

GILBERTS



MISTRALE FUSION EVO MFS-HR-CE 1 & 2

75% Heat Recovery | CE-Marked Performance |
DfE-Aligned Design | One Coordinated Solution

Hybrid ventilation made easier to specify



School ventilation is becoming more complex. *Specifying it shouldn't be!*

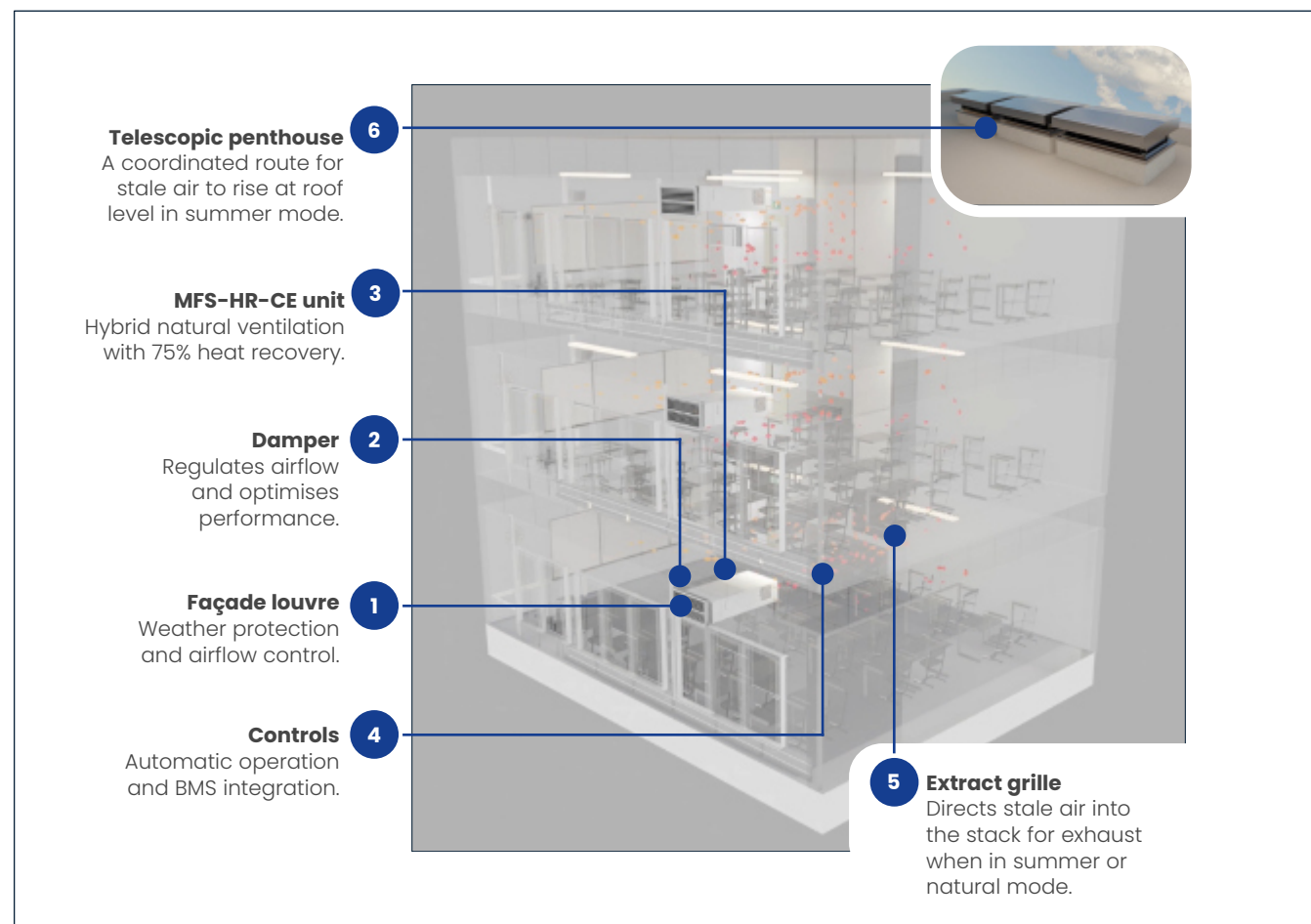
Designing effective ventilation for today's learning environments means balancing indoor air quality, energy performance, thermal comfort, acoustics and increasingly demanding Department for Education (DfE) requirements.

Mistrale Fusion Evo, fondly known as MFS-HR-CE, brings those demands together in one coordinated hybrid natural ventilation solution. With 75% heat recovery, CE-marked performance and a natural-first operating strategy, it gives designers greater confidence that comfort, compliance and energy efficiency can be achieved without unnecessary complexity.

The new MFS-HR-CE is available in two models; MFS-HR1-CE and MFS-HR2-CE. These are now fully compliant and CE marked to the requirements of Annex V of Commission Regulation (EU) No 1253/2014.

Gilberts simplifies specification by bringing every element together as one coordinated system. **Follow the journey** to discover how each component works together to deliver a complete ventilation strategy.

Click [here](#) to see our system in action.



CE MARKED

Greater confidence in product selection, performance and regulatory compliance.



75% HEAT RECOVERY

More heat retained within the building, reducing ventilation heating demand.



<1,000 ppm CO² TARGET

Supporting healthy learning environments.

Why MFS-HR-CE?

MFS-HR-CE is a hybrid natural ventilation system with heat recovery, designed to provide fresh air and maintain comfortable conditions in educational buildings.

So, why should you consider MFS-HR-CE? From specification and energy demand to building design, here's how it responds to the challenges you face.

CONFIDENCE IN SPECIFICATION

CE marked - Confidence in specification, performance and compliance

BB101 - Supports thermal comfort and overheating mitigation

BB93 - Supports acoustic comfort and low-noise operation

Supports Part L - For reduced operational energy demand

TM54 - supports dynamic energy modelling

LOWER ENERGY DEMAND

75% heat recovery - Reduces heating energy demand

Low SFP - Reduced fan energy consumption

Low air leakage - Less than 3m³/hr/m²

U-value <1 W/m²K - Reduced fabric heat loss when out of occupancy

EUI targets - Helps reduce whole-building energy demand

A BETTER LEARNING ENVIRONMENT

CO₂ control - Supports <1,000 ppm daily average target

Cool recovery - Helps mitigate summertime overheating

Night purge - Passive cooling and climate resilience

DESIGNED FOR THE WHOLE BUILDING

Roof stack solution - Supports passive vertical exhaust ventilation

BMS integration - Automatic monitoring and control

No recirculation - Segregated fresh and exhaust air

Whole-life carbon - UK manufactured and designed

What difference does 75% make?

A higher heat recovery efficiency means more heat is retained within the building, reducing the need for supplementary heating and lowering energy demand, while maintaining a comfortable learning environment.

Typical 55m² classroom | 33 occupants | -4°C outside air | 21°C room*:

	50% HR	75% HR
Incoming supply air	8.5°C	14.75°C
Heating required	0.95 kW	None
Heat recovered	2.56 kW	3.54 kW
Annual heating energy	32 kWh	None

Scroll to **page 7**
for more
performance
data.



✓ **Smaller heating provision:**

Lower ventilation heat demand could reduce the required capacity of supplementary heating systems, potentially reducing plant size and associated capital cost.

✓ **Less renewable generation required:**

Reducing operational energy demand can reduce the amount of renewable generation needed to meet a building's energy targets, potentially meaning fewer PV panels, less roof space and fewer assets to maintain.

✓ **More flexibility for the roof:**

If fewer PV panels are required, valuable roof space can potentially be freed for other services, access, maintenance and future requirements.

✓ **Reduced strain on heating systems:**

Recovering more heat means the heating system has less work to do to maintain classroom temperatures, potentially reducing operating hours, wear and long-term maintenance requirements.

✓ **More resilient winter comfort:**

With supply air entering the room at a higher temperature, the classroom is less dependent on supplementary heating to offset cold outdoor conditions, helping maintain a more stable learning environment.

*Gatwick weather file.



The right mode at the right time

MFS-HR-CE offers six operating mode which include:

Morning warm-up mode (with heating coil option)

Room air enters inlet grille on underside, passes through supply fans under the heat exchanger and through the coil.

Air from the primary fans by-passes the heat exchanger passing under it and through the heating coil.

The total airflow passes through the heating coil and into the room.



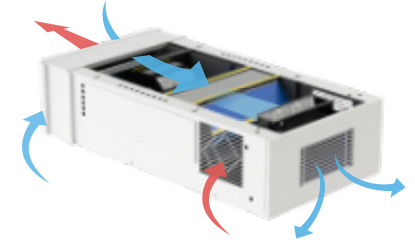
Natural ventilation mode (when units are meeting set-points, unit is placed in NV mode with no fan assistance)

May be used with opening windows or stack.

Damper open to outside to allow flow of air in and out of room.

No mechanical fans used in this mode.

Natural ventilation occurs via buoyancy and stack effect.



Night time cooling mode

Operates in the same manner as supplementary mode.

Allows cool night time air to condition the room.

Natural ventilation system to operate in tandem with linked control.

Reduces classroom temperature to ensure comfortable morning conditions.



Supplementary ventilation mode (for summer conditions where heat recovery is not required)

Fresh air enters through the lower face of the façade damper.

Fresh air passes into the supply fans and bypasses the heat exchanger.

Total fresh air passes through the coil (if fitted) and into the room.

Peak lopping can be provided by pumping cold water through the coil (if fitted).



Heat recovery mode (winter normal operation)

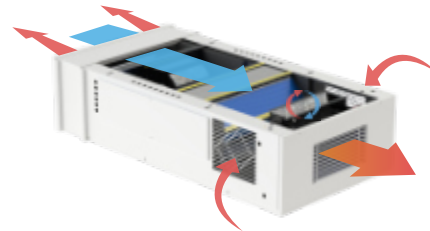
Fresh air enters and part deflected through heat recovery section.

Room air returned into heat exhaust section and removed via extract fan.

Mix of air through each chamber adjusted to meet room temperature requirements in heat exchanger.

Air volume adjusted to suit CO₂ requirements.

Additional heat input can be added (if coil fitted).



Cool recovery mode (outside air temperature higher than room temperature)

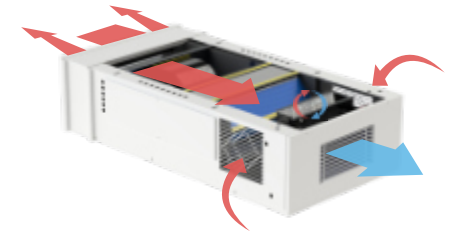
Fresh air enters and is fully deflected through the heat exchanger.

Room air returned into heat exhaust section and removed via extract fan.

Mix of air through each chamber adjusted to meet room temperature in heat exchanger.

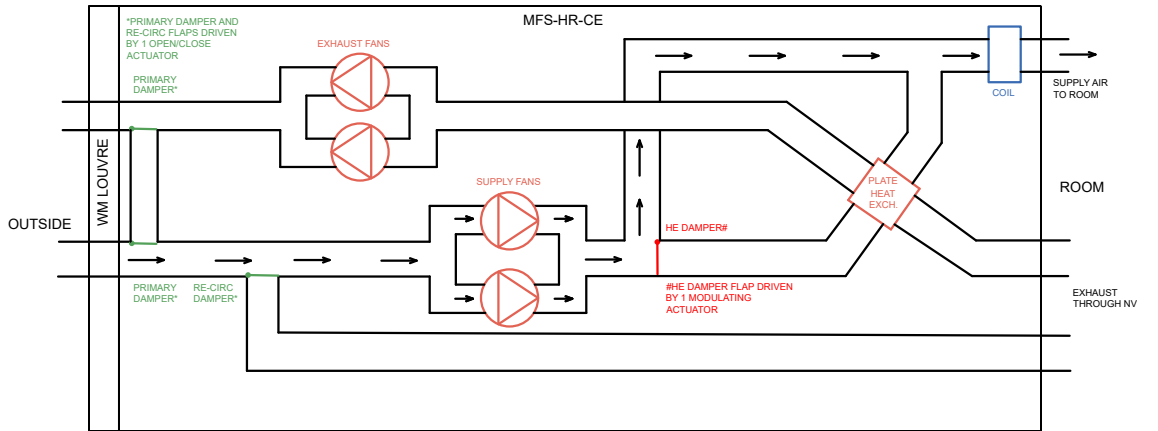
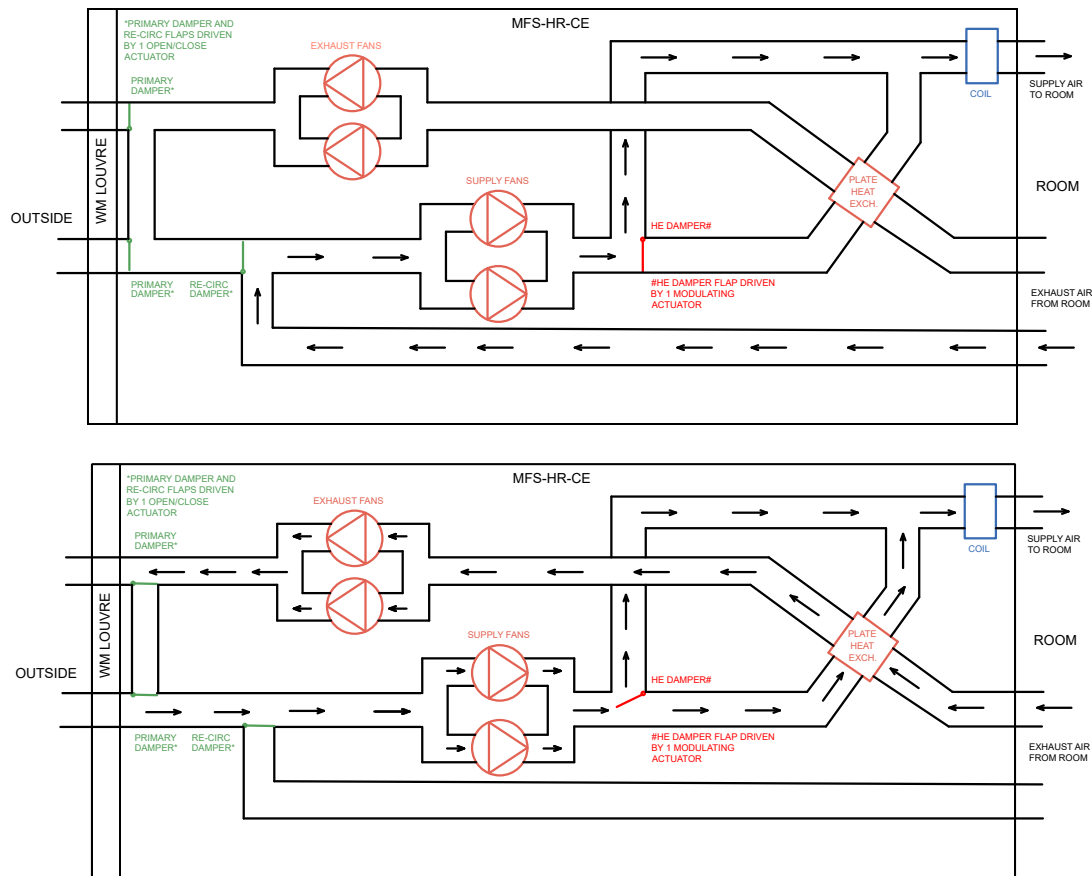
Air volume adjusted to suit CO₂ requirements.

Peak lopping can be provided by pumping cold water through the coil (if fitted).



Airflow Maps

The airflow maps show the routing of air pathways during morning warm up, winter heat recovery and normal summer conditions. Each mode offers different air pathways routing the air through fan packs, damper arrays, heat exchangers and heating coils to provide a clean uninterrupted and uncontaminated air supply.

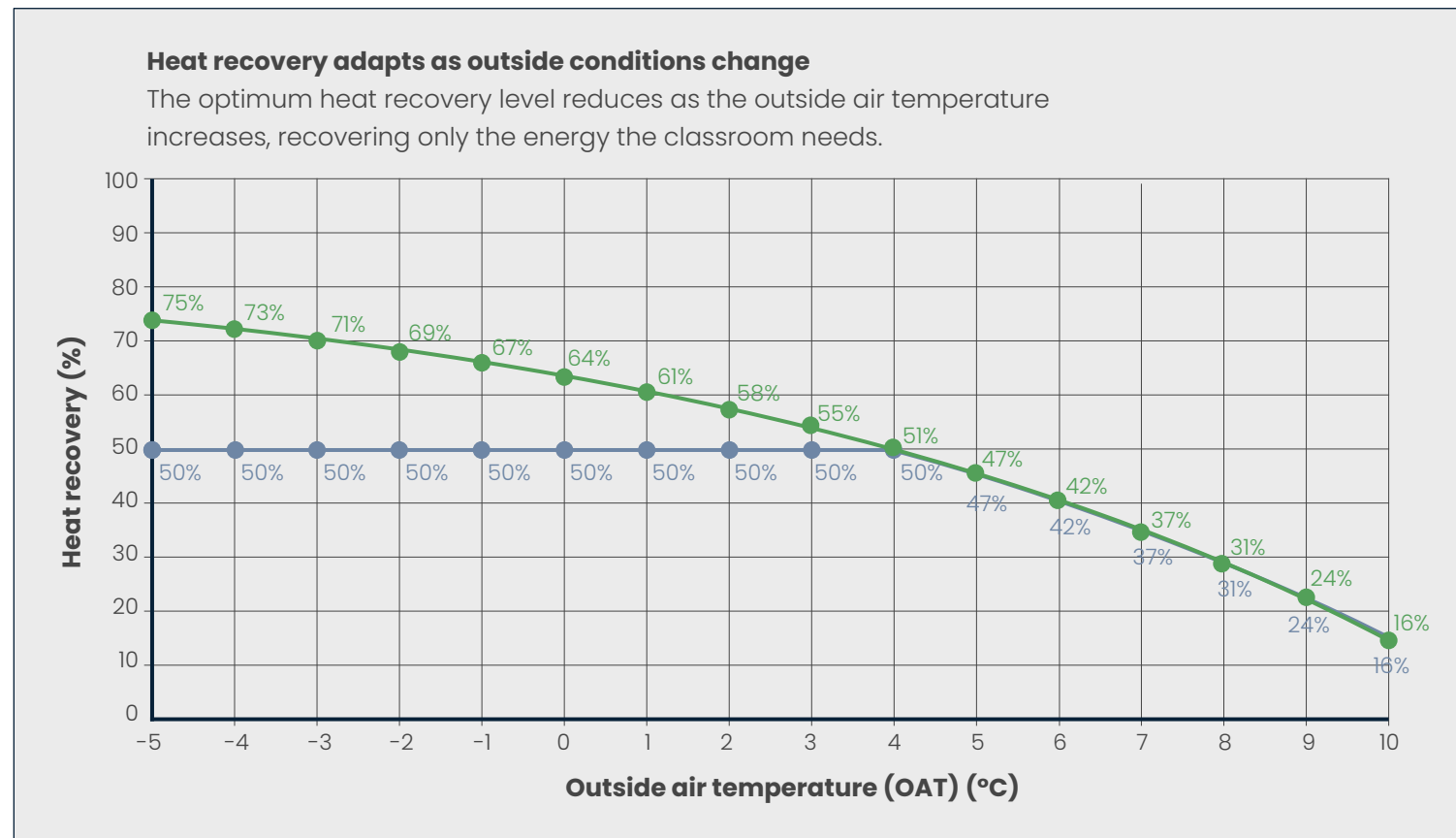


Note

Exhaust ventilation required to allow for natural ventilation to occur.

Performance that responds to demand

MFS-HR-CE adjusts heat recovery as outside conditions change, recovering the heat needed to maintain comfortable classroom conditions without unnecessary energy use.



75% heat recovery.
50% heat recovery.

Calculations refer to the modelled heat recovery cycle energy.

Performance continued...

Impressive numbers, but what does it actually mean and how does this translate into end user benefit?

The following chart illustrates the difference between 50% and 75% heat recovery for a single classroom (taking min temperature as -5°C outside air temperature).

Conditions					
OAT	Occ. Hrs*	Heat Loading Occ's	Heat Load- Other	Heat Loss- Building	Nett Heat Load
deg C	h/yr	W	W	W	W
-5	1	1885	750	1300	1335
-4	3	1885	750	1250	1385
-3	1	1885	750	1200	1435
-2	4	1885	750	1150	1485
-1	7	1885	750	1100	1535
0	22	1885	750	1050	1585
1	50	1885	750	1000	1635
2	38	1885	750	950	1685
3	34	1885	750	900	1735
4	43	1885	750	850	1785
5	56	1885	750	800	1835
6	58	1885	750	750	1885
7	70	1885	750	700	1935
8	95	1885	750	650	1985
9	111	1885	750	600	2035
10	147	1885	750	550	2085

Air swap		
Fresh Air Flow Rate	I/s pp	Energy Lost Through Fresh Air
I/s	I/s	W
160	5	5376
160	5	5184
160	5	4992
160	5	4800
160	5	4608
160	5	4416
160	5	4224
160	5	4032
160	5	3840
160	5	3648
160	5	3456
160	5	3264
160	5	3072
160	5	2880
160	5	2688
160	5	2496

Optimum Heat Recovery 75% max							
Energy Recov'd	HR#	Spare Capacity of HR	Suppl. Heating Power	Heating Energy	Total Fan Power	SFP	Fan Power Cons /yr
W	%	W	W	kWh	W	W/l/s	kWh
4041	75	-9	0		38.0	0.24	0.0
3799	73	89	0		38.0	0.24	0.1
3557	71	187	0		38.0	0.24	0.0
3315	69	285	0		38.0	0.24	0.2
3073	67	383	0		38.0	0.24	0.3
2831	64	481	0		38.0	0.24	0.8
2589	61	579	0		38.0	0.24	1.9
2347	58	677	0		38.0	0.24	1.4
2105	55	775	0		38.0	0.24	1.3
1863	51	873	0		38.0	0.24	1.6
1621	47	971	0		38.0	0.24	2.1
1379	42	1069	0		38.0	0.24	2.2
1137	37	1167	0		38.0	0.24	2.7
895	31	1265	0		38.0	0.24	3.6
653	24	1363	0		38.0	0.24	4.2
411	16	1461	0		38.0	0.24	5.6
Max	75		0				28

Heat Recovery 50% max							
Energy Recov'd	HR#	Spare Capacity of HR	Suppl. Heating Power	Heating Energy	Total Fan Power	SFP	Fan Power Cons /yr
W	%	W	W	kWh	W	W/l/s	kWh
2688	50	0	1353	1	33.0	0.21	0.0
2592	50	0	1207	4	33.0	0.21	0.1
2496	50	0	1061	1	33.0	0.21	0.0
2400	50	0	915	4	33.0	0.21	0.1
2304	50	0	769	5	33.0	0.21	0.2
2208	50	0	623	14	33.0	0.21	0.7
2112	50	0	477	24	33.0	0.21	1.7
2016	50	0	331	13	33.0	0.21	1.3
1920	50	0	185	6	33.0	0.21	1.1
1863	50	0	0	0	33.0	0.21	1.4
1621	47	107			33.0	0.21	1.8
1379	42	253			33.0	0.21	1.9
1137	37	399			33.0	0.21	2.3
895	31	545			33.0	0.21	3.1
653	24	691			33.0	0.21	3.7
411	16	837			33.0	0.21	4.9
Max	50			72			24

Illustration conditions, 75 kW small power, 65 Wpp, 29 occupants, 50 W/°C fabric loss.

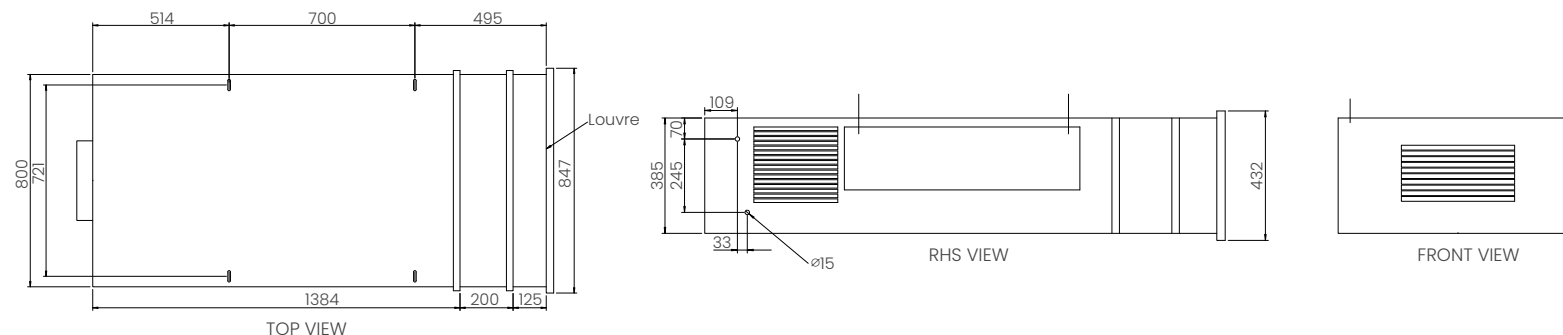
■ Annual energy requirement to supplement the HR units.

■ Annual energy requirement to operate the Fans in the HR mode.

Calculations refer to the modelled heat recovery cycle energy.

Daytime Performance – MFS-HR1-CE exposed

Designed for high-level installation above windows, MFS-HR1-CE features a clean white powder-coated finish that blends naturally into classroom environments. With flexible configurations for standard classrooms and noise-sensitive SEN spaces, it delivers the right balance of airflow, acoustic comfort and energy efficiency.



VENTILATION CAPACITY

Summer boost airflow.

Additional fresh air when demand increases.

370 l/s

ACOUSTIC COMFORT

Quiet operation.

Low-noise ventilation for sensitive learning spaces.

21 dBA

HEAT RECOVERY

Less wasted heat and lower supplementary demand.

4.1 kW

ENERGY PERFORMANCE

Mean annual SFP.

Low fan power requirements help control running costs.

0.12

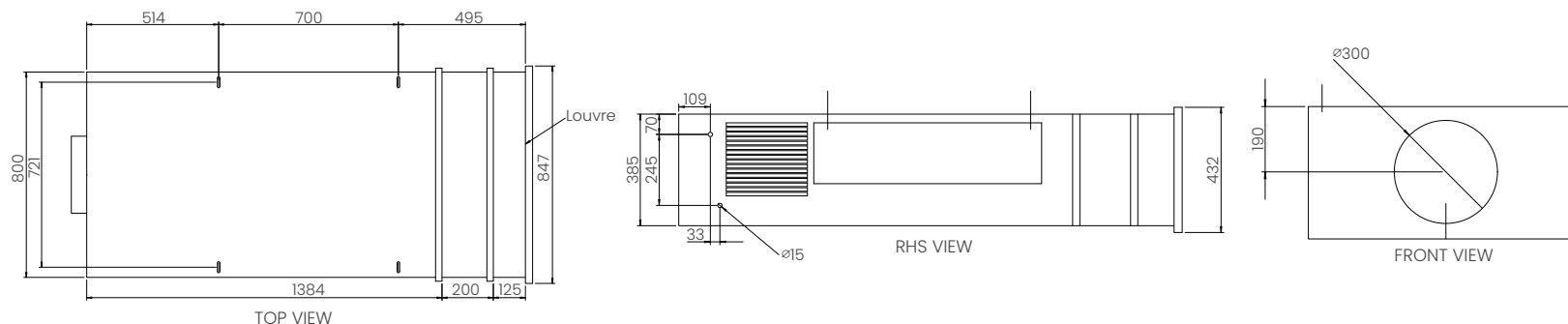
Performance figures represent selected configurations and operating conditions. Refer to the tables below for individual model performance.

MFS-HR1-CE solution	Winter heat recovery		Summer bypass			Max operating current	Peak current
	Nominal (5l/s/pp)/SPL (dBA)	Max high airflow(l/s)/SPL (dBA)	Nominal (8l/s/pp)/SPL (dBA)	Max high airflow (l/s)/SPL (dBA)	Summer boost flow (l/s)/SPL (dBA)		
2xMFS-HR1(CE)-K15 (no coil)	160/29	212/35	256/29	314/35	364/40	1.4A total	2.8A
2xMFS-HR1(CE)-C-K15 (with coil)	160/30	206/35	256/29	312/35	370/40	1.4A total	2.8A
1xMFS-HR1(CE)-K15 (SEN-no coil)	60/23	97/30	96/21	147/30	173/35	0.7A total	1.4A
1xMFS-HR1(CE)-C-K15 (SEN-with coil)	60/23	94/30	96/22	146/30	173/35	0.7A total	1.4A

MFS-HR1-CE solution	Energy recovered, optimum efficiency (kW) @ -5°C OAT	Airflow on warm-up (l/s)	Warm-up performance (50/40, air on 13°C) in W	Winter SFP	Summer SFP	Mean annual SFP	MFS-HR weight (kg)
2xMFS-HR1(CE)-K15 (no coil)	4.1	N/A	N/A	0.26	0.08	0.13	94
2xMFS-HR1(CE)-C-K15 (with coil)	4.1	410	4640	0.24	0.08	0.12	98
1xMFS-HR1(CE)-K15 (SEN-no coil)	1.5	N/A	N/A	0.25	0.08	0.13	94
1xMFS-HR1(CE)-C-K15 (SEN-with coil)	1.5	205	2320	0.23	0.07	0.12	98

Daytime Performance – MFS-HR1-CE concealed (above ceiling)

Where space permits, MFS-HR1-CE can be installed above the ceiling. A suspended ceiling will conceal while giving the benefits of easy access. Plasterboard is also a practical solution with ducted outlets allowing connection to a variety of air distribution grilles.



VENTILATION CAPACITY

Summer boost airflow.

Additional fresh air when demand increases.

362 l/s

ACOUSTIC COMFORT

Quiet operation.

Low-noise ventilation for sensitive learning spaces.

22 dBA

HEAT RECOVERY

Less wasted heat and lower supplementary demand.

4.1 kW

ENERGY PERFORMANCE

Mean annual SFP.

Low fan power requirements help control running costs.

0.13

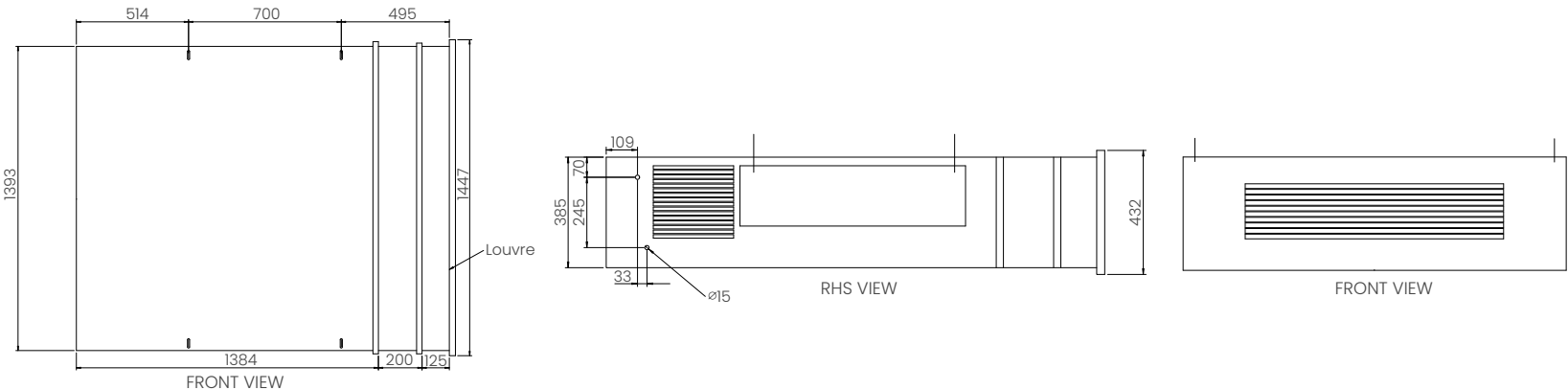
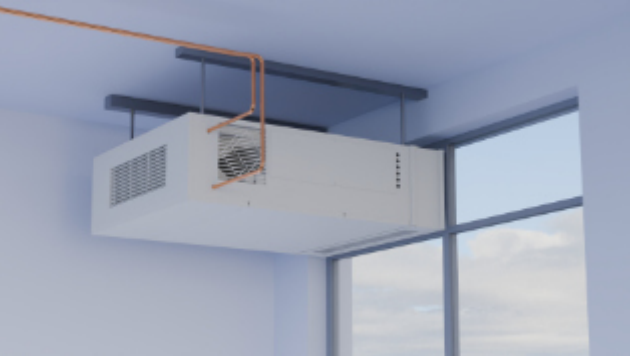
Performance figures represent selected configurations and operating conditions. Refer to the tables below for individual model performance.

MFS-HR1-CE solution	Winter heat recovery		Summer bypass			Max operating current	Peak current
	Nominal (5l/s/pp)/SPL (dBA)	Max high airflow(l/s)/SPL (dBA)	Nominal (8l/s/pp)/SPL (dBA)	Max high airflow (l/s)/SPL (dBA)	Summer boost flow (l/s)/SPL (dBA)		
2xMFS-HR1(CE)-OS300 (no coil)	160/28	228/35	160/28	300/35	352/40	1.4A total	2.8A
2xMFS-HR1(CE)-C-OS300 (w/coil)	160/28	230/35	256/31	306/35	362/40	1.4A total	2.8A
1xMFS-HR1(CE)-OS300 (SEN-no coil)	60/22	105/30	96/22	137/30	166/35	0.7A total	1.4A
1xMFS-HR1(CE)-C-OS300 (SEN-w/coil)	60/22	105/30	96/22	143/30	168/35	0.7A total	1.4A

MFS-HR1-CE solution	Energy recovered, optimum efficiency (kW) @ -5°C OAT	Airflow on warm-up (l/s)	Warm-up performance (50/40, air on 13°C) in W	Winter SFP	Summer SFP	Mean annual SFP	MFS-HR weight (kg)
2xMFS-HR1(CE)-OS300 (no coil)	4.1	N/A	N/A	0.27	0.15	0.19	94
2xMFS-HR1(CE)-C-OS300 (w/coil)	4.1	366	4200	0.26	0.14	0.18	98
1xMFS-HR1(CE)-OS300 (SEN-no coil)	1.5	N/A	N/A	0.22	0.09	0.13	94
1xMFS-HR1(CE)-C-OS300 (SEN-w/coil)	1.5	183	2100	0.22	0.11	0.14	98

Daytime Performance - MFS-HR2-CE exposed

Our higher-capacity unit has been designed for high-level installation above windows, MFS-HR2-CE features a clean white powder-coated finish that blends naturally into classroom environments.



VENTILATION CAPACITY
Summer boost airflow.
 Additional fresh air when demand increases.

333 l/s

ACOUSTIC COMFORT
Quiet operation.
 Low-noise ventilation for sensitive learning spaces.

33 dBA

HEAT RECOVERY
 Less wasted heat and lower supplementary demand.

4.1 kW

ENERGY PERFORMANCE
Mean annual SFP.
 Low fan power requirements help control running costs.

0.24

Performance figures represent selected configurations and operating conditions. Refer to the tables below for individual model performance.

MFS-HR2-CE solution	Winter heat recovery		Summer bypass			Max operating current	Peak current
	Nominal (5l/s/pp)/SPL (dBA)	Max high airflow(l/s)/SPL (dBA)	Nominal (8l/s/pp)/SPL (dBA)	Max high airflow (l/s)/SPL (dBA)	Summer boost flow (l/s)/SPL (dBA)		
1xMFS-HR2(CE)-K15 (no coil)	160/34	164/35	256/33	276/35	333/40	1.4A total	2.8A
1xMFS-HR2(CE)-C-K15 (with coil)	160/35	160/35	256/34	268/35	323/40	1.4A total	2.8A

MFS-HR2-CE solution	Energy recovered, optimum efficiency (kW) @ -5C OAT	Airflow on warm-up (l/s)	Warm-up performance (50/40, air on 13°C) in W	Winter SFP	Summer SFP	Mean annual SFP	MFS-HR weight (kg)
1xMFS-HR2(CE)-K15 (no coil)	4.1	N/A	N/A	0.49	0.13	0.24	140
1xMFS-HR2(CE)-C-K15 (with coil)	4.1	383	4580	0.62	0.12	0.27	155

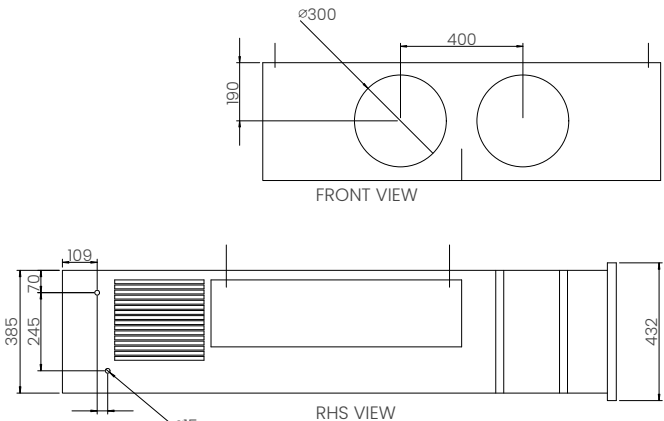
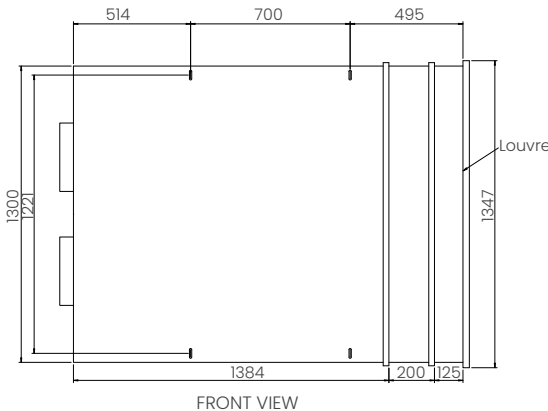
★ MFS-HR2-CE uses a single unit rather than two MFS-HR1-CE units, while still offering 4.1 kW of recovered heat under the stated conditions.

Daytime Performance - MFS-HR2-CE concealed (above ceiling)

Where space permits, MFS-HR2-CE can be installed above the ceiling. A suspended ceiling will conceal while giving the benefits of easy access. Plasterboard is also a practical solution with ducted outlets allowing connection to a variety of air distribution grilles.



Ceiling tiles removed for clarity



VENTILATION CAPACITY
Summer boost airflow.
Additional fresh air when demand increases.

333 l/s

ACOUSTIC COMFORT
Quiet operation.
Low-noise ventilation for sensitive learning spaces.

33 dBA

HEAT RECOVERY
Less wasted heat and lower supplementary demand.

4.1 kW

ENERGY PERFORMANCE
Mean annual SFP.
Fan energy performance to support informed system selection.

0.31

Performance figures represent selected configurations and operating conditions. Refer to the tables below for individual model performance.

MFS-HR2-CE solution	Winter heat recovery		Summer bypass			Max operating current	Peak current
	Nominal (5l/s/pp)/SPL (dBA)	Max high airflow(l/s)/SPL (dBA)	Nominal (8l/s/pp)/SPL (dBA)	Max high airflow (l/s)/SPL (dBA)	Summer boost flow (l/s)/SPL (dBA)		
1xMFS-HR2(CE)-OS300 (no coil)	160/34	168/35	256/33	270/35	324/40	1.4A total	2.8A
1xMFS-HR2(CE)-C-OS300 (with coil)	160/34	164/35	256/34	263/35	318/40	1.4A total	2.8A

MFS-HR2-CE solution	Energy recovered, optimum efficiency (kW) @ -5C OAT	Airflow on warm-up (l/s)	Warm-up performance (50/40, air on 13°C) in W	Winter SFP	Summer SFP	Mean annual SFP	MFS-HR weight (kg)
1xMFS-HR2(CE)-OS300 (no coil)	4.1	N/A	N/A	0.53	0.23	0.32	140
1xMFS-HR2(CE)-C-OS300 (with coil)	4.1	374	4480	0.53	0.22	0.31	155

★ MFS-HR2-CE uses a single unit rather than two MFS-HR1-CE units, while still offering 4.1 kW of recovered heat under the stated conditions.

Designed to work together

The louvre is just as important as the ventilation unit behind it. That's why Gilberts provides a purpose-designed external louvre to work alongside MFS-HR-CE, bringing fresh air in, directing stale air out and protecting the building from the weather.

With both components from one manufacturer, you benefit from a coordinated solution that's easier to specify and integrate into the building.



Intake/discharge combined louvre

One purpose-designed louvre manages both fresh air intake and stale air discharge, integrating directly with the MFS-HR-CE unit.



Cross contamination

Separate airflow paths direct stale air out through the upper section and draw fresh air in below, helping prevent discharged air from re-entering the classroom.



Border styles

WMZ – Glazed-in louvre:

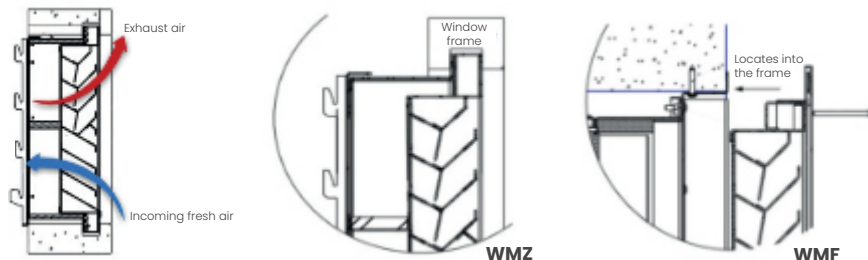
Designed for integration into window glazing systems.

WMF – Flanged louvre:

Suitable for installation into walls and cladding.

Hook-on installation system

The purpose-designed hook-on system allows the louvre to attach quickly and securely to the MFS-HR unit, simplifying installation and reducing time on site. See illustration below for the hook-up system and cross contamination prevention.

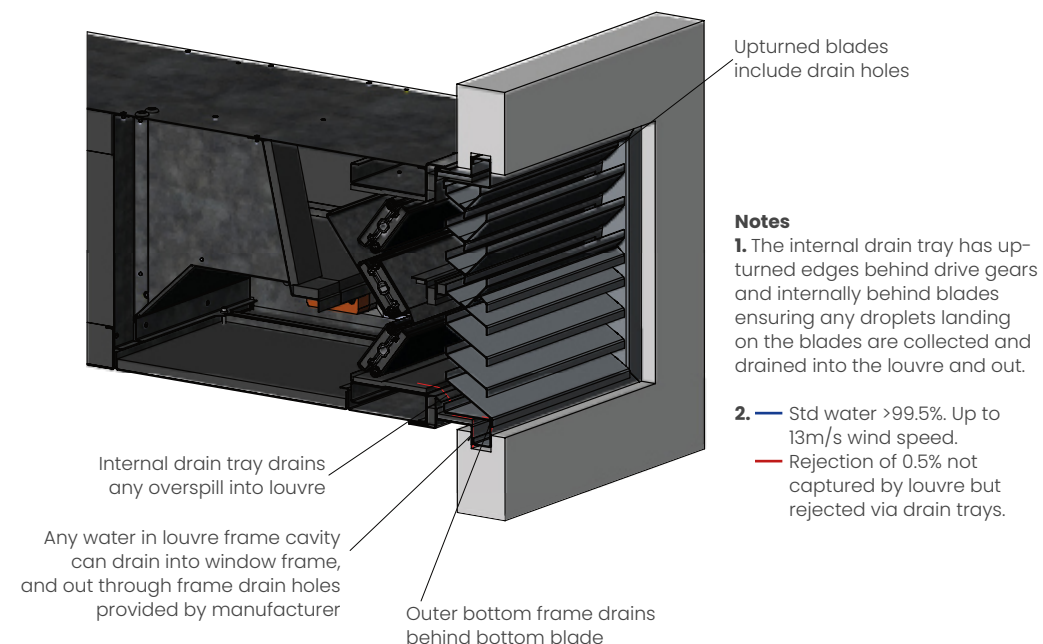


Designed around your building

Whether you're working with a standard opening or a larger architectural façade, Gilberts offers louver arrangements designed to integrate with your building without compromising the ventilation strategy.

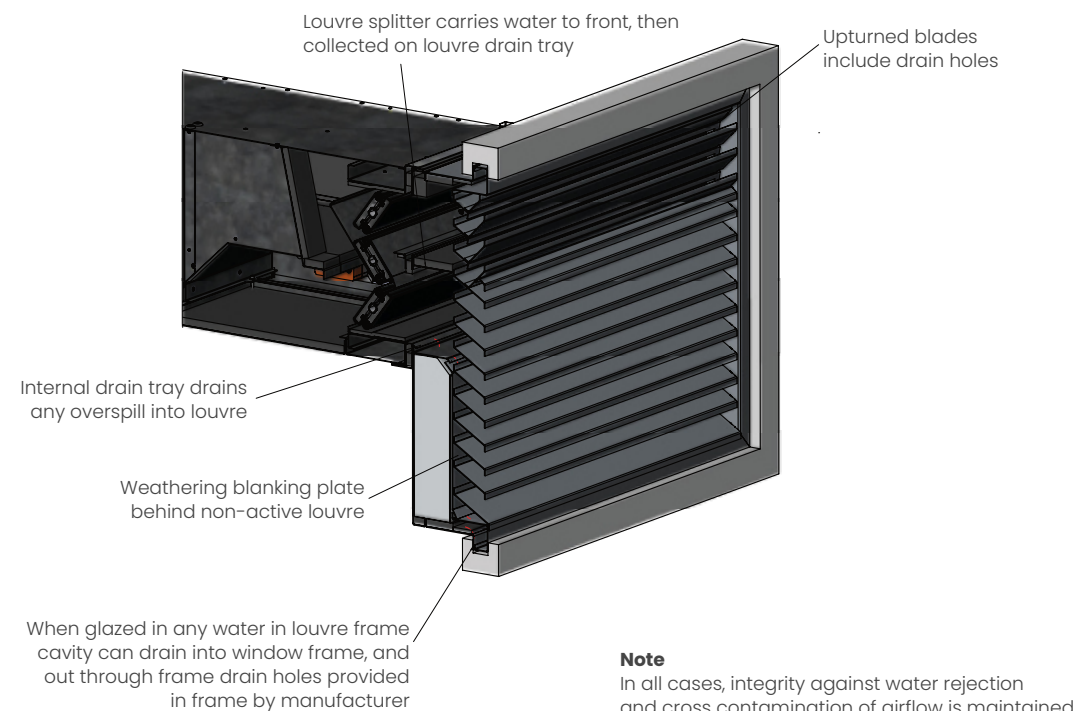
Standard Louvre

The standard louver solution connects directly to the MFS-HR-CE unit and can be integrated into window glazing or fitted to wall cladding.



Large Format Louvre

The louver has been designed with added size flexibility which means that it does not have to match the size of the MFS-HR unit. The louver can be manufactured larger in length, height or both dimensions in order either to match the glass aperture size, match with any other louvres or create a design aesthetic.



Complete DfE ventilation solution

Gilberts provides coordinated ventilation solutions for multi-storey schools, combining MFS-HR-CE units with a **dedicated telescopic chimney penthouse** to manage vertical exhaust ventilation without shared corridors or central ductwork.

How does it work?

Using the natural stack effect, warm, stale air rises through a contained shaft and is discharged at roof level. Each teaching space has an independent exhaust route, even when its MFS-HR-CE unit is closed or operating in a recirculation-safe mode. This helps reduce cross-contamination and maintain separation between floors.

Why choose a complete solution?

By combining façade-based hybrid ventilation with roof-level exhaust, Gilberts helps design teams simplify coordination and address DfE requirements for air quality, overheating, acoustics and natural ventilation.



COMPLETE VENTILATION

From single classrooms to multi-storey schools.



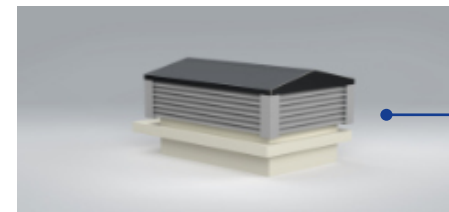
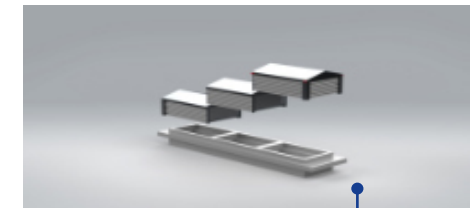
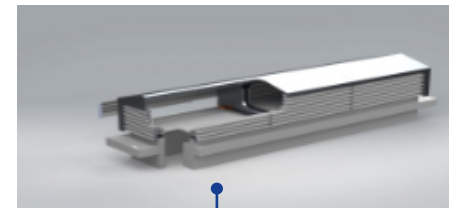
REDUCED CROSS-CONTAMINATION

Independent exhaust routes between floors.



SIMPLIFIED SPECIFICATION

Coordinated solutions supporting DfE requirements.



NEW
TELESCOPIC
PENTHOUSE

A smarter way to stay in control

Effective ventilation is about more than moving air. Gilberts Mistrale Control Solutions monitor classroom conditions and automatically adjust ventilation to help maintain indoor air quality, temperature and occupant comfort.

Designed to work alongside the MFS-HR-CE, the controls provide a coordinated approach to classroom ventilation, with flexible options for individual rooms or larger school buildings.

How does it work?

Using CO₂ and temperature sensors, Mistrale controls monitor classroom conditions and adjust the ventilation system to respond to changing demand. Programmable controllers regulate ventilation components, while manual overrides give occupants additional control when needed.



- ✓ Demand-led ventilation
- ✓ Automatic comfort control
- ✓ Simple user override
- ✓ Flexible integration



Explore the full Mistrale Controls catalogue



Technical Specification

1. Building interface – louvre

A. The external louvre is designed specifically to work with MFS-HR-CE. Key features include an inverted chevron top exhaust section that directs the soiled air (which is always warmer and more buoyant) upwards preventing contamination and recirculation of the fresh air. Specific test reports are available illustrating how this configuration is the optimum interface arrangement. (FOS 4.4.1.2).

B. The external louvre/damper/sleeve arrangement is tested to Class 'A' weathering performance. (FOS 4.4.18.2). The testing has been carried out at BSRIA, but since this type of louvre is not available in 1m² individual modules it has been tested with the highest inward airflow rate for each section of the louvre. Test report available on request.

C. The louvre has special drainage points to ensure all the water collected is directed out over the bottom blade of the louvre to ensure that the glazing internal drainage system is not overwhelmed.

D. All grilles and louvres comply with Annex 2C: External Fabric and Annex 2D: Internal Finishes. (FOS 4.4.17.1.a).

E. The louvre is designed to fit into many different types of glazing system and can cater for various thicknesses. The frame is with a two piece fabrication comprising an outside section, which includes the blades, and an inside section which includes the thermal insulation and a splitter that ensures that the warm outgoing air is deflected upwards. The two halves are separated using plastic spacers to ensure no cold bridging (FOS 4.4.10.1.i).

F. Where a larger louvre needs to be used to match the glazing on the façade, the rear half of the louvre includes an integrated blanking plate for any areas not used by the MFS-HR-CE. The blanking plate is insulated with 50mm insulation to minimise any unnecessary energy losses, (FOS 4.4.10.1.i) and to prevent external ambient noise break in. (FOS 4.4.1.3).

G. The inside glazing bead face of the louvre is part of the rear blanking plate system and is fully sealed from inside prior to fixing to the exterior louvre section. When the louvre is installed in the façade it creates an excellent air seal between the room and the window frame. (FOS 4.4.17.1.b).

H. The louvre is fitted with a 'hanging flange' to facilitate easy jointing and an integrated seal between the external louvre and the heat recovery unit. A suite of specially designed 'hang on' duct sections are available if the MFS-HR-CE cannot be directly fitted to the louvre.

2. MFS-HR-CE primary components – primary air control damper

A. Immediately behind the louvre is an insulated high seal air damper. The Façade air seal when the damper is closed is less than 3m³/hr/m², and the energy loss through the section of the façade which is allocated to the ventilation system is less than 1W/m²/K. (FOS 4.4.18.1) With our WM louvre building interface arrangement the ventilation equipment does not require to be 'bagged off' when testing to prove the building seal.

3. MFS-HR-CE primary components – fans

A. The MFS-HR-CE contains fans, arranged along with some internal dampers to operate in a number of different ways. They may be controlled to operate in parallel or separately with one as an intake, and the other one as exhaust in conjunction with a heat exchanger.

B. The fans are selected to be most efficient at the design airflows/pressure drops for the installed system. Fans comply with AD-L (FOS 4.4.14.2.a).

C. Although the fans are maintenance free, access for maintenance is required (FOS 4.4.14.2.b). To gain access, a removable panel on the underside reveals the fans, providing enough space to remove or replace.

Ordering Specification

Customer string selection example:



TYPE

MFS - Mistrale 75% Heat Recovery Fusion terminal

SIZE

HR1 (CE) - Standard unit
HR2 (CE) - High-capacity unit

COIL OPTION

CL - With coil pipe connections left
CR - With coil pipe connection right
NC - No coil required

OUTLET DUCT OPTION

K15 - Standard
OS300 - Outlet spigot(s) on HR1, two on HR2 (Dia 300 preferred)

EXHAUST DUCT OPTION

GG - Integrated grille as standard

DUCT EXTENSION OPTION

NHF - Connection detail for when used with connections by others
HF - Hanging flange for louver and duct extensions

CONTROL OPTION

M - Master unit with control components in enclosure. Ordered separate
S - Slave unit with junction terminals in the enclosure
M(s) - Master unit with control components in enclosure. Ordered separate (HR2 wired for use with slave)

HANDING

LH or **RH** - Position of controls viewed from inside

CONDENSATE PUMP

I-CON - Condensate pump to drain internally
E-CON - Condensate pump to drain externally (through louver)

PAINTED FINISH

MFS terminal to be RAL 9010 20% gloss UOS

Service & Maintenance

Gilberts is pleased to offer a comprehensive service and maintenance package for **hybrid and natural ventilation systems** across educational establishments within the local authority portfolio.

These systems play an important role in supporting indoor air quality, occupant comfort and energy efficiency. Regular inspection, servicing and maintenance help ensure they continue to operate as intended.

Our package includes:



**H&S
Diagnostic**



**Preventative
Maintenance**



**Performance
Check**



**Follow-up
Report**

Discover more about our complete service by clicking [here](#).

We're here to help you!

Our team of technical experts are always on-hand to help support you, whether it's specifying, bespoke solutions or general advice, Gilberts are here to help.

Speak to our team today:



01253 766911



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