliable usage. Our investigation determines whether the H₂ Respire 1000 device meets our H₂ product performance standards required for approval and recommendation by H₂HUBB. For more information about our performance standards for hydrogen inhalation systems, please visit [H₂HUBB](https://www.h2hubb.com).

H₂ Products

- Company: Qlife Hydrogen Solutions
- Product Name: H₂ Respire 1000™
- Type: Pure H₂ Inhalation Device (≥99.99%/4N)
 - PEM/SPE
 - Mid Flow Rate
- Mfg rated H₂ Output: 666 mL/min
- URL Link: <https://qlifetoday.com/product/h2respire1000/>

Method and Procedure

- Distilled Water (used for testing): 6.0 pH
- Water Temperature: 65~70F/ 18~21C
- Reservoir Vol Size: 2.6 L/2600 mL (0.68 gals)
- H₂ Output: 666 mL/min or 54.91 mg/min (@ SATP)
- Test Location: 277 meters (909 ft elevation)
- H₂ Flow Test: mL/min, normal timing for a breathing session (1 hr)
- Test methodology:
 - [Alicat H₂ Mass Flow Meter](#)
- All measurements converted to SATP where applicable

Test Results

To evaluate the hydrogen gas flow rate, the H₂ Respire 1000 was assembled per H2HUBB protocol and filled with distilled water to the manufacturer's level. The device operated for a 1-hour session to simulate typical consumer use, with a 10-minute warm-up for stabilization. During operation, hydrogen gas passed through a drying column, humidity and temperature sensors, and into an Alicat Mass Flow Meter for precise output measurement. A 5–10 minute stabilization period minimized ambient interference, and minor flow corrections accounted for resistance or moisture losses. Each mode was tested at least three times, and the reported values represent the averaged results. All measurements were conducted at SATP (Standard Ambient Temperature and Pressure).

H₂ Flow Rate Test Results at SATP:

- Device H₂ Flow Rate (mL/min) (mg/min) avg: $\cong$ 660.39 mL/min H₂, $\pm$ 0.30% ($\approx$ 54.41 mg/min)
- Device O₂ Flow Rate (mL/min) avg: $\cong$ 330.19 mL/min
- Total H₂/O₂ Flow Rate (mL/min) avg: $\cong$ 990.58 mL/min

Claimed Mfg'r's H₂ mL/min (mg/min) confirmed: Yes

H₂HUBB Hydrogen Flow Rate Assessment

- H₂HUBB's hydrogen gas flow rate testing verified the manufacturer's performance claims for the H₂ Respire 1000. Under standard ambient temperature and pressure (SATP), the device produced an average hydrogen gas output of 660.39 mL/min during a 1-hour operational session simulating typical consumer use. When operated with a single-user nasal cannula, the device delivers an estimated inhaled hydrogen concentration of approximately 3–4% H₂. In a dual-user configuration, where the flow is divided, each user is estimated to receive an inhaled concentration of 1.6–2.2% H₂, remaining well within the safe and therapeutically effective range demonstrated in human clinical studies. These results exceed H₂HUBB's minimum performance standards, qualifying the H₂ Respire 1000 for **H₂HUBB Recommendation and Approval Status**.

INTERNAL BREAKDOWN AND PERFORMANCE:

Manufacturer's Rated Electrical Values:

Type of Device / Electrolytic Cell:

- Pure H₂: PEM/SPE Membrane

Power Supply Rating (per label):

- Voltage Output Rating: 7 V
- Current Output Rating: 40 A
- Rated Power: 280 Watts

Confirmed Electrical Values:

- Applied Voltage at Stack: 3.8 V DC
- Total Measured Current: 44.0 A DC
- Total Electrical Power: 167.0 Watts (3.8 V $\times$ 44.0 A)

Cell Configuration:

- Number of Stacks: 1 stack
- Cells per Stack: 2 (wired in series)
- Total Number of Electrolytic Cells: 2 PEM cells

Electrolytic Cell Stack Characteristics:

- Voltage per Stack: 3.8 V
- Voltage per Cell: 1.91 V ($3.8 \div 2$)
- Current per Cell: 44.0 A (same as stack current in series configuration)
- Effective Electrochemical Current (for H₂ production): 88.0 A (44×2)
- Power per Stack: 167W (3.8×44.0)
- Total System Power: 167W (single-stack system)

H₂ Production: (Based on measured amperage @SATP)

- Total Theoretical Max H₂ production (@ 100% cell efficiency)
 - Total: 669.76 mL/min (55.22 mg/min)
- Measured H₂ production
 - 660.39 mL/min (54.41 mg/min)
- Electrolytic cell efficiency
 - 98.60%

Product Assessment

Functionality:

- **Power input/Power cord:**
 - Located on the back of the system; supplies power to the device.
- **Digital Display and Control Panel**
 - Start/Pause: Initiates electrolysis for hydrogen gas inhalation.
 - Timer: Allow the user to select a time frame for the H₂ inhalation session
 - Selectable Session time-frames: 30 mins, 60 mins, 90 mins, 2hr, 3hr, 4hr, 5hr, 6hr, 7hr, 8hr
 - Dim mode: Dims the display for low light settings.
- **Power Button:**
 - Merely a display button.
- **Reservoir (2.6 L or 0.68 gal):**
 - Requires 2.6 liter of distilled water
- **H₂ Port (1x):**
 - Outputs hydrogen gas for single-user inhalation
- **O₂ Vent (1x):**
 - Vents oxygen gas produced during electrolysis
- **Drain Port:**
 - Allows the user to empty the distilled water reservoir using a special drain port and tubing located on the back of the system.

Product Safety

Safety Components:

- The system has 6 fundamental safety mechanisms for ensuring the device's safety.
 - Low-water protection
 - Protects cells from excessive heat
 - Gas blockage protection
 - Prevents build-up of internal pressure or pressurized hydrogen gas.
 - Device tilt protection
 - May prevent damages or leaks
 - High-temp cell sensor
 - Prevents the cell from overheating.
 - Internal Fans
 - May also aid in preventing overheating and prevents hydrogen gas build-up in case of leaks.
 - Heat Vents
 - Prevents excessive heat in the system

The system theoretically should only be combustible at the tip of the nasal cannula as the system produces >99% pure hydrogen gas. As with all inhalation devices that produce pure hydrogen gas, care should be taken to avoid exposing the cannula tip to any source of ignition (such as an open flame or a spark) which could result in the combustion of the gas.

Overall Opinion

The Q-Life H₂ Respire 1000™ Inhalation Device has been confirmed through H₂HUBB testing to be a well-engineered and high-performing system for hydrogen inhalation. The manufacturer specifies a hydrogen gas output of 666 mL/min at >99.99% purity under standard operating conditions. Our independent testing verified these claims, demonstrating that the device consistently achieves the stated hydrogen output.

Hydrogen gas output flow rates are a critical performance parameter for inhalation devices. At H₂HUBB, the minimum standard for hydrogen generators or inhalation units (whether pure hydrogen, oxyhydrogen, or H₂ mixed with air) is 120 mL/min of H₂. This rate corresponds to approximately 0.7-1.3% H₂ at typical resting breathing rates (4-6 L/min) when using a nasal cannula for an average adult. Scientific studies on molecular hydrogen inhalation therapy generally utilize concentrations between 0.5% and 4% or more at resting breathing rates, a range that has been shown to provide therapeutic benefits. Given these findings, H₂HUBB establishes 120 mL/min of H₂ as the baseline requirement for hydrogen inhalation devices to ensure effectiveness. The H₂ Respire 1000™ H₂ inhalation device exceeds this minimum standard, delivering performance well within the therapeutic range.

The H₂ Respire 1000 utilizes a dual electrolytic cell in a series configuration. Electrical measurements recorded 3.827 V / 44 A at the device's full production capacity, indicating each cell operates at approximately 1.91 V while drawing 44.0 A. Based on these electrical values, the measured hydrogen gas output of ≈ 660.39 mL/min (± 0.3%), equivalent to 54.41 mg/min, closely aligns with and effectively confirms the manufacturer's stated performance of 666 mL/min. Theoretical hydrogen gas output at 100% cell efficiency was calculated to be 1,004.64 mL/min (@ SATP), suggesting the electrolytic cell operates at an impressive 98.60% efficiency. Correspondingly, the system's oxygen production was calculated at ≈ 330.19 mL/min (@ SATP). Thus, the combined oxyhydrogen (H₂/O₂) output was determined to be ≈ 990.58 mL/min (± 0.3%), which closely corroborates the manufacturer's claim of 1,000 mL/min total gas output. At this production rate, the H₂ Respire 1000™ delivers hydrogen gas concentrations of approximately 3-4% H₂ when used with a single-user nasal cannula, and 1.6-2.2% H₂ when operated in a dual-user configuration. These concentrations fall well within the safe and therapeutically relevant range documented in human clinical research. Accordingly, the system's hydrogen output is suitable for both single-user and dual-user inhalation applications, providing an effective and safe method of therapeutic hydrogen delivery.

Based on H₂HUBB's verified flow rate test results, the H₂ Respire 1000™ qualifies for inclusion on the H₂HUBB Approved Hydrogen Inhalation Devices list featured on our website.

You can view their approval listing [here](#).

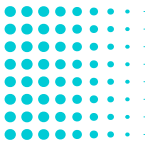
Although this report does not include the dissolved hydrogen concentration results for the H₂ Nano Stick as part of the formal evaluation, H₂HUBB wanted to make our data publicly available for consumer awareness and transparency.

The Q-Life H₂ Respire 1000™ is accompanied by a specialized diffusion stone known as the H₂ Nano Stick, designed for producing hydrogen-enriched water. The system performed exceptionally well in our mg/L (ppm) concentration testing for an open-to-atmosphere device. On average, it generated 1.55 mg/L (ppm) of dissolved hydrogen in 500 mL of water at SATP, corresponding to approximately 0.77 mg of H₂ per serving. This allows for a convenient intake of roughly 1.50 mg of H₂ via 1 liter of hydrogen water per day. The H₂ Nano Stick received a hydrogen gas supply of 660 mL/min, achieving the target dissolved hydrogen concentration within a 600-second (10-minute) dissolving session—well aligned with Q-Life's stated performance range of 8-12 minutes to reach ~1.50 mg/L (ppm) in 500 mL of water. The 10-minute interval was chosen to represent a balanced midpoint within that range.

Dissolved hydrogen concentration (mg/L or ppm) is a critical performance metric, as research suggests that a daily intake of 1-3 mg of H₂ may provide therapeutic benefits for humans. The IHSA minimum standard for this type of product is 0.5 mg per serving (0.5 mg/L), while H₂HUBB's performance standard is more stringent, requiring consistent delivery of at least 0.8 mg/L (ppm) and 0.8 mg/day. The system successfully exceeded both IHSA and H₂HUBB standards, demonstrating high efficacy for an open-air diffusion design.

The validity of the manufacturer's claims remains strong, as our findings closely align with their stated specifications. We have no safety concerns regarding the system, which appears to employ adequate engineering and safety controls. Overall, H₂HUBB is pleased with the performance of the Q-Life H₂ Respire 1000™, which surpassed our minimum internal performance standards and, in our assessment, is a safe and effective system suitable for in-home hydrogen inhalation. H₂HUBB will be moving forward with recommending this product to the public.

H₂ Hubb LLC disclaimer: All tests conducted and test results produced by H₂ Hubb LLC have been done according to industry-accepted practices and standards. Nevertheless, these results may not necessarily reflect test results performed by manufacturers, suppliers or third-party labs. Our test results are independent of all other parties, and testing by other parties may produce different results. We understand that many variables are involved in testing, some of which are extremely difficult to control. These reports are not meant or intended for any other purpose but to uphold H₂ Hubb LLC's business practices and to validate the reasons for our recommendations.





Approved by:

CEO, H₂HUBB LLC

