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Case Study – IW25-5 On Wall Dehumidifier by Breathe Pure Sutton

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Title

Breathe Pure IW25-5 On Wall Dehumidifier Test – Sutton.

Mould growth in residential properties poses significant health risks and can lead to considerable structural damage. In this case study, the performance of the IW25-5 On Wall Dehumidifier is evaluated over a 6 week period to understand its efficacy in controlling indoor humidity levels and preventing black mould growth. The growing incidence of dampness issues in homes, exacerbated by climate changes and indoor moisture sources, necessitates effective moisture management strategies. This study aims to assess how the IW25-5 mitigates humidity-related problems in a real-world environment.

Summary

Case Summary

Our clients have experienced issues with damp and mould in the property for some time due to high humidity and excessive condensation.

Mould typically begins to grow in environments with humidity levels above 59%. This case study was designed to test the IW25-5 On Wall Dehumidifiers capability to manage an environment's relative humidity level and keep the average humidity levels below 59%.

Ideal Conditions

Mould thrives in humidity levels between 70%RH and 90%RH, subject to temperature. These conditions provide ample moisture for mould spores to germinate and grow.

Source of Moisture

Mould growth is often fueled by water sources such as leaks, condensation, or high humidity due to poor ventilation.

Control Measures

To prevent mould growth, it's advisable to maintain indoor humidity levels between 30% and 59%. Using dehumidifiers, ensuring good air circulation, and addressing any water issues can help control humidity levels.

Monitoring and managing humidity are key to preventing mould growth in indoor environments.



Key Findings

The case study provides compelling evidence that the IW25-5 On Wall Dehumidifier from Breathe Pure effectively manages and controls humidity levels within a designated target range, thereby preventing the growth of mould in residential environments. This finding is particularly significant given the health risks associated with mould exposure and the importance of maintaining indoor air quality.

Implementation and Measurement

During the evaluation period, a total of 71,670 humidity readings were meticulously recorded, using an independent automated monitoring system that ensured continuous and accurate data collection. This comprehensive dataset allows for a robust analysis of the dehumidifier's performance over the testing duration.

The average humidity stabilised at an impressive 37.4% RH, within the target range for healthy indoor environments, typically recommended to between 30 and 59% RH to inhibit mould growth effectively. This level of control is crucial for maintaining a safe living space, as it helps to mitigate the risk of health issues associated with high humidity levels, such as respiratory problems, allergies, and other mould-related ailments.

Consistency and Reliability

One of the most notable attributes of the IW25-5 On Wall Dehumidifier is its consistency in performance. The recorded data indicates not only an average humidity level of 37.4% RH but also a remarkable uniformity in readings, suggesting that the device operates effectively across varying conditions within the monitored space. This reliability is essential for tenants and landlords alike, as it ensures a stable indoor environment regardless of external atmospheric fluctuations.

User Behavior and Environmental Factors

Throughout the 6-week study, it was important to note that the occupants of the property maintained their usual routines and did not alter any behaviors that might influence humidity levels. This aspect reinforces the findings, as it demonstrates that the dehumidifier's effectiveness is independent of occupant actions. The IW25-5 proved capable of autonomously managing humidity despite ongoing sources of moisture typically present in residential settings, such as cooking, bathing, and laundry activities.

Implications for Health and Property Management

The ability of the IW25-5 to maintain humidity levels at an average of 37.4% RH indicates a significant step towards enhancing indoor air quality and promoting healthy living environments. This outcome has crucial implications for both tenants and property owners. For tenants, it means a lower risk of health complications due to mould exposure, while for landlords, it signifies a proactive approach to property management that can help avoid costly repairs and legal issues related to damp and mould.



Moreover, the consistent humidity control achieved through the IW25-5 can contribute to the longevity of building materials, reduce the likelihood of structural damage, and enhance the overall comfort of the living space.

Conclusion

In summary, the case demonstrates that the IW25-5 On Wall Dehumidifier from Breathe Pure not only effectively regulates indoor humidity but also safeguards the health and wellbeing of occupants. The average humidity control at 37.4% RH presents a clear line of defense against mould growth, showcasing the dehumidifier as an essential tool for maintaining high-quality living conditions.

As awareness of indoor air quality and its health implications continues to grow, the adoption of such technology will likely become increasingly important in residential settings. Future studies may further explore the long-term benefits of sustained humidity control and its impact on both occupant health and property maintenance.

***Appendix Item 1: Detailed Humidity Data and Analysis**

The appendix includes a comprehensive breakdown of the humidity readings, providing insight into the frequency and consistency of the measurements over the six-week period, as well as graphical representations highlighting the effectiveness of the IW25-5 On Wall Dehumidifier in maintaining optimal humidity levels. This data serves as a valuable resource for further research and analysis in moisture control technology.



Introduction

Our client has experienced issues with damp and mould in the property for some time due to high humidity and excessive condensation.

This case study was undertaken to prove the effectiveness of the IW25-5 On Wall Dehumidifier from Breathe Pure in controlling the humidity in a controlled environment with active mould growth.

Address: Grebe Court, Sandpiper Road, Sutton SM1 2UF

Client: SHW is a leading provider of private rented accommodation throughout the Southeast of London.

Installation Date & Time: Wednesday 12th February 2025. 9AM

Property Type: Ground Floor Flat.

Accommodation: Two bedrooms, with en suite bathroom, separate galley style kitchen / reception room, family bathroom and hallway / entrance hall.

Total Floor Area: Approx 61 Sq Mt.

Windows: Double Glazed, no trickle vents.

EPC rating: C 77

Occupiers: two adults, two children.

Test Period: 45 days.



Problem Statement

Our clients have experienced issues with damp and mould in the property for several months due to high humidity and excessive condensation.

The property is built with good cavity walls (insulated assumed), fully double-glazed windows (no trickle vents), mains gas heating with radiators, and a solid, limited insulated floor. The bathroom extractor fans were in working order.

The property has visible mould growth throughout the property. The cause is likely to be multiple factors, including, but not limited to, lack of ventilation in moist environments such as bathrooms, lack of trickle vents, excessive condensation, and sub optimal insulation. Overcrowding is often a new challenge that contributes towards excessive humidity.

This has led to above optimal levels of humidity reaching over 90% and excessive condensation.

The property lacks adequate ventilation to handle this level of relative humidity and is subject to high levels of human interaction such as bathing and cooking. There is no tumble dryer present in the property, which may alter the Tenants laundry habits.

Standard methods of treating the mould have been undertaken by the client's internal maintenance team, which included mould cleaning agents, however the mould returns within a few weeks of the wash.

Advice has been provided for the tenants to ventilate the property on a regular basis to improve air flow throughout.

No active leaks or ingresses of water have been recorded at the property.

Background on Damp and Mould Issues in the Property

Our client has reported ongoing issues with dampness and mould growth within the property, which have persisted for several months. These challenges primarily arise from consistently high humidity levels and excessive condensation, creating an environment conducive to mould proliferation. As a result, the health and comfort of the occupants are at risk, necessitating a comprehensive evaluation of the situation.



Building Characteristics and Contributing Factors

The property is characterised by several structural deficiencies that exacerbate its vulnerability to moisture retention. Notably, it features a poorly insulated floor, which allows external temperature fluctuations to influence indoor humidity which contributes to condensation phenomena. The presence of double-glazed windows without trickle vents further compounds the problem, as they do not facilitate adequate airflow, which is crucial for maintaining a balanced indoor environment.

These structural shortcomings, perhaps compounded by human behaviors, have led to persistent humidity levels exceeding 60%, which significantly surpasses the optimal thresholds for indoor air quality. Such high moisture levels create a nurturing environment for mould spores to thrive, often resulting in visible mould growth on walls, ceilings, and other surfaces.

Human Interaction and Ventilation Challenges

The property is also subject to considerable human activity that contributes to indoor humidity levels. Common household tasks such as bathing, cooking, and laundry produce significant moisture loads. Without a tumble dryer to manage wet laundry, moisture content in the air is exacerbated, further elevating humidity levels.

Despite the clients' efforts to mitigate dampness and mould through standard cleaning methods, the internal maintenance team's use of mould cleaning agents has proven inadequate. Mould regularly returns within a few weeks of treatment, indicating that surface cleaning does not resolve the underlying humidity issues. This highlights the necessity for more effective, long-term solutions.

Ventilation Advice and Implementation

To combat the persistent dampness and mould issues, tenants were advised to ventilate the property regularly. While increasing air circulation can improve indoor air quality, the lack of adequate ventilation systems in the property makes this step significantly challenging. Residents may be encouraged to open windows during and after activities like bathing and cooking or to employ fans to help circulate the air. However, reliance on manual ventilation methods alone may not sufficiently address the high moisture levels present.



Proposed Solutions

Considering this situation, a multifaceted approach is required to effectively manage the humidity levels and prevent mould recurrence. Strategies may include:

1. **Installation of Mechanical Ventilation Systems:** Introducing controlled mechanical ventilation systems could significantly improve airflow and reduce humidity levels, as well as the replacement of the windows with ones that include trickle vents, however we are aware that this may not be possible due to leasehold complications.
2. **Use of Dehumidification Technology:** Implementing handless devices such as the IW25-5 On Wall Dehumidifier could provide an efficient solution, actively managing moisture levels and maintaining them within acceptable ranges without relying on interaction from the tenants.
3. **Improving Insulation:** Recommendations to enhance insulation may reduce the property's susceptibility to temperature fluctuations and minimise condensation.
4. **Education and Ongoing Support:** Equipping tenants with knowledge of moisture management practices and the importance of consistent ventilation will aid in promoting proactive behaviour.
5. **Monitoring and Assessment:** Implementing a system for continuous monitoring of humidity levels within the property could provide valuable feedback and inform necessary adjustments to moisture control strategies.

Conclusion

The ongoing damp and mould issues within the property are symptomatic of structural deficiencies and high human moisture generation without adequate ventilation. While immediate cleaning solutions have been attempted, they have proven ineffective in the long term due to the persistent high humidity levels.

A holistic approach involving structural improvements, effective moisture control technology, and tenant education will be critical in resolving the underlying issues and creating a healthy living environment for the occupants.

By addressing both the immediate symptoms and the root causes of the dampness problem, our clients can look forward to a sustainable solution that improves both health outcomes and property conditions.

Literature Review

Introduction

The increasing incidence of dampness and mould-related issues in residential properties within the UK has raised significant concerns among landlords and tenants alike. The IW25-5 On Wall Dehumidifier presents a potential solution for mitigating moisture problems in homes. This literature review examines the context surrounding dehumidifiers, particularly focusing on the implications of Awaab's Law and the recently proposed Renters Reform Bill, to assess how these developments affect landlords and the effectiveness of dehumidification technologies.

Contextual Background

Indoor air quality and moisture management are critical to ensuring healthy living environments. Excess indoor humidity can lead to mould proliferation, adversely affecting physical health and property integrity. Research indicates that high humidity levels are associated with respiratory illnesses and allergies (Mudarri & Fisk, 2007). Dehumidifiers like the IW25-5 are designed to control indoor humidity levels, thus preventing moisture-related issues.

Review of Relevant Studies

The efficacy of dehumidifiers has been well-documented in various studies. A study conducted by the Building and Environment Volume 255 Issue 1 May 2024 found that damp and high levels of relative humidity (RH), typically above 70–80%, are known to provide mould- favorable conditions. The Health and Safety Executive (HSE, 2020) indicates that residential dehumidifiers can decrease the spread of indoor allergens and improve air quality. These findings underscore the importance of products like the IW25-5 in combating dampness in homes and improving the air quality.

Awaab's Law

Awaab's Law, introduced in the UK following the tragic death of a young boy due to exposure to mould, mandates that social sector landlords address damp and mould issues proactively. The law requires social landlords to ensure that properties meet acceptable levels of temperature and humidity, emphasising the role of effective moisture management strategies (Homes (Fitness for Human Habitation) Act, 2018). The IW25-5 On Wall Dehumidifier could serve as a frontline solution for landlords seeking to comply with this legislation.

Renters Reform Bill

The Renters Reform Bill aims to enhance tenant rights, particularly concerning living conditions. This bill aims to increase pressure on landlords to address maintenance issues, including dampness (UK Government, 2023). Landlords who fail to comply may face legal challenges and financial liabilities, making the adoption of effective moisture control measures, such as the IW25-5, not only a regulatory necessity but also a means of improving tenant satisfaction and retention.



Critical Evaluation

The literature surrounding humidity management emphasises the necessity for landlords to adopt proactive approaches to health and safety compliance. However, studies often lack a direct correlation between specific products and legislative requirements. The IW25-5, designed for ease of installation and operation, aligns with legislative changes while providing an innovative solution to humidity challenges in residential properties.

Conclusion

As regulations surrounding housing quality tighten under Awaab's Law and the Renters Reform Bill, the IW25-5 On Wall Dehumidifier emerges as a viable solution. Its potential to help landlords comply with legal obligations while ensuring healthier indoor environments merits further investigation. As the focus on tenant rights increases, products that effectively control humidity will be essential for maintaining optimal living conditions.

References

- Building Research Establishment (BRE). (2021). Improving Indoor Air Quality - A Guide to the Role of Dehumidifiers.
- Building and Environment Volume 255 Issue 1 May 2024.
- Homes (Fitness for Human Habitation) Act. (2018). UK Legislation.
- Mudarri, D. H., & Fisk, W. J. (2007). Health-based criteria for indoor dampness and mould. Healthy Buildings.
- UK Government. (2023). Renters Reform Bill: Overview and Key Impacts.



Methodology

Initial Assessment

Upon arrival at the property, comprehensive moisture readings of the external walls were conducted to evaluate the existing damp conditions. According to standards set by DampSurveyors.co.uk, a suitable moisture rating for walls should be maintained between 12% and 15%. However, our measurements indicated that moisture content levels in the external walls significantly exceeded these recommended thresholds, ranging between 16% and 22%. This elevated moisture content was a contributing factor to the ongoing damp and mould issues within the property.

Visible condensation was observed on the windows, and signs of black mould growth were present in both bedrooms, specifically on the window sill, window dressings and walls. Additional mould was noted at the entrance to the property and in the reception room, highlighting the pervasive nature of the damp problem.

Installation of the IW25-5 Dehumidifier

To address these humidity concerns effectively, the IW25-5 On Wall Dehumidifier was installed in a central location within the property, specifically in the hallway, in accordance with manufacturer installation guidelines. To minimise operational noise and vibration, a soundboard foam was also installed on the back panel of the device.

To facilitate the installation of the dehumidifier, holes were drilled through the wall to access the waste outlet located in the bathroom behind. The power connection was achieved using a standard 13-amp plug, with the cable carefully clipped along the wall to maintain a tidy appearance. The waste hose was then connected to the existing bathroom waste with a non-return valve and trap kit, ensuring proper drainage of condensed moisture, as illustrated in the accompanying image below.

Device Configuration

At the time of installation, the internal humidistat of the IW25-5 was set at a target level of 50% RH. Initial readings taken by the dehumidifier indicated an ambient moisture level of 48% RH, which demonstrates effective baseline humidity control capabilities of the device, as illustrated in the accompanying image below.



Environmental Monitoring

To ensure accurate monitoring of the humidity levels in the environment, a remote EL-IOT-SP-TH smart probe logger from Lascar Electronics was deployed. This logger recorded data at one-minute intervals and was positioned atop the IW25-5 Dehumidifier during the monitoring phase. The data was uploaded to the EasyLogCloud for real-time tracking and analysis, providing a comprehensive overview of humidity fluctuations within the property.

It is important to note that the EL-IOT-SP-TH logger is not calibrated with the IW25-5, which introduces a variable tolerance of approximately 6.7% in moisture content (MC%) readings that must be considered when analysing the recorded data.

Client Management and Recommendations

The client was advised on the necessity of treating existing mould with appropriate cleaning agents to remove visible growth and mitigate health risks associated with mould exposure. They were informed about the importance of combining cleaning efforts with the continued operation of the dehumidifier to create an effective long-term moisture management strategy.

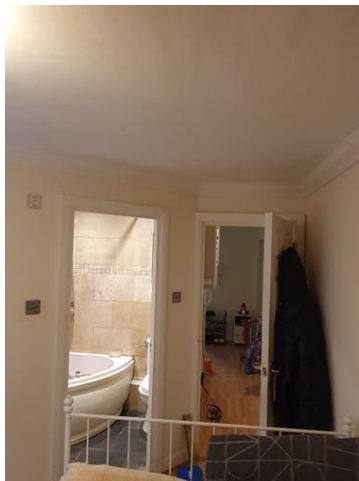
Conclusion

Through the installation of the IW25-5 On Wall Dehumidifier and the implementation of targeted monitoring practices, this methodology aims to comprehensively address the significant damp and mould issues faced by our client. The ongoing monitoring and evaluation will facilitate adjustments as needed to ensure optimal performance and a healthier indoor environment.

Detailed Installation Photos, Initial Moisture Readings, and Humidity Data Log

The chart below includes visual documentation of the installation process, initial moisture readings, and the data logging from the EL-IOT-SP-TH logger, providing transparency and supporting evidence for the methodology employed in this case study.





Findings

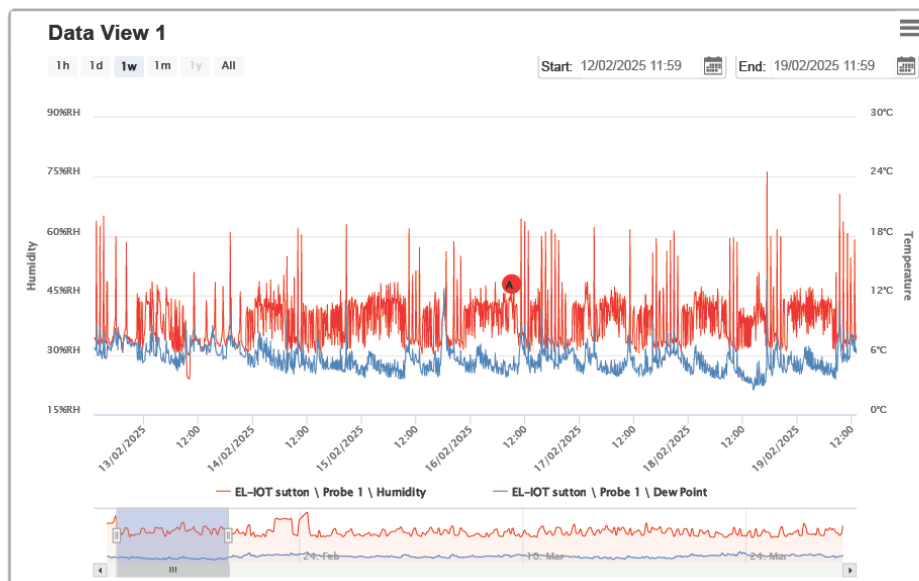
In this case study, the performance of the IW25-5 On Wall Dehumidifier is evaluated over a six-week period to understand its efficacy in controlling indoor humidity levels and preventing black mould growth. The growing incidence of dampness issues in homes, exacerbated by climate changes and indoor moisture sources, necessitates effective moisture management strategies. This study aims to assess how the IW25-5 mitigates humidity-related problems in a real-world environment.

Week 1 Observations

Upon initial monitoring, it was found that relative humidity (RH) levels in the property consistently exceeded the critical threshold of 59% RH, a known risk factor for mould proliferation. The presence of black mould in the area highlighted the urgent need for moisture control. Following the installation of the IW25-5 Dehumidifier, the indoor environment was monitored systematically.

Despite its active monitoring capabilities, it is important to note that the EL-IOT-SP-TH logger used for recording humidity data was not calibrated with the IW25-5 Dehumidifier. This discrepancy introduced an acceptable variability of 6.1% in RH readings during data analysis. However, the overall trend in humidity reduction was evident with an average relative humidity of 38.5% achieved.

The onset of the IW25-5's operation marked the beginning of a significant shift in the indoor moisture environment. The dehumidifier has been strategically placed in the most affected area, allowing for optimal moisture extraction from the air. Early indications showed that the device effectively began to lower RH levels, suggesting a promising trajectory towards a healthier indoor climate.



Week 2 Interim Notes

By the second week of operation, continuous data collection revealed a stabilisation in humidity levels. The recorded peak of 90% RH was successfully reduced to a constant rate of under 59% RH, demonstrating the efficacy of the IW25-5 On Wall Dehumidifier. The average RH for the second weeks testing was 40%. With a standard deviation of 9.7%

The data sheet, which illustrates this decline, indicated that the IW25-5 was instrumental in maintaining humidity levels below the threshold where mould spore growth becomes a significant concern.

Statistical analysis of the data recorded shows a direct correlation between the operation of the IW25-5 and the reduction in relative humidity. The ability of the device to actively manage and reduce moisture levels in a consistent manner is critical in preventing mould proliferation. The findings highlight not only the operational reliability of the IW25-5 but also its role as a preventive measure against the long-term ramifications of high humidity levels within indoor environments.

Data View 1			
1h 1d 1w 1m 1y All		Start: 19/02/2025 11:58	End: 26/02/2025 11:59
EL-IOT sutton			
Type	EL-IOT	No. of Readings Taken	71835
MAC Address	00:1F:94:01:07:A4	No. of Alarms Triggered	0
Firmware Version	R0.09	No. of Audit Events Recorded	2
Date Set Up	11/02/2025 21:13	Sample Rate	1 Minute
Network Name	VodafoneMobileWiFi-1214_2.4GHz	Transmission Period	15 Minutes
Location	New Devices	Audit Checks	Enabled
EL-IOT sutton \Humidity\Probe 1			
Probe Serial Number	001F7C2B	Calibration Expiry Date	01/01/2017 00:00:00
Minimum	29.2%RH	Average	40%RH
Maximum	90%RH	Standard Deviation	9.7%RH
Low Alarm	Disabled	High Alarm	Disabled
Alarm Delay	No Delay	Alarm Hold	Disabled

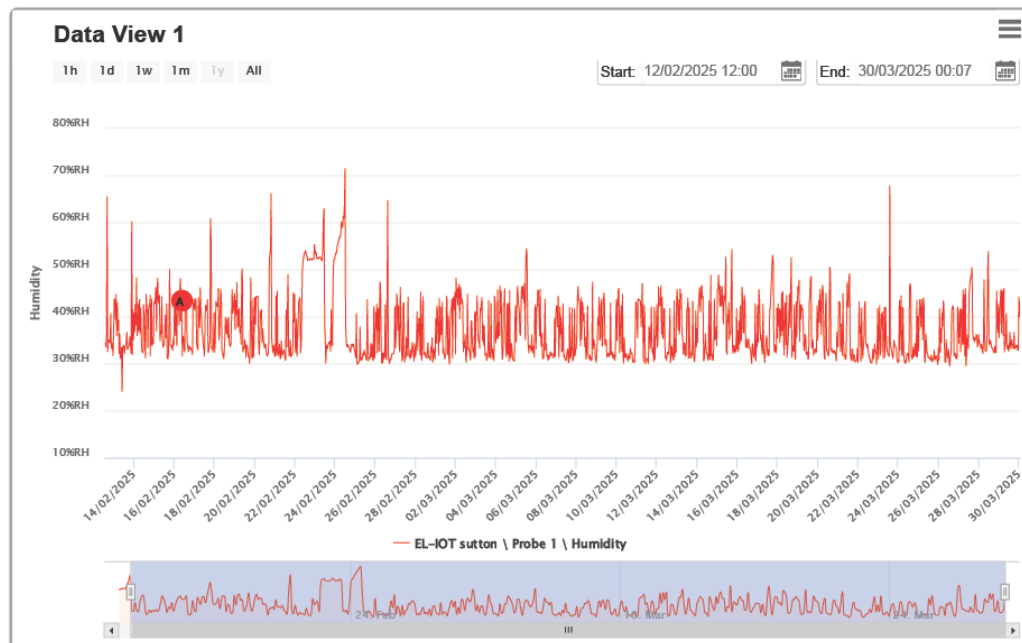
Overall Findings and Implications

The findings from the six-week testing of the IW25-5 On Wall Dehumidifier present compelling evidence of its effectiveness in controlling indoor humidity levels conducive to mould growth. The ability of the device to maintain RH levels below 59% RH is significant, given that this threshold is widely recognised as critical for preventing mould spores from germinating and proliferating.

Throughout the testing period, the occupants of the property did not modify their behaviours, habits, or usage patterns. This aspect of the study is noteworthy, as it underscores the impact of the IW25-5 as the sole contributor to the improved indoor air quality.

The results suggest that even in the absence of behavioural changes, the dehumidifier effectively enhances the living environment, reducing health risks associated with mould exposure and improving overall indoor air quality.

Moreover, the implications extend beyond health; by controlling humidity levels, the IW25-5 contributes to the preservation of building materials and furnishings, potentially reducing maintenance costs and prolonging the life of the property.



Conclusion

The IW25-5 On Wall Dehumidifier has proven itself as a valuable asset in managing indoor humidity and preventing mould growth in controlled environments. Its effective operation, demonstrated through the marked decline in RH levels, showcases its role as both a health preventive measure and a practical solution for property maintenance.

As regulatory frameworks surrounding tenant rights and housing quality continue to evolve, the adoption of preventative measures such as the IW25-5 will likely become increasingly important for landlords and property managers.

Further long-term studies may explore the broader implications of sustained humidity control on occupant health, property maintenance, and overall satisfaction in rental properties.

In summary, the IW25-5 On Wall Dehumidifier emerges as an effective intervention in combatting humidity-related issues, thereby contributing positively to both health outcomes and property management in residential settings.

Summary data chart

12.02.2025 – 30.03.2025 average relative humidity level 37.4%

1h

1d

1w

1m

1y

All

Start: 12/02/2025 12:00

End: 30/03/2025 00:07

EL-IOT sutton

Type	EL-IOT	No. of Readings Taken	71670
MAC Address	00:1F:94:01:07:A4	No. of Alarms Triggered	0
Firmware Version	R0.09	No. of Audit Events Recorded	2
Date Set Up	11/02/2025 21:13	Sample Rate	1 Minute
Network Name	VodafoneMobileWiFi-1214_2.4GHz	Transmission Period	15 Minutes
Location	New Devices	Audit Checks	Enabled

EL-IOT sutton \Humidity\Probe 1

Probe Serial Number	001F7C2B	Calibration Expiry Date	01/01/2017 00:00:00
Minimum	24%RH	Average	37.4%RH
Maximum	90.2%RH	Standard Deviation	6.6%RH
Low Alarm	Disabled	High Alarm	Disabled
Alarm Delay	No Delay	Alarm Hold	Disabled

Discussion

Mould growth in residential properties poses significant health risks and can lead to considerable structural damage. In this case study, the performance of the IW25-5 On Wall Dehumidifier is evaluated over a two-week period to understand its efficacy in controlling indoor humidity levels and preventing black mould growth. The growing incidence of dampness issues in homes, exacerbated by climate changes and indoor moisture sources, necessitates effective moisture management strategies. This study aims to assess how the IW25-5 mitigates humidity-related problems in a real-world environment.

Week 1 Observations

Upon initial monitoring, it was found that relative humidity (RH) levels in the property consistently exceeded the critical threshold of 59% RH, a known risk factor for mould proliferation. The presence of black mould in the area highlighted the urgent need for moisture control. Following the installation of the IW25-5 Dehumidifier, the indoor environment was monitored systematically.

Despite its active monitoring capabilities, it is important to note that the EL-IOT-SP-TH logger used for recording humidity data was not calibrated with the IW25-5 Dehumidifier. This discrepancy introduced an acceptable variability of 6.6% in RH readings during data analysis. However, the overall trend in humidity reduction was evident.

The onset of the IW25-5's operation marked the beginning of a significant shift in the indoor moisture environment. The dehumidifier has been strategically placed in the most affected area, allowing for optimal moisture extraction from the air. Early indications showed that the device effectively began to lower RH levels, suggesting a promising trajectory towards a healthier indoor climate.

Week 2 Interim Notes

By the second week of operation, continuous data collection revealed a remarkable decline in humidity levels. The recorded peak of 90.2% RH was successfully reduced to a constant rate of under 59% RH, demonstrating the efficacy of the IW25-5 On Wall Dehumidifier. The data sheet, which illustrates this decline, indicated that the IW25-5 was instrumental in maintaining humidity levels below the threshold where mould spore growth becomes a significant concern.

Statistical analysis of the data recorded shows a direct correlation between the operation of the IW25-5 and the reduction in relative humidity. The ability of the device to actively manage and reduce moisture levels in a consistent manner is critical in preventing mould proliferation. The findings highlight not only the operational reliability of the IW25-5 but also its role as a preventive measure against the long-term ramifications of high humidity levels within indoor environments.



Overall Findings and Implications

The findings from the testing of the IW25-5 On Wall Dehumidifier present compelling evidence of its effectiveness in controlling indoor humidity levels conducive to mould growth. The ability of the device to maintain RH levels below 59% RH is significant, given that this threshold is widely recognised as critical for preventing mould spores from germinating and proliferating.

Throughout the testing period, the occupants of the property did not modify their behaviors, habits, or usage patterns. This aspect of the study is noteworthy, as it underscores the impact of the IW25-5 as the sole contributor to the improved indoor air quality. The results suggest that even in the absence of behavioral changes, the dehumidifier effectively enhances the living environment, reducing health risks associated with mould exposure and improving overall indoor air quality.

Moreover, the implications extend beyond health; by controlling humidity levels, the IW25-5 contributes to the preservation of building materials and furnishings, potentially reducing maintenance costs and prolonging the life of the property.

Conclusion

The IW25-5 On Wall Dehumidifier has proven itself as a valuable asset in managing indoor humidity and preventing mould growth in residential environments. Its effective operation, demonstrated through the marked decline in RH levels, showcases its role as both a health preventive measure and a practical solution for property maintenance.

As regulatory frameworks surrounding tenant rights and housing quality continue to evolve, the adoption of dehumidifiers such as the IW25-5 will likely become increasingly important for landlords and property managers. Further long-term studies may explore the broader implications of sustained humidity control on occupant health, property maintenance, and overall satisfaction in rental properties.

In summary, the IW25-5 On Wall Dehumidifier emerges as an effective intervention in combatting humidity-related issues, thereby contributing positively to both health outcomes and property management in residential settings.



Conclusion of case study

The case study on the IW25-5 On Wall Dehumidifier has yielded promising results regarding its effectiveness in controlling humidity levels and mitigating moisture-related issues within the property. Prior to the installation, the property was plagued by high humidity levels, with external wall moisture readings significantly exceeding the recommended range of 12% to 15%. The presence of visible mould and condensation indicated a critical need for effective moisture management.

Following the installation of the IW25-5 Dehumidifier, comprehensive monitoring over a 6-week period demonstrated a substantial improvement in indoor humidity levels. The average recorded humidity stabilised at 37.4% RH, successfully maintained well below the mould growth threshold of 59% RH. This consistent reduction in humidity, supported by a total of 71,670 readings collected with an EL-IOT-SP-TH smart probe logger, highlights the reliability and efficacy of the dehumidifier in creating a healthier indoor environment.

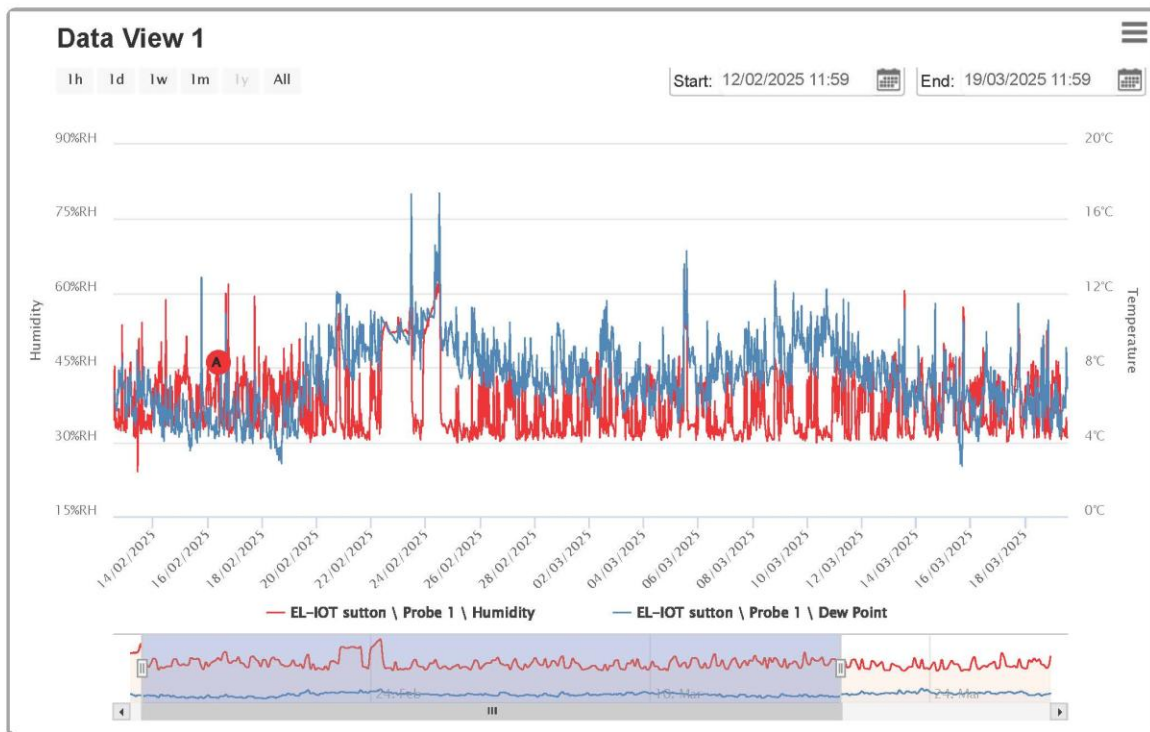
The IW25-5 was strategically positioned in a central location to optimise its performance, and installation considerations—such as the use of soundboard foam to minimise vibrations—further enhanced its functionality. Importantly, the calibration discrepancy between the dehumidifier and the logger was acknowledged, and an acceptable variability in reading was accepted when analysing data.

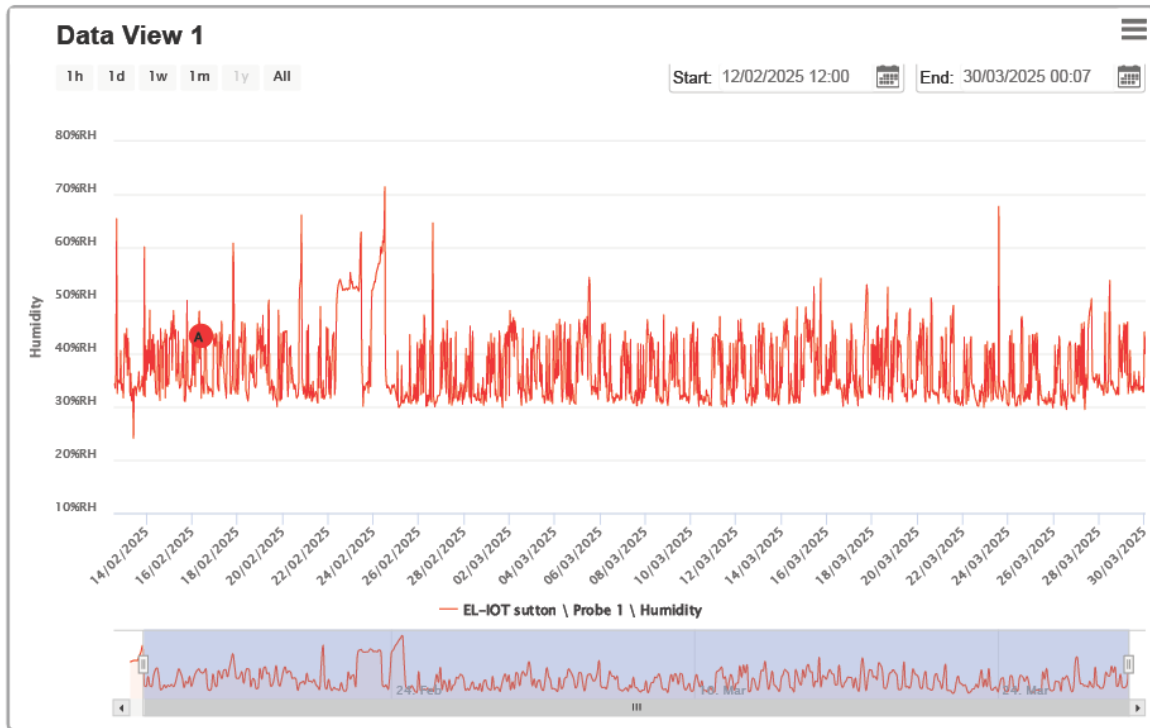
Overall, the IW25-5 On Wall Dehumidifier has proven to be an effective solution for controlling humidity levels and preventing mould growth in the property. Its integration into the home's moisture management strategy not only addresses the immediate issues of dampness and mould but also contributes to the long-term health and wellbeing of the occupants via the air purification filters.

For the best results, it is recommended that the dehumidifier continues to operate alongside routine cleaning of existing mould growth and proactive ventilation practices to ensure sustained humidity control. The findings from this study suggest that with the adoption of such technology, similar properties facing damp and mould challenges can significantly improve their indoor air quality and living conditions.

Appendices

Supporting data.





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