MICHAEL GABRIEL

ANGEL GUARD

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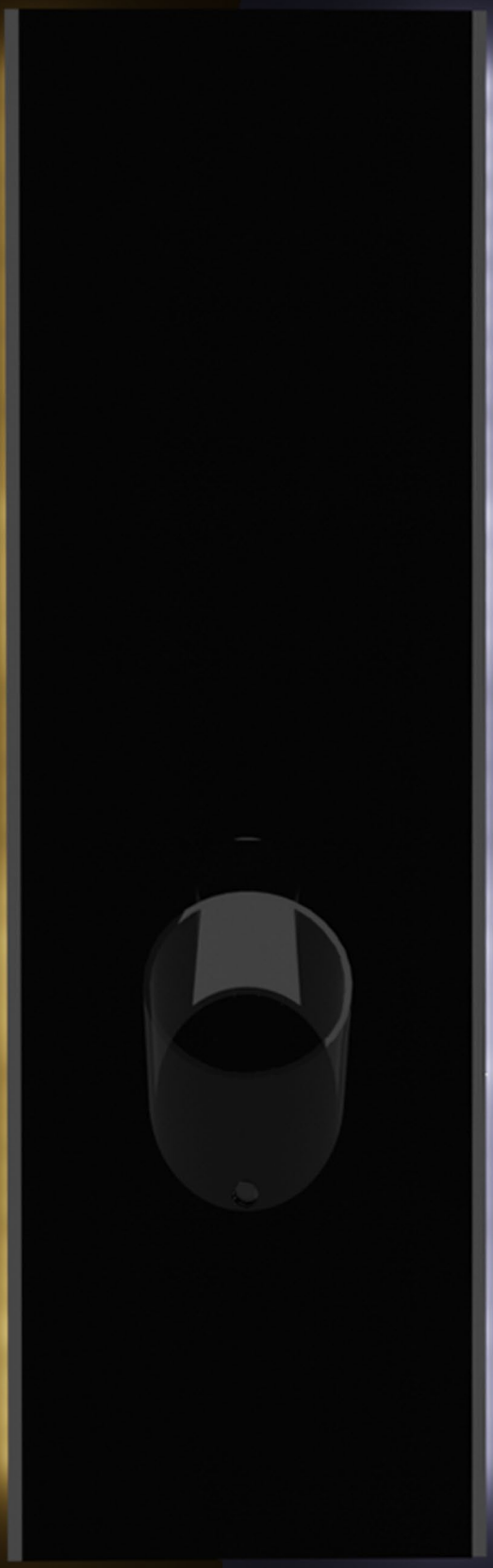


Official Michael & Gabriel Unit Brochure

CONTENTS

CURRENT ISSUES CLINICAL WASH BASINS FACE

PROBLEMS WITH TRADITIONAL LEVER HANDLE HOSPITAL MIXERS

Typically, levers for hospital mixers tend to not be set correctly and make contact with the wall. However, the main issue is that the lever itself creates a touch point, leading to contact with multiple users, increasing the risk of transmission. Given the conditions, the lever can quickly become a hotspot for pathogens to spread from user to user. Current guidance states that these taps are for use with elbows, in order to decrease hand-to-tap contact, this is not always the case as users forget to use their elbows, and default to switching off with their hands.

Angel Guard has solved this issue by creating a 100% touch-free clinical washbasin. Water, soap and hand gel are delivered without any touch requirements. Through doing this, the units have eliminated a significant source for pathogens to spread.

CONTAMINATION OF WASTE OUTLETS

Another cause for concern is that many waste outlets are heavily contaminated with pathogens and biofilm, which leads to Carbapenemase Producing Enterobacteriaceae (CPEs) becoming commonplace, meaning a high degree of risk. Unfortunately, users depositing liquids and other such waste to the outlets creates a food source for these bacteria.

Luckily, there is a solution for this too. All of the Angel Guard units have a waste and trap made from copper, chosen for its anti-microbial attributes. The waste outlet has also been enlarged, to prevent blockages. Angel Guard units also have on-board detection systems, which can detect if any other liquids are poured down the waste. Through the use of RFID tags, the unit is able to identify the person responsible, allowing re-training to take place to avoid future incidents. Each clinical washbasin also has the ability to chemically disinfect the waste, automatically or manually in an effort to reduce risk.

ITEMS PLACED ONTO WASHBASINS

Each time an item is placed onto a washbasin, this creates an opportunity for pathogens to spread, through water splash and aerosol. Angel Guard have taken care to ensure that will never be an issue with their washbasins. Each basin is constructed with a cylindrical shape, designed to prevent the placement of foreign objects onto the washbasin.

CHALLENGES OF INCREASING HAND WASH COMPLIANCE

Disappointingly, across the board hand washing compliance in many hospitals is currently below 38%.[1] This is based on the correct hand washing methods distributed by the World Health Organisation, from wetting hands, to drying and application of hand gel after washing. Raising compliance can be difficult, with true, reliable data being incredibly difficult and time consuming to extract. Angel Guard have taken this issue and implemented this into the design of the unit. Each unit comes equipped with a video screen to display the WHO method for hand washing, to encourage compliance and make the process easier for users to follow. Additionally, Angel Guard's Michael units are able to record all handwashing data, down to an individual level if required. This allows users to track their compliance rates and improve on them.

DESIGNED WITHOUT HEALTHCARE IN MIND

Not all washbasins and taps are created equally – sometimes manufacturers claim that their products have been designed and are actually intended for use in augmented care areas, or healthcare in general. However, their design is often inherently flawed, as they are constructed in such a way that still allows for water splash and pathogen spread, ultimately nullifying any of the health benefits that would come with such a device. This has been remedied through the design of Gabriel and Michael, as through much study, testing and thought, Angel Guard has accounted for splash, accessibility and prevention of pathogen spread. Through the ergonomic design, the cylindrical basin and many other advances in the field of washbasin and tap technology.

1 WHO Guidelines on Hand Hygiene Ref No. WHO/IER/PSP 2009.07

SPLASHING AND AEROSOL

Commonly, pathogens spread through the air via splashing. This can cause patients, drug preparation cups and other sterile equipment to become contaminated. Many washbasins in current circulation are sadly designed to encourage this splash and spread of aerosol. Even top of the line products that incorporate anti-splash protection, only does so when hands are not within the waterflow. The risk factor is increased further, given that current washbasins also have the risk of water hitting off the waste outlet and releasing the aforementioned harmful pathogens into the air, spreading contamination further.

Angel Guard's patent-pending washbasin cylinder has been constructed precisely to attack this issue head on. The slope of the cylinder itself aids in the slowing down of the water, and the waste outlet is positioned in such a way that the initial impact point of the water won't interact with it. The Angel Guard Aero Blade produces a blade of laminar water, reducing splashing dramatically. Any aerosol and/or splashing that is generated is contained within the innovative design thus preventing wider spread. A number of studies have demonstrated how transmission of water droplets and aerosol can occur up to two metres away, and potentially contaminate the surrounding clinical areas.[2]

Each unit also comes with an air admittance device, preventing positive and negative pressure from dumping the trap contents into the washbasin, reducing chances of contamination further.

2 Barker, J. and Jones, M. (2005), The potential spread of infection caused by aerosol contamination of surfaces after flushing a domestic toilet. Journal of Applied Microbiology, 99: 339-347. https://doi.org/10.1111/j.1365-2672.2005.02610.x

RISKS OF RETROGRADE CONTAMINATION

Retrograde contamination tends to occur when pathogens are entering the outlet and spout of the tap, causing biofilm to establish itself. This biofilm can then be carried to patients via the splashing of water and aerosol. This typically occurs from personal contact with the outlet or spout, and through cleaners making contact with the outlet or spout.

The tap spouts of all Angel Guard units are concealed, made with 100% pure copper and no plastics. The Aero Blade design of the spout reduces risk, not only with how it is designed, but also is inherently placed to prevent contact with users and cleaners, diminishing chances of spread. The spout itself comes with a biofilm sensor built-in, providing critical real-time assessment and feedback 24/7 at the point of delivery, thus greatly assisting the water safety group in reducing the risk of inadvertent contamination in augmented care areas. As mentioned before, the waste outlet is positioned in such a way that retrograde contamination will not be an issue.

UTILISATION OF WATER, WASHBASIN AND OUTLETS

With most washbasins and outlets, an issue arises in the form of dead-legs and the stagnation of water. This happens due to the simple fact of the outlets not being used often enough leading to water standing still within the tap and localised pipework. Angel Guard units are able to monitor water usage 24/7 and can help healthcare providers plan for not only the present, but also the future. If the worst happens, then the Angel Guard units are able to detect raised levels of risk, and can activate countermeasures such as freshwater flushing and chemical disinfection. Also, as Angel Guard units monitor and record activity at every unit this can help with any future planning and possible removal of very low use outlets.

CONTAMINATION OF TMVS AND SOLENOID VALVES

Thermostats (TMVs) often contain many plastic parts and complex waterways that encourage the growth of harmful biofilm. They can be difficult to clean, maintain and service and are reliant on a manual intervention that can be time-consuming and costly. Under current HTM 04-01 guidance, a risk assessment should be taken on all TMVs as to whether the danger of patient infection coming from them is greater than the scalding risk. This guidance recommends hospitals consider removing TMVs in the vast majority of areas where scalding is not considered a risk (as identified and confirmed by the risk-assessment).

By an increasing over-adoption and installation of TMVs, water temperature is commonly blended close to or behind the point of delivery. The very nature of the materials and designs of traditional TMVs, coupled with a trend of under-utilisation and turnover of all WHB outlets, can be considered a significant risk factor in promoting waterborne bacterial growth and hazards of transmission to vulnerable patient populations.

Like TMVs, solenoid valves (and subsequently touch-free sensor taps) are often avoided due to their plastic parts, combined with more complex waterways which leads to an increased risk of biofilm and pathogen spread.

With Angel Guard units, these difficult decisions become a thing of the past. Hygienic Mixing Valves, (HMVs) use ceramic discs to mix the water (given that ceramic is a naturally anti-microbial material) instead of plastics and rubbers, in tandem with the waterways being constructed in a simple fashion. This provides all the benefits of a TMV (more constant mixed water temperature and no scalding risk) with 100% touch-free operation, without compromising on biofilm prevention.

DANGER OF PRE-CONTAMINATING TAPS AND WASHBASINS

When taps and washbasins are constructed, it is incredibly common for them to sit in unclean warehouses for long stretches of time, pre-contaminating themselves with pathogens. Installers for these units also tend to use tools that haven't yet been cleaned on jobs multiple days in a row without cleaning them properly.

Angel Guard are doing something about this. All clinical hand wash units are treated with the same care that is applied to medical devices, and thus are manufactured in clean factory conditions. Units are made to order to coincide with delivery, as not to keep them in the factory for too long, increasing the chance of contamination. Water testing is never carried out on units, instead Angel Guard comply with HTM 04-01 guidance and carry out testing using nitrogen gas, removing any moisture. Angel Guard employ their own Service Scientists to install every unit. Service Scientists are equipped with clean overalls, shoe covers, gloves and one set of sterilised tools to fit each unit, lowering the risk of any cross-contamination.

DIFFICULTIES IN GATHERING DATA AND RISK ASSESSING

At present, the accepted path of risk assessing is simply limited. First of all, to capture the data that is needed is a manual process. The incoming hot and cold water temperatures, mixed water temperature, usage levels, flushing frequency, additional countermeasure frequency and biofilm presence are all required. This is very time consuming and also can vary on a day by day basis, meaning current risk assessment is only based on a small period of time and a select few basin units.

Angel Guard units are not only able to monitor all of these parameters across all basin units but are able to monitor them 24/7. This feature, along with the Colony Technology grants all units within a specified area the ability to risk assess in real-time, with the basis of the risk assessment formed from the constant flow of data.

PROBLEMS WITH IPS UNITS

Current IPS units often get contaminated, due to panel materials delaminating and succumbing to bacterial infestation. In addition, traditional washbasin units have gaps in panels or access hatches that are seldom cleaned. Furthermore, soap, hand towel and hand gel dispensers are often incorrectly affixed on panels, leading to issues with soap falling onto the floor and causing slipping hazards.

All AG units are constructed with smooth, toughened glass and are edged with stainless steel, as standard. There are no panel gaps or access hatches to the front of the unit. The soap and hand gel dispensers are fitted inside Angel Guard unit's cylindrical basin, avoiding any issues with misplacement.

WHO ARE ANGEL GUARD?

WHO?

Angel Guard is a new and innovative company in the field of Medical Biotechnology, founded on the experience of Managing Director Jonathan Waggott and Director of Operations Elaine Waggott, both of whom being very well-versed in the world of plumbing.

Angel Guard is a UK company, with manufacturing and offices based in Scotland, proudly promoted through Made in Britain membership. Angel Guard is passionate about improving patient outcomes, along with reducing the costs associated with and incurred by HCAIs. Additionally, striving to complement, enhance, and contribute to risk assessing, and the construction of water safety plans and written schemes of control through features such as it's unique Halo Protect reporting system. Due to the rise of multi-drug resistant bacteria, Angel Guard incorporates the use of anti-microbial resistant materials to combat CPEs. On top of this, Angel Guard also aims to increase the frequency, compliance and effectiveness of handwashing across the board.

During a 33-year career, Jonathan developed many innovative healthcare products. He has travelled the world, visiting many hospitals to better understand how sanitaryware can be improved and made safer for patients. In 2017, Jonathan was made a Fellow of the Royal Society for Public Health and has been given the Freedom of the City of London. Through his work he has been recognised as one of the World's leading experts in sanitary infection control issues.

Elaine began her career working in the building and construction sector, co-owning a distribution company by the age of 24. Elaine is Six Sigma trained, has recently been awarded membership of the Royal Society of Public Health, and will soon also be given the Freedom of the City of London.

Furthermore, Elaine is also to become a Liveryman of the Worshipful Company of Plumbers. Jonathan, Elaine and their experienced team have worked with many hospital trusts, infection control specialists and microbiologists to develop the Angel Guard units for over 3 years into the highly innovative product that it is today.

WHAT?

Angel Guard began with a vision, recognising the shortfalls of the repurposing of standard and traditional washbasin and taps into hospitals and healthcare facilities. This resulted in washbasins being unable to cope with large, complex water systems. that supply water to vulnerable and high-risk patients. Coupled with Jonathan's extensive experience in the industry, this issue spurred the idea behind Angel Guard, the creation of this ground-breaking solution to combat each of the identified risks and hazards.

Angel Guard aims to be the leading name in providing clean, safe water through the utilisation of AI technology, along with reducing the heavy burden of nosocomial infections, and disrupting the industry norms for effective and hygienic hand washing. Angel Guard units are the first designed for purpose clinical healthcare washbasins and testing has proven that they significantly reduce the risk of infection. However, as well as reducing infection risk, the units have shown to be sustainable, contributing to a carbon net zero through the recycling of parts, cutting down on plastic waste, and the reduction of water, soap and hand gel used.

HOW?

Angel Guard wants to not only increase bed space and free up time for staff, but to also greatly reduce the cost to the healthcare sector. These cost savings include the typical costs of keeping water safe such as chemicals, risk assessments, maintenance and water flushing costs. The largest cost savings of all though are the overall impact of HCAIs. Between the 2016/17 period, HCAIs were estimated to have cost £2.1 billion to NHS England alone.[3] These costs include additional bed space, litigation costs and the costs of specialist drugs and treatment. By focusing on a well-documented and proven route for transmission, Angel Guard seeks to significantly reduce the risk of infection and patient complications arising from the delivery of water to clinical areas. These units will not only keep patients safe, but also prove invaluable to the operations undertaken by the staff within.

3 Guest JF, Keating T, Gould D, et al, Modelling the annual NHS costs and outcomes attributable to healthcare-associated infections in England, BMJ Open 2020;10:e033367. doi: 10.1136/bmjopen-2019-033367

FEATURES & BENEFITS

ANGEL GUARD'S UNIQUE NON-SPLASH GLASS BASIN

Angel Guard's patent pending glass clinical washbasin prevents pathogens from contaminating through typical means i.e. airborne aerosols or from splashing, even when hands are within water flow.

ANTI-MICROBIAL MATERIALS USED

All Angel Guard units are built using naturally anti-microbial materials (glass and copper) which help to protect patients and makes for easy-to-clean components and surfaces.

AI COLONY TECHNOLOGY

Angel Guard clinical washbasins utilise a patent-pending AI Technology system. Each individual unit can gather data, which is then sent to the Angel Guard Halo Protect Cloud System. The system can then identify units within the same specified area and enables them to "talk" to each other. If one unit detects a high level of risk, then the other units can raise the state of alert – causing them to gather data at a higher frequency, issuing preventative countermeasures across the group of units. Through doing this, the units can effectively diminish the chances of pathogen contamination across the entire system, and keep patients safe.

BUILT-IN AUTOMATED COUNTER MEASURES

Angel Guard units come equipped with a number of built-in counter measures, in order to keep users safe.

- Intelligent Flushing means units are able to flush themselves to reduce biofilm build-up, but only when necessary, saving time, money and water.
- Thermal and chemical disinfection can take place automatically and in a safe way when required.
- The optional inclusion of ProEconomy's copper/silver ionisation at point of use, keeps pathogen levels down, reducing the highest risk point for infection.
- Angel Guard units also use a holistic approach to counter pathogens, utilising its entire suite of countermeasures to reduce pathogen resistance.

ADVANCED HALO PROTECT SYSTEM

The Advanced Halo Protect System provides in-depth reporting and risk assessment, including reports tailored to Infection Control, Water Safety Groups, Authorising Engineers and Estate Teams. All of these can be specified exactly to your requirements, complete with graphics, charts and graphs.

STERILISED MANUFACTURING, INSTALLATION AND SERVICING

Manufacturing of all Angel Guard units is performed in a clean environment, with clean tools for each unit. None of the units are water tested, instead tests are performed using nitrogen gas, in line with HTM 04-01. Transportation is also sterile, as is installation, with Angel Guard's Service Scientists using clean overalls and sterilised tools for each installation.

BIOFILM SENSORS

Every unit comes equipped with an on-board biofilm sensor fitted within the tap spout. Michael also comes equipped with two additional biofilm sensors, positioned directly within the hot and cold water supply, ensuring enhanced biofilm detection is taking place 24/7, keeping patients safe.

HTM 04-01 COMPLIANT

As a company passionate about bringing safe and clean water to Hospitals and other healthcare environments, all Angel Guard clinical wash-hand stations have been designed to minimally meet and comply with all 31 points listed for the minimisation of risk within the HTM 04-01 guidelines, whilst often enhancing the level of assurance through innovative adoption of technology and comprehensive use of appropriate materials (encouraging low microbial growth) throughout all aspects of construction.

HYGIENIC MIXING VALVE

A staple of most waterways tends to be TMVs and solenoid valves, which more often than not house biofilm. However, Angel Guard units work with simple waterways and come equipped with a Hygienic Mixing Valve (HMV) which does not include rubber or plastic, but instead ceramic disks, which have been proven to greatly reduce biofilm build-up.

ANGEL GUARD CYBER SECURITY SYSTEM

Angel Guard uses its own cyber-security system, ensuring that any data sent will be kept safe and secure within the company's encrypted systems, meaning that each organisation will have access to their own data and no one else's.

HTM 04-01: NOT JUST COMPLIANCE, BUT EXCEEDING STANDARDS

Health Technical Memorandum (HTM) 04-01 is a piece of legislative guidance issued by the Department of Health and Social Care. It gives guidance on the legal requirements, design applications, maintenance and operation of hot and cold water supplies, storage and distribution systems in all types of healthcare premises.

Angel Guard believes that it is not enough to merely comply with these measures, but to exceed them in their delivery of world class clinical washbasins.

On the following page, Angel Guard have compiled a number of points from the HTM 04-01 memoranda which were considered relevant to the Angel Guard units. Opposite them will be ways in which the Michael and Gabriel units comply with these standards, or in some cases, exceed them.

CURRENT HTM 04-01 GUIDANCE	HOW ANGEL GUARD COMPLIES/EXCEEDS
HTM 04-01 C: 3.2a & 3.3e – Cross-contamination should not occur during cleaning through use of the same cloth between multiple basins and multiple taps	Angel Guard units can detect when and by whom they are cleaned. Angel Guard are developing cleaning cloths to ensure they are only used on a single unit
HTM 04-01 C: 3.2b - Waste outlets are more often than not a breeding ground for bacteria	Units are each equipped with a copper waste and trap, and can automatically disinfect the waste when required
HTM 04-01 C: 3.2c – If POU (Point of Use) filters are fitted to taps, then they should be cleaned the same as the basin. Do not contaminate the external surface and outlet of the filter	Angel Guard have avoided this with each unit being supplied with fully concealed POU filters
HTM 04-01 C: 3.3a & b – Do not dispose of bodily fluids or patient equipment down the clinical wash-hand basin	The units are able to alert and shut down the washbasin until they are decontaminated. Users doing so can be identified and flagged for retraining
HTM 04-01 C: 3.3c – Do not use clinical wash-hand basins for storing used equipment awaiting decontamination	Objects are unable to be placed onto Angel Guard clinical washbasins due to its cylindrical design
HTM 04-01 C: 3.3d – Do not touch the spout outlet when washing hands	Angel Guard units have a concealed spout outlet, preventing users from accidentally making contact
HTM 04-01 A: 10.59 Note 1 – Where installed, ensure that thermostatic mixing valves (TMVs) are fitted directly to the mixed temperature outlet or be integral with it	Angel Guard units are all fitted with a Hygienic Mixing Valve (HMV) incorporating an integral outlet
HTM 04-01 A: 10.59 Note 3 – Automatic taps can be considered through risk assessment. Sensors should be offset to reduce risk of accidental contamination of outlet	Angel Guard units all have 100% touch free controls, and it is impossible to touch the outlet whilst activating the tap via the sensor

HTM 04-01 A: 10.59 Note 5 – Taps, components and fittings should be removable and easily dismantled for cleaning and disinfection	All components are removable, and can be cleaned and replaced as part of the Halo Protect service offer
HTM 04-01 A: 10.58 – Components should be selected for their ability to minimise the accumulation of debris and splashing	Michael and Gabriel units have a unique bladed open outlet and cylindrical washbasin to reduce splashing and biofilm build-up
HTM 04-01 A: 3.41 – Flexible hoses should only be used to allow for vibration of equipment, to accommodate high and low sinks/baths and essential maintenance and access of bespoke equipment when no alternative is available	Angel Guard's Michael and Gabriel units do not use flexible hoses in their construction at all, to entirely avoid this issue
HTM 04-01 A: 3.44 – Where possible, leak-testing should be carried out using nitrogen or medical quality compressed air	All Angel Guard units are tested prior to installation with nitrogen gas
HTM 04-01 C: 3.1 k & m – TMVs and associated components should be serviced at recommended intervals Taps that can be easily removed should be regularly removed for maintenance	As part of the Angel Guard Halo Protect Service, Service Scientists will regularly service and check the HMVs, taps and other components
HTM 04-01 C: 3.1 l – An integral TMV should be considered to help minimise the risk of stagnation	Units use an HMV that is integral, and has a unique drain down system, ensuring removal of mixed water

MICHAEL & GABRIEL

At the forefront of the fight against HCAIs, Angel Guard employs two champions in the forms of Michael and Gabriel, their two state-of-the-art clinical washbasins. Gabriel is well equipped to deal with most issues that are faced when dealing with biofilm and pathogens in water. However, there is a more advanced option in Michael, which is very effective when utilised in high-risk areas. For a brief overview of their abilities and differences, look below:

DELIVERY & COMPLIANCE FEATURES	DELIVERY & COMPLIANCE BENEFITS	MICHAEL	GABRIEL
Sterile manufacture, commissioning, install & service	Setting a new standard with clean manufacturing, no water testing, clean overalls, sterile tools used each time	✓	✓
AG Cyber Security System	Keeps sensitive data safe and secure	✓	✓
Reporting system - Infection Prevention, Water Safety Group, Estates etc.	Easy use tailored reports including graphics which helps save time and provide more accurate planning and overall risk assessment	✓	✓
HTM 04-01 Compliant	Ensures compliance is met and exceeded for peace of mind	✓	✓

PRO-ACTIVE FEATURES	PRO-ACTIVE BENEFITS	MICHAEL	GABRIEL
Real Time Sensors - Temperatures, Flow and biofilm sensor (spout)	Data is sent to the AG cloud system and is used to keep patients safe by identifying and reducing risk	✓	✓
Real Time Sensors - Temperatures, Flow and biofilm sensors (spout & incoming hot & cold water)	Additional biofilm sensors help to identify exactly where biofilm is within each unit - reducing risk and saving lives	✓	
Colony Technology - Units work together to keep entire areas safe	Provides building-wide protection against systemic contamination	✓	✓
Automatic AI risk assessment system	This keeps the unit safe by identifying when countermeasures are required and how effective they have been	✓	✓
Halo Protect 24/7 monitoring by Guardian staff	No need to respond to alarms - fully trained staff will look after everything - keeping patients safe and giving your staff members more time	✓	✓
Touch Free delivery of water, soap and hand gel	Large reduction in transfer of pathogens	✓	✓
Infection Prevention Hygiene System (intelligent handwash with monitoring)	Each handwash is monitored down to job roles or even individuals (if required) to enable each user and department to achieve their optimal handwash performance	✓	
No touch outlet	Significant reduction in retrograde contamination	✓	✓
Unique bladed open outlet	Reduces splashing and aerosol whilst reducing biofilm	✓	✓

HYGIENE FEATURES	HYGIENE BENEFITS	MICHAEL	GABRIEL
Patent pending next generation anti-splash washbasin	Virtually eliminates splashing even when hands are in the water flow - a very common method of transporting pathogens to patients	✓	✓
Non-Splash waste outlet	Removes the risk of splashing from the waste outlet - greatly reducing HCAIs	✓	✓
Wider waste outlet (anti-splash)	Helps prevent blockages which can cause pathogens to be spread	✓	✓
Basin trap contents cannot come back up into the basin	This is a common occurrence caused by positive and negative pressure build-up, leading to high levels of contamination, and in turn, HCAIs	✓	✓
Cleaning protection system	Monitors cleaning of each unit and helps to prevent contamination from liquids being poured down the basin	✓	
Hygienic Mixing Valve (HMV)	Has simple waterways and mixes water using ceramic discs (not rubber/plastic) to greatly reduce biofilm build-up	✓	✓
No solenoid valves	Solenoid valves often contain harmful biofilm	✓	✓
Unit made from naturally anti-microbial easy-clean materials	The outside of the units are made from safety glass which is very easy to keep clean. Waterways are copper and lead-free brass which is naturally anti-microbial	✓	✓

COUNTERMEASURE FEATURES	COUNTERMEASURE BENEFITS	MICHAEL	GABRIEL
Intelligent flushing system	Ensures flushing only when really required - based on real-time risk assessments, saving water and cost whilst keeping the system clean	✓	✓
Manual thermal disinfection	Saves time and money by alerting only when thermal disinfection is required		✓
Fully automated thermal disinfection	Saves time by delivering disinfection without the need for manual input	✓	
Fully automated chemical disinfection (including waste pipe and trap)	Delivered at point of use only when required - saving cost and being more effective	✓	
Optional Pro Economy silver/ copper ionisation at point of use	Helps to keep pathogen levels down at POU - where the highest risk is	✓	✓
Intelligent countermeasure delivery	Provides additional safety by delivering an holistic approach - issuing a suite of countermeasures to help ensure pathogens don't become resistant to a single type	✓	✓

SUSTAINABILITY

SAVING LIVES, MONEY & THE ENVIRONMENT

WATER

Angel Guard is well aware that water is one of the most valuable commodities in every day life, and that is why Angel Guard units can save (on average) 9.4 million litres of water per year.[4] To help put it in perspective, the water saved would be more than two Olympic-sized swimming pools. This in turn equates to cost savings of £7,128 per unit.[5]

CARBON DIOXIDE

Angel Guard is also very conscious of the amount of CO2 it emits, not only in its factories and maintenance, but also its installation and transport. However, it is thanks to this eco-friendly approach that Angel Guard units are able to save each hospital 347,000 tonnes of CO2 each year.[6]

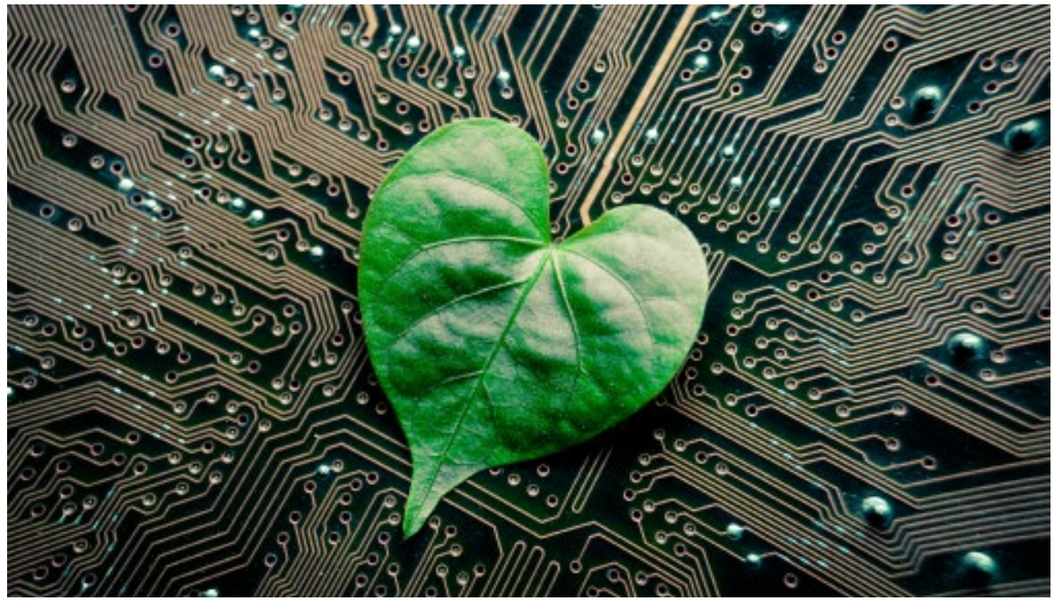
4 Based on 10 installed AG units compared with existing hospital taps running for 40 seconds per use – 300 uses per day, flow 6 litres per minute.
5 Based on costs from Thames Water over a 5 year period.
6 Based on 1,000 units installed. (Angel Guard use fully electric cars and vans)

PLASTIC & RECYCLING

Given the different shape of Angel Guard units and the components within, Angel Guard have calculated that they will be able to save up to 2.5 tonnes of plastic.[7] The units themselves are also very environment friendly, with over 50% of the unit being made from recyclable materials, and 99% of the materials will be recycled at the end of each units life.[8]

SOAP & HAND GEL

Yet another way that Angel Guard units reduce their carbon footprint on the planet is through their soap and hand gel dispensers. Installations of these units will see savings of 260,000 litres of soap/hand gel.[9]



7 Based on 1000 existing taps using 12 filters per year and soap and hand gel refills over 5 years.
8 Based on weight.
9 Based on 3 pumps compared to 1 delivery per use over 5 years with 50 units installed.

ERGONOMICALLY DESIGNED

Angel Guard have taken great care when designing their Michael and Gabriel clinical washbasins. For example, the entire unit is self contained, and with its sleek and modern design, there will be no sharp edges jutting out or causing danger.

The unit is designed in such a way that there are no points of contact required for access to soap or hand gel. Instead all controls are easy to use and 100% touch free, with soap, water and hand gel delivered direct to the hands within the anti-splash glass washbasin.

The clinical washbasin itself has been designed to be completely accessible to all users, including those in wheelchairs and to young children.

With clear instructions and instructional videos appearing on the screen, it means Angel Guard units are the easiest and safest way to clinically handwash.

TECHNICAL INFORMATION

Angel Guard want to make sure prospective partners have all the information they need before making the decision to request Angel Guard's clinical washbasins, and so, have made plenty of information available on their website, including:

BIM FILES

Given the informative age the world has entered, Angel Guard ensures that they will always utilise the technological tools at their disposal, meaning that Building Information Modelling (BIM) files will be there when requested.

DATA SHEETS

Data Sheets are available on demand, allowing viewers a full breakdown of Angel Guard's clinical washbasins, including features and benefits gained from their use.

ASSOCIATIONS

MADE IN BRITAIN

Angel Guard is proud to announce its membership to Made In Britain, which is due to the fact that the Michael and Gabriel units are manufactured at its headquarters in Great Britain.

ROYAL SOCIETY FOR PUBLIC HEALTH (RSPH)

Angel Guard is a corporate member of the Royal Society for Public Health (RSPH). The aims of the RSPH also align with those of Angel Guard. The company wishes to create healthier environments, improve and also protect the public's health, which is made possible thanks to Michael and Gabriel's ability to drastically reduce levels of water-borne pathogens including Legionella.

SNOWBIRD FINANCE

Angel Guard realises that in some cases, capital expenditure can be an issue, which is why Angel Guard have collaborated with Snowbird Finance Ltd, in order to tailor a financial solution to meet any circumstance with low monthly or quarterly payments. Please contact the Angel Guard solution architects for more information.

MADE IN BRITAIN®

RSPH CORPORATE MEMBER

Snowbird
EXPERTISE | SERVICE | INTEGRITY

CONTINUING PROFESSIONAL DEVELOPMENT (CPD) COURSES

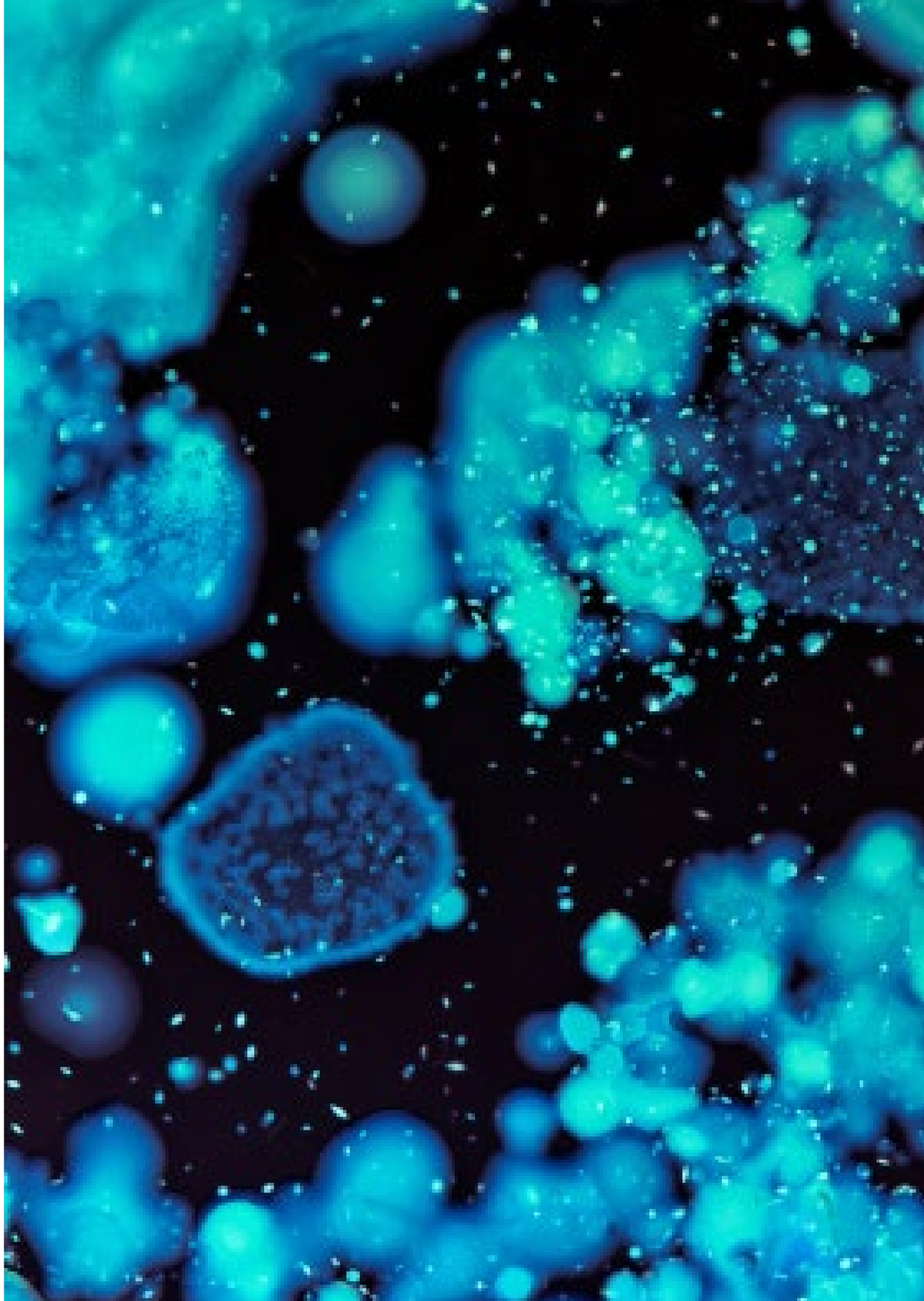
Angel Guard's CPD course covers the difficulties encountered with regards to clinical washbasins and fighting pathogens including legionella, pseudomonas aeruginosa etc. The course is entitled "Preventing the Spread of Water-Borne Pathogens in Healthcare Settings".

Angel Guard feels that in the tumultuous times we live in, especially now, that it is vital for healthcare professionals at all levels to understand why clinical washbasins need to be kept safe, and how they can continue to be safer moving forwards.

The course will cover:

- The risks posed to medical professionals regarding water outlets and anti-microbial resistance
- The challenge of keeping clinical wash outlets clean and safe
- Current issues, maintenance and costs faced by healthcare facilities
- How this can be improved in the future

Please contact the Angel Guard solution architects for full details on the content available, to support ongoing professional development through training and education.



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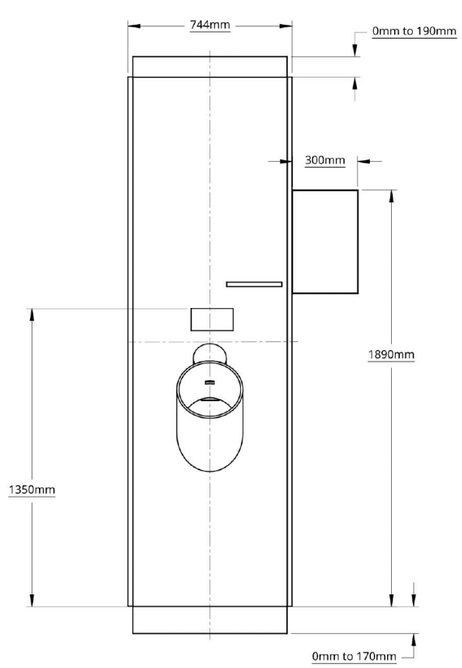
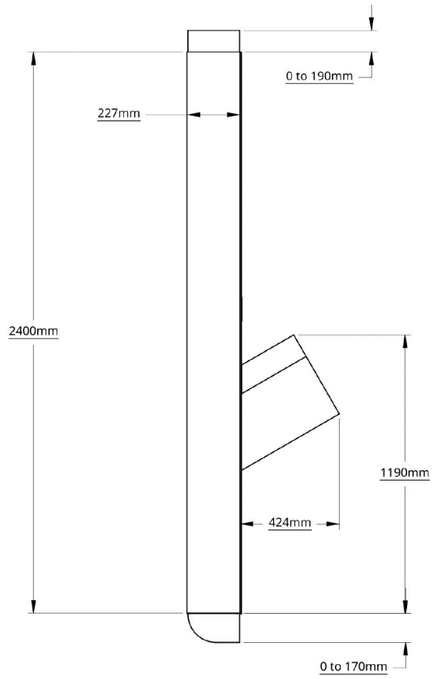
Product Data Sheet

Date Created: 05/05/22

Angel Guard - Gabriel

Angel Guard Gabriel unit	A0706 BG
Angel Guard Gabriel unit	A0707 YG





Finishing Options:

Black Glass BG
Yellow Glass BG

Material Type

Frame: Galvanised Steel
Front and Basin: Glass
Pipework: Copper
Side Panels: Stainless Steel

Weight

Angel Guard Gabriel Unit	108 KG

Features and Benefits

- AngelGuard Unique Glass Basin
- Anti Microbial materials used: All of our units are built using naturally anti-microbial materials such as glass and copper, which protects your patients and is easy to clean!
- A.I Colony technology: This technology intelligently learns and adapts to bacterial behaviours.

Notes:

Designer: Jonathan Waggott and Elaine Waggott

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Product Data Sheet

Date Created: 05/05/22

Angel Guard - Michael

Angel Guard Michael unit	A0704 BG
Angel Guard Michael unit	A0705 YG

Finishing Options:

Black Glass BG
Yellow Glass BG

Material Type

Frame: Galvanised Steel
Front and Basin: Glass
Pipework: Copper
Side Panels: Stainless Steel

Weight

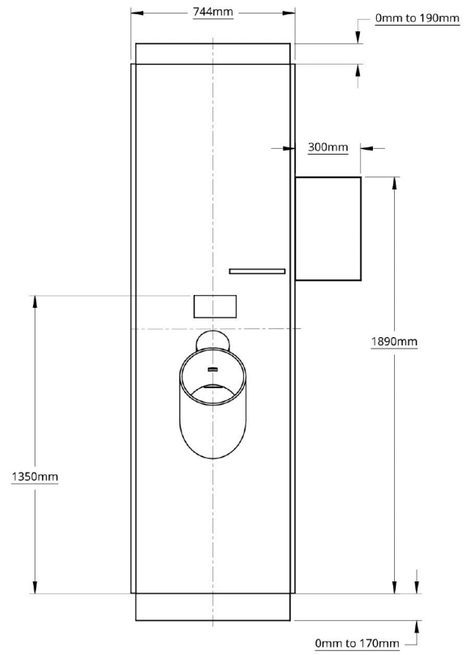
Angel Guard Michael Unit 140 KG

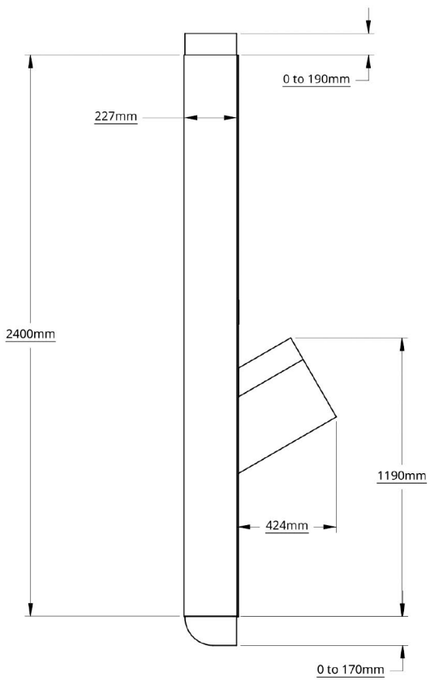
Notes:

Designer: Jonathan Waggott and Elaine Waggott

Features and Benefits

- Built in Automated Counter Measures - this includes Chemical and Thermal disinfection and mixed water flushing
- Pro Economy copper/silver ionisation system also available
- Biofilm Sensor: Michael has 2 additional biofilm sensors postitioned within the water supply for enhanced detection
- Halo System Advanced: This advanced system provides in depth real time reporting including reports specifically for Infection Control/Water Safety Groups/Authorising Engineers/Estates. These can be tailored to your specific needs and requirements.





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