COMPANY

Brilliant solutions for commercial kitchens

002

GIF ActiveVent – Modular Ventilated Ceiling as part of a system

Since it was founded in 1976 GIF ActiveVent's core area of expertise has been developing and producing individual modular ventilated ceilings and systems for use in different professional kitchens. In doing so, we have positioned ourselves at the head of the market.

Under the name of GIF ActiveVent we have set up a production site in Freiburg, Germany, where production is carried out according to the high quality standards of ISO 9001.
The patent-protected, area-active GIF Ventilated Ceiling complies with all current VDI guidelines (guidelines of the Association of German Engineers) and DIN standards (standards of the German Institute for Standardisation).

The ceiling assembly made of AISI 304 stainless steel is the basis for a system which is entirely ULC*-certified and flameproof. The individual components are produced following complex procedures, are tested and then installed exclusively by installation companies which are part of GIF ActiveVent. This ensures reliable performance long after the initial installation.

We are a member of the HKI (Industrieverband Haus-, Heiz- und Küchentechnik – Industry Association For House, Heating and Kitchen Technologies) and support: VdF (Verband der Fachplaner – Association of Professional Planners), FCSI (Foodservice Consultants Society International), VKK (Verband der Küchenleiter/Innen in Krankenhäusern und Pflegeeinrichtungen – Association of Chefs de Cuisine in Hospitals and Care Facilities)

HKI

Verband der Fachplaner VdF

ACTIVELY SUPPORTING FCSI

Verband der Küchenleiter/innen in Krankenhäusern und Pflegeeinrichtungen e.V. VKK

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GIF ActiveVent

Our presence is our strength

Experience, performance, service – from a single source

Our support services begin at the planning stage where we provide air volume calculations and cost comparisons and design CAD reflected ceiling plans.

Furthermore, our head office or one of our regional offices will accompany you all the way through the different stages in the process: on site, during problem-free installation and by providing extensive documentation regarding our services.

- **Solutions for all areas of professional kitchens based on decades of experience**
- **Completion of all assignments at the highest quality level**
- **Drafts and implementation plans in CAD quality**
- **Reliable execution of building work including installation on site**

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PRODUCTS

The system — customised and flexible

True genius is found in simplicity

The **GIF Ventilated Ceiling** is an area-active uniform solution from wall-to-wall including large-scale exhaust and fresh air sections, lighting and infill panels with an **installation depth of only 200 mm.**

Using the ceiling cavity as a pressure chamber, according to VDI 2052, enables active air supply zones to be implemented as an "open" and "closed" system, with the largest possible ceiling extents being active ventilation zones. Therefore, large-scale capturing of frying, cooking and other vapours and large-scale low turbulence fresh air supply guarantee a "feel-good" environment, free of condensation and draughts.

The unique modular system offers maximum transparency and hygiene due to a fully reversible structure. Each **GIF Active Cassette Ceiling (1)** acts as an aerosol separator in compliance with VDI 2025 and DIN 18869 in the large-scale extract air zone. The aerosolate separated in the active cassettes is collected in the small registers. All active cassettes can be easily removed from the ceiling grid and can be cleaned in the dishwasher. The active cassettes can also be used to introduce fresh air to large areas and can therefore be interchanged as desired.

Because of the modular structure, all components can be cleaned in a simple and hygienically acceptable way in the dishwasher with very little effort. The push-and-pull type characteristic of the cassettes mean that the **GIF Ventilated Ceiling** can be removed from virtually any location for cleaning in the dishwasher. As a result, climbing on kitchen equipment is not necessary and hygienic cleaning is guaranteed.

By using AISI 304 stainless steel the necessary factors of durability and flame-propagation safety, according to DIN 18869 and to the ULC, are provided over the entire area. Very tight manufacturing tolerances are the basis for the highest degree of particulate interception (up to 97%). Depending on the individual kitchen proportions, it is also possible to use the **GIF Supply Air Flat Cassette Ceiling (3)** for the fresh air supply at low ventilation rates instead of the GIF Active Cassette Ceiling. This system also guarantees a large-scale, draught-free fresh air supply and, together with the other components, forms a uniform composite ceiling. In the style of the GIF Supply Air Flat Cassette Ceiling, the **GIF Supply Air Flat Cassette Ceiling – Sound Absorption – (4)** combines the function of fresh air supply with sound absorption. The outstanding feature is the combination of these two functions in one and the same area resulting in the best possible sound reduction.

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GIF Restaurant Systems (2), which enable concentrated air extraction above cooking appliances where large amounts of fat and water vapour occur, can also be integrated in an identical arrangement.

GIF Luminaires (5) fit flush in the GIF Ventilated Ceiling and guarantee the best possible illumination of the work area in line with current directives and standards. Equipped with IP 54 moisture-proof light fittings, they are designed specifically for use in professional kitchens. The special feature here is the connection of the luminaires to the fresh air supply in the extract air zone. This generates an air cushion around the polycarbonate cover thus protecting the luminaries against dirt.

We also offer **GIF Special Lighting (6)**, e.g. at food counters, spotlights, etc. and an efficient and hygienic solution for ancillary rooms. This system, made of aluminium (powder-coated on request) or AISI 304 stainless steel, is particularly suitable for areas in which thermal impacts or cooking vapours do not occur. Naturally, the **GIF Flat System Ceiling (7)** includes all the components required for leading of the extract air, fresh air supply and lighting. We offer a special and already established development for show cooking. Cross-flow, which mainly occurs in "open" kitchen areas, considerably reduces the efficiency of standard extract canopies. The rising kitchen vapours are "blown away" before reaching the extract air hood. The **GIF Jet Stream Extractor (8)** has been especially developed for such areas and for many years has ensured that kitchen vapours are extracted in the best possible way directly above the wok or grill. Pollution of the room air is thereby minimised; guests and employees can breathe freely.

Additionally, GIF designs, develops and installs **GIF UV-C(lean) (9)** equipment for aerosol after-treatment. Residual fat, which still remains in the extract air stream following aerosol separation, can hereby be further reduced to an absolute minimum. When combined with heat recovery equipment, this results in a highly effective kitchen extract air system. The equipment is produced according to DIN 18869-7 and can be installed in ventilated ceilings, jet stream extractors and exhaust hoods. Retrofitting into existing equipment is possible. The service life of the high-performance-UV-lamps makes this equipment extremely interesting from an economic point of view.

Please open

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The uniform wall-to-wall solution

1 GIF Active Cassette Ceiling
for the capture of extract air and for fresh air supply as modular components for cleaning in the dishwasher

2 GIF Restaurant Systems
for the concentrated capture of extract air as modular components and cleaning in the dishwasher

3 GIF Supply Air Flat Cassette Ceiling
for fresh air supply as modular components for cleaning in the dishwasher

4 GIF Supply Air Flat Cassette Ceiling - Sound Absorption -
for fresh air supply and sound level reduction as modular components for cleaning in the dishwasher

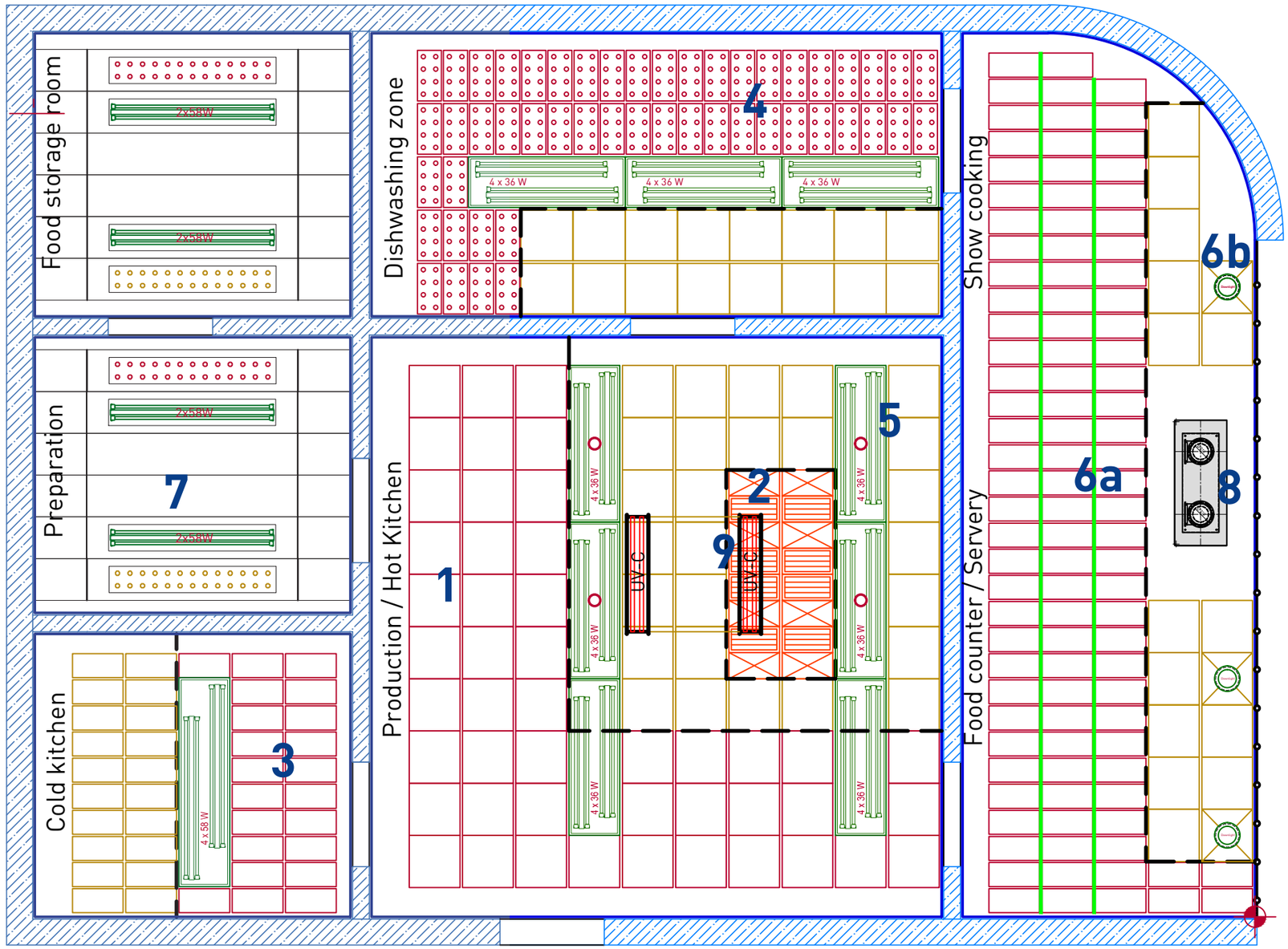
5 GIF Luminaires
as standard light-boxes

6 GIF Special Lighting
LED Rail Lighting System and downlights

7 GIF Flat System Ceiling
as a complete solution for areas not thermally loaded

8 GIF Jet Stream Extractor
in show cooking areas, e.g. above grills and woks

9 GIF UV-C(lean)
for the secondary treatment of extract air



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The products:
Their characteristics and uses

The efficient and hygienic solution

To provide a better overview,
the following matrix shows
the different components and
their main areas of use.
Of course, all components can
also be individually interchanged.

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Product component matrix

Component Area	**1 GIF Active Cassette Ceiling** for the capture of extract air and for fresh air supply as modular components for cleaning in the dishwasher	**2 GIF Restaurant System** for the concentrated capture of extract air as modular compo-nents and cleaning in the dishwasher	**3 GIF Supply Air Flat Cassette Ceiling** for fresh air supply as modular components for cleaning in the dishwasher	**4 GIF Supply Air Flat Cassette Ceiling - Sound Absorption -** for fresh air supply and sound level reduction as modular components for cleaning in the dishwasher		**5 GIF Luminaires** in continuous lines	**6 GIF Special Lighting** 6a - LED Rail Lighting System 6b - Downlights	**7 GIF Flat System Ceiling** as a complete solution for areas not thermally loaded	**8 GIF Jet Stream Extractor** in show cooking areas, e.g. above grills and woks	**9 GIF UV-C(lean)** for the secondary treatment of extract air
Production / Hot Kitchen	●	●	●	●		●	●			●
Dishwashing zone / Pot wash	●		●	●		●	●			
Food counters / Serveries Show cooking	●	●	●	●		●	●	●	●	●
Preparation rooms			●	●		●	●	●		
Auxiliary and storage rooms			●			●		●		
Corridor areas / Waiter thoroughfares			●	●		●	●	●		

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Individual solutions for ceilings

Patented Quality – Made in Germany

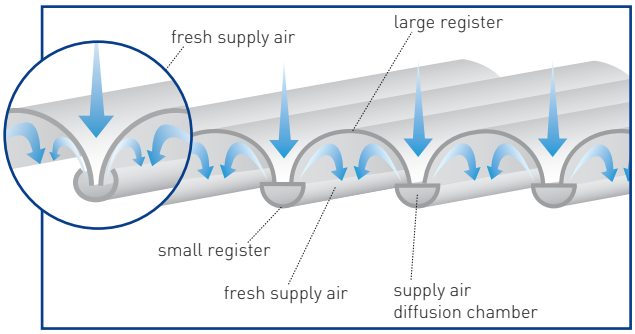
As far as we are concerned, a kitchen contains a lot more than "just" the kitchen zone. We develop system solutions for capturing exhaust air and supplying fresh air for all areas of a professional kitchen.

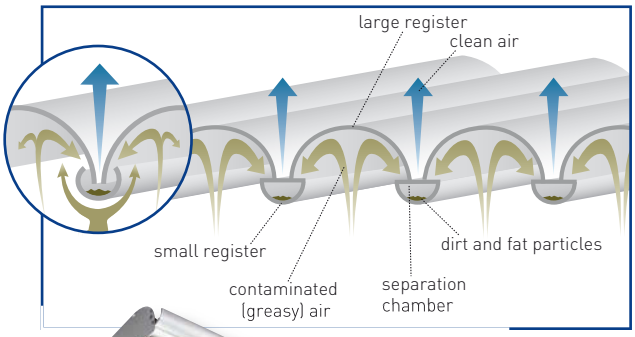
- **Efficient systems in kitchen zones**
- **High-speed air capture**
- **Design solutions for show cooking**
- **Sound absorption in dishwashing zones**
- **Cost-effective and hygienic solutions for preparation areas**

Using the GIF Ventilated Ceiling enables us to offer tailor-made solutions to our customers. Whether you are catering for 100,000 guests or are an individual star-awarded restaurant, we are the reliable partner for professional planners, architects, investors – and users of course.

The entire GIF ventilated ceiling is designed as an area-active cassette construction. Each active cassette acts as an aerosol separator in compliance with VDI 2052 and DIN 18869 in the area-wide exhaust air area. The particles separated in the active cassettes are collected in the small registers.
All active cassettes can be easily removed from the composite ceiling and cleaned in the dishwasher. The active cassettes are also used to introduce fresh air on a extensive area and are therefore interchangeable in any configuration.

Our established functional principle





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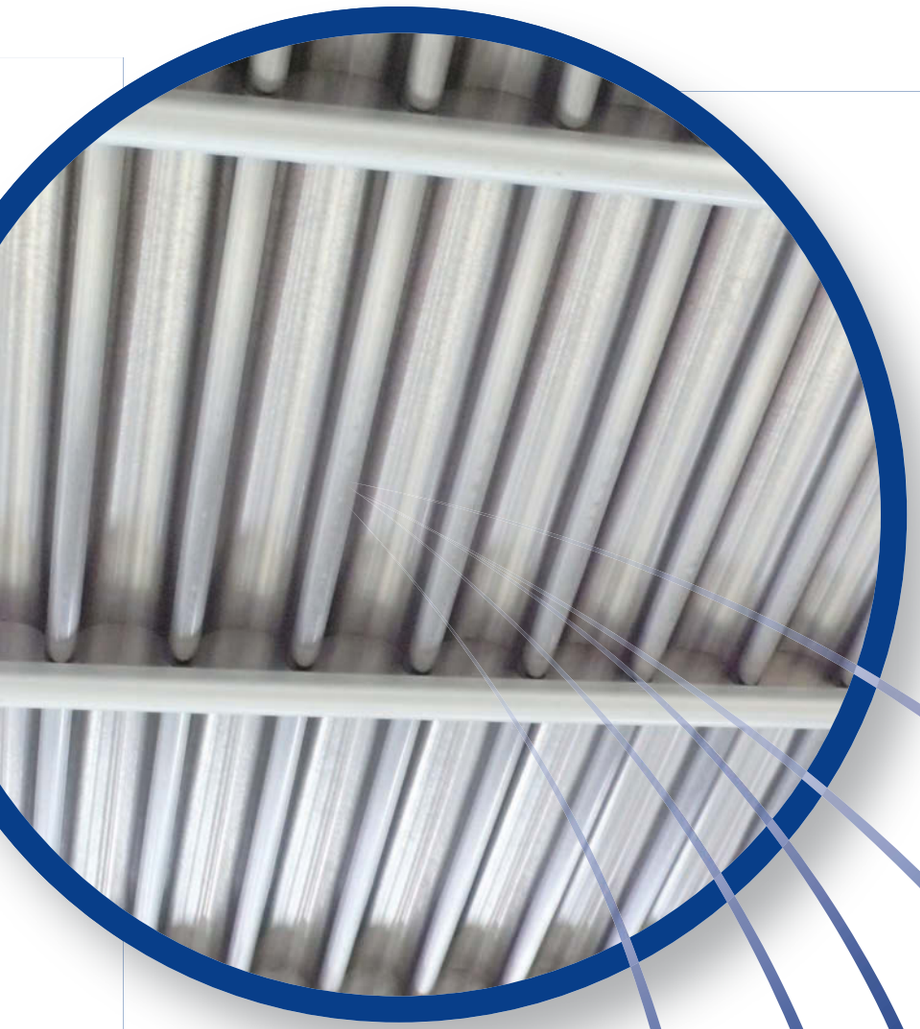
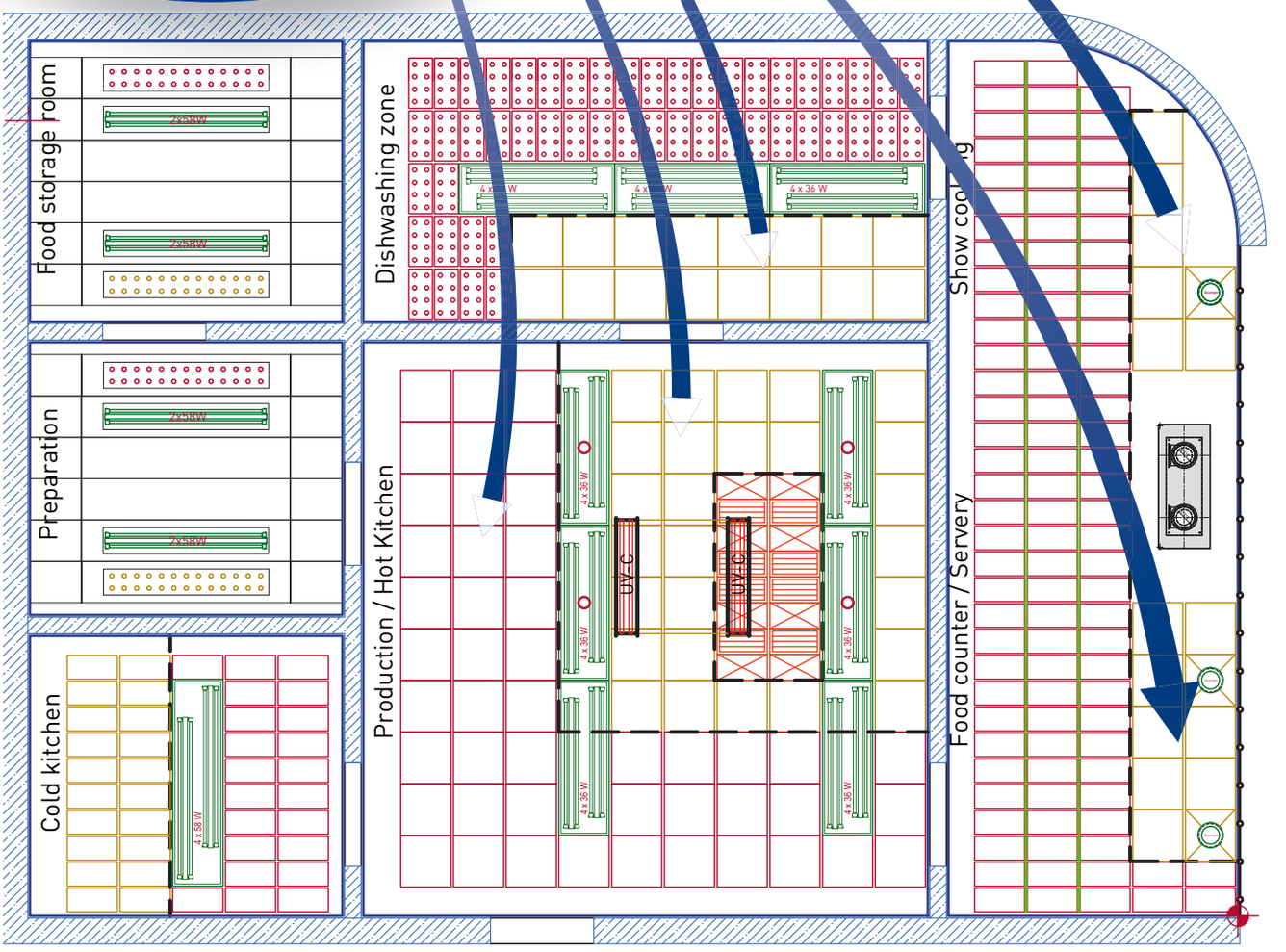
GIF ActiveVent

1. GIF Active Cassette Ceiling



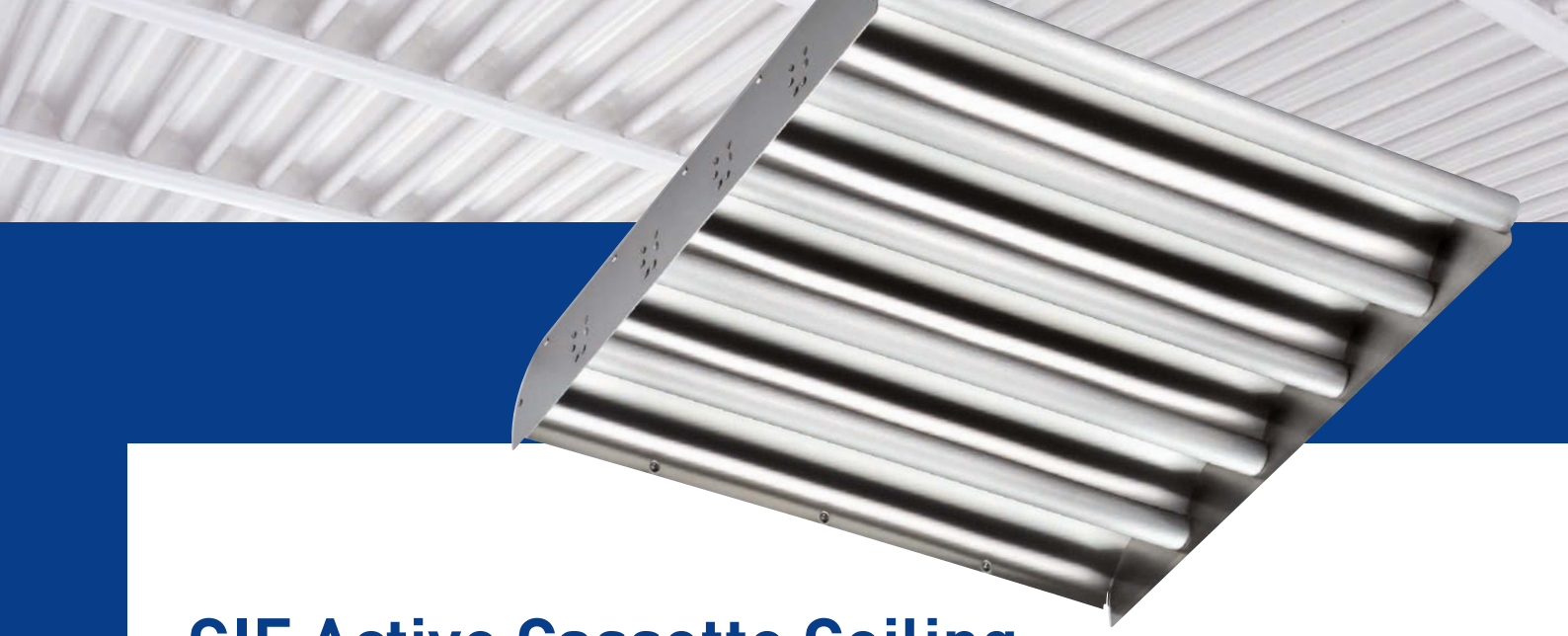
GIF ActiveVent



GIF Active Cassette Ceiling

Production kitchen and dishwashing zone, pot wash, food counters / serveries and show cooking

TU Dresden (Dresden University of Technology)



GIF Active Cassette Ceiling

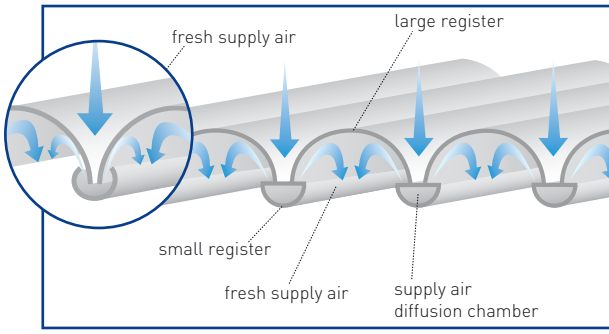
Production kitchen and dishwashing zone, pot wash, food counters / serveries and show cooking

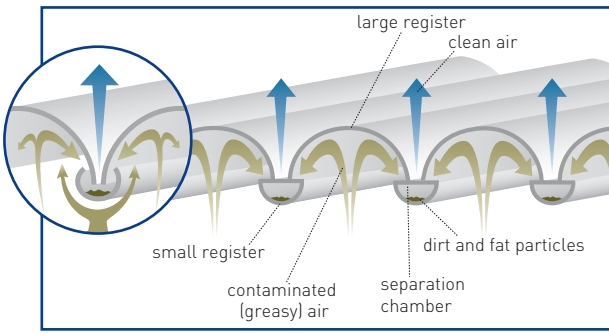
Description of the system

The entire GIF Active Cassette Ceiling is designed as an area-active, modular casset-te construction and performs both extract air functions above cooking appliances as well as air supply functions outside the extract air areas.

The active cassettes serve as aerosol separators on the extract air side according to VDI 2052 and DIN 18869-5 and form a large-scale extract air area. Moreover, flame propagation safety can be verified according to ULC (Underwriters' Labora-tories of Canada).

The active cassettes are only manufactured from AISI 304 stainless steel and reach the highest degree of interception (up to 97%) due to very tight manufacturing tolerances. The exhaust flow velocity above the active cassette is so low (0.08 m/s) that floating par-ticles, which have not been intercepted in the separation chamber, trickle back on to the top of the cassette surface by mass inertia.





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GIF Active Cassette Ceiling

Production, kitchen and dishwashing zone, pot wash, food counters / serveries and show cooking

All active cassettes can be removed from the ceiling grid simply by pushing and pulling in the rows. Therefore, the GIF Active Cassette Ceiling can be removed from virtually any location almost entirely (≈ 98%) and can be cleaned in any industrial dishwasher. As a result, climbing on kitchen equipment is not necessary and hygienic cleaning is guaranteed.

The unique modular system offers very high transparency and hygiene due to a construction which is fully reversible.

On the air supply side, the GIF Active Cassette Ceiling is applied for supplying low-turbulence fresh air on a large scale according to the principle of layered flow. Therefore, an energy-efficient solution is standard. The special design ensures an indirect fresh air flow, even with high air volumes and low inflow speeds, without induction impulse.

Since the active cassettes for the extract air and the fresh air areas are identical, they are fully interchangeable in any configuration.

Facts and advantages

- **Compliant with or exceeding current directives and standards (VDI 2052, VDI 6022, DIN 18869) also including the inspection capability of components at the back (no access panels needed)**
- **Durability of the AISI 304 stainless steel material**
- **Interlinking cassettes facilitate quick and easy removal**

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Smartly solved – easy to handle

- **Economic and hygienic cleaning of only 4 components per m² in the dishwasher**
- **Active cassettes can be pushed and pulled in the suspension profiles, as a result they are easy to remove without the need for tools**
- **Partial cleaning possible if required**
- **No need to climb on greasy, hot kitchen appliances (danger of slipping)**
- **HACCP certified**

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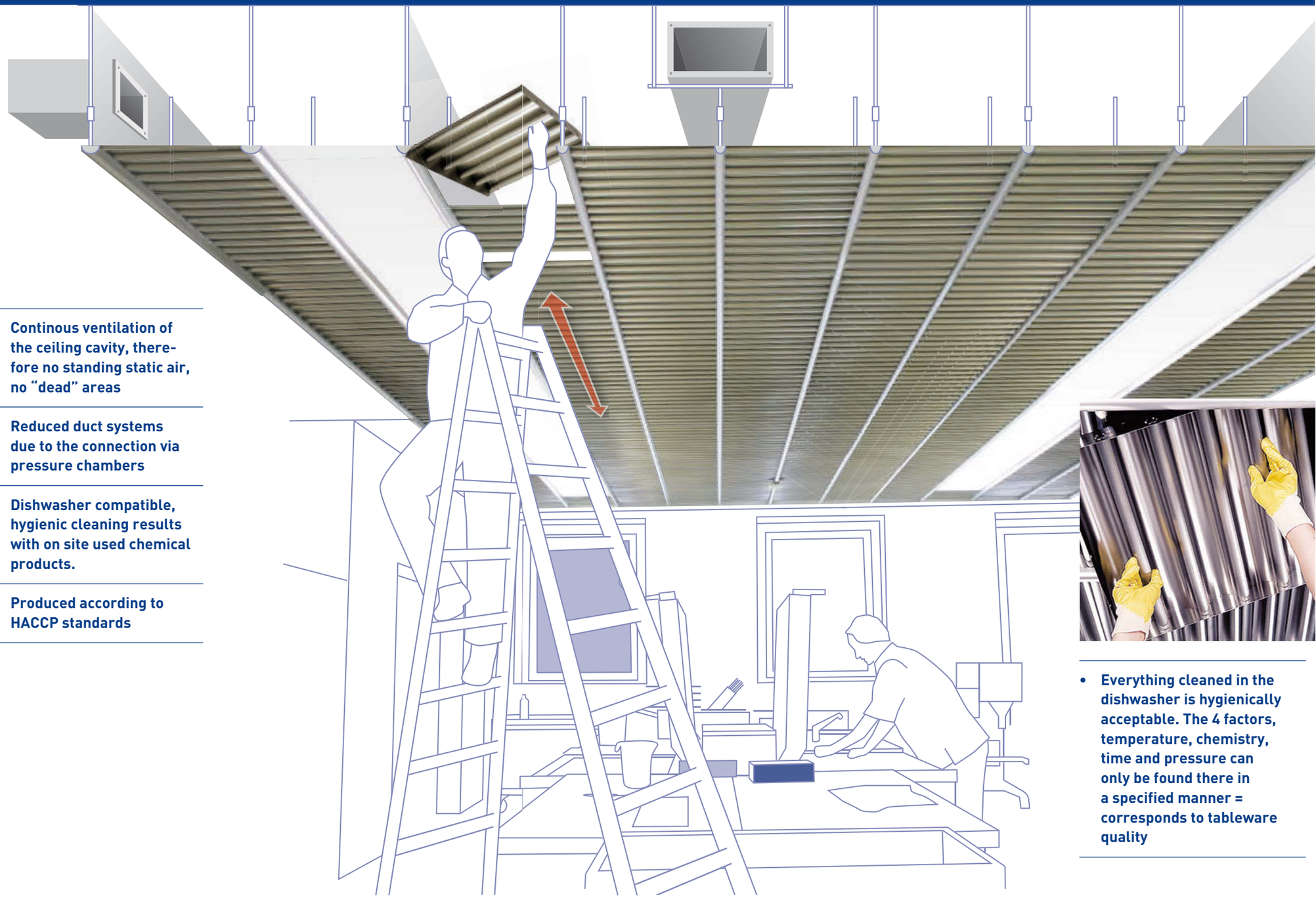
Ventilated ceilings as part of a system

- Modular installation provides high flexibility when renovating or relocating
- Highest degree of separation due to combined gravity and condensation separators
- Entire ceiling construction certified as flashover-proof according to DIN 18869-5, ULC and TNO
- Draught-free fresh air supply/laminar outlet according to DIN 18869-3
- Homogenous appearance when viewed from below, a completely level and uniform wall-to-wall solution
- No low hanging components, no impairment of view
- Homogenous capture of extract air
- All components are interchangeable
- Very low installation depth of only 200 mm

- Continous ventilation of the ceiling cavity, therefore no standing static air, no “dead” areas
- Reduced duct systems due to the connection via pressure chambers
- Dishwasher compatible, hygienic cleaning results with on site used chemical products.
- Produced according to HACCP standards



- Everything cleaned in the dishwasher is hygienically acceptable. The 4 factors, temperature, chemistry, time and pressure can only be found there in a specified manner = corresponds to tableware quality

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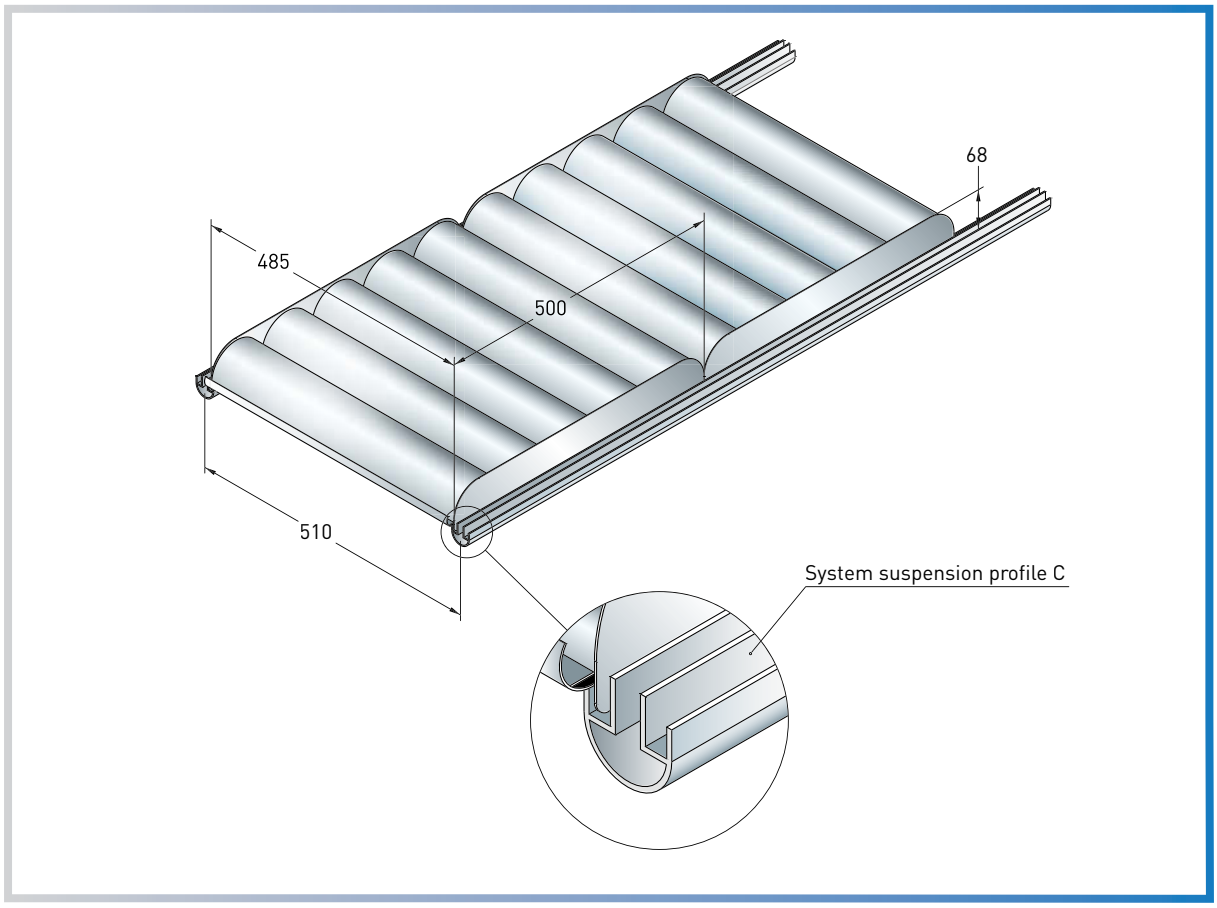
GIF ActiveVent



Specific technical data

GIF Active Cassette Ceiling **extract air**

air flow	260-300 m^3/h m^2
degree of interception	up to 97%
dimensions	500x485 mm
pressure drop	20-25 Pa
material/surface	AISI stainless steel material No. 304
weight per m^2 excluding primary suspension grid	10,00 kg

GIF Active Cassette Ceiling **supply air**

air flow	360-500 m^3/h m^2
dimensions	500x485 mm
pressure drop	25-30 Pa
material/surface	AISI 304 stainless steel
weight per m^2 excluding primary suspension grid	10,00 kg
exhaust flow velocity	less than 0.2 m/sec

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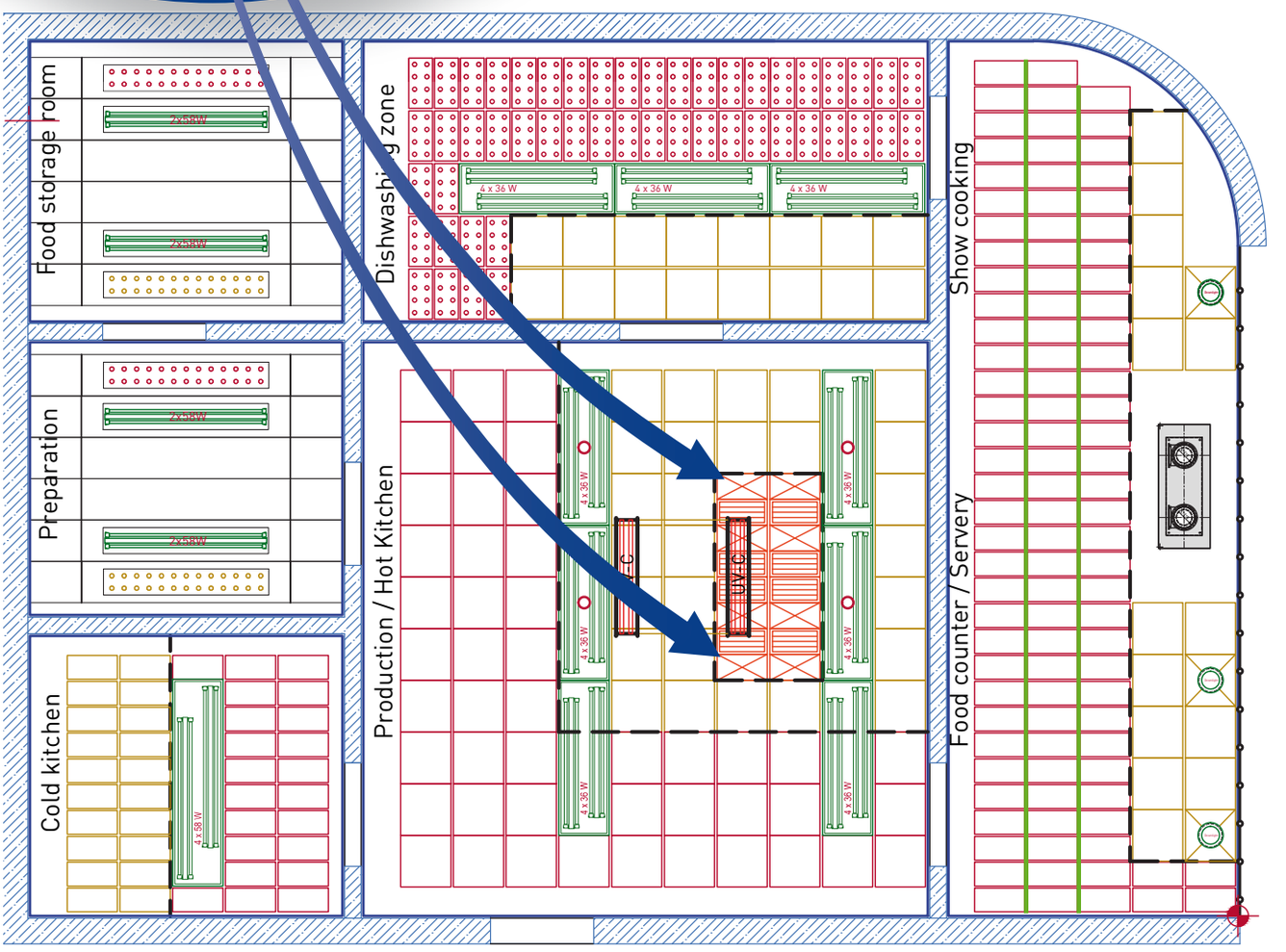
2. GIF Restaurant Systems

GIF ActiveVent



GIF Restaurant Systems

Production / Hot kitchen, food counter / servery and show cooking

Marienhospital Witten

GIF Restaurant Systems

Production / Hot kitchen, food counter / servery and show cooking

Description of the system

This high performance separator fits neatly into the ceiling grid and is used mainly above deep frying and frying sections. It enables concentrated air extraction at the point of origin. When using high performance separators, up to 2400 m3/h m^2 can be extracted.

The high performance separators are inserted at a sloping angle into the GIF Restaurant System, so that the aerosolate amounts (intercepted aerosols), which are very high in these areas, are drained into the integrated collecting trough. This trough can be emptied at regular intervals via an integrated drain trap.

The GIF separator is available in convex or concave forms. The classic version in concave form protrudes from the ceiling as a trapezium. The concave restaurant system is a further development of this model. The extracting surface lies inside the ventilated ceiling, thanks to the system mounted flush with the ceiling a uniform view from below is achieved. In this way a restricted view, which occurs especially with low ventilated ceilings, is avoided.

Like all air-handling components, the GIF Restaurant System is also, as standard, made of AISI 304 stainless steel. The high performance separators can be easily removed from the ceiling and cleaned in the dishwasher. The collection trough is, as a result, also easily accessible and readily cleaned.

Facts and advantages

- **Can be installed in convex or concave form.**
- **High air flow rates within a small area**
- **Equipped either with active cassettes or with high performance separators**
- **Reduced maintenance frequency, increased service life**
- **The LED Rail Lighting System can be integrated in the Concave Restaurant System.**
- **AISI 304 stainless steel material**
- **Hygienic cleaning of the components in the dishwasher**
- **Completely welded finish**
- **Can be easily upgraded due to the modular character**
- **Individual design solutions are possible**

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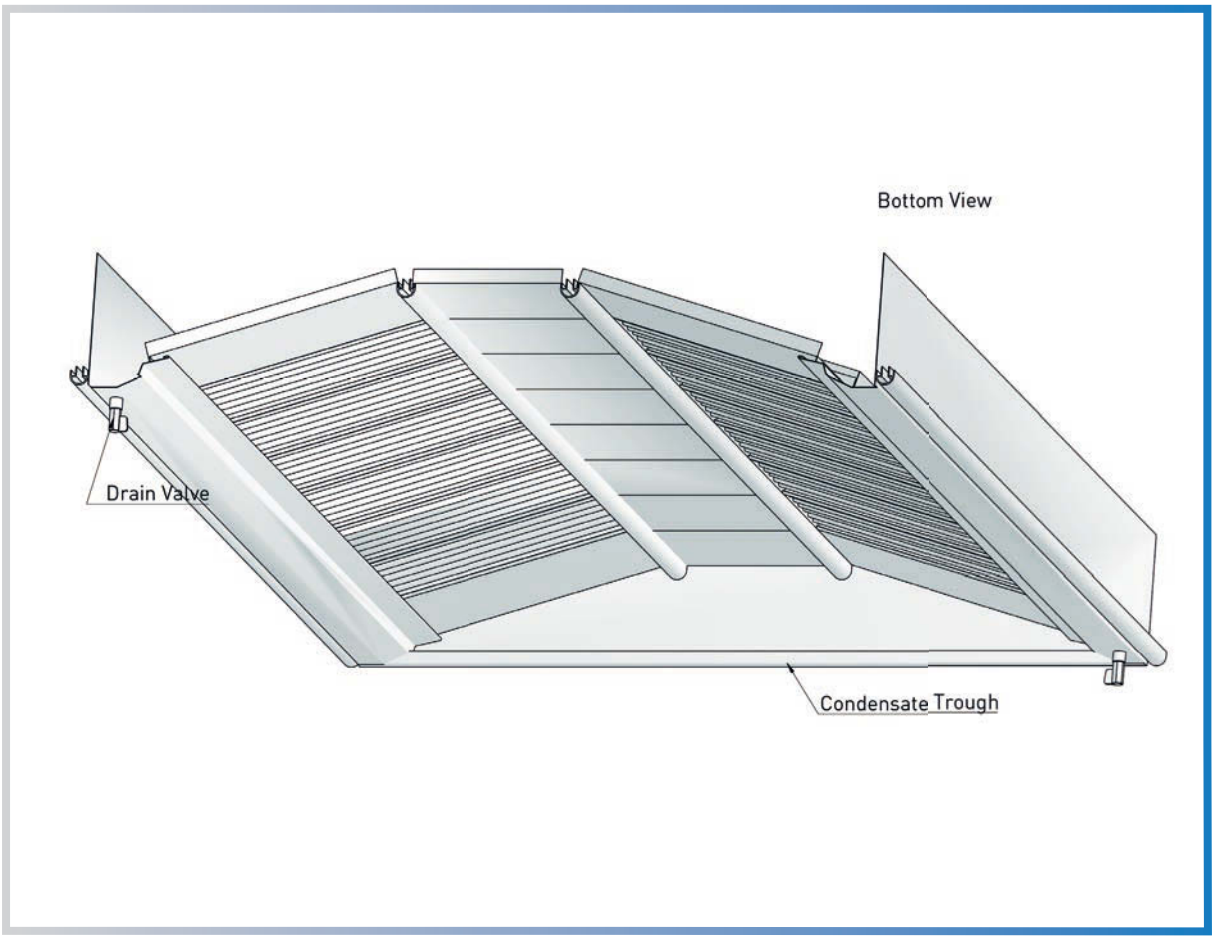
GIF Concave Restaurant System

Production / Hot kitchen, food counters / serveries and show cooking



3-row

Specific technical data

GIF Restaurant Systems

air flow		300-2400 $m^3/h\ m^2$
pressure drop		30-50 Pa
dimensions/length		Depending on requirements however, maximum single length: 3.5 m
material/surface		AISI 304 stainless steel
separation efficiency		up to 97%

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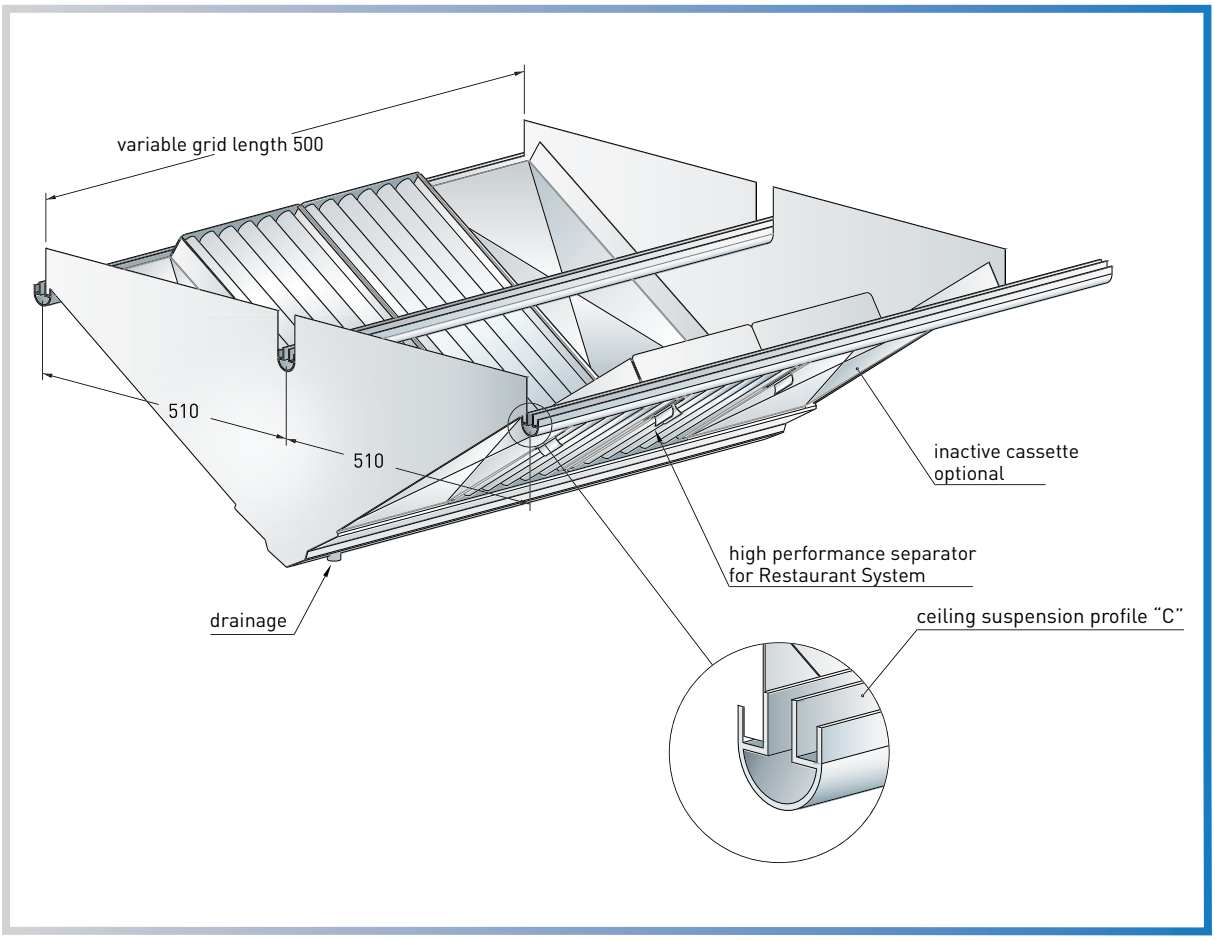
GIF Restaurant Systems

Production / Hot kitchen, food counter / servery and show cooking



double-row

Specific technical data

GIF Restaurant Systems

air flow		300-2400 m^3/h m^2
pressure drop		30-50 Pa
dimensions/length		Depending on requirements however, maximum single length: 3 m
material/surface		AISI 304 stainless steel
separation efficiency		up to 97%

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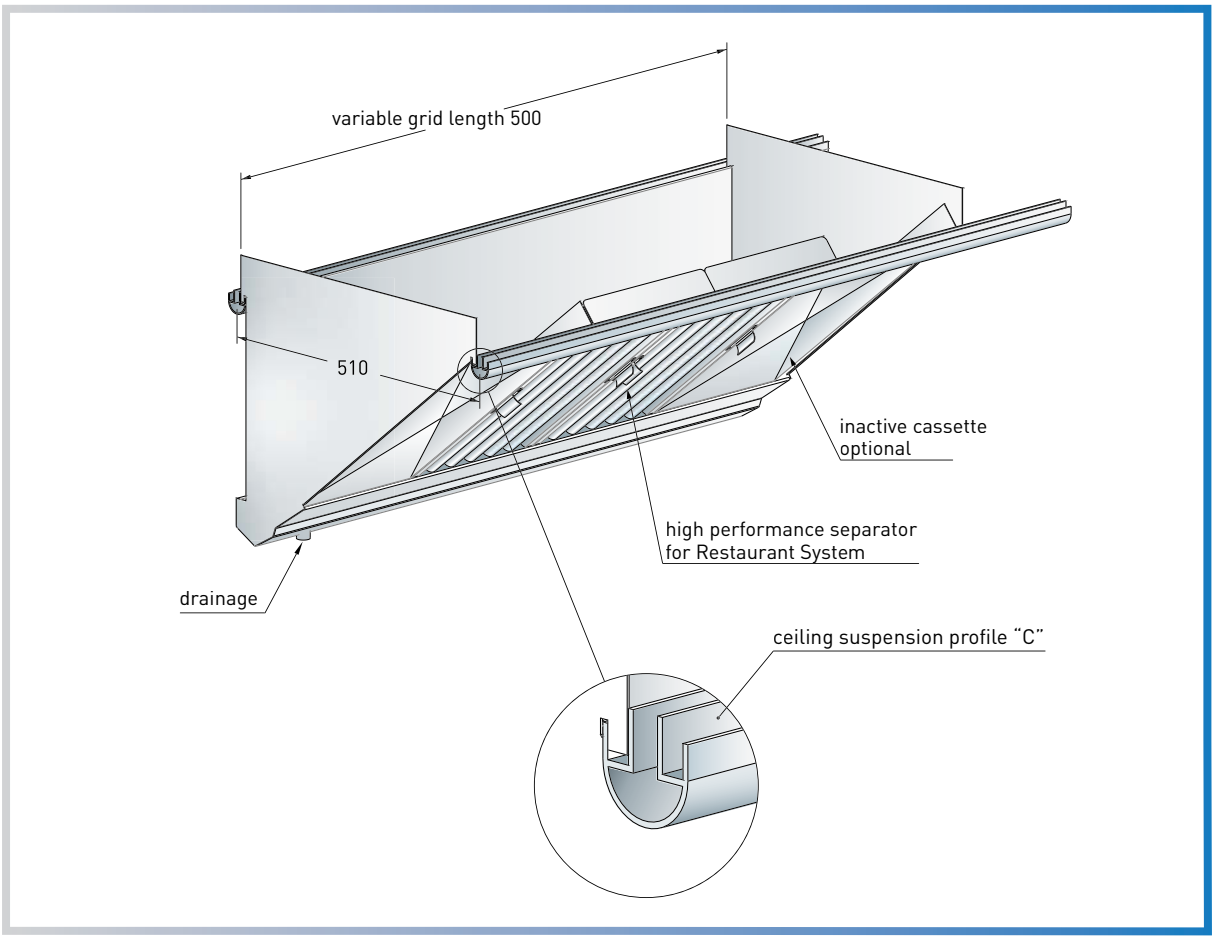

single-row

Specific technical data

GIF Restaurant Systems

air flow		300-2400 $m^3/h\ m^2$
pressure drop		30-50 Pa
dimensions/length		Depending on requirements however, maximum single length: 3 m
material/surface		AISI 304 stainless steel
separation efficiency		up to 97%

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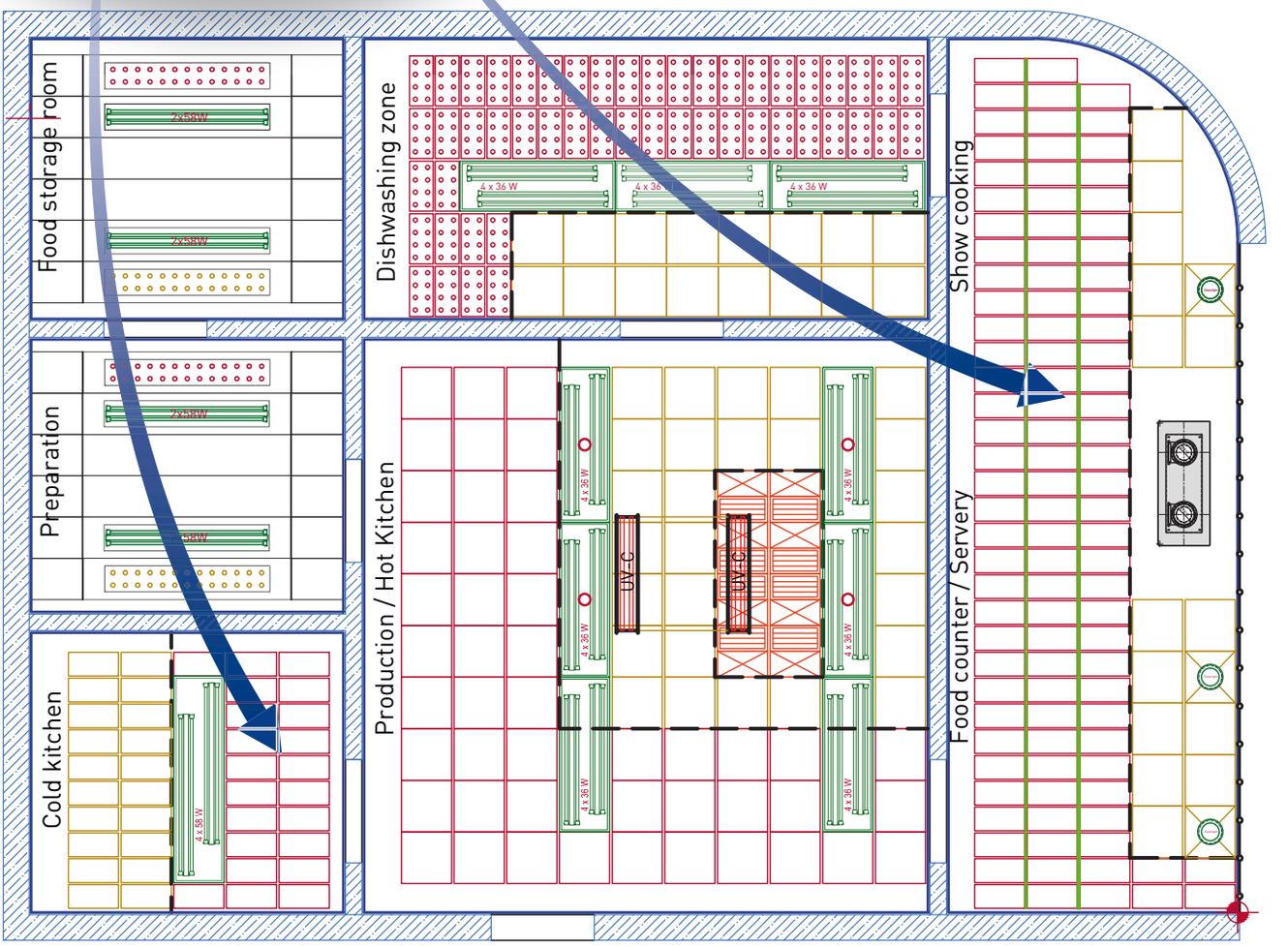
3. GIF Fresh Air Supply Flat Ceiling

GIF ActiveVent



GIF Supply Air Flat Cassette Ceiling

Production kitchen and dishwashing zone, food counters / serveries, show cooking, preparation rooms, auxiliary and storage rooms as well as corridor areas and waiter thoroughfares

St. Lioba Monastery

GIF Supply Air Flat Cassette Ceiling

Production kitchen and dishwashing zone, food counters / serverys, show cooking, preparation rooms, auxiliary and storage rooms as well as corridor areas and waiter thoroughfares

Description of the system

This ceiling solution can be adapted to individual kitchen conditions and supply fresh air via a broad jet feature at a more cost-effective price. Furthermore, it ensures a large-scale, uniform fresh air supply at lower ventilation rates and, together with the other components, it forms a uniform composite ceiling.

Like all air-handling components, the GIF Supply Air Flat Cassette Ceiling is, as standard, made of AISI 304 stainless steel. On request, it is also possible to have RAL coatings. The components can be pushed along the grid, removed without tools and cleaned in the dishwasher.

Facts and advantages

- **Targeted air supply**
- **Broad jet feature created by integrated spacer**
- **Easily removable for hygienic cleaning in the dishwasher**
- **Can be inspected according to VDI 6022**
- **System-integrated as a uniform modular ceiling**
- **Shallow installation depth**
- **Pressurised open plenum reduces length of duct runs**
- **Colour coatings according to RAL are possible**
- **Can also be used as an extract air component in grease-free auxiliary areas**
- **Durability of the AISI 304 stainless steel material**

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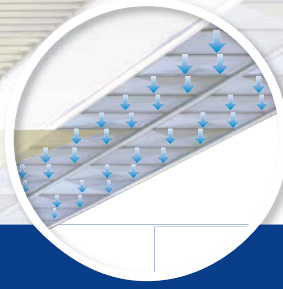
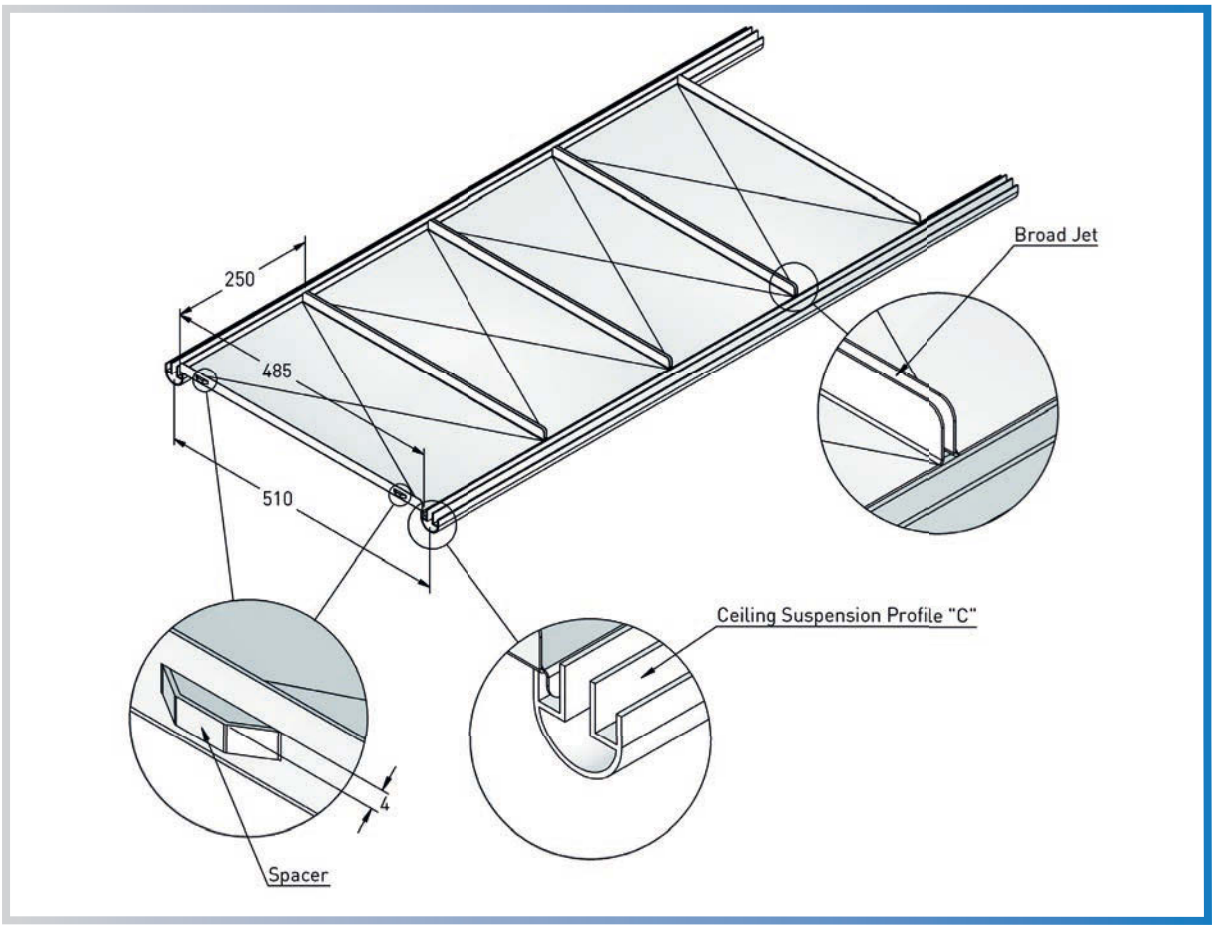


GIF Supply Air Flat Cassette Ceiling

Production kitchen and dishwashing zone, food counters / serveries, show cooking, preparation rooms, auxiliary and storage rooms as well as corridor areas and waiter thoroughfares



Specific technical data

GIF Supply Air Flat Cassette Ceiling

air flow	max. 160 m³/h m²
pressure drop	20 Pa
dimensions	250 x 485 mm
weight per m² excluding suspension grid	7.2 kg
material	AISI 304 stainless steel

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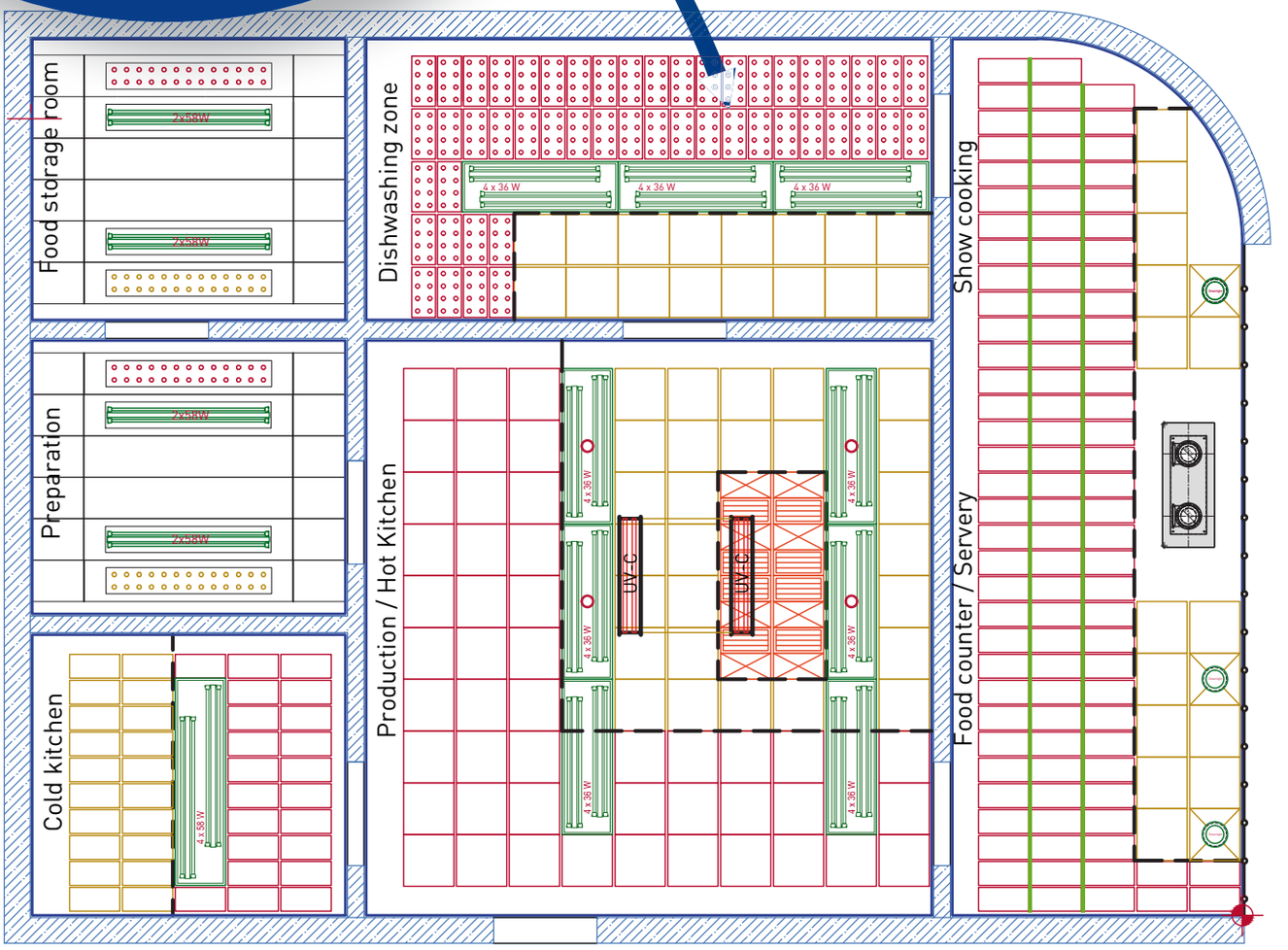
4. GIF Supply Air Flat Cassette Ceiling – Sound Absorption –

GIF ActiveVent



GIF Supply Air Flat Cassette Ceiling
– Sound Absorption –

Dishwashing zone, pot wash and preparation rooms as well as corridor areas and waiter thoroughfares

4
GIF Supply Air
Flat Cassette Ceiling
– Sound Absorption –

DKV Köln – DKV (German Health Insurance) Cologne

GIF Supply Air Flat Cassette Ceiling – Sound Absorption –

Dishwashing zone, pot wash and preparation rooms as well as corridor areas and waiter thoroughfares

Description of the system

Like the GIF Supply Air Flat Cassette Ceiling, this ceiling system combines two functions in one component and this is also why it is unique. This system provides fresh air supply and, at the same time, incorporates the best possible sound reduction in the same area. By using highly efficient sound absorbing material, the high noise level occurring e.g. in dishwashing zones and waiter thoroughfares, can be considerably reduced.

Like all components of the GIF Ceiling Systems, the GIF Supply Air Flat Cassette Ceiling – Sound Absorption is, as standard, made of AISI 304 stainless steel. On request, it is also possible to have RAL coatings.

Together with the other components, this system forms a uniform modular ceiling. The components can be removed from the suspension grid for cleaning without the need for tools. To facilitate easy handling and removal, the components can be slid along the suspension grid to a convenient removal point clear of kitchen appliances. This enables quick, efficient and safe cleaning. The removable sound absorption cushion (fire material class A) is hygienically encapsulated in a sealed plastic film which is simply slid clear for separate cleaning.

The requirements of VDI 6022 are thus met.

Facts and advantages

- **Large areas can be equipped because of the unique combination of fresh air supply and sound reduction at the same time over the same area**
- **Can be used in dishwashing zones, waiter thoroughfares, recreation rooms, etc.**
- **Shallow installation depth**
- **In 2-parts for hygienically acceptable cleaning in the dishwasher**
- **AISI 304 stainless steel material**
- **Sound insulation cushion can be removed and is shrink-wrapped in a vapour-tight film**

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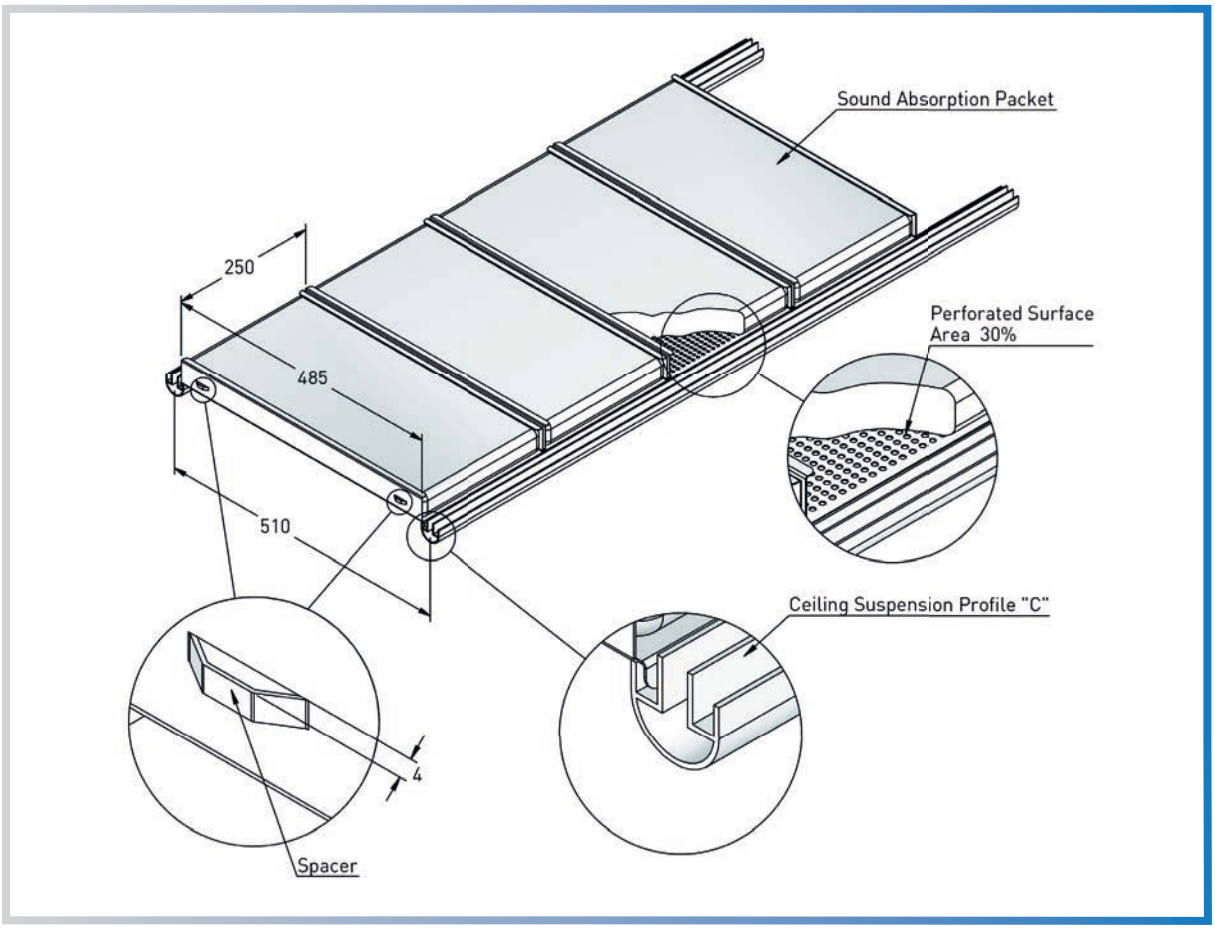
GIF Supply Air Flat Cassette Ceiling – Sound Absorption –

Dishwashing zone, pot wash and preparation rooms as well as corridors and waiter thouroughfares



Specific technical data

GIF Supply Air Flat Cassette Ceiling – Sound Absorption –

air flow	max. 160 m³/h m²
pressure drop	40 Pa
dimensions	250 x 485 mm
weight per m² excluding suspension grid	8 kg
material	AISI 304 stainless steel
sound-absorbing material	sound-absorbing material welded into non combustible plastic films

sound absorption coefficient	frequency in Hz	α
see also: Products for noise reduction, TÜV Rheinland Publishing House, ISBN 3-88585-026-5	125	0.40
	250	0.85
	500	0.90
	1000	0.85
	2000	0.85
	4000	0.70

Further information on the reduction of noise levels can be found in the Annex under number 10.30/10.31 Expert Report.

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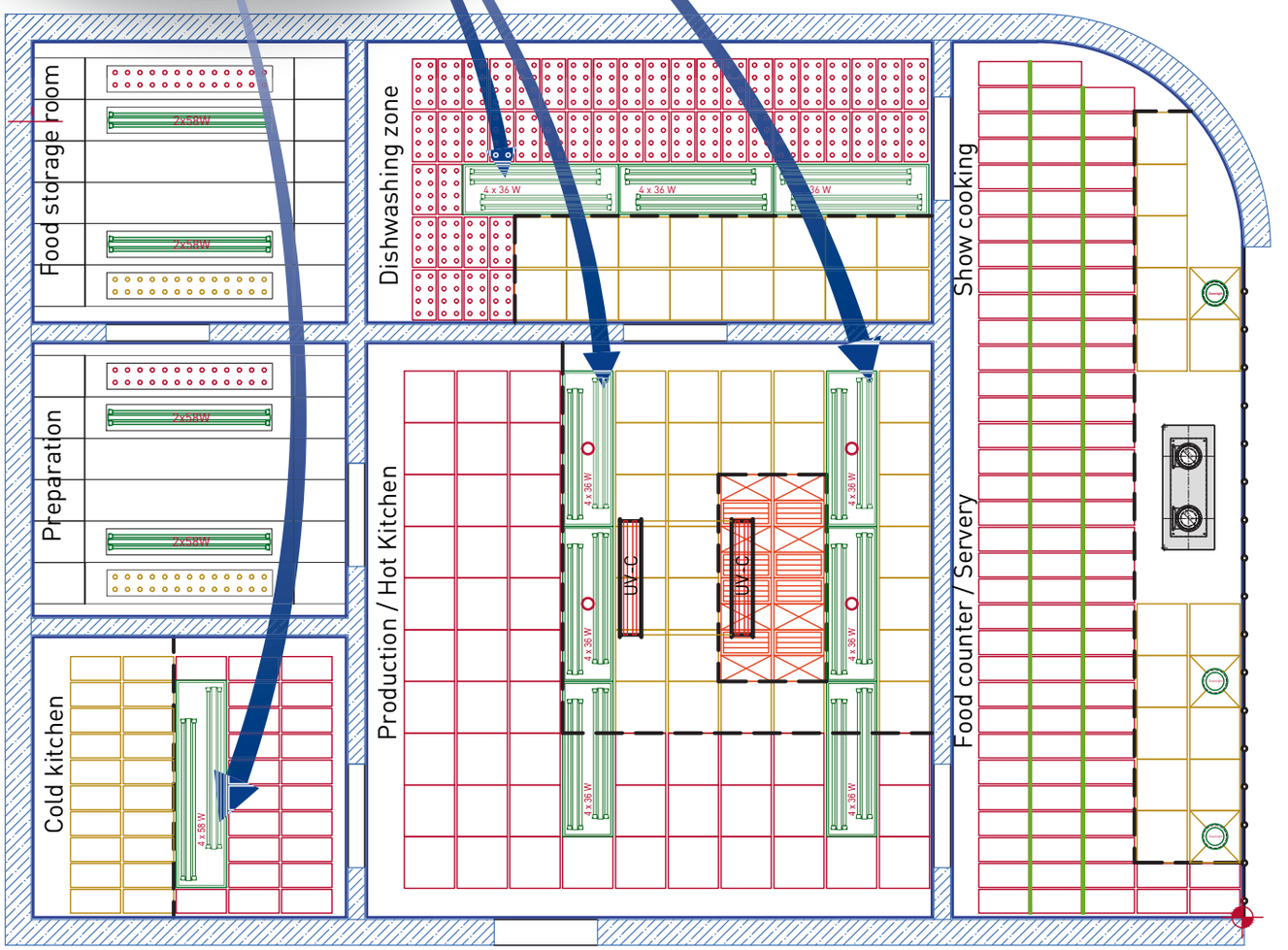
5. GIF Luminaires

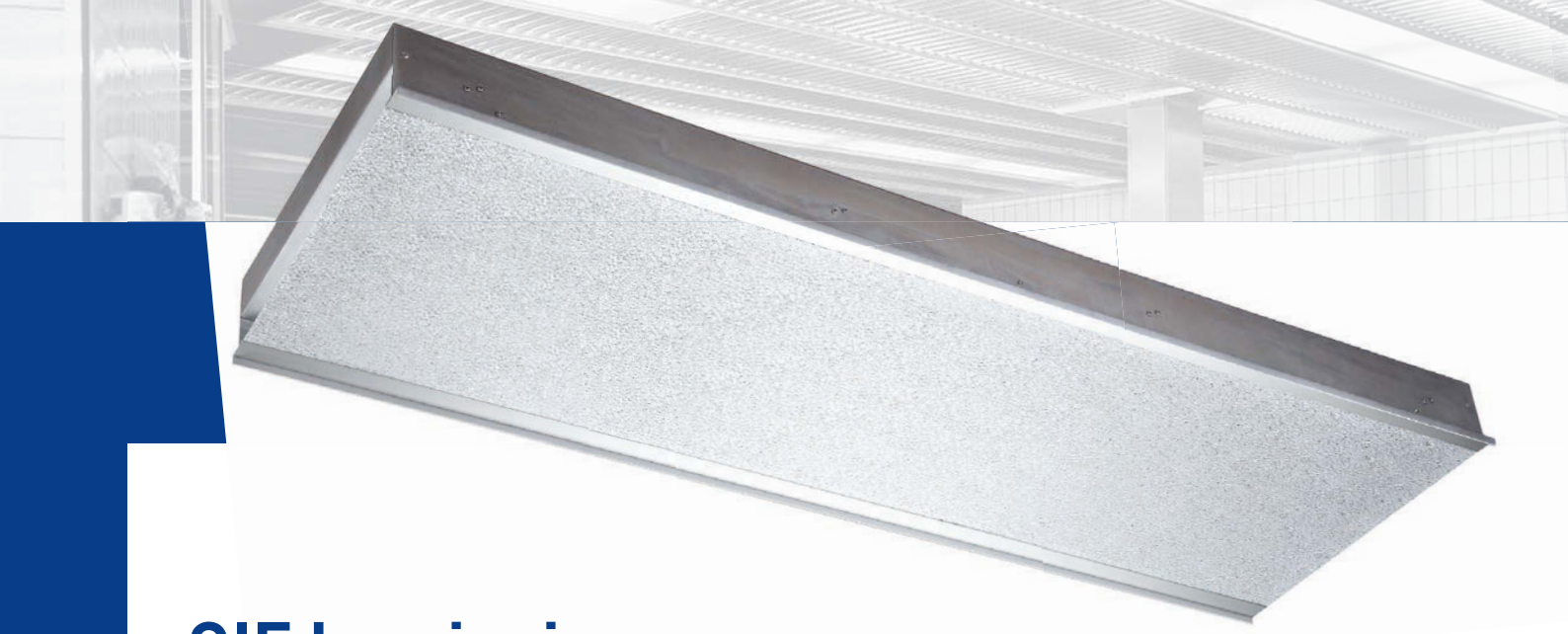
GIF ActiveVent



GIF Luminaires

Production kitchen and dishwashing zone, food counters / serveries, show cooking, preparation rooms, auxiliary and storage rooms as well as corridors, circulation areas and waiter thoroughfares

Clinical Centre Gütersloh



GIF Luminaires

Production kitchen and dishwashing zone, food counters / serveries, show cooking, preparation rooms, auxiliary and storage rooms as well as corridors, circulation areas and waiter thoroughfares

Also available with LED-technology

Description of the system

Compliant with the specifications of the Arbeitsstättenverordnung (German Work Safety Regulations) GIF Luminaires fit compatibly into the ceiling design. On request, they can also be arranged in a continuous band. The level ceiling ensures uniform shadow-free lighting and hence the work areas can be optimally illuminated.

All GIF Luminaires are equipped with moisture proof light fitting (protection class IP 54 minimum) as standard and are specifically designed for use in professional kitchens. GIF Luminaires set another standard with the integral connection for air supply. Longitudinal air vents along both sides of the light box emit a fresh air curtain across the face of the diffusor in addition to the fresh air environment created in the light housing. Rising vapours are directed to the adjacent extract air areas, so that soiling of the diffuser surface is permanently minimised. As a result, intervals between cleaning are considerably extended. Long term tests show that a much longer ballast service life results from cooling by continuous ventilation.

Alternatively the GIF Luminaires can be equipped with the energy saving T5 lamps or with the LED lamps in T8

Facts and advantages

- **Best possible lighting due to the textured face of the polycarbonate, smooth on the rear side.**
- **Integral flush as part of the ventilated ceiling**
- **Protection class IP 54 as a minimum**
- **Interior ventilation forms a curtain of fresh air across the underside of the diffusor to avoid contamination or soiling**
- **Cooled Luminaires have extended service life**
- **Lighting in existing systems can be retrofitted**

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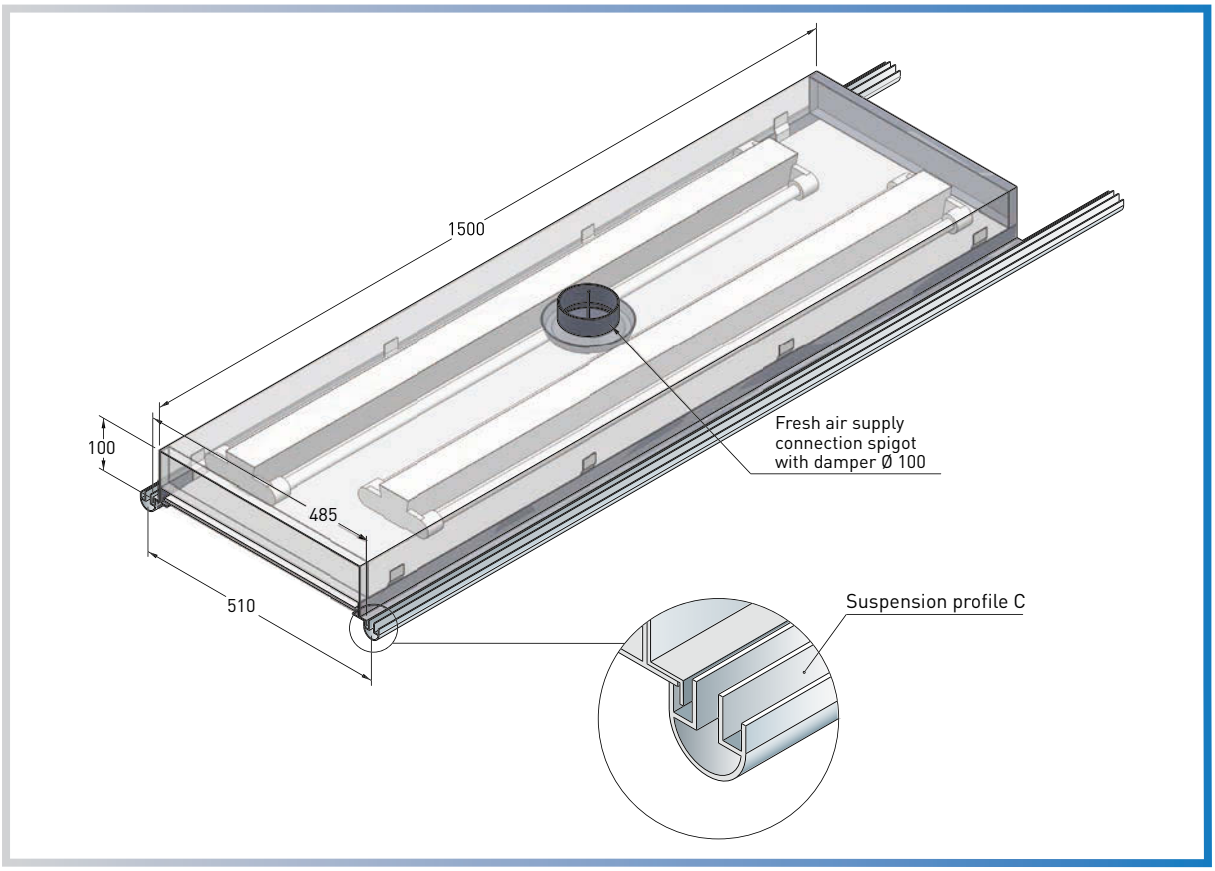
GIF Luminaires

Production, kitchen and dishwashing zone, pot wash, food counters / serveries, show cooking, preparation rooms, auxiliary and storage rooms as well as corridors, circulation areas and waiter thoroughfares



Schematic

Specific technical data

GIF Luminaires	without LED	with LED
type	T8/T5	T8
power/connection values	4x36 Watt to 4x58 Watt 4x28 Watt to 4x49 Watt	4x20 Watt 4x25 Watt
Supply air connection	75 m^3/h (only when used in the extract air area)	75m^3/h (only when used in the extract air area)
protection class	IP 54	IP 65
dimensions/length	1500/2000 mm	1500/2000 mm

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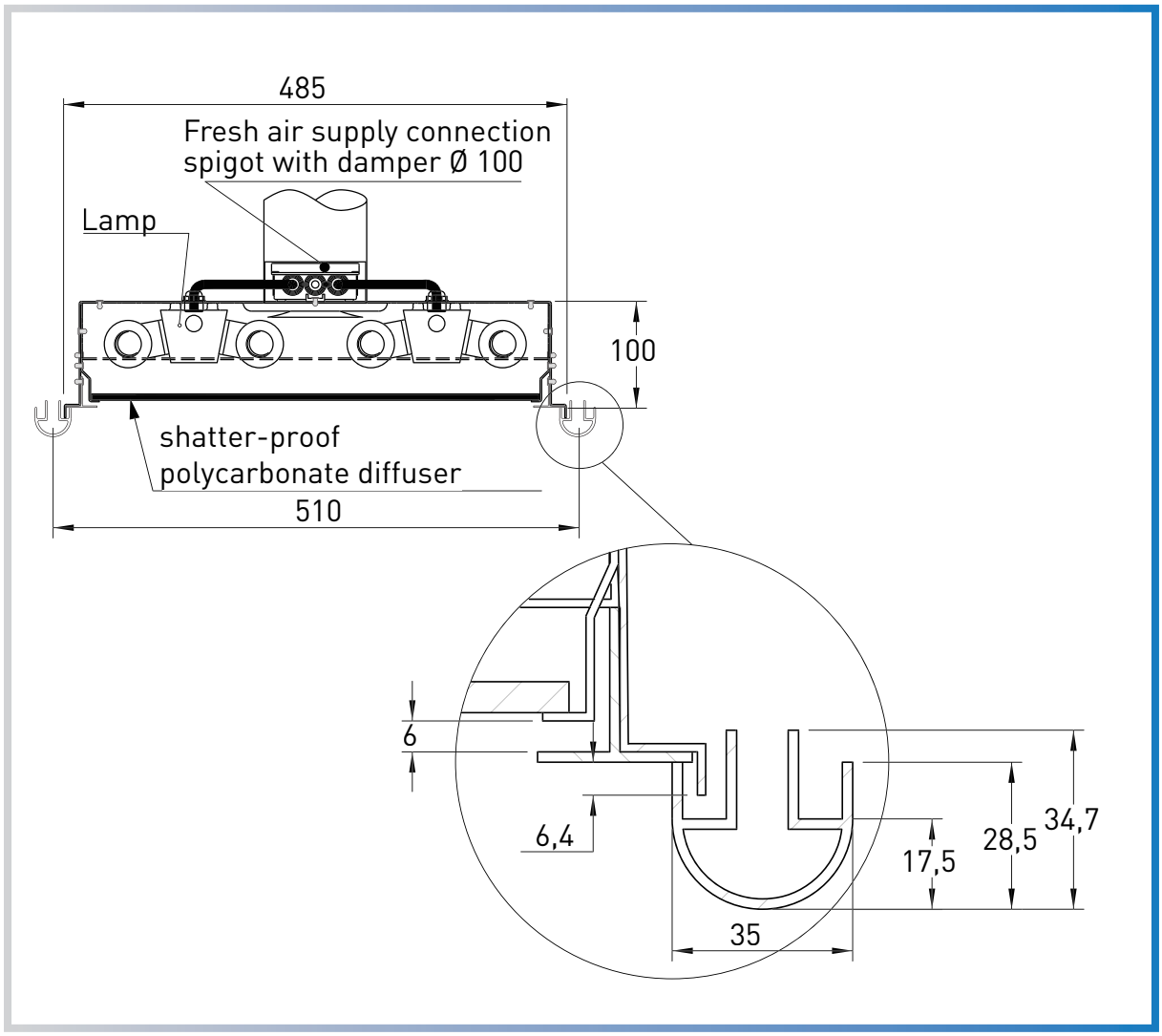

Cross section

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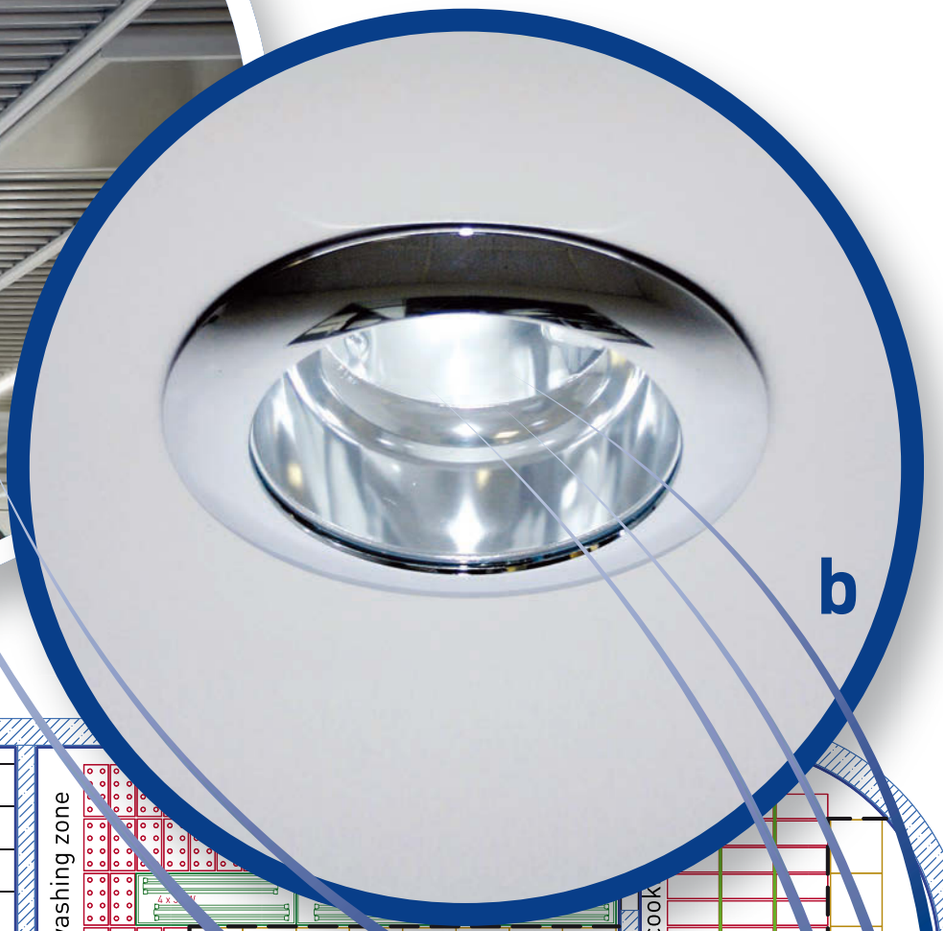
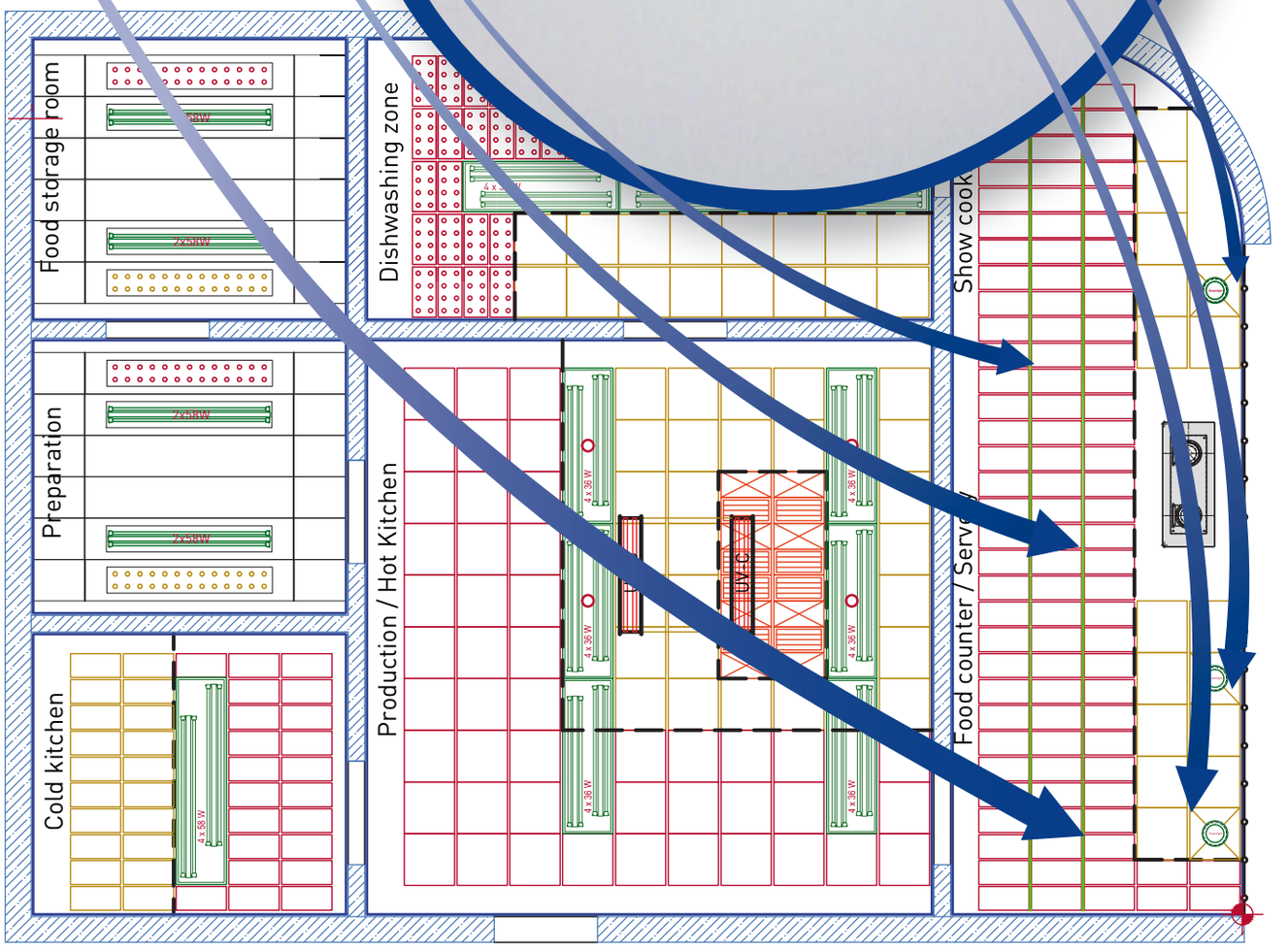
6. GIF Special Lighting

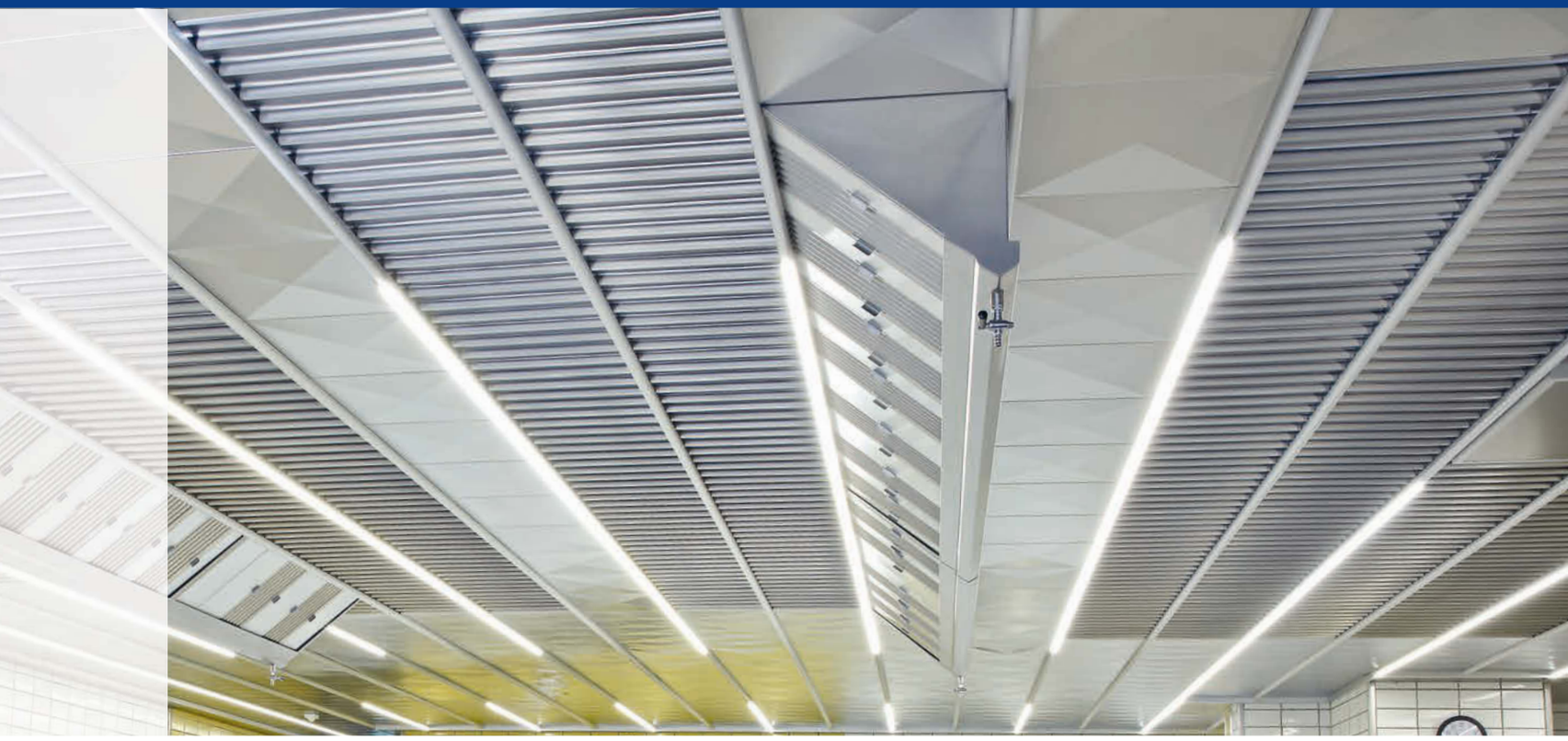
GIF ActiveVent





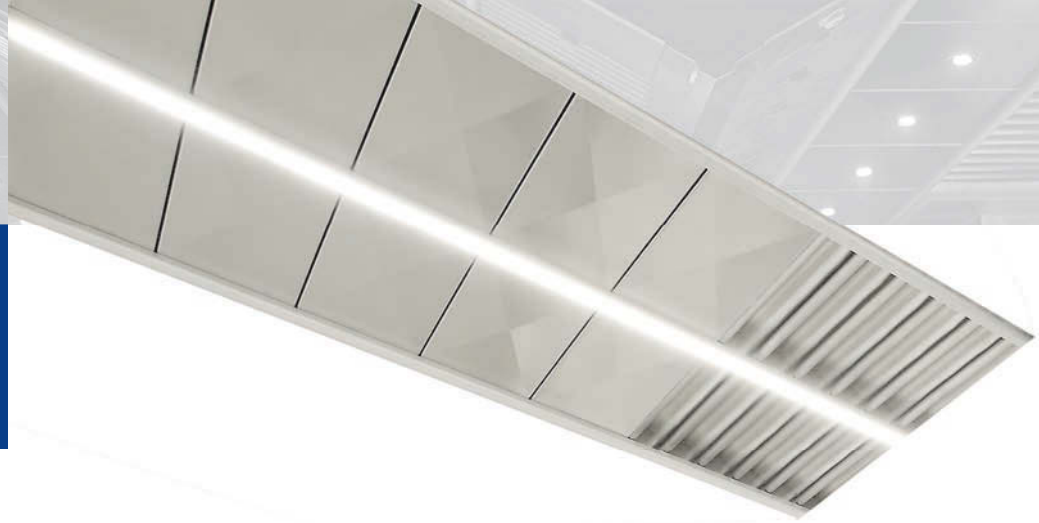
GIF Special Lighting

Food counters / Serveries and show cooking as well as corridors and waiter thoroughfares



Federseeklinik, Bad Buchau

Juwi AG, Wörrstadt



GIF Special Lighting
LED Rail Lighting System

Show cooking, Food counters/Serveries, production kitchen, dishwashing zone, preparation rooms, corridors and waiter thoroughfares

Description of the system

The GIF LED Rail Lighting System, for which a patent application has been filed, makes possible a particularly homogeneous arrangement of the lighting at almost every work station in the commercial kitchen with a maximum uniform lighting intensity.

The specifications and requirements for the lighting of the work stations in accordance with the regulations applicable to them are therefore fully respected.

The rails have a two-fold function: not only do they support the cassettes of the ventilated ceiling, they also contain the lights themselves.

There is therefore no need for the usual system of lighting fixtures. As a result, there is an increase in the active ventilation area of the GIF ceiling which supplies and extracts air. In future, thanks to the innovative construction of the lighting, no more pipes for supplying air will be needed in the ceiling cavity.

Facts and Advantages

- **integrated as part of the ventilated ceiling**
- **long service life of the LEDs of about 50,000 hours**
- **low electricity consumption**
- **protection class IP 66**
- **high luminosity with uniform light distribution**

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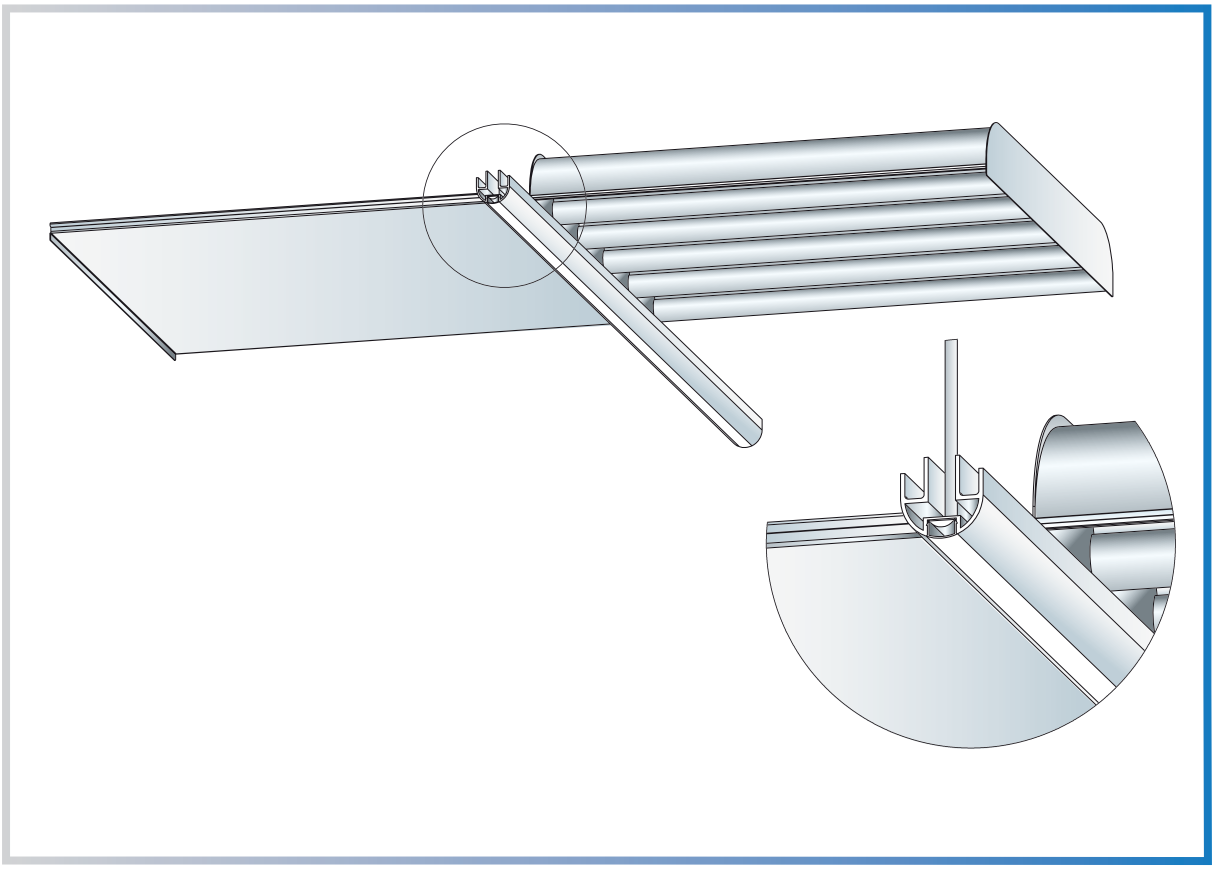
GIF Special Lighting LED Rail Lighting System

Show cooking, Food counters/Serveries, production kitchen, dishwashing zone, preparation rooms, corridors and waiter thoroughfares



Specific technical details

GIF special lighting

Protection class		IP 66
Electrical performance		15 W/m
luminous flux		approx. 1.260 lm/m
Feed		230 V
LED-Band		24 V (incl. transformer)

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GIF Special Lighting

Food counters / Serveries and show cooking as well as corridors and waiter thoroughfares

Description of the system

Particularly in public areas, aesthetic as well as functional criteria have to be met. Using the custom-made lighting concepts of Hidria GIF GmbH, show cooking and food counter/ servery areas, for example, can be aesthetically illuminated. For this purpose, we offer, amongst other things, spot lights equipped with the latest technology.

Of course, they all meet the requirements of protection class IP 54 at least.

Facts and advantages

- **Integrated as part of the ventilated ceiling**
- **Protection class IP 65**
- **Long service life of the LEDS of about 50,000 hours**
- **Control components (Emergency lighting) can also be integrated**

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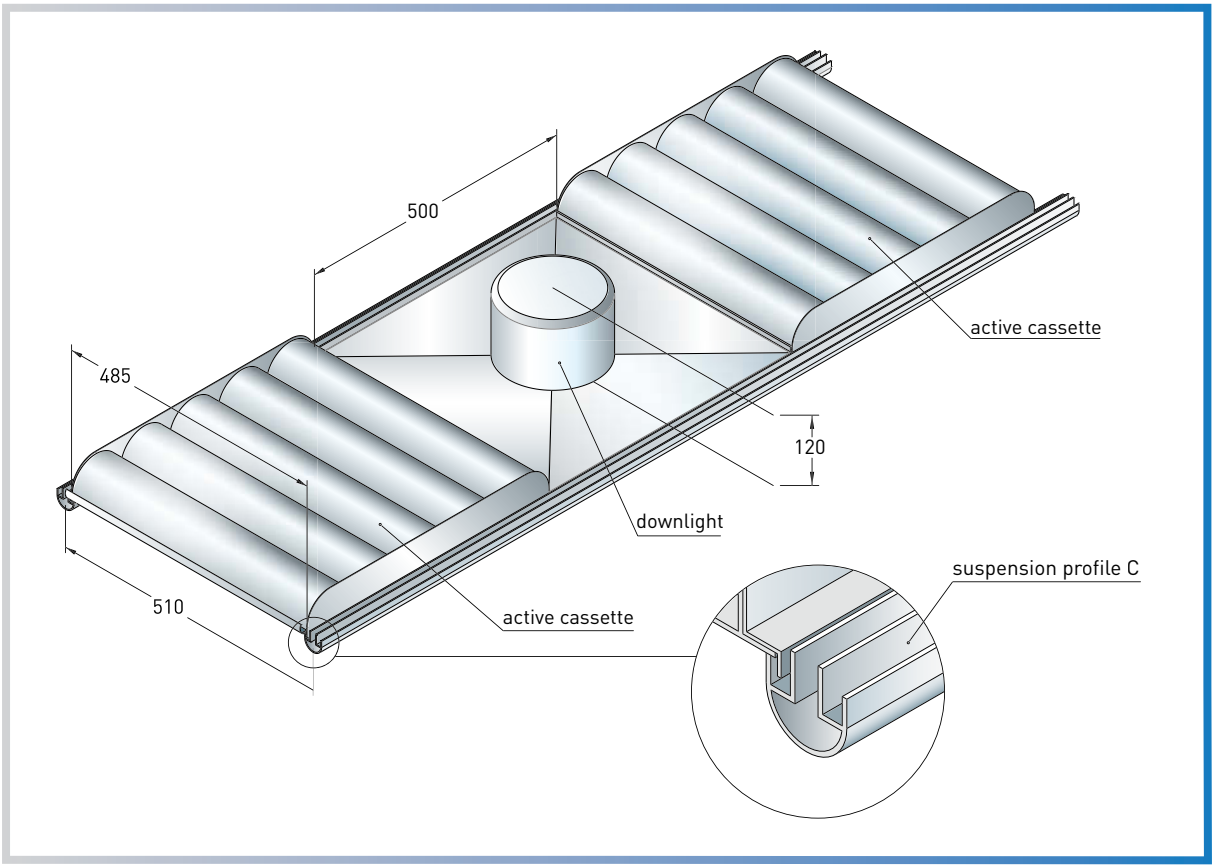
GIF Special Lighting

Food counters / Serveries and show cooking as well as corridors and waiter thoroughfares



Specific technical data

GIF Special Lighting

Protection Class		IP 65
Electrical performance		18 Watt
Connection		230 V

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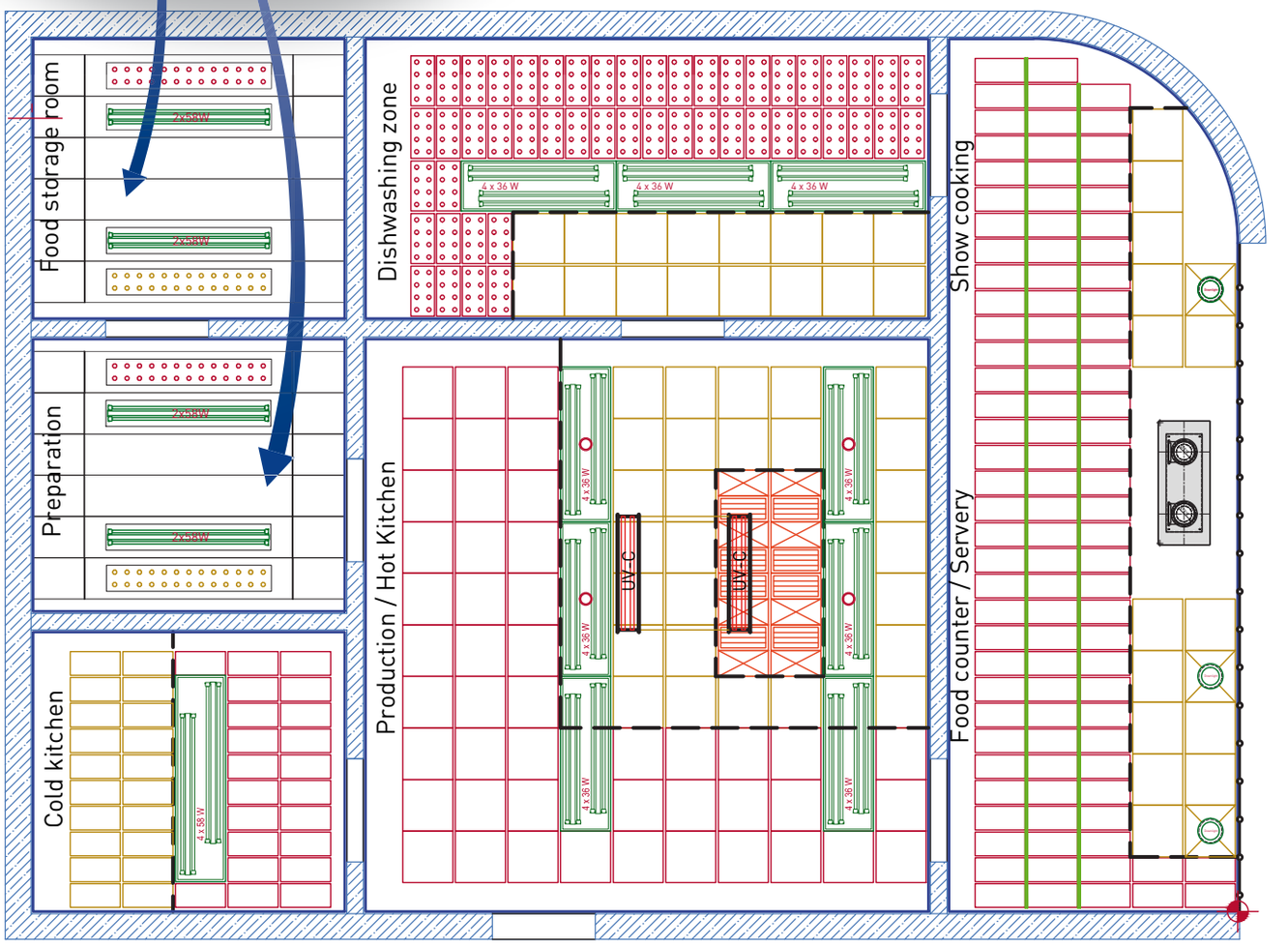
7. GIF Flat System Ceiling

GIF ActiveVent



GIF Flat System Ceiling

Food counters / Serveries, show cooking, preparation rooms, auxiliary and storage rooms as well as corridors and waiter thoroughfares

Commercial Offices Prague

GIF Flat System Ceiling

Food counters / Serveries, show cooking, preparation rooms, auxiliary and storage rooms as well as corridors and waiter thoroughfares

Description of the system

The auxiliary areas of professional kitchens, such as preparation rooms, storage rooms or the associated corridors, are also subject to the regulations and standards of VDI 2052. This means that here the requirements regarding hygiene, ventilation and air-conditioning must also be taken into account.

The GIF Flat System Ceiling has been specifically developed for these areas. Since there is no thermal load here, the GIF Flat System Ceiling consists of large components which can be demounted in a pressure-proof manner. Of course, the GIF Flat System Ceiling is also a wall-to-wall solution and comprises all the components required for capturing extract air, fresh air supply via adjustable air diffusers and lighting.

In areas with loud noise pollution, the GIF Flat System Ceiling can optionally be manufactured with a sound reducing design.

The durability is guaranteed for years due to the use of high quality materials such as AlMgSi 0.5 aluminium (also in a powder-coated form) or alternatively AISI 304 stainless steel.

Facts and advantages

- **Integrated lighting and ventilation elements**
- **Pressure-proof disassembly**
- **Economic, hygienic system for all auxiliary areas**
- **On site installation possible**

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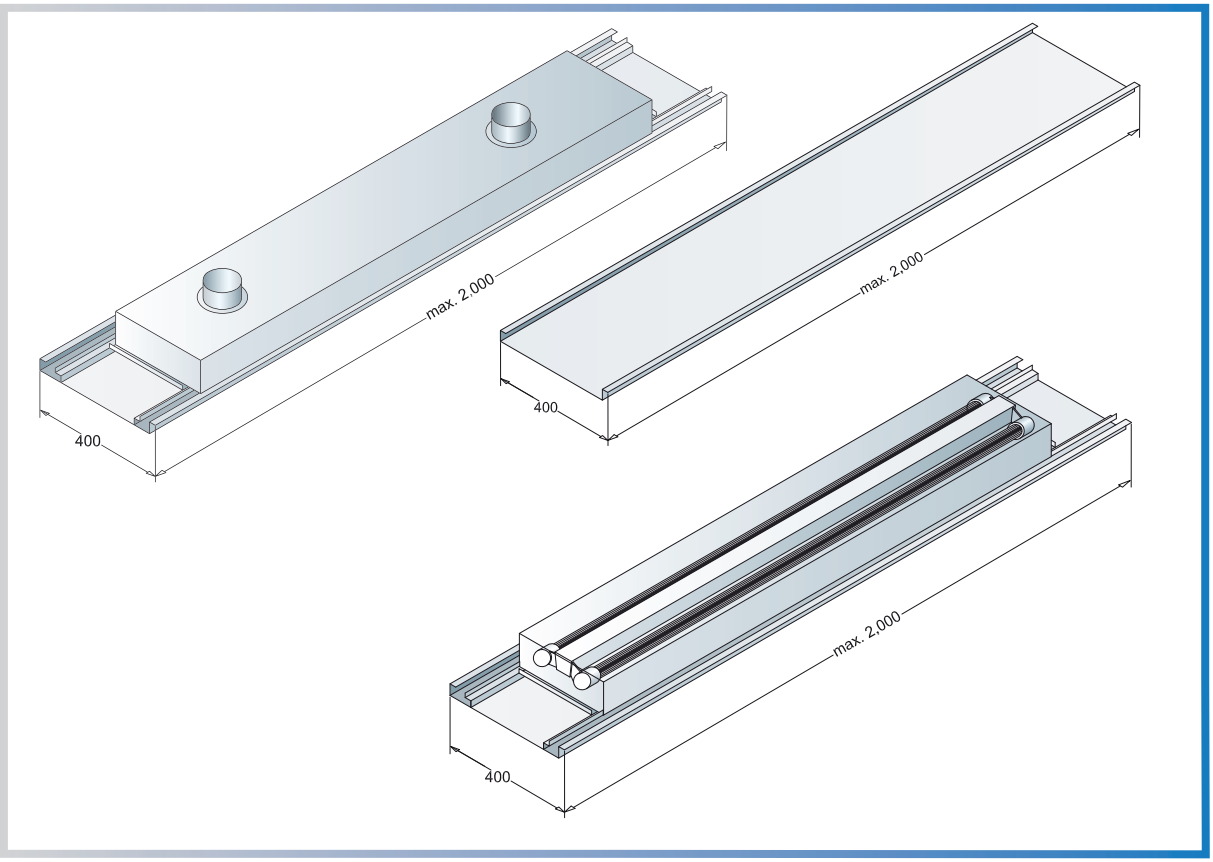
GIF Flat System Ceiling

**Food counters / Serveries, show cooking, preparation rooms,
auxiliary and storage rooms as well as corridors and waiter thoroughfares**



Specific technical data

GIF Flat System Ceiling

air flow		500 m³/h per element
dimensions/grid		2000x400 mm
pressure drop		50 Pa
material/surface		coated aluminium RAL 9010, optionally AISI 304 stainless steel
lamps		T8/T5 2x58 Watt / 2x49 Watt or LED T8 2x20 Watt / 2x25 Watt

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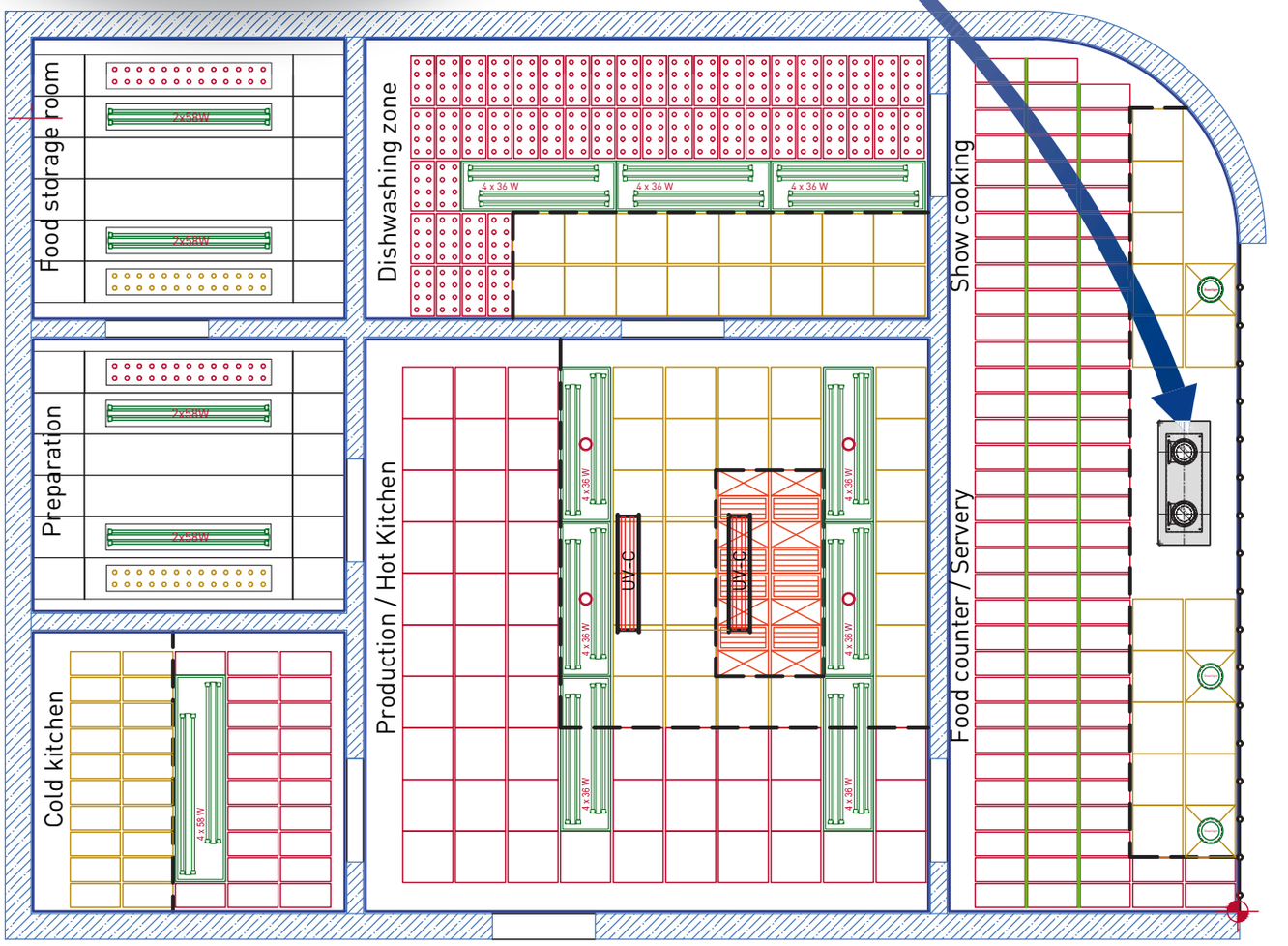
8. GIF Jet Stream Extractor

GIF ActiveVent



GIF Jet Stream Extractor

Food counters / Serveries and show cooking

County Court Düsseldorf

GIF Jet Stream Extractor

Food counters / Serveries and show cooking

Description of the system

Show cooking in an unpolluted ambient atmosphere:

Show cooking is one of the new trends in the catering business. However, in this area it is almost impossible to extract rising vapours created when cooking by means of conventional extraction systems (e.g. hoods). Cross-flow caused, for example, by an open spatial geometry or by passing guests, can lead to vapours and therefore also fat, odours and harmful substances, not reaching the capture zone of the hood, but instead being carried off into adjacent areas.

The consequences become apparent as fat deposits collect on flat surfaces and smells pervade everywhere.

GIF ActiveVent, one of the market leader in kitchen ventilation technology, presents the Jet Stream Extractor, which guarantees perfect ambient air conditions for show cooking.

The elegant and sophisticated Jet Stream Extractor is an outstanding solution for show cooking. Instead of a kitchen ventilation hood, a glass plate with inset stainless steel exhaust jets is installed at chest height above the cooking points.

The GIF Jet Stream Extractor ensures cooking vapours are immediately extracted directly above the wok or the grill. The jet mouth is inset in the glass plate. This solution provides perfect results, since cross-flow has no influence on the cooking vapours being sucked up in the high speed Tornado-effect extract. As a result, virtually no harmful substances and odours diffuse into the room - the GIF Jet Stream Extractor protects kitchen personnel and guests from harmful substance emissions.

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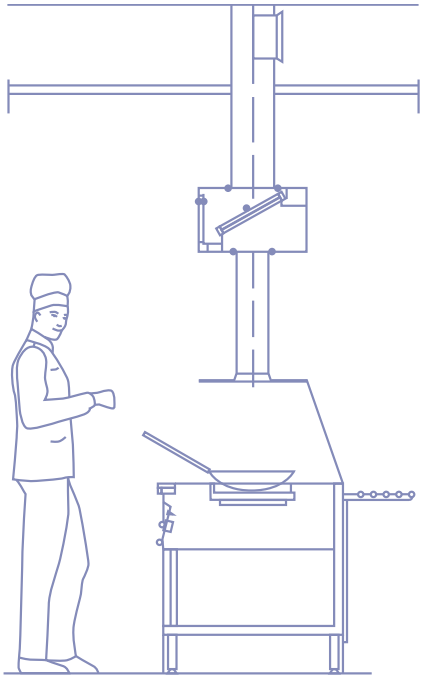
GIF Jet Stream Extractor

Food counters / Serveries and show cooking

Facts and advantages



- **Extraction of emissions (cooking vapours) immediately above cooking and frying appliances mean the extraction efficiency factor is higher than 95 %**
- **Almost no odours, aerosols or harmful substances spread into personnel and guest areas**
- **Jet Stream Extractor is particularly suitable for areas in which anticipated cross-flow makes extraction with conventional systems almost impossible**
- **Can be flexibly adapted to suit counter shapes**
- **Reduction of pollution in the work area or working environment has been certified by the relevant trade association**
- **Integration of lighting and promotional messages is possible**
- **1-2-3 or multiple jet systems available**
- **Positioning the extract air box above the ceiling facilitates attractive designs**
- **Custom-made design solutions are possible**

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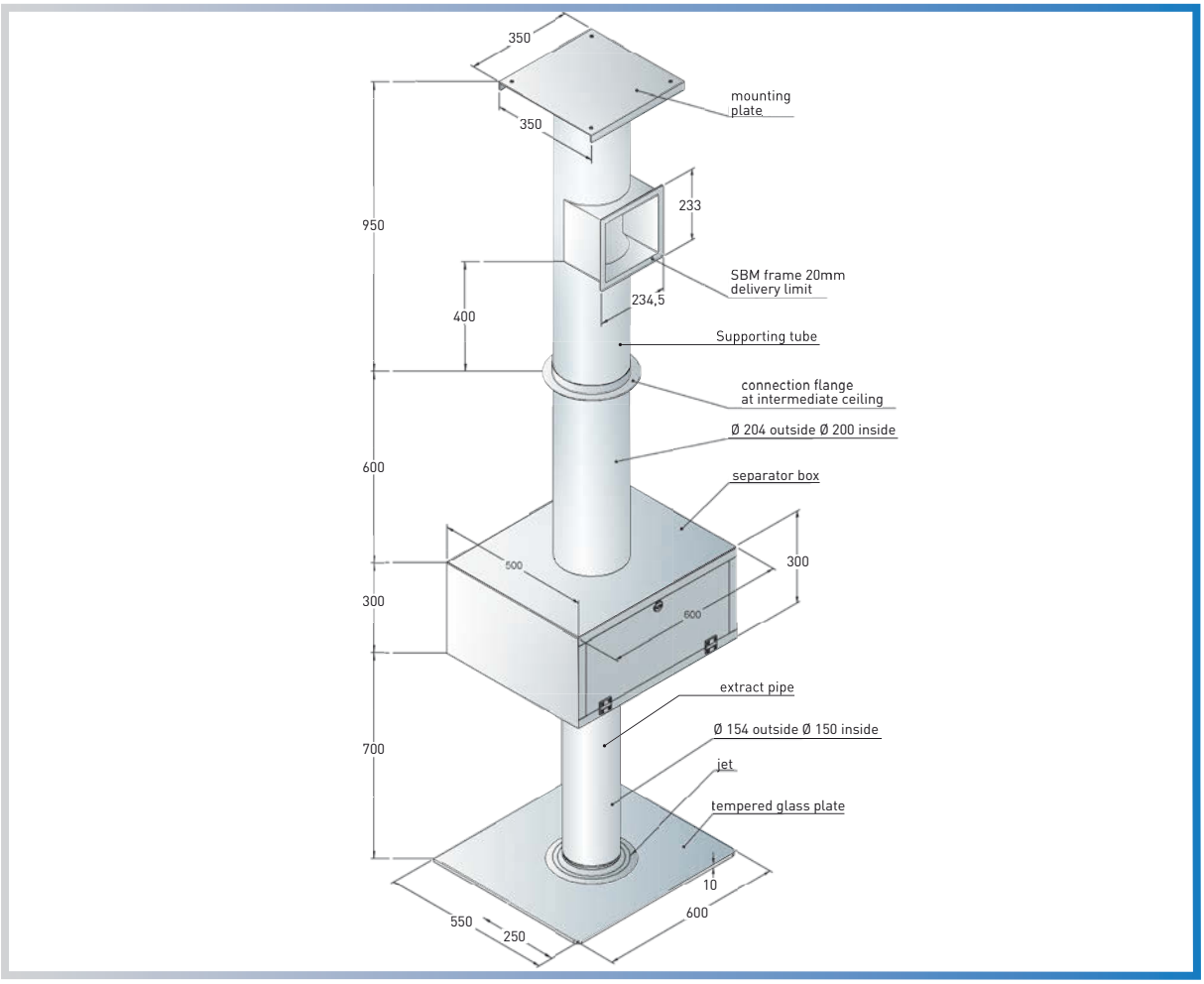
GIF Jet Stream Extractor

Food counters / Serveries and show cooking



Specific technical data

GIF Jet Stream Extractor

air flow per extraction tube	700-900 m^3/h
dimensions of glass	Glass plate and supporting tube length individually adaptable
pressure drop	250 Pa
material / surface	AISI 304 stainless steel, tempered glass 8-10 mm

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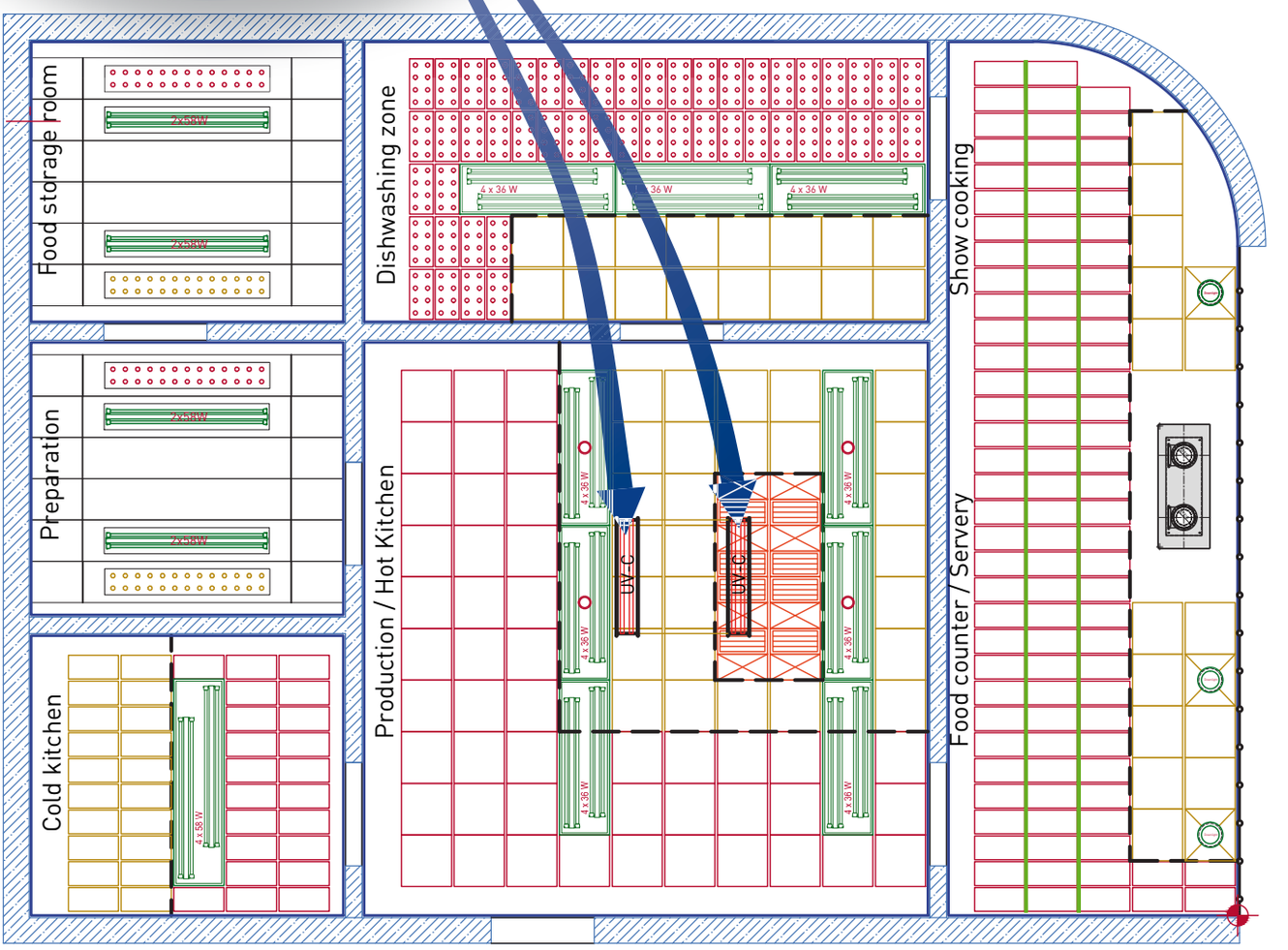
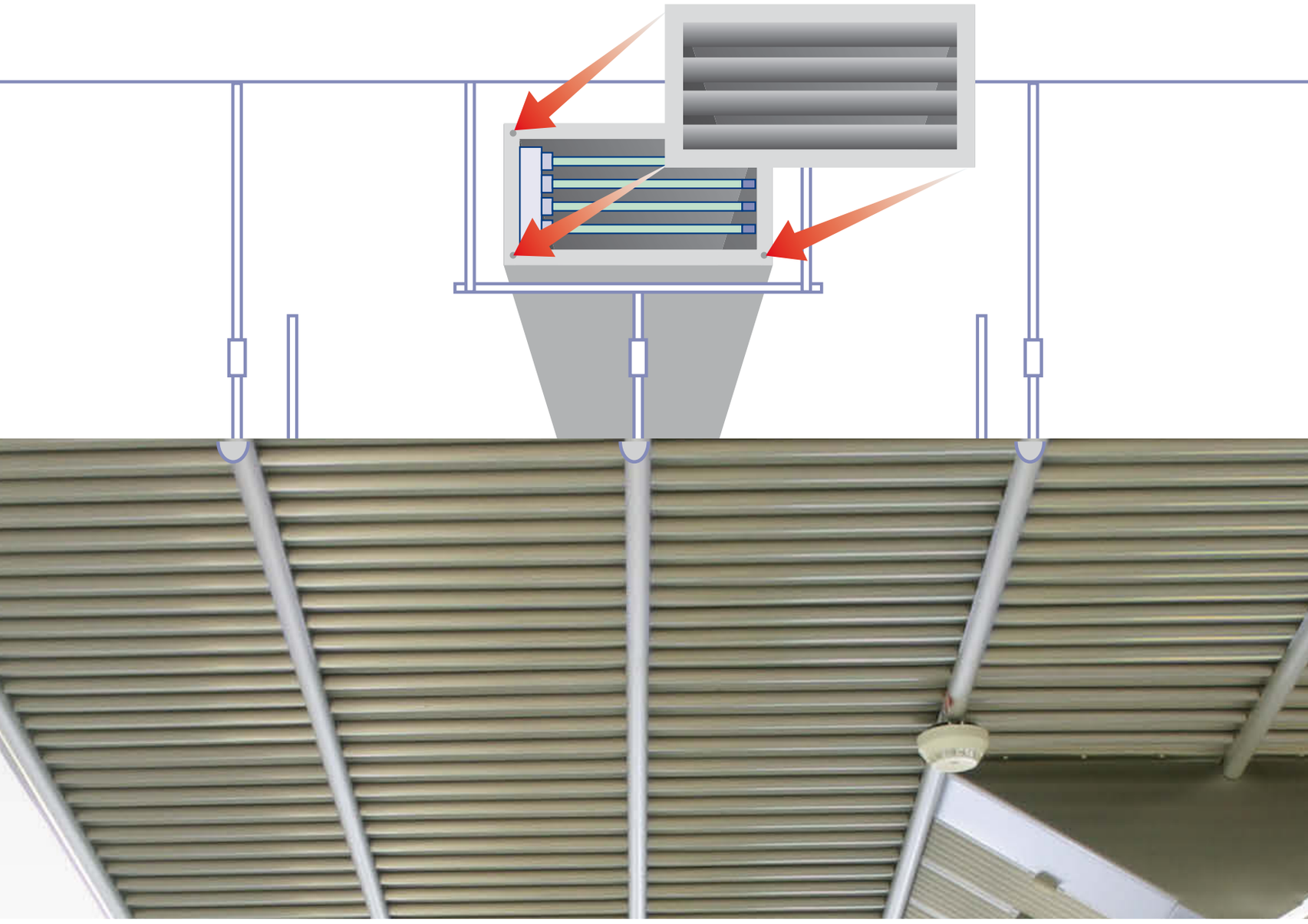
9. GIF UV-C(lean)

GIF ActiveVent



GIF UV-C(lean)

Production / Hot kitchen, food counters / show cooking



UV-C(lean)

GIF UV-C(lean)

Production / Hot kitchen, food counters / show cooking

Problems/ dangers because of grease deposits in the extract air system:

Large amounts of fat particles rise with the thermal air flow caused by cooking, deep-frying and frying. A good portion of these fat particles is usually separated by mechanical aerosol separators, which are installed in exhaust hoods and ventilated ceilings. But even the best aerosol separators do not collect all fat particles.
This leads to fat deposits in extract air ducts and downstream equipment exhaust plant.

As a result, the risk of fire hazards in these areas increases. In addition, hygiene problems, for example, mould formation (due to nutrient-rich fat deposits), may occur.
Another problem may be unwanted odours in the kitchen. These do not only arise when deep-frying, cooking or frying but also from fat deposits inside the extract air ducts.

Facts and advantages

- **Reduced fire load in kitchen extract air equipment**
- **Reduced cleaning costs**
- **Improved hygiene**
- **Conforms to DIN 18869-7**
- **Improved quality of air when using heat recovery equipment according to EnEV [German Energy Savings Regulation] 2014**
- **Several safety devices for personal protection networks**
- **Can also be installed as upgrade set for exhaust air hoods, duct nets, GIF Ventilated Ceilings and GIF Jet Stream Extractor**
- **Maximum efficiency combined with GIF Ventilated Ceilings**
- **Unique UV-Clean lamp operating time of 10,000 hours with a minimum loss of efficiency**
- **Hardly any fatty degeneration on the lamps as a result of high UVC performance per square centimetre**
- **Reduces odours**

GIF ActiveVent GmbH, Brühlstrasse 7, 79112 Freiburg, Germany
P.O. Box 34 01 65, 79050 Freiburg, Germany, Tel. +49 (0)7664 9302-0,
info@gif-activevent.com, www.gif-activevent.com

GIF UV-C(lean)

Production / Hot kitchen, food counters / show cooking

Conventional Cleaning:

Conventional cleaning involves complex and expensive cleaning at regular intervals using robots, high-pressure cleaners and high-performance chemicals to locate the fat deposits in the ducts and remove them.

The conventional way of cleaning can, however, only solve the above mentioned problems in the short term and only partly. Many places in the duct system cannot be reached because, for example, of the lack of inspection hatches. The highly aggressive, high performance chemicals used for conventional cleaning also cause considerable problems especially for older duct systems.

Our solution:

The GIF UV-C(lean) System is the ultimate solution for the decomposing of organic fats and oils in the kitchen extract air by means of UVC-light.

Oils and fats are hydrocarbon compounds, the individual molecules of which consist of several carbon atoms, which are linked to one another by single or multiple bonds.

1. When greasy substances are irradiated with intensive UVC-radiation a part of the energy of the UVC-light is absorbed by the fat or oil. The fat molecules are brought into an energetically stimulated state which enables the fat molecules to be oxidised much more quickly.

2. At the same time, ozone is created by the action of the UVC-radiation on the oxygen molecules of the air. The oxidation capacity of ozone is much higher than that of the normal oxygen in the air.

These two processes enable the fat molecules to be oxidised immediately ("cold combustion").

The products of the oxidation formed as a result are gaseous, short-chain, organic compounds (e.g. carbon dioxide), which are removed by the extract air stream.

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Your advantages at a glance:

Fire protection:
Extensive and permanent prevention of fat deposits inside the extract air ducts.

Neutralisation of odours:
Considerable reduction of odours in the kitchen extract air.

Cleaning costs:
Almost no cleaning costs for extract air ducts and the extract air fans.

Hygiene:
No accumulation of micro organisms and related hygiene problems.

Further system specific advantages:

GIF UV-C(lean) Systems are equipped with new generation, high efficiency UV-C radiators, which give better performance without requiring more space.

Furthermore, GIF´s UV-C(lean) System is designed for operating at very high temperatures without the usual loss of efficiency. As a result, it can be fitted, for example, into exhaust hoods, which are installed directly above grills and deep-fat fryers.

The operating displays of the GIF UV-C(lean) system can be integrated without difficulty into the existing control and surveillance device by means of control technology. Central monitoring of the ventilation system is therefore maintained.

Expansion of the GIF UV-C(lean) equipment and hence also of the control system (for example to cope with increased fat usage or additional cooking appliances) can be easily implemented.

The GIF UV-C(lean) equipment is available in almost any size or with almost any power output.

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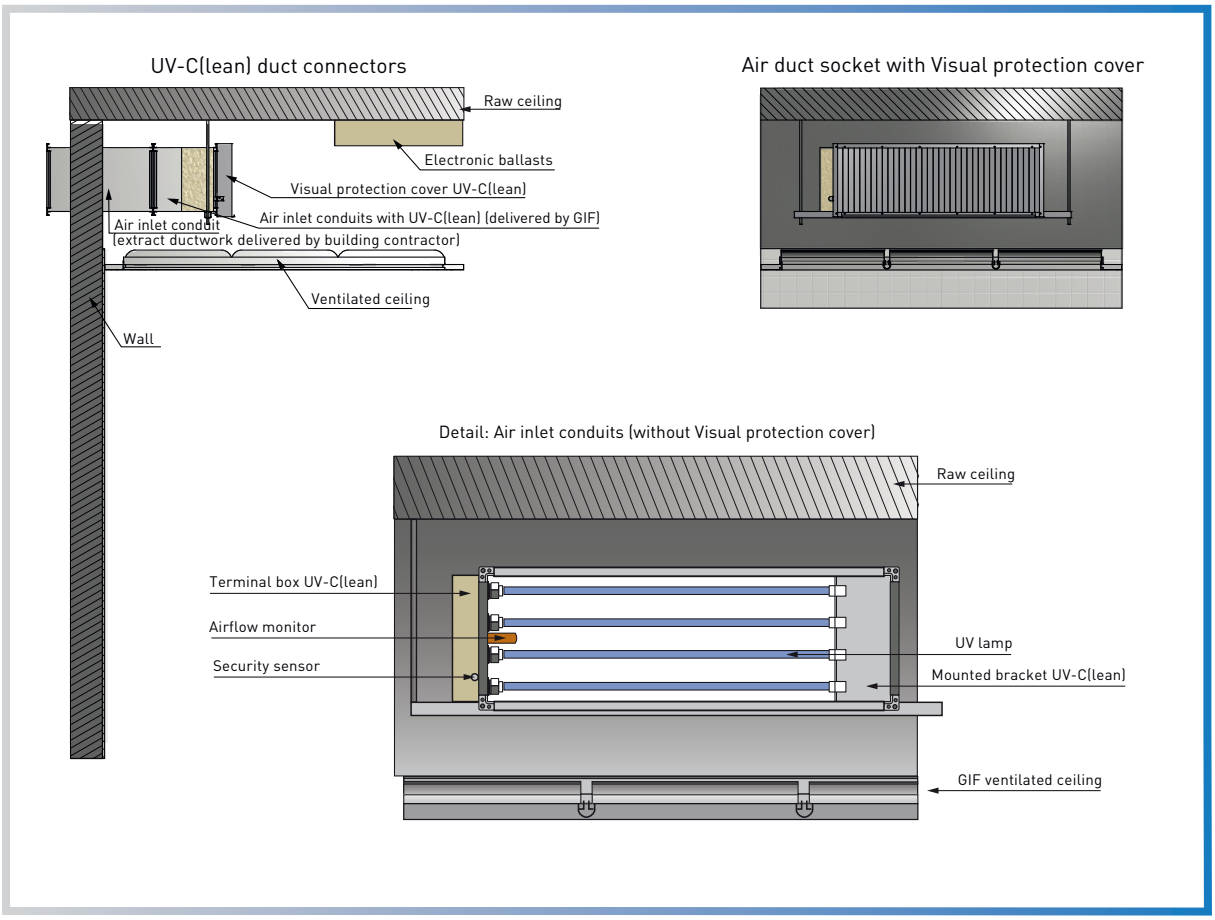
GIF UV-C(lean) System example



Solution according to project

Specific technical data

GIF UV-C(lean)

Performance	130 or 180 Watt per UV-lamp Usage according to individual requirements
Function time / Service life of lamps	10,000 hours

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ANNEX

Table of Contents Annex

GIF ActiveVent GmbH, Brühlstrasse 7, 79112 Freiburg, Germany
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GIF ActiveVent

10. Expert Reports

GIF ActiveVent

Certificates

Expert Reports

Contents certificates and surveys

GIF ActiveVent GmbH, Brühlstraße 7, DE-79112 Freiburg,
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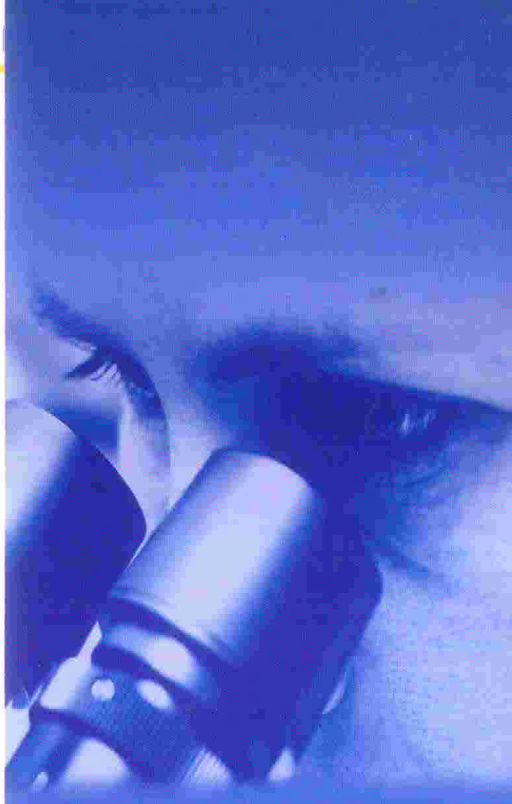
info@gif-activevent.com, www.gif-activevent.com

GIF ActiveVent

HACCP INTERNATIONAL

eliminate the hazard - reduce the risk

HACCP INTERNATIONAL FOOD SAFETY PROGRAMME CERTIFICATION



This is to certify that

GIF ActiveVent GmbH

Demountable Ventilated Ceilings

ACC	GIF Active Cassette Ceiling
RS	GIF Restaurant System
SFCC	GIF Supply Air Flat Cassette Ceiling
SFCC-SA	GIF Supply Air Flat Cassette Ceiling – Sound Absorption
LG	GIF Lighting
FCS	GIF Flat Ceiling System

are certified as food-safe and suitable for food and beverage facilities that operate a

HACCP based Food Safety Programme

noting the conditions on the certification statement

Food Zone Classification: SSZ

in accordance with the standards of HACCP International's Food Safety Certification Systems

HACCP INTERNATIONAL PTY LIMITED A.C.N. 123 358 359 The Common Seal Of

Issued by

Approved

25 June 2015

Issue Date

20 March 2017

Expiry Date

This certificate belongs to HACCP International and must be returned upon demand. All products and services to which this certificate refers are evaluated prior to reissue. To verify certification or conditions, please email certification@haccp-international.com

Issued by the HACCP International Certification office:
No. 3 Ridgewest Building,1 Ridge Street, North Sydney, NSW 2060 Australia

Certificate Number

I-PE-621-HG-RG-03

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH

certifies that

GIF ActiveVent GmbH

Brühlstraße 7, 79112 Freiburg, Germany
Zum Pier 49, 44536 Lünen, Germany
CASA Alzenau-Süd E4, 63755 Alzenau, Germany

has established and applies
a Quality Management System for

Sales, design and production of
GIF ventilated ceilings in Freiburg.

Sales and design of
GIF ventilated ceilings in Lünen.

Sales of
GIF ventilated ceilings in Alzenau.

An audit was performed, Report No. **70021100**.

Proof has been furnished that the requirements
according to

ISO 9001:2008

are fulfilled.

The certificate is valid from **2015-11-16** until **2018-09-14**.

Certificate Registration No. **12 100 21003 TMS**.

Product Compliance Management
Munich, 2015-11-04

DAkkS Deutsche Akkreditierungsstelle D-ZM-14143-01-03

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstraße 65 • 80339 München • Germany

TÜV®

Concluding report concerning the micro-biological examination of the raw concrete soffit, airtight partitioning and active cassettes of the GIF Ventilated Ceiling and also of various airborne germ measurements in the production kitchen of the refectory of the Students' Hall, Students' Building, Würzburg on 30.11.10.

Client: Hidria GIF GmbH, Brühlstraße 7, 79112 Freiburg

Objective: The state of hygiene of various structural elements in the GIF Ventilated Ceiling as well as the air quality was to be determined on the basis of micro-biological examinations and optical assessment (extended visual check). According to the manufacturer of the GIF Ventilated Ceiling the individual cassettes of the ventilated ceiling function as grease and condensation separators. Because of the effects of gravitation and condensation the flow of air via separation chamber leads to a build-up of dirt, grease and other floating particles on the inner side of the small register. According to the information provided, the accumulation of dirt in the ceiling cavity is thus avoided.

Description of the property:

Operational details: Refectory of the Students' Hall, Students' Building, Würzburg

Number of meals: approximately 2500 hot meals per day

Date of start of service of kitchen including ventilated ceiling: in year 2000

Volumes of extracted and supply air: (ventilation with nominal volume flow rate in operation): 33600m³ / h

Heights: GIF Kitchen Ventilated Ceiling: 3.0m above FFL, concrete soffit approx. 3.5 above FFL

Cleaning cycles: According to the information received, the cleaning of the kitchen ventilated ceiling is carried out every 3 – 6 months, or more frequently in individual places if necessary. The last cleaning was reported to have been carried out in September 2010.

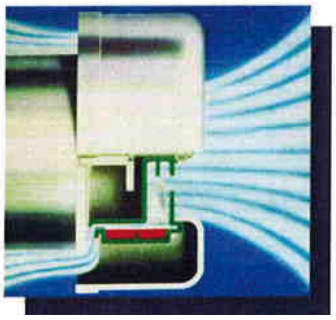
Details of the property: A GIF Kitchen Ventilated Ceiling was installed in the above property in 2000. The GIF Kitchen Ventilated Ceiling functions as an open type of construction with a ceiling pressure chamber in accordance with VDI 2052 and DIN 18869-2 feature B1. The extracted air and the supply air pass via pressure chambers in the ceiling cavity. The pressure chambers are formed by means of aluminium compartments inside the ceiling cavity. The extracted as well as the supply air is realised over structurally identical active cassettes at a modular dimension of 500mm x 500mm. The GIF Kitchen Ventilated Ceiling is fixed to a concrete soffit, which together with the air-tight compartments and the GIF Kitchen Ventilated Ceiling forms the pressure chambers. Besides the air pipes there are additional installations such as electrical cables present in the ceiling cavity. The active cassettes form a completely reversible ventilated ceiling with integrated lighting in all sections.

1. Methods and Results

1.1 Optical assessment (extended visual check)

The optical assessment which was carried out in the framework of an extended visual check in the areas of both extracted and supplied air showed no traces of flaws of hygiene or other possible harmful effects such as dirt, formation of rust, limescale deposits, damage, fibre discharges. As a result of the GIF-ceiling elements being removed immediately beforehand, the ceiling sections were shaped in such a way that they could be clearly and extensively examined. This made the inspection of the parts much easier and no anomalies were found. The assessed surfaces in the ceiling area (raw concrete, air compartments, air passages) were dry and free of deposits and dirt.

1.2 Airborne germ measurements with the help of an air sampler



Illustrations 1+2: Air sampler RCS Principle of measurement

The airborne germ measurements were carried out with an air sampler RCS High Flow from Biotest HYCON by means of repeated determinations. On each occasion 200l of air was collected for the test (Method BAV-IM-5. 4-55). The airborne germ measurements were carried out directly at the air outlet of the supply air passage (entry of air into the supply air pressure chamber – Point 10054152/-53) and also after a length of approx. 11m in the ceiling cavity (Point 10054156/-57). In a similar way measurements were taken at the air outlet inside the kitchen directly beneath the supply air component (active cassette – Point 10054154/-55) as well as at a representative place in the production area near the tilting frying pans at a height of approximately 1m (Point 10054158/-59).

No criticism could be made of the eight airborne germ measurements (repeated determinations at four measuring places) all produced satisfactory results. It should not be forgotten that the assessment “satisfactory” represents the best possible evaluation on the basic scale of “satisfactory”, “acceptable”, “unsatisfactory”. All the tests were below the benchmark of 400KbE (colony forming units) per cubic metre for the aerobic mesophilic germ count and below the benchmark of 1000 KbE per cubic metre for fungus. To arrive at the evaluation benchmarks were used which are valid for sectors dealing with food ready for consumption. At the endpoints of the incoming airflow in particular very small germ counts were recorded (some of which were below the limit of detection), which underline the manufacturer’s specification that the use of the voluminous ceiling cavity for the air-flow does not contravene the hygiene regulations.

1.3 Examination of surrounding areas (surface and swipe sampling)

Surface and swipe sampling were carried out on different elements in the ceiling area as well as on several active cassettes and evaluated (ISO 18593 (2004)): Horizontal procedure for testing techniques of surfaces by means of contact plates and swabs; DIN 10113 (1997); determination of surface germ content on the fixtures and implements in the food area.

The surface and swipe sampling on the raw concrete surfaces, active cassettes (extracted and supply air) together with the air-tight partitions (for the individual positions please see attachment) also produced exclusively satisfactory results. Again it must not be forgotten that the term “satisfactory” represents the best possible result. Enterobacteriaceae (to which also hygiene indicators such as E-coli and disease causing elements such as salmonella also belong) were not found in any of the tests. Seven from ten surface samplings and three from five swipe samplings showed no signs of germ growth. The germ count of covered agars gave no cause for complaint. What should be especially emphasised is that all the tests of active cassettes, which were cleaned before the testing in the on-site multi-tank conveyor dishwashing machine, showed no signs of germ growth. These results satisfy almost entirely the regulations concerning materials with direct food contact of DIN 10516 (Food hygiene – cleaning and disinfection) and demonstrate the possibility of cleaning the GIF ceiling elements simply and effectively. Moreover, the removal and reinstallation of the ceiling elements do not require any technical aids and can be integrated without difficulty in the operational cleaning processes.

2. Summary of Assessment

During the course of the tests described above it was shown that in the production kitchen of the refectory in the Students’ Hall in the Students’ Building in Würzburg while the GIF-kitchen ventilated ceiling was in use and during the air-supply feed over the ceiling pressurised chamber there was no additional germ-pollution caused by germs as set out in VDI 6022 Sheet 3, Point 3.3 or any other adverse effects found at the time the expert assessment was written on 30.11.10.

(signed) Dipl. LM-Ing. Dr. rer. Biol. Vet. Christian Kaiser

UNDERWRITERS' LABORATORIES OF CANADA

REPORT

File CR2003

Application No. 7943

June 22, 1989
Rrevised: July 24, 1992

Laboratorium voor Aanwending der Brandstoffen en Warme-overdracht

Beproevingsverslag Nr: 8051

Orientierungsprobe bezüglich der Feuerwiderstandsfähigkeit der Hängedecke unter einem Zellenbetonboden

REPORT CONCERNS ORIENTATING INVESTIGATION ON THE BEHAVIOUR UNDER FIRE CONDITIONS (CHIP PAN FIRE) OF A FILTER VENTILATED CEILING CONSISTING OF MIVIKO FILTER CASSETTES (MAKE: STAINLESS-STEEL)

Reportno.: B-84-178(E)
Orderno. : 00.65.6.0084/017

IBBC

Instituut TNO voor Bouwmaterialen en Bouwconstructies
Bezoekadres: Lange Kleiweg 5, Rijswijk (ZH)
postbus 49 2600 AA Delft
tel. 015-138222 Telex 38270 IBBC NL
centrum voor brandveiligheid

INSTITUTE TNO FOR BUILDING MATERIALS AND BUILDING STRUCTURES

NETHERLANDS ORGANIZATION FOR APPLIED SCIENTIFIC RESEARCH

LANGE KLEIWEG 5
COMPLEX PLASPOELPOLDER
RIJSWIJK (Z-H)

P.O. BOX 49, DELFT, THE NETHERLANDS
TEL. 015 - 138222 TELEX 33567

REPORT

Nr. B-84-178(E)

Orderno.: 00.65.6.0084/017

Date : April 1984

Re: AN ORIENTATING INVESTIGATION ON THE BEHAVIOUR UNDER FIRE CONDITIONS (CHIP PAN FIRE) OF A FILTER VENTILATED CEILING CONSISTING OF MIVIKO FILTER CASSETTES (MAKE: STAINLESS-STEEL)

Author: J. Dekker

To: Miviko B.V.
Leigraafseweg 2
6983 BP DOESBURG

This report has been compiled in April 1984.
If it has to be used after a period of time, it is advisable to contact the Technical Centre for Fire Prevention TNO, to check whether the usefulness of the contents has remained unaltered.
This report contains 6 pages + 1 drawing.

Subject : Ceiling consisting of Miviko filter cassettes (make: stainless-steel).

Investigated for : Behaviour under fire.

Sponsor : Miviko B.V.
Leigraafseweg 2
6983 BP DOESBURG

Date of experiment : February 20th, 1984.

Purpose and aim of the investigation : False ceilings such as under investigation are used in kitchens of hotels, hospitals, nursing homes, barracks, etc., among others.
This suspended false ceiling is built out of filter cassettes of stainless steel, resting upon aluminium ceiling sections. The construction of the cassette ceilings is such that exhaust air extraction occurs over the whole surface area through slots in the cassettes.
According to the supplier, the cassettes are so constructed that they also act as grease collecting filters. In this way, it should be possible to avoid grease and other such deposits from accumulating on the bottom surface of the floor above, from which it is suspended, as well as the connecting air transmission ducts, ventilators, etc. In case of a fire under the ceiling, (such as chip pan fire), the spread of fire via the enclosed gap above the ceiling could be avoided due to this.
In order to obtain more information on this question, an orientating investigation is carried out, where a practical situation of chip pan fire under a Miviko ceiling under air suction is simulated.

Page 10.11

The investigated structure : In an industrial space in Almere, a test ceiling was built, suspended from the soffit of the floor above, made up of flat steel panels. The surface area of this false ceiling and adjacent floor were about 3m x 3 m. The whole structure rested upon 4 steel columns, built up with corrugated steel plate. The height of the gap between the false ceiling and the floor above was about 0.3 m. The false ceiling was 3.05 m above the lower floor. The sides of the 0.3 m void were enclosed with steel plating. Over a height of 1.16 m below the ceiling, aluminium plate was provided against the sides of the column.

On the top of the floor above the false ceiling, a layer of rock wool provided, so that heat loss from the 0.3 m void via this floor was limited as much as possible.

In the centre of this topping, a 400 mm diameter air extraction duct was constructed. A ventilator was fitted to this duct. The false ceiling consisted of 36 cassettes, make stainless-steel 50 x 48 x 7 cm. The cassettes came from an existing false ceiling in a kitchen. The false ceiling was in use for several years. The cassettes were therefore deposited with a thin layer of grease, especially around the air suction slots. The cassettes were placed upon aluminium ceiling rails that were suspended from the top floor at centre to centre distances of 0.5 m by means of ceiling hangers. Four ceiling hangers were used for each ceiling rail. Along the sides of the floor, the cassettes were placed upon an aluminium frieze.

- For further details, see appended drawing no. 1 -.

Method of testing : In the centre of the room under the ceiling, a deep frying pan measuring 0.5 x 0.36 x 0.1 m was placed. The distance between the bottom of the pan to the soffit of the false ceiling was 3.05 - 0.8 = 2.25 m. The frying pan was than filled with 9 litres of deep frying fat, so that the pan was filled with fat up to a height of 0.05 m. The air suction through each cassette was set at approx. 65 m^3/hr, which is according to the sponsor an average value for a kitchen exhaustion. The total air suction of the ceiling amounted to approx. 36 x 65 ≃ 2500 m^3/hr. During the test, temperatures were measured by means of 11 thermocouples at different locations. The thermocouples (tk) were provided as follows:

tk 1,2,3 and 4	in the 0.3 high void at a distance of 0.1 m under the soffit of the floor.
tk 5	in the air duct, at approximately 2 m distance from the air duct opening in the floor.
tk 6	at 0.1 m distance below the false ceiling and directly above the centre of the deep frying pan.
tk 7	at a distance of 0.5 m under the ceiling and directly above the centre of the deep frying pan.
tk 8 and 9	in an individual suction slot of a cassette place above the middle of the deep frying pan.
tk 10	in the centre of the air duct at the junction with the floor.
tk 11	in the deep frying pan.

Page 10.13

Finaly, visual observations were made on the behaviour of the false ceiling and in the 0.3 m void between the top floor and false ceiling. The fat was heated by means of a propane burner until self-ignition of the frying fat occurred.

Observations : At 0 minutes, self-ignition of the frying fat occurred at a temperature of 372°C in the fat. After 1 minute, the flames were about 1.2 m high. The underpressure in the 0.3 m gap was observed to be 4 Pa. During the whole duration of the test, this suction pressure remained fairly constant at 4 - 5 Pa.
After 2 minutes, the flames had reached a height of 1 m above the deep frying pan. The 0.3 void became gradually filled with smoke.
After 2.5 minutes, the length of the flames increased. The distance between the top of the flames to the underside of the false ceiling was about 0.5 m.
After 5 minutes, the distance became about 0.2 m. The 0.3 m gap was completely filled with smoke.
After 7 minutes the void was still filled with smoke.
After 10 minutes, the distance from the top of the flames to the underside of the false ceiling was about 0.5 m. A temperature of 480°C was measured by tk 11 at that moment.
After 15 minutes, a temperature of 130°C was measured on the outside of the air duct.
After 17 minutes, the length of the flames began to reduce. The distance of the top of the flames from the false ceiling became about 1 m.
After 18 minutes, a temperature of about 700°C was measured by tk 11.

After 20.5 minutes, it was decided to end the test in agreement with the sponsor. This decision was influenced by the fact that the temperature both below and above the false ceiling began to fall.
During the whole duration of the heating, no flames were observed in the 0.3 m ceiling void. The highest temperature observed in this void was 127°C, while under the false ceiling it was 205°C. The deformations in the ceiling were hardly noticeable.

The measured temperatures are summarized in Table I.

Table I

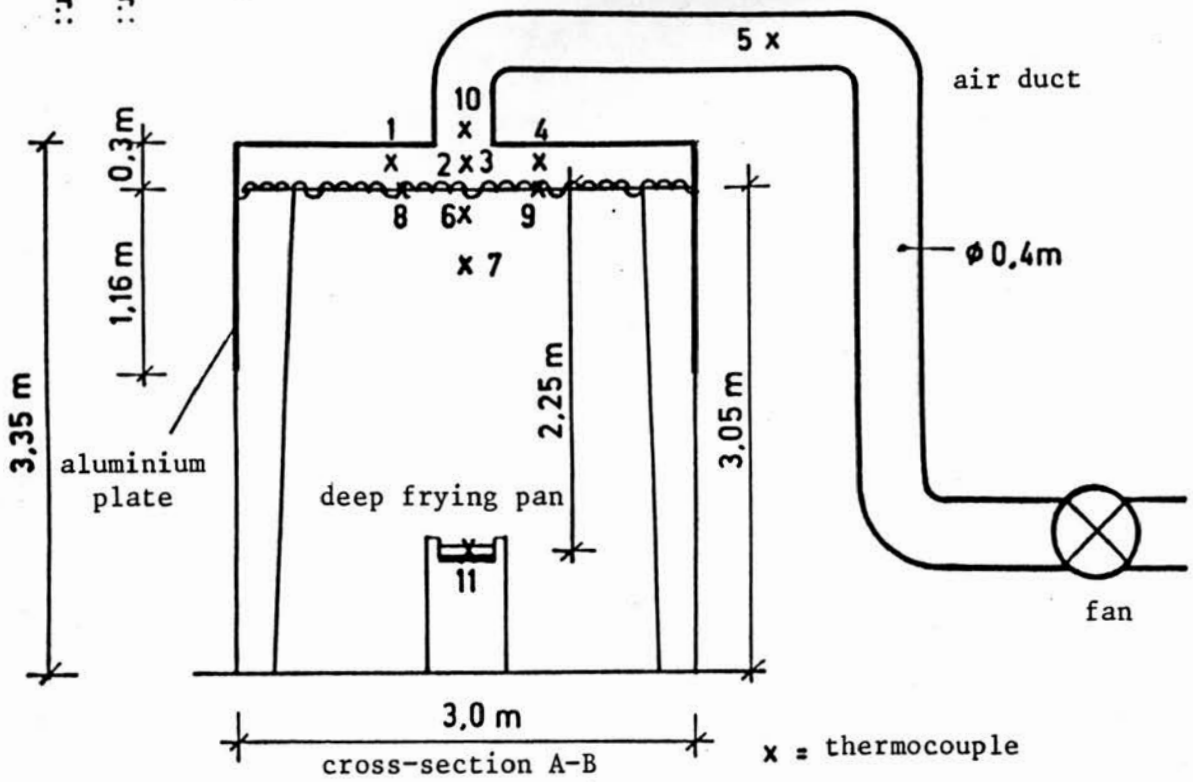
Duration of heating in minutes	Measured temperatures in °C									
	under the false ceiling		in the 0.3 m gap				in the air duct		in an individual suction slot of a cassette	
	tk 6	tk 7	tk 1	tk 2	tk 3	tk 4	tk 5	tk 10	tk 8	tk 9
0	15	15	15	15	15	15	15	15	15	15
5	200	180	120	110	115	125	110	140	110	-
10	140	125	125	100	105	127	65	125	-	140
15	140	150	98	80	88	110	-	110	105	90
18	140	115	95	75	85	100	-	105	-	-

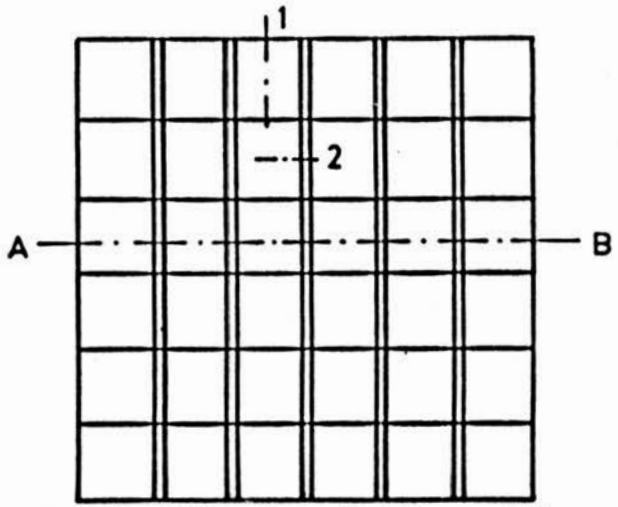
Summary and conclusions : An orientating investigation has been carried out on the behaviour of a filter ventilated ceiling, consisting of Miviko filter cassettes (make: stainless-steel) when subjected to a fire (chip pan fire).

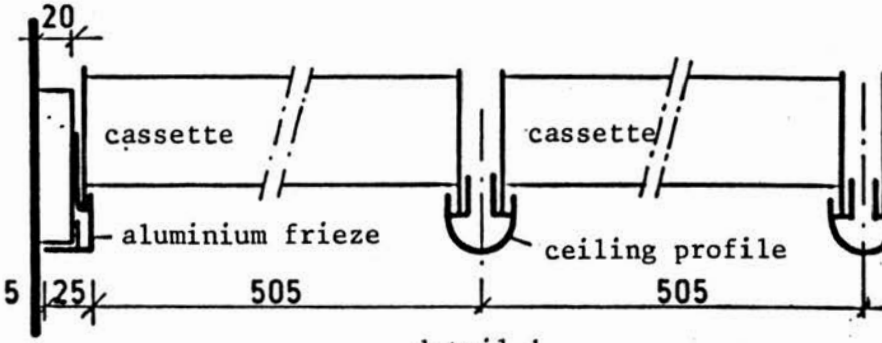
The ceiling, with measurements of 3 m x 3 m and a suspended height of 0.3 m was provided under a floor made of non combustible materials. The suction in the ceiling was set at 65 m^3/hr. per cassette.
Fat in a deep frying pan, placed 2.25 m below the ceiling, was heated up to self ignition. The soffit of the false ceiling was exposed to heat for a duration of 20.5 minutes. Under the circumstances in the test - false ceiling suspended under a floor of non combustible material and with a distance between the false ceiling and deep frying pan of 2.25 m - no collapse of the ceiling or spread of the fire in the 0.3 m gap was observed.

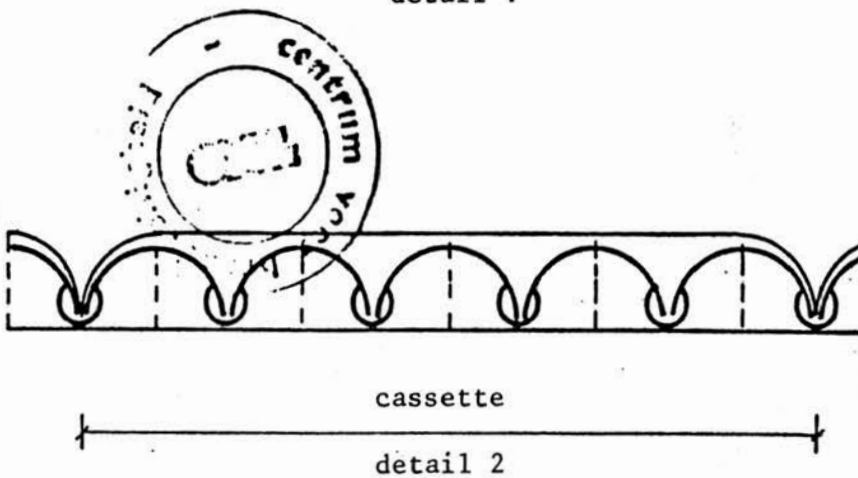
Technical Centre for Fire Prevention TNO,

J. Dekker A.F.R. Harms









TEST SET UP FOR FILTER VENTILATED CEILING

DRAWING NO. 1

[TÜV logo]

Technical Report No. 71355439/1

Rev. 0

dated 29th July 2009

Client:	Hidria GIF GmbH Mr. Volker Eckmann Brühlstr. 7 79112 Freiburg Germany
Production site:	Hidria GIF GmbH Brühlstr. 7 79112 Freiburg Germany
Monitored Object:	Product: Aerosol separator of construction type A Type: VF VFK AK
Test specification:	DIN 18869-5: 2007
Function of survey:	Testing of flame propagation according to DIN 18869-5: 2007
Test result:	See point 3 of this technical report

Writer: Frank Feihle
Date of issue: 29 JUL 2009

Phone: +49(0)61 969601-91
Fax: +49(0)61 969601-59
Email: frank.feihle@tuev-sued.de

TÜV Product Service GmbH
TÜV SÜD Gruppe
Frankfurt Branch
Mergenthalerallee 27
65760 Eschborn
Germany

1 Description of device

1.1. Function

Declaration of manufacturer regarding the normal use:

"* Types VF, VFK"
designated position of operation: 45 ø
* Type AK
designated position of operation: horizontal

Declaration of manufacturer regarding the reasonably

foreseeable misuse:
not specified

1.2. Technical data

Type	Position of operation	Year of manufacture	Material	Dimensions (w x h x d in mm)	Air volume (m^3/h)
VF (Images 1 and 2)	45 ø	2009	1.4301	approx. 500 x 250 x 40	75
VFK (Images 3 and 4)	45 ø	2009	1.4301	approx. 500 x 250 x 40	200
AK (Images 5 and 6)	horizontal	2009	1.4301	approx. 500 x 500 x 68	75

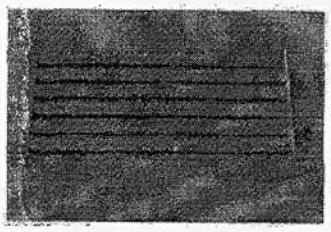


Image 1

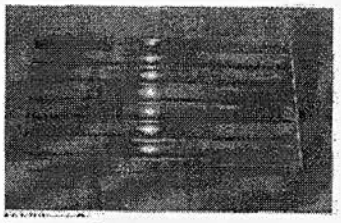


Image 2

Writer: Frank Feihle
Date of issue: 29 JUL 2009

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65760 Eschborn
Germany

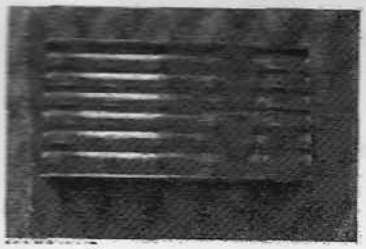
Image 3

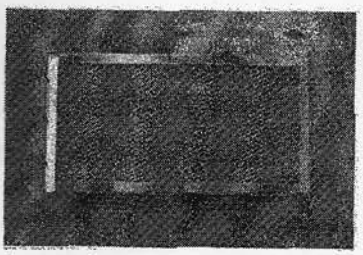
Image 4

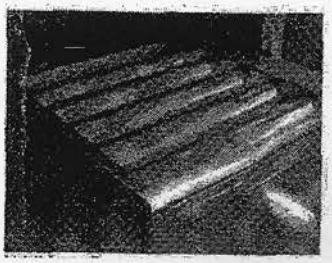
Image 5

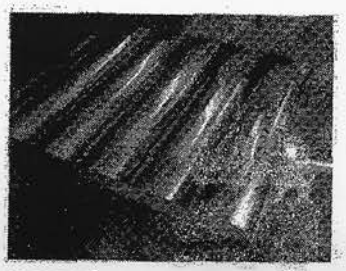
Image 6

2 Order

2.1 Date of order, sign of client

25th of June 2009, Herr Volker Eckmann"

2.2 Entry of test sample, place

The test was effected on 22nd and 23rd July 2009 in D-94447 Plattling, (Germany), Nicolausstr. 5.

2.3 Test date

22nd to 23rd July 2009

2.4 Place of test

Company Heindl Lüftungstechnik GmbH, Nicolausstr. 5,
D-94447 Plattling (Germany)

Phone: +49(0)61 969601-91
Fax: +49(0)61 969601-59
Email: frank.feihle@tuev-sued.de

TÜV Product Service GmbH
TÜV SÜD Gruppe
Frankfurt Branch
Mergenthalerallee 27

65760 Eschborn
Germany

2.5 Deviations or exceptions of testing procedure

The test of flame propagation was effected according to DIN 18869-5 chapter 8.2.

3 Test results

The installation of the aerosol separators of type VF and VFK was carried out in the scheduled position of operation of 45 ø to the horizontal. The installation of the aerosol separators of type AK was carried out in the scheduled position of operation horizontal. The approach velocity is independent of the approach area of the respective type of filter.

1.

Type of filter:	VF
Designated position of operation:	45 ø
Installation position for the measuring:	45 ø
Year of manufacture:	2009
Material:	1.4301
Air volume flow:	75 m^3 / h
Dimensions:	25cm x 50cm x 4cm
Approach velocity:	0.167 m / sec.
Marking:	none
Specific air resistance before flame impingement:	1.1 Pa
Specific air resistance after flame impingement:	1.6 Pa

Result:
There were no flames detectable behind the separator within the standard testing period of one minute. The separator stayed intact during the complete standard testing period.

2.

Type of filter:	VF
Designated position of operation:	45 ø
Installation position for the measuring:	45 ø
Year of manufacture:	2009
Material:	1.4301
Air volume flow:	75 m^3 / h
Dimensions:	25cm x 50cm x 4cm
Approach velocity:	0.167 m / sec.
Marking:	none
Specific air resistance before flame impingement:	1.1 Pa
Specific air resistance after flame impingement:	1.7 Pa

Result:
There were no flames detectable behind the separator within the standard testing period of one minute. The separator stayed intact during the complete standard testing period.

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Frankfurt Branch
Mergenthalerallee 27

65760 Eschborn
Germany

3.

Type of filter:	VFK
Designated position of operation:	45 ø
Installation position for the measuring:	45 ø
Year of manufacture:	2009
Material:	1.4301
Air volume flow:	200 m^3 / h
Dimensions:	25cm x 50cm x 4cm
Approach velocity:	0.44 m / sec.
Marking:	none
Specific air resistance before flame impingement:	4.4 Pa
Specific air resistance after flame impingement:	4.5 Pa

Result:
There were no flames detectable behind the separator within the standard testing period of one minute. The separator stayed intact during the complete standard testing period.

4.

Type of filter:	VFK
Designated position of operation:	45 ø
Installation position for the measuring:	45 ø
Year of manufacture:	2009
Material:	1.4301
Air volume flow:	200 m^3 / h
Dimensions:	25cm x 50cm x 4cm
Approach velocity:	0.44 m / sec.
Marking:	none
Specific air resistance before flame impingement:	4.4 Pa
Specific air resistance after flame impingement:	4.4 Pa

Result:
There were no flames detectable behind the separator within the standard testing period of one minute. The separator stayed intact during the complete standard testing period.

5.

Type of filter:	AK
Designated position of operation:	horizontal
Installation position for the measuring:	horizontal
Year of manufacture:	2009
Material:	1.4301
Air volume flow:	75 m^3 / h
Dimensions:	50cm x 50cm x 6,8cm"
Approach velocity:	0,083 m / sec.
Marking:	none
Specific air resistance before flame impingement:	2.3 Pa
Specific air resistance after flame impingement:	2.8 Pa

65760 Eschborn
Germany

Result:
There were no flames detectable behind the separator within the standard testing period of one minute. The separator stayed intact during the complete standard testing period.

6.

Type of filter:	AK
Designated position of operation:	horizontal
Installation position for the measuring:	horizontal
Year of manufacture:	2009
Material:	1.4301
Air volume flow:	75 m^3 / h
Dimensions:	50cm x 50cm x 6,8cm
Approach velocity:	0.083 m / sec.
Marking:	none
Specific air resistance before flame impingement:	2.3 Pa
Specific air resistance after flame impingement:	2.9 Pa

Result:
There were no flames detectable behind the separator within the standard testing period of one minute. The separator stayed intact during the complete standard testing period.

4 Remark

There was no setup manual or instruction guideline available for the tested aerosol separators.

5 Documentation

At the time of the test there was no product documentation available.

TÜV SÜD Product Service GmbH Test Report reviewed [Signature] On behalf of Dipl.-Ing. Edgar Harnisch Manufacture, Tools & Construction	[Official stamp: Frankfurt TÜV SÜD Product Service]	TÜV SÜD Product Service GmbH Tester [Signature] On behalf of Dipl.-Ing. Frank Feihle Manufacture, Tools & Construction

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Email: frank.feihle@tuev-sued.de

TÜV Product Service GmbH
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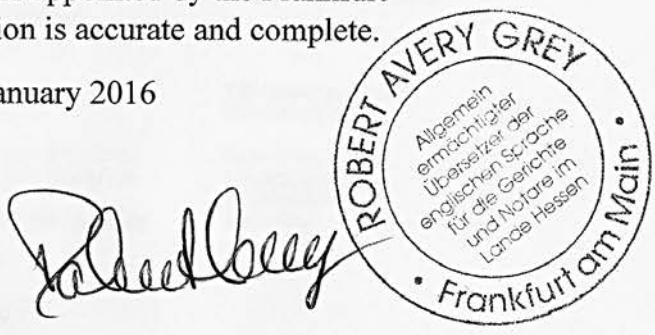
Frankfurt Branch
Mergenthalerallee 27
65760 Eschborn
Germany

I, Robert Avery Grey, sworn German-English translator appointed by the Frankfurt Regional Court, hereby certify that the above translation is accurate and complete.

Frankfurt am Main, Germany, 14th January 2016



Certified translation from the German

GARRISON ADMINISTRATION OF WALLDÜRN
IV 2.2.010 file number: 45- 01- 11

Walldürn, 23 October 1995
Federal forces trunk dialing number 5726
Telephone (06282) 5 11 (EXT)
Fax (06282) 5 11 / 4 95
Clerk in charge: H. Gremminger

Gesellschaft für Ing. Projekte GIF mbH
Brühlstr. 7
79112 Freiburg-Opfingen

Dear Sirs,

Damage caused by fire in the mess kitchen
Building No. 11 - Nibelungen Barracks Walldürn

On 25 October 1993, a deep-frying pan, rated capacity 28 KW, caught fire in the mess kitchen in building No. 11 in the Nibelungen barracks Walldürn.

A ventilation ceiling with modular grid dimensions 500/500 mm, "make GIF" is installed above the cooking appliances.

The fire caused damage to several coffers as a result of burning fat. Nevertheless, the suspension device has not been damaged by the fire and withstood fire exposure for about 40 - 50 minutes.

By order
(signature illegible)
(Gremminger)

Mailing address: P.B.O. 1431 , 74726 Walldürn
Office: Waldstrasse 6 , 74731 Walldürn

I hereby certify that the above text is a true and correct translation of the original German document/certified copy submitted:

Freiburg, dated: - 8 MAR 2001

(Sworn translator)

PETER J. SPÄTH, B.A.
Sworn translator and interpreter (English) for the courts of Baden-Württemberg (Germany)
ELSÄSSER STR. 43, D-79110 FREIBURG

Schornsteinfegerinnung Darmstadt

(Association of Chimney Sweepers Darmstadt)

Statutory Body under Public Law – Technical Department –

Schornsteinfegerinnung Darmstadt, Hch-Hertz-Str. 20, 63225 Langen

Landgasthof
Pension Neubauer
Westring 3/a

63500 Seligenstadt

Langen, 10.09.99

Expert Assessment

Re: **The ventilated ceiling installed by GIF mbH in the kitchen of the Hotel "Pension Neubauer", Westring 3/a, 63500 Seligenstadt**

At the request of the GIF Ventilator and Extractor Ceilings Company, Freiburg mbH and the Technical Department of the Association of Chimney Sweepers, Darmstadt, an onsite-visit was arranged for 12 May 1999 by Mr Klaus-Peter Stallknecht, the official expert who had been engaged and sworn in for the purpose of clarifying the question of the „Certification of Secure Use" according to §80 Paragraph 2 HBO.

As the above-mentioned expert was able to see by direct inspection on site, no defects were found in relation to the installed ventilated ceiling, the built in gas fired heaters in the commercial kitchen of the Hotel „Pension Neubauer" and the steam-removal chimney (see page 2, pictures 3 + 4).

From the way they have been installed, ventilated ceilings cannot be judged in accordance with the Facility-Ventilation guidelines. These Facility Ventilation Guidelines are applicable only to commercial steam-removal hoods and for down standing extraction equipment.

As a result, the ventilated ceiling installed by GIF mbH can only be assessed by independent testing establishments (see attachment ULC-Laboratories and Institute for Building Materials) in relation to material, fire-protection and usability (International Assessment Agencies – EU-Norm and Testing Agencies).

In this case the appointed Master Chimney Sweepers can only be held responsible for the installation of fire places (see attachment CE-Certification of combination ovens) and their combustion supply (with particular reference to extracted air).

There is nothing to prevent a certification of “Secure Use” in accordance with § 80 2 HBO being granted by the appointed Master Chimney Sweeper Mr Moran, who is responsible for the matter.

Yours faithfully

Klaus Dieter Köbler	(signed) Klaus-Peter Stallknecht
Association Technical Supervisor	Deputy AssociationTechnical Supervisor

Encs.
1. ULC-Laboratories
2. Institute for Building Materials, Delft (Fire Issues)
3. DVGW-CE Sample Building Assessment Certificate

Certified translation from the German

University Clinic Freiburg
Institute for Environmental Medicine and Hospital Hygiene
Director: University Professor Dr. F. Daschner
National Reference Centre for Hospital Hygiene
Telephone / Fax
Dr. med. Markus Dettenkofer, Senior Physician, Consultant for Hygiene and Environmental Medicine
(Extension:)

Hugstetter Strasse 55
79109 Freiburg i. Br.

GIF GmbH
Brühlstr 7
79112 Freiburg

Date: 20 February 2001

Expert medical report on the examination of the rough-cast ceiling above the GIF ventilation ceiling in the staff canteen of the Freiburg University Clinic.

1. The issue

According to the manufacturer of GIF ventilation ceilings (GIF GmbH, Freiburg), the individual coffers of this ventilation ceiling act as a fat and condensate separator: the directing of the air current over phase separating chambers leads to the depositing of dirt, fat and other suspended particles on the inner surface of the small coulisses, thus avoiding contamination of the ceiling cavity of the rough-cast ceiling.

As instructed by GIF (Managing Director Mr. Hammer) in their letter of 26 October 2000, the rough-cast ceiling above the GIF ventilation ceiling which was installed in the staff canteen of the Freiburg University Clinic about 15 years ago (in the area above the tilt-type frying pan, see Fig.1) was examined and appraised with regard to hygiene.

2. Methods

Within the course of routine cleaning of the removable element of the GIF ventilation ceiling, the area situated above this section (rough-cast ceiling) was thoroughly examined on 10 November 2000. In addition, a microbiological examination was carried out using sterile, commercial RODAC contact agar plates ("Replicate Organism Detection and Counting", Biotest Columbia blood contact agar, Heipha Diagnostika, Heidelberg; contact surface approx. 21 cm²). These were opened taking aseptic precautions, put on the various accessible control points (plasterboard ceiling, ventilation duct, girder element, cut-off wall) applying moderate pressure for 10 seconds each, and then sealed immediately to avoid contamination. The plates were incubated in the laboratory for 48 hours at 37°C, followed by a germ count and, where necessary, by a microbiological analysis.

3. Results

The macroscopic inspection of the clearly designed and largely visible ceiling area above the GIF ceiling elements, which had been removed a few minutes before, did not show any conspicuities: the yellowish surface of the plasterboards was dry, smooth and did not show any specific sediments. The steel plate surface of the ventilation duct and the steel girder construction for the GIF elements were also in good condition commensurate with their age (refer to Fig. 3-5).

In total, 19 RODAC plates were used to take multiple samples from all accessible areas (refer to item 1). Using an additional plate, the rear of a dismantled GIF ceiling element was sampled.

In 16 cases, there was no germ growth on the RODAC plate after the incubation period. One colony-forming unit (CFU) of coagulase-negative staphylococci was isolated in three plates, with an additional CFU of micrococci found on one of these plates.

On the RODAC plate used to sample the rear of the ceiling element, the following germs were isolated: aerobic spore-forming organisms 5 CFU, coagulase-negative staphylococci 11 CFU, non-fermentors 2 CFU, micrococci 4 CFU.

4. Summary assessment

As mentioned above, the external (macroscopic) aspects did not give any cause for objection, the visible areas above the GIF ventilation ceiling showed findings commensurate with their age without any relevant sediments/contamination.

The results of the microbiological examination of selected surfaces by means of contact agar plates presented no conspicuous findings and/or a low degree of contamination (0 CFU - 2 CFU for each RODAC plate). The European Good Manufacturing Practices (EU GMP, 1997) were applied in the assessment; the germ concentration found corresponds to the second highest purity level (Grade B) as defined for the manufacture of medical products. The 22 CFU/RODAC plate isolated on the rear of a ceiling element are to be assigned to 'Grade C' (3rd level). The spectrum of the isolated germs corresponds to the usual colonization of surfaces (mainly by gram-positive bacteria).

We fully agree with the manufacturer's statement that ceiling cavity contamination on the rough-cast ceiling can be ruled out by the special GIF ventilation ceiling design. In summarizing, it may be stated that, even after many years of using the GIF ventilation ceiling in the staff canteen of the Freiburg University Clinic, the accessible areas of the rough-cast ceiling above the ventilation elements were in perfect condition in terms of hygiene.

Freiburg, 20 February 2001
Dr. med. M. Dettenkofer (signature illegible)

I hereby certify that the above text is a true and correct translation of the original German document/certified copy submitted:

Freiburg, dated: - 8 MAR 2001

(Sworn translator)

PETER J. SPÄTH, B.A.
Sworn translator and interpreter (English) for the courts of Baden-Württemberg (Germany)
ELSÄSSER STR. 43, D-79110 FREIBURG

Wolfgang Rink
Noise and Fire Protection Company

Officially Appointed and Sworn-in Expert in Noise and Fire Protection
Measurement Agency for Noise Emissions and Immissions in accordance with § 26 BImSchG

Isw • Wolfgang Rink • Schwarzwaldstr. 37 • 7801 Reute

Gesellschaft für Ingenieur-Projekte
Freiburg mbH
Attn: Mr Hammer
Brühlstraße 7

7800 Freiburg

02.03.93

GIF-Ceilings in dish-washing areas
- Advice in respect of room acoustics

Dear Mr Hammer,

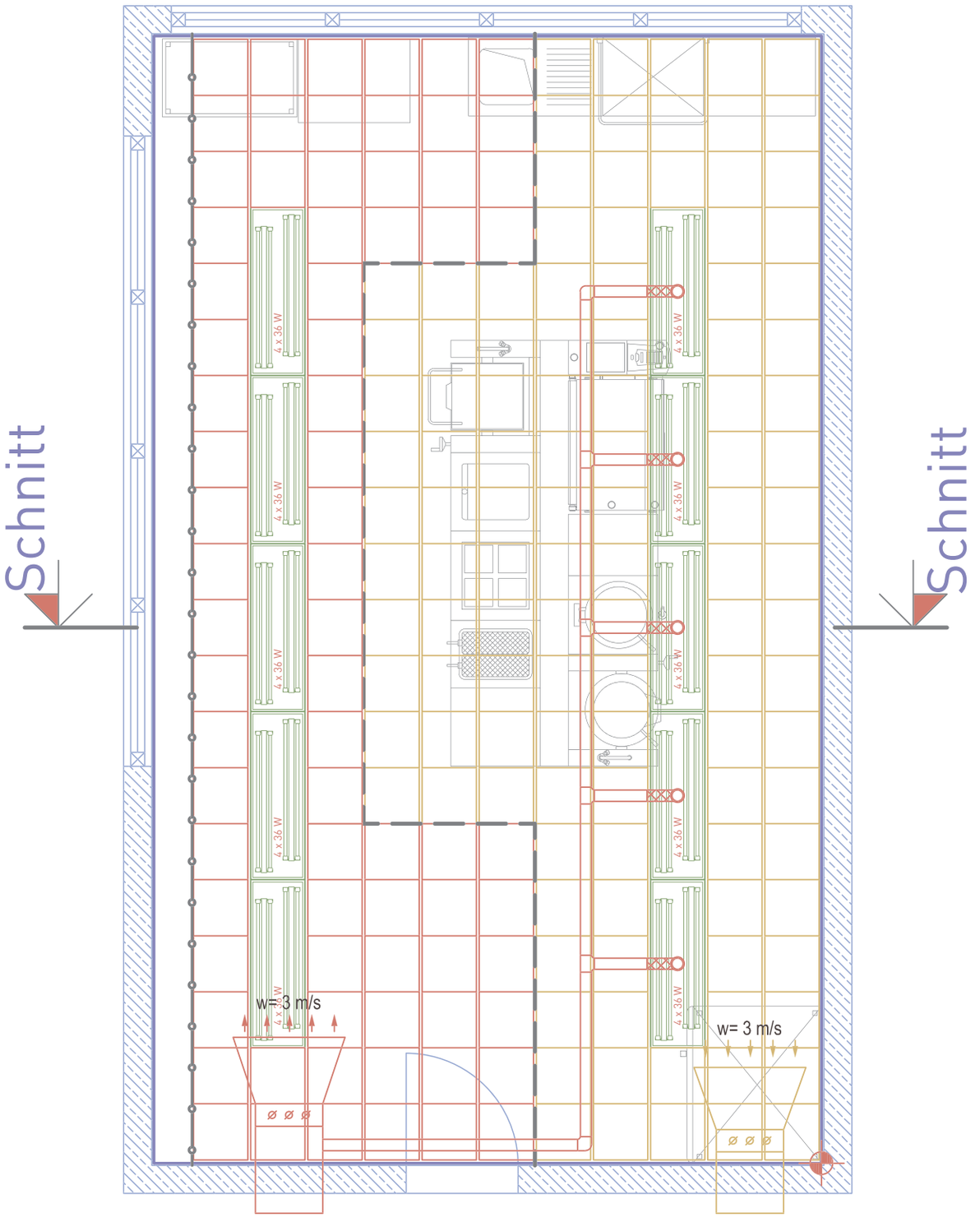
According to your telephone call you wish to have in addition to the results contained in my letter of 08.02.93 further pairs of variates to be considered in respect of the surface relationship active/flat cassettes in the mathematical prognosis of the achieved level reduction. As agreed, I have therefore extended the two tables on page 3 of the above-mentioned letter, as follows:

Variants	Surface relationship active-/flat cassettes	Resulting median degree of noise absorption
I	70 / 30	$\alpha_{mI} = (0,7 . 0,20) + (0,3 . 0,76) = 0,37$
II	50 / 50	$\alpha_{mII} = (0,5 . 0,20) + (0,5 . 0,76) = 0,48$
III	40 / 60	$\alpha_{mIII} = (0,4 . 0,20) + (0,6 . 0,76) = 0,54$
IV	30 / 70	$\alpha_{mIV} = (0,3 . 0,20) + (0,7 . 0,76) = 0,59$
V	20 / 80	$\alpha_{mV} = (0,2 . 0,20) + (0,8 . 0,76) = 0,65$
VI	10 / 90	$\alpha_{mVI} = (0,1 . 0,20) + (0,9 . 0,76) = 0,70$

Variants	Equivalent Absorption Surface	Level reduction
I	$A_{2,I}$ = 58,7 m²	ΔL_I = 7,1 dB
II	$A_{2,II}$ = 78,5 m²	ΔL_{II} = 8,3 dB
III	$A_{2,III}$ = 89,3 m²	ΔL_{III} = 8,9 dB
IV	$A_{2,IV}$ = 98,3 m²	ΔL_{IV} = 9,3 dB
V	$A_{2,V}$ = 116,3 m²	ΔL_V = 9,8 dB
VI	$A_{2,VI}$ = 118,1 m²	ΔL_{VI} = 10,1 dB

Kind regards,

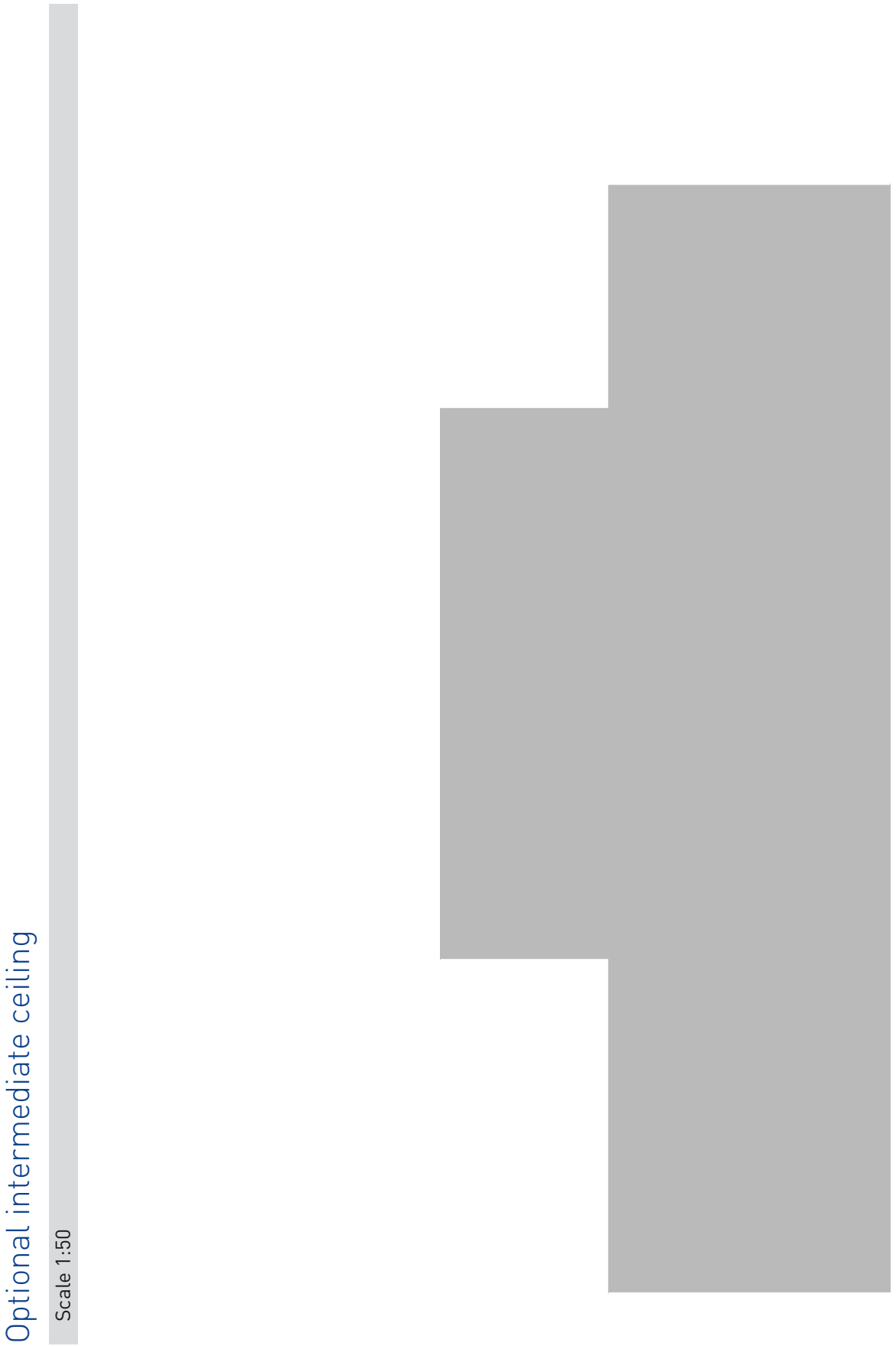
11. Planning Example



11

Planning
Example

Planning Example

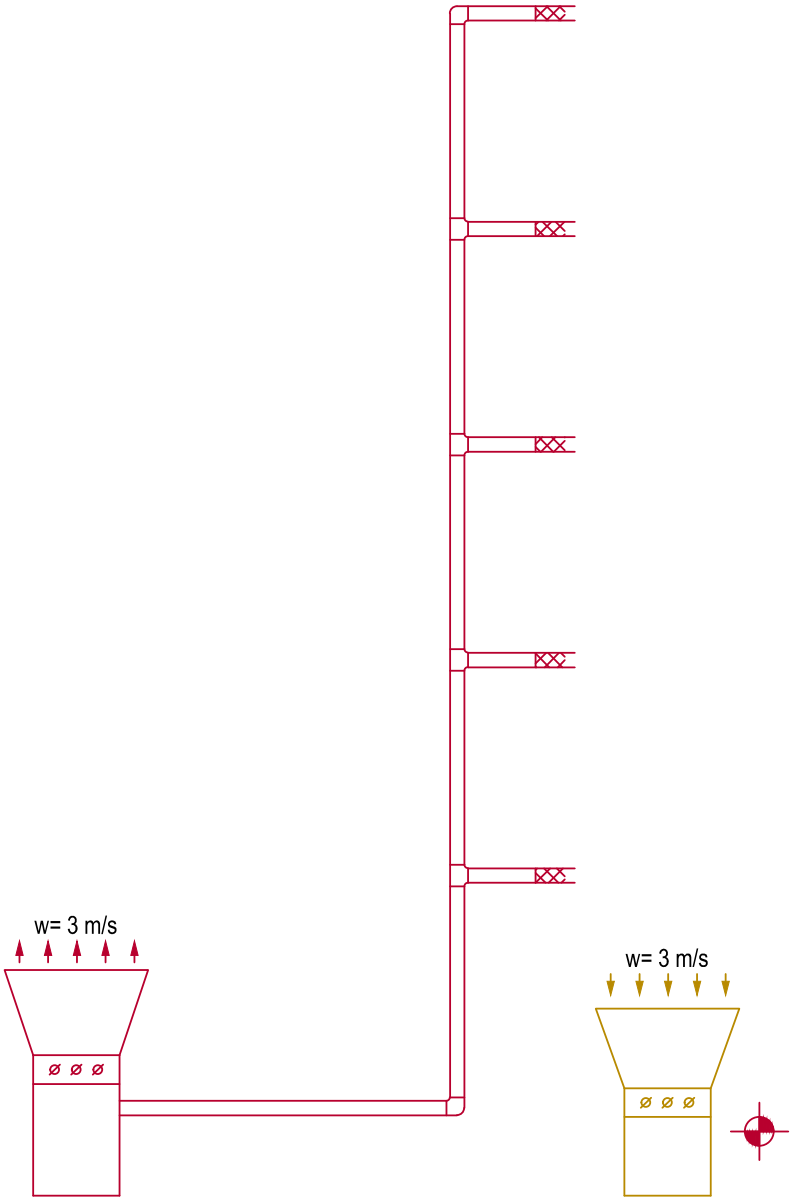


GIF ActiveVent GmbH, Brühlstrasse 7, 79112 Freiburg, Germany
P.O. Box 34 01 65, 79050 Freiburg, Germany, Tel. +49 (0)7664 9302-0,
info@gif-activevent.com, www.gif-activevent.com

Planning Example

Air duct network extract air and fresh air

Scale 1:50, w = velocity



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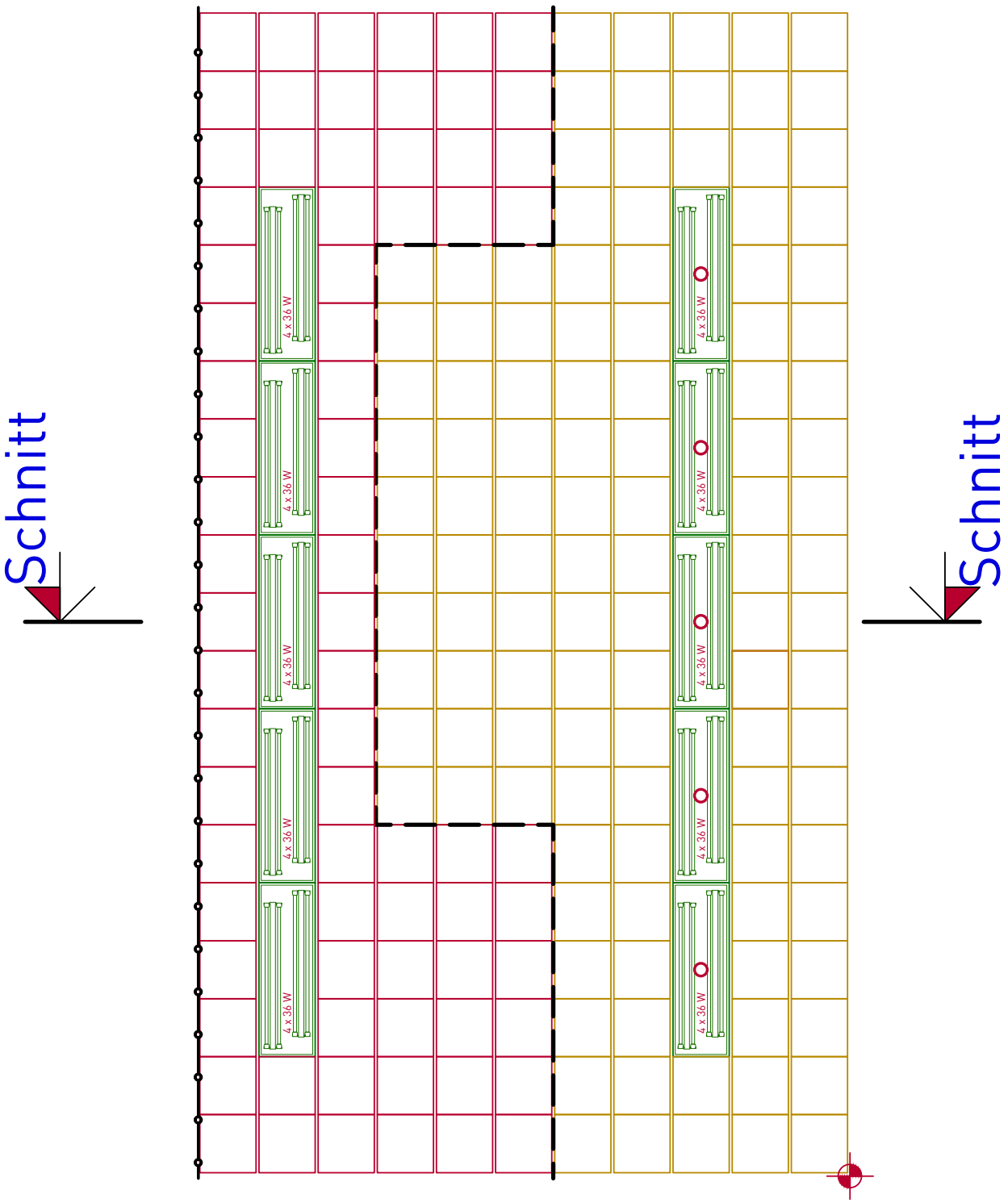
info@gif-activevent.com, www.gif-activevent.com

Planning Example

GIF Ventilated Ceiling



Scale 1:50

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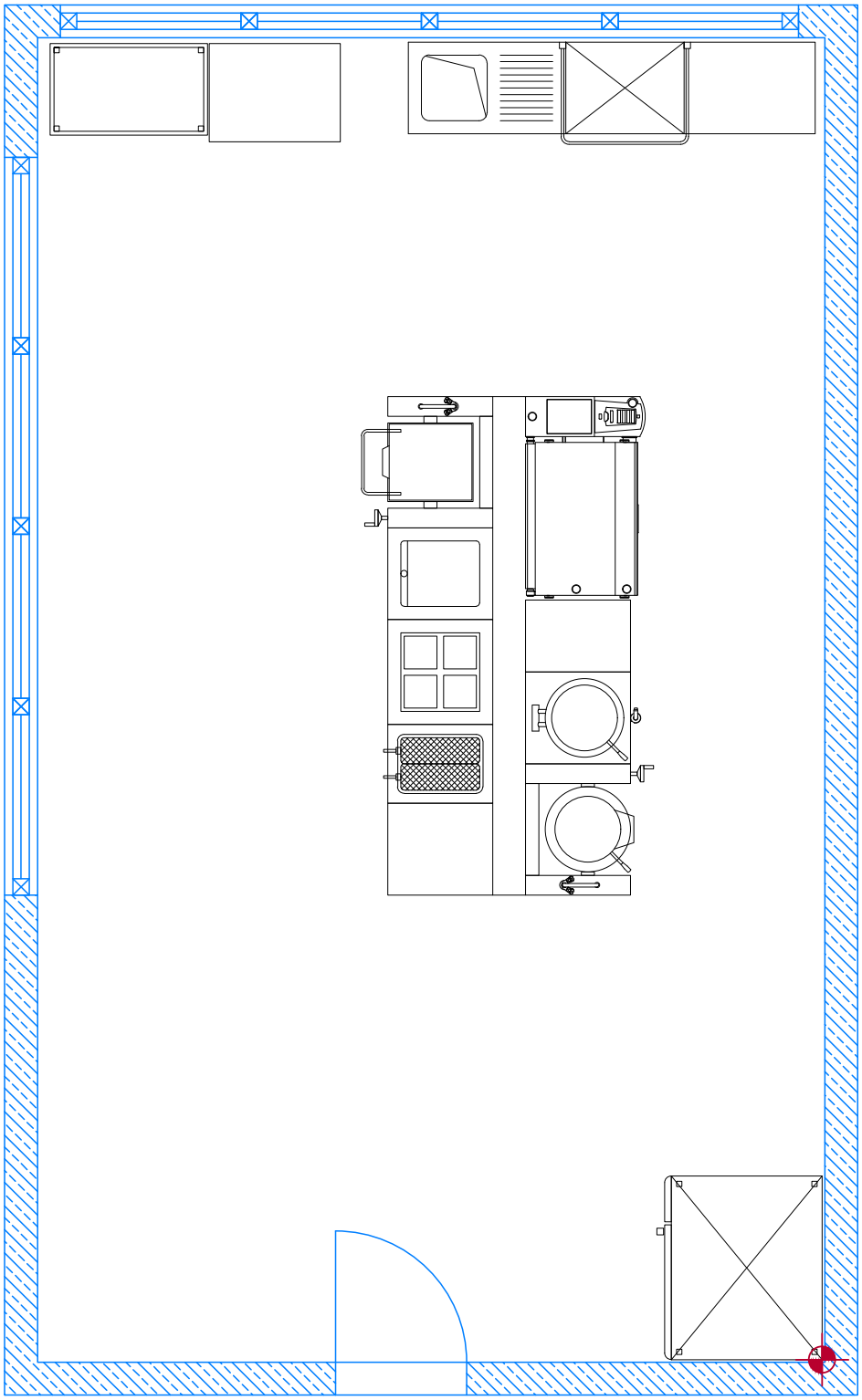
P.O. Box 34 01 65, 79050 Freiburg, Germany, Tel. +49 (0)7664 9302-0,
info@gif-activevent.com, www.gif-activevent.com

Planning Example

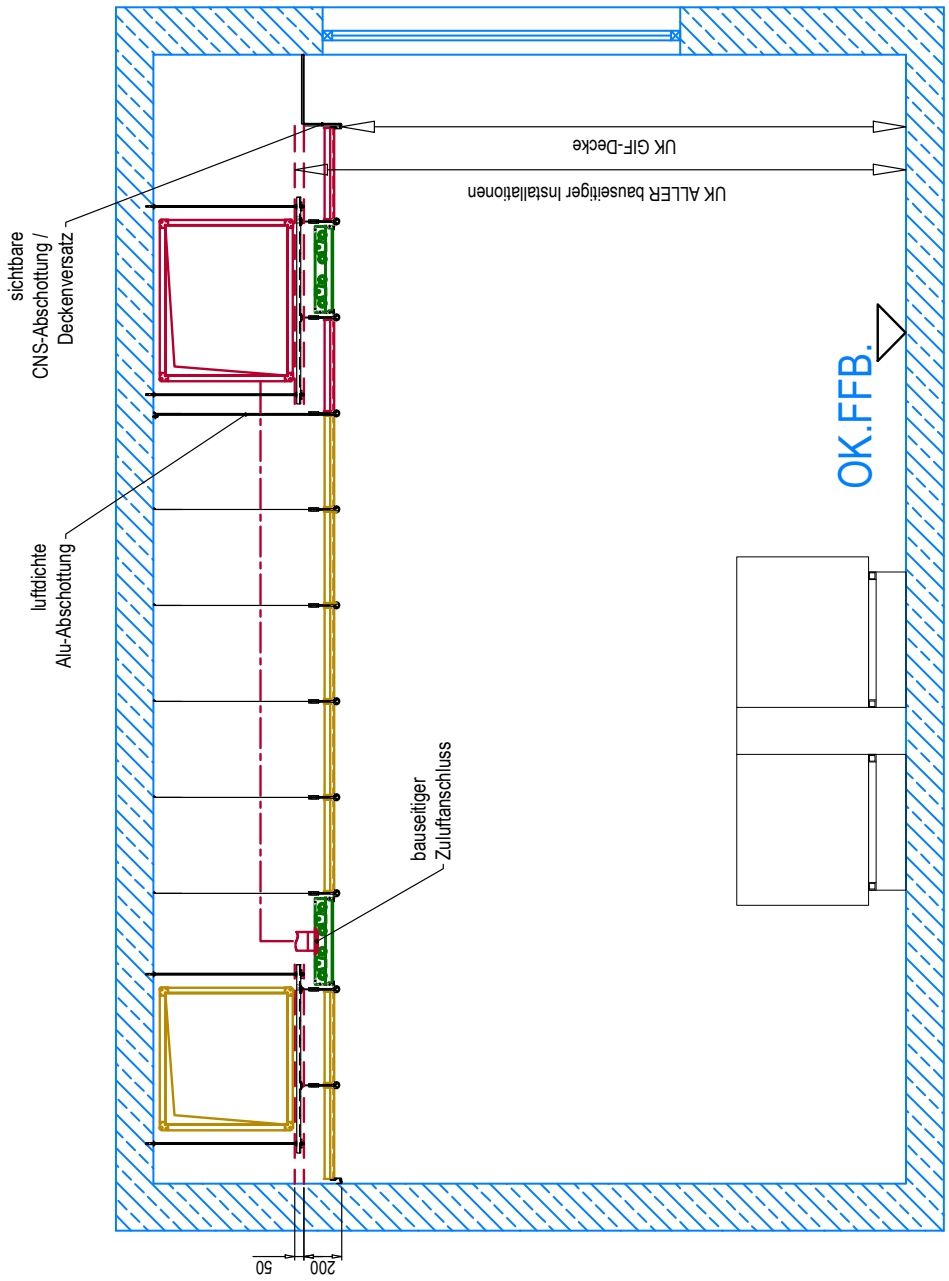
Floor plan of the kitchen and cooking appliances

Scale 1:50



GIF ActiveVent GmbH, Brühlstrasse 7, 79112 Freiburg, Germany
P.O. Box 34 01 65, 79050 Freiburg, Germany, Tel. +49 (0)7664 9302-0,
info@gif-activevent.com, www.gif-activevent.com

Planning Example



Cross section

Scale 1:50

GIF ActiveVent GmbH, Brühlstrasse 7, 79112 Freiburg, Germany
P.O. Box 34 01 65, 79050 Freiburg, Germany, Tel. +49 (0)7664 9302-0,
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Planning Example

Legend for GIF Ceiling

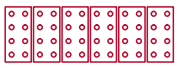
Active cassettes for extract air and fresh air supply

Flat cassettes without function

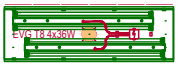
Flat cassettes for extract air and fresh air supply

Restaurant Systems with high performance separators and blank cassettes

Restaurant Systems with active cassettes



Combined sound absorption and fresh air supply cassettes



Light box equipped with 4 x 36 W, IP 54, electrical supply and E-connection on-site

- O • including fresh air connection on-site, damper ø 100 mm
- ⊠ • not including direct connection, only damper ø 100 mm
- ⊗ • including emergency lighting, e.g. lamp E14
- EVG • including electronic ballast

Ceiling perimeter

Air tight partition

Split-level ceiling

Visible air tight partition

Datum point for installation of the GIF Ceiling

Attachments to and fittings into ceiling: e.g. speaker, pictogram, heat detector, equi-potential bonding

Thermal cooking appliances present on-site

GIF ActiveVent GmbH, Brühlstrasse 7, 79112 Freiburg, Germany
P.O. Box 34 01 65, 79050 Freiburg, Germany, Tel. +49 (0)7664 9302-0,
info@gif-activevent.com, www.gif-activevent.com

12. References

RTL, Cologne

Buckingham Palace, London

Hilton, Athens

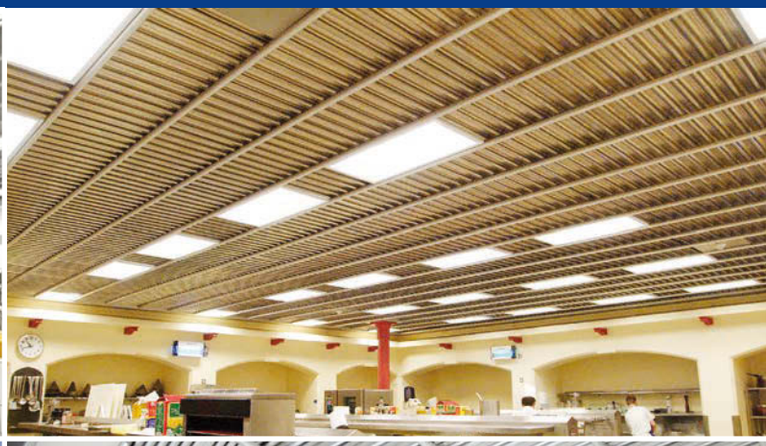
Marienhospital, Witten

Stadtsparkasse, Hagen

Technical University of Dresden

IGV, Mannheim

Nestlé, Milan



HDI Insurance Cologne

Description

GIF Kitchen Ventilated Systems meet all requirements regarding ventilation and air-conditioning

The thermal and material impacts are captured above the warm air output by an active extract air ceiling.

GIF Jet Stream Extractors are used for capturing extract air in the grilling and free flow areas. They guarantee the best possible capture of extract air in these high emission areas. A migration of smells and harmful substances into the work and dining areas thereby can be prevented. The Jet Stream glass plates have been adapted to the round shape of the counter and therefore neatly fit into the counter design.

For architectural reasons, the separator housing is installed above the GIF Ceiling, it is accessible via the removable, modular GIF Ceiling.

Fresh air is supplied to the rear food counter area via GIF Active Cassettes according to the principle of layered flow. As a result constant pressure, which is an hygienic requirement, is also ensured in this critical area.

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HDI Insurance Cologne

An additional fresh air curtain along the line of the server counter prevents the food counter/ servery area air from mixing with the dining or kitchen areas air.
GIF luminaires were used for the lighting above the food counter area as their form corresponds to that of the food counter. Further spot lighting was installed above the public area using downlights. The work areas are therefore lit with at least 500 lux (according to ASR – Guideline for Workplaces).

The visible cover plates made of stainless steel close up the GIF Kitchen Ventilation Solution towards the top.

- **New office canteen at HDI Gerling Insurance in Cologne**
- **All kitchen areas are equipped with the various system solutions of Hidria GIF GmbH**
- **The various GIF Kitchen Ventilation Systems in combination provide an ideal solution regarding ventilation and air-conditioning as well as an architecturally attractive design**
- **Integrated jet stream extraction in the display cooking area, and therefore no diffusion of harmful substances or odours**
- **Spot lighting in the public area**
- **Due to the principle of layered flow, the work area is air-conditioned ideally**
- **The components (active cassettes) for the capture of extract air and fresh air supply are identically constructed. This creates a uniform appearance**

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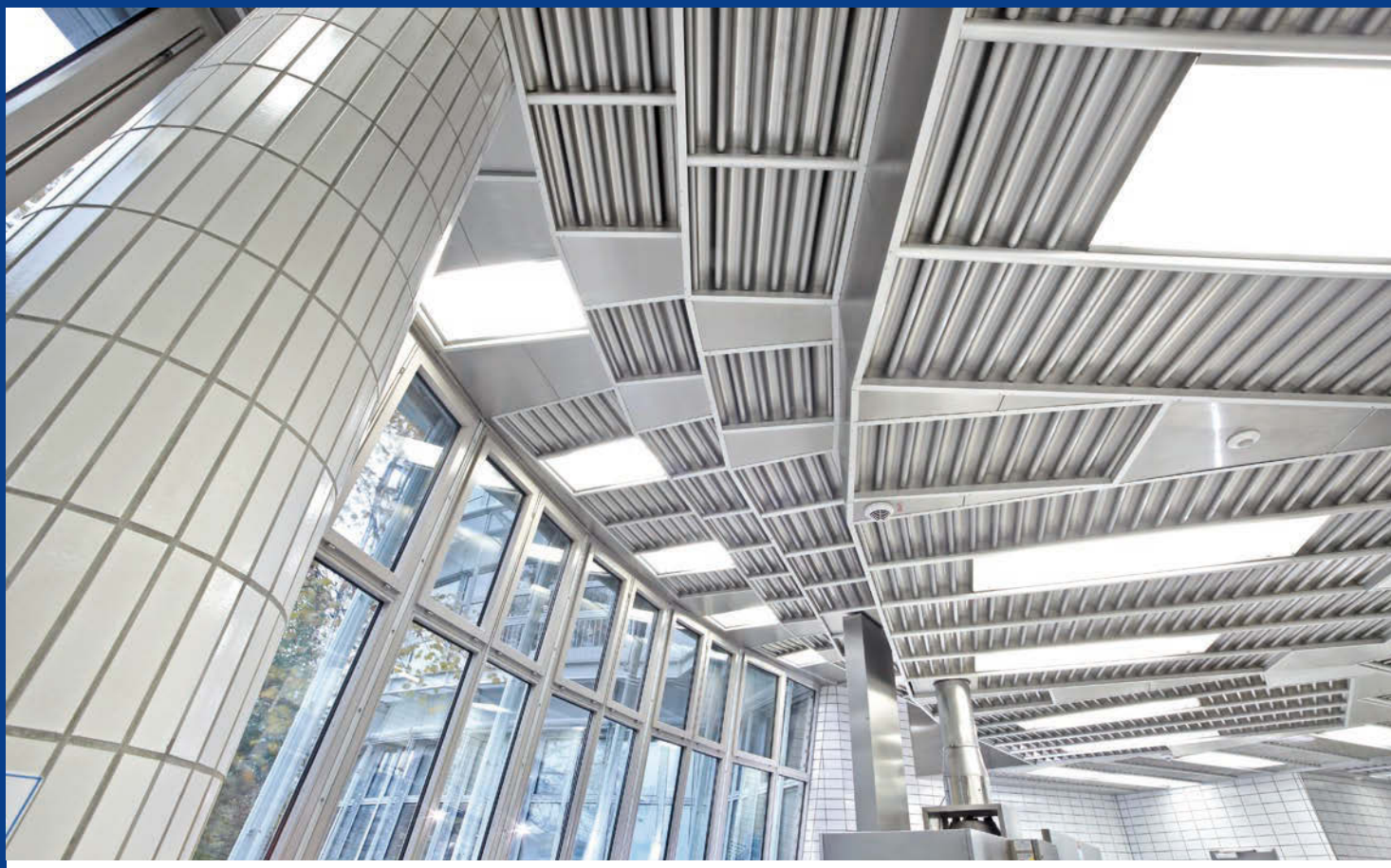
info@gif-activevent.com, www.gif-activevent.com

Techniker Krankenkasse (Health Insurance) Hamburg



Description

The canteen of the Techniker Krankenkasse in Hamburg was equipped by our company in 1999. One of the challenges was to adapt the kitchen's ventilated ceiling to the facades made entirely of glass. The solution was to use 3 consecutive ceiling down-steps. Due to the active cassettes used here, the narrow areas between the steps could also be used for the fresh air supply. The curtain of air down the face of the windows prevents condensation of humid air on the glass.

Techniker Krankenkasse (Health Insurance) Hamburg

- Grid solution specially adapted to the building configuration having the maximum ceiling height
- Even the smallest individual grids are active regarding ventilation and air-conditioning and create a fresh air curtain to protect the window panes
- All air-movement components (extract air and fresh air) are identical in construction and can be cleaned in the dishwasher. There is therefore no danger of mixing up individual components
- The shape of the kitchen ventilated ceiling, covering the whole area exactly follows the polygonal lines of the building
- By incorporating luminaires to suit the sign and shape of the grid pattern and down-steps, the surface area available for ventilation is maximised, so contributing to an homogenous and low-speed air flow.

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Thyssen Krupp Headquarters, Essen

Description

At the new Thyssen Krupp AG Head Office, which was completed in 2010, both the office canteen in the Forum and the restaurant for the Board of Directors at the headquarters were equipped with GIF Kitchen Ventilated Ceilings. In doing so, the most innovative technologies developed by Hidria GIF were used. These ensure a pleasant indoor climate at all times and an economic operation. Due to the huge commitment of all parties involved in the project, everything was up and running within just a few weeks.

Thyssen Krupp Headquarters, Essen

- Jet Stream Extractors are used to ensure optimum capture of cooking vapours in the free-flow areas. As a result, in particular the polluted air above the high emission wok and grill units can be reliably captured despite the cross-flow which is typical for free-flow areas. Draught free fresh air is supplied through the area-active GIF Kitchen Ventilated Ceiling

- The kitchen extract air systems were equipped with a further technology developed by Hidria GIF. Here, the GIF UV-C(lean) Systems provide grease-free kitchen extract air

- In the production areas of the kitchen, extract air is captured above deep frying areas via GIF Restaurant Systems. These ensure constant capture of exhaust air and cost-efficient intervals between cleaning

- The fire-extinguishing systems as well as the alarm systems and loud speakers were incorporated in the kitchen ventilated ceiling

- Clear room heights of more than 6 m required special designs taking account of structural loads

- All components carrying extract air were made of Thyssen Krupp stainless steel

- The preparation and auxiliary rooms were equipped with GIF Flat System Ceilings

- The noise levels in the dish-washing zone, generated by dishwashing processes, were considerably reduced by using combined GIF Sound Absorption Fresh Air Supply Ceilings. These ceilings simultaneously vent fresh air and reduce ambient noise levels up to 10dBa.

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Stadtsparkasse, Hagen

Description

The area-active GIF Ventilated Ceiling was adapted to the round geometry of the food counter. The trapezoid levelling areas determined by the radius were designed with a stainless steel effect. The grid layout of the kitchen ventilated ceiling, which is active as regards ventilation and air-conditioning, and of the lighting consequently remains unchanged.

A lintel was built in the transition to the dining area, following the counter in segment design. The lighting is provided by integrated down-lights. Additionally, an exhaust hood was provided in the rear production area for core capture of extract air.

- **Food counter area at Stadtsparkasse Hagen**
- **Adapting the GIF Kitchen Ventilated Ceiling to the round geometry of the counter**
- **Segmented lintel, made of stainless steel, in the transition to the dining area**
- **Different lighting systems in the production area and lighting of the food**

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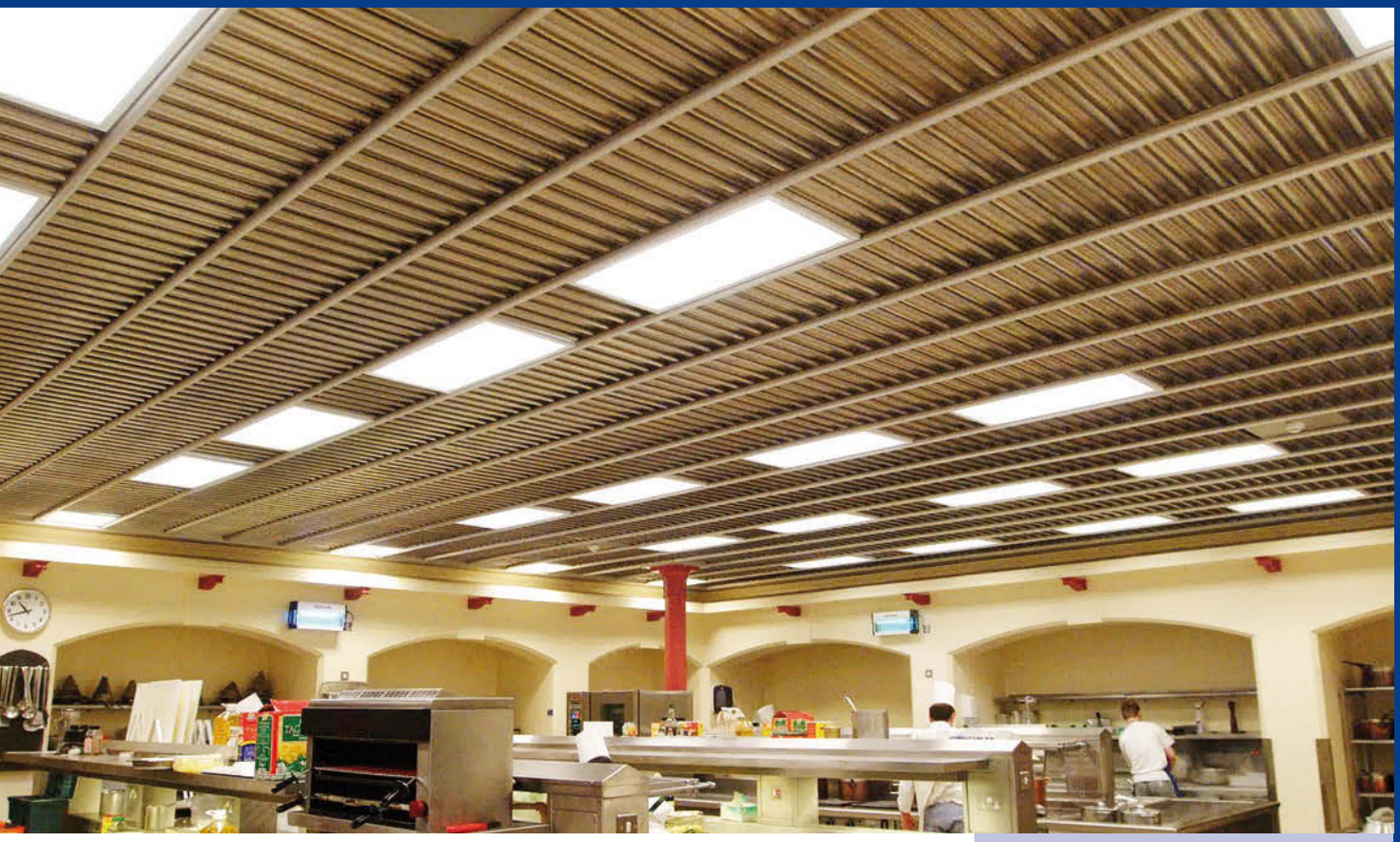
Buckingham Palace, London



Description

Buckingham Palace is one of three locations in London's government district with a kitchen equipped by Hidria GIF.

The main kitchen was equipped with an area-active GIF Kitchen Ventilated Ceiling. As usual, this ceiling forms a wall-to-wall solution including the required lighting according to ASR (Arbeitsstättenverordnung – German Work Safety Regulations).
The polluted extract air is captured above the thermal appliances on a large scale. At the boundary areas, the fresh air can then also flow in via the GIF Active Cassettes according to the principle of laminar air flow, without any draughts occurring.

To prevent the historical column heads from being obscured, the area ventilated ceiling was installed at a height of 3.5 m above the finished floor.

Despite this height, there is no need for scaffolding when cleaning the kitchen ventilated ceiling. "Climbing" onto kitchen appliances is not required either. The individual components (active cassettes) can be removed from one location (e.g. at the front side of the cooking unit) by pushing and pulling the entire row and cleaned in the dishwasher.

- **Production kitchen of Buckingham Palace in London**
- **One of three kitchens equipped by Hidria GIF in the government district – House of Lords and House of Commons**
- **Fully area-active and level kitchen ventilated ceiling**
- **More than 90% of the ventilated ceiling area can be cleaned in the dishwasher, as is the standard for GIF Kitchen Ventilated Ceilings, without the need for scaffolding or climbing onto kitchen appliances**

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Student Canteen, Osijek, Croatia

Description

This project was created by the investors of the city of Osijek and the Croatian Ministry for Sciences in 2008 and was already implemented in spring 2009. The kitchen caters the campus students and has an area of more than 450m². The equipment is designed for producing up to 4000 meals per day.

The GIF Ventilated Ceiling was installed in all areas, including preparation rooms (vegetable, meat and fish), bakery and pastry room, dishwashing zones and main kitchen.
The main kitchen is divided into three areas – cooking, grilling and baking. Restaurant systems were installed to absorb reliably the cooking vapours – especially above fat intensive cooking appliances i.e. tilting frying pans and deep fryers. Furthermore less time of cleaning is needed due to the angular positioning of the high performance separator.

- **Once the planning had started it took only 16 months to implement and open this professional kitchen**
- **In total, up to 4000 meals are produced and served each day in a kitchen area of more than 450 m²**
- **The GIF Kitchen Ventilated Ceilings are designed as a modular system. More than 90% of the ceiling area can be cleaned in the existing dishwasher as required**
- **Durability, even over decades, is ensured by the use of stainless steel 304**
- **Fresh air is supplied via the GIF Active Cassette Ceiling according to the principle of laminar air flow. The fresh air replaces the polluted extract air and is supplied draught-free. A pleasant working environment, free of harmful substances, is ensured for all employees**

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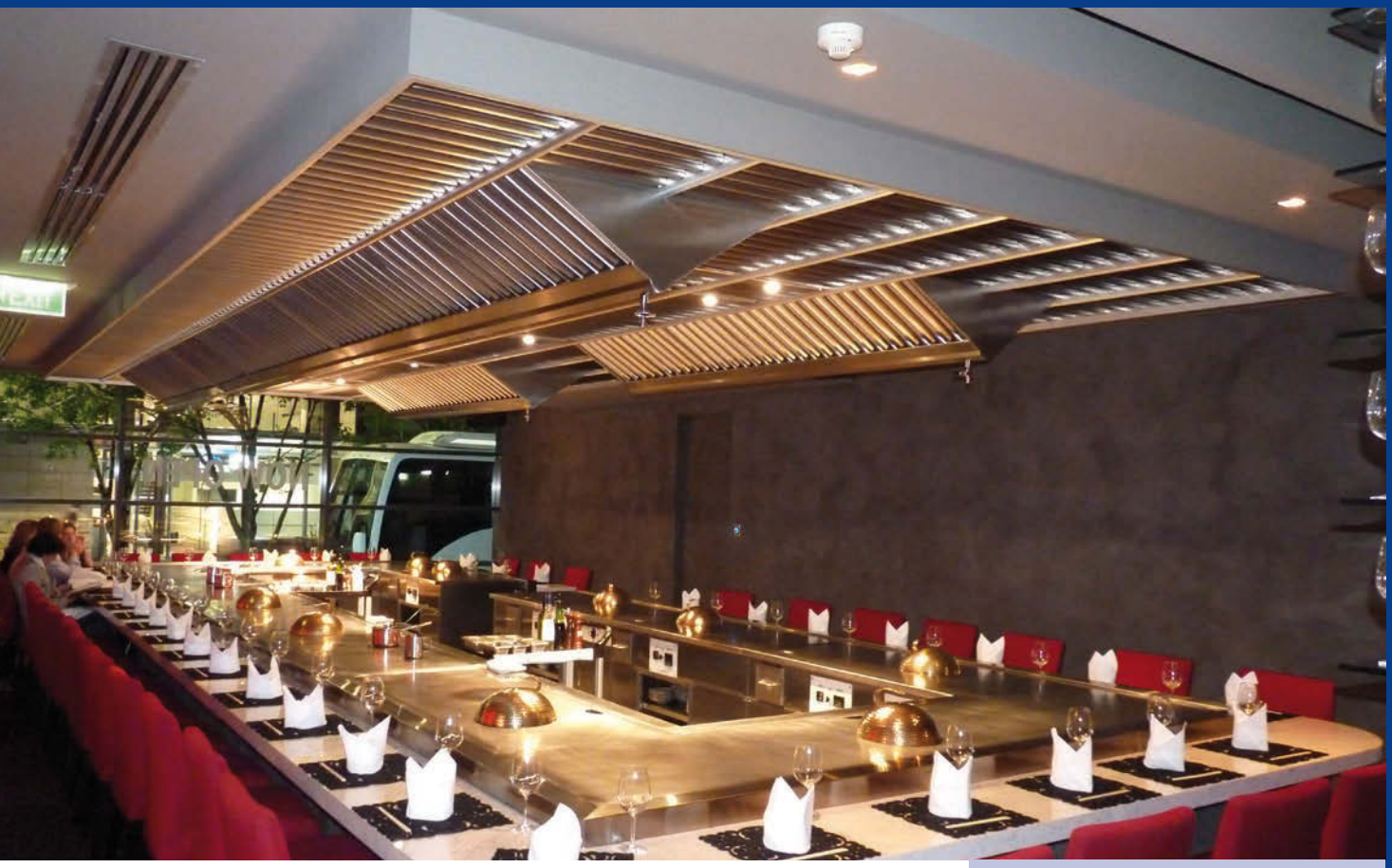
Kobe Jones Restaurant, Sydney, Australia



Description

The Japanese restaurant Wharf Teppanyaki, located in the world-famous Darling Harbour in Sydney, has 12 Teppanyaki cooking units with 46 seats for guests in total. In co-operation with our Australian Partner PHOENIKS PTY Ltd., Hidria GIF developed and installed the GIF Kitchen Ventilated Ceiling above the Japanese Teppanyaki tables. The ceiling combines modern aesthetics with excellent product features. The extract air is reliably captured above the Teppanyaki grills via GIF Restaurant Systems. Guests can enjoy a wonderful dinner in the open cooking area without being disturbed by kitchen vapours and steam.

- **The cooking area is illuminated by special high performance spotlights which were incorporated into the GIF Kitchen Ventilated Ceiling and can also be found in the dining area.**
- **The modular system enables everything to be easily handled and cleaned in the existing dishwasher. This is a decisive factor especially in open plan cooking areas.**
- **The materials used for the Teppanyaki units can also be found in the GIF Kitchen Ventilated Ceiling.**

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Airport Terminal 2, Prague, Czech Republic

Description

The new kitchen at Terminal 2 of the airport opened in January 2006. The GIF Ventilated Ceilings were installed in the so-called "Food Gallery", which is an open plan kitchen area of about 200m², where different national and international dishes from Italy, Mexico and Asia are prepared.

The illuminated signs were incorporated into the stainless steel panels designed by Hidria GIF. The technology installed in the signs and the automatic rear roller blind system can be easily accessed via the GIF Kitchen Ventilated Ceiling, which can be inspected without the use of tools. The sensors for the fully automatic doors were incorporated into the GIF Fresh Air Supply Flat Cassette Ceiling within the kitchen areas. This considerably reduced the amount of work for installing connection cables.

The transfer areas of the "Porto Café Restaurant" and "Gourmet Restaurant" were also equipped with GIF Kitchen Ventilated Ceilings. The great flexibility of the GIF system enables us to adapt the „Food Gallery" installation in such a way that it could also be easily used in the smaller but very challenging areas.

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Airport Terminal 2, Prague, Czech Republic

- Professional kitchen designed as an open plan kitchen towards thedining area, equipped with a GIF Kitchen Ventilated Ceiling – completely inter-changeable system with integrated lighting
- The transition to the dining area includes illuminated signs and an automatic shutter
- The GIF Kitchen Ventilated Ceiling was chosen by the architect because of its adaptability to complex room configurations, amongst other things. As a result, it was possible to create a smooth transition between the kitchen area and dining area
- The rectangular luminaires, incorporated flush with the ceiling, provide optimum lighting for the work areas

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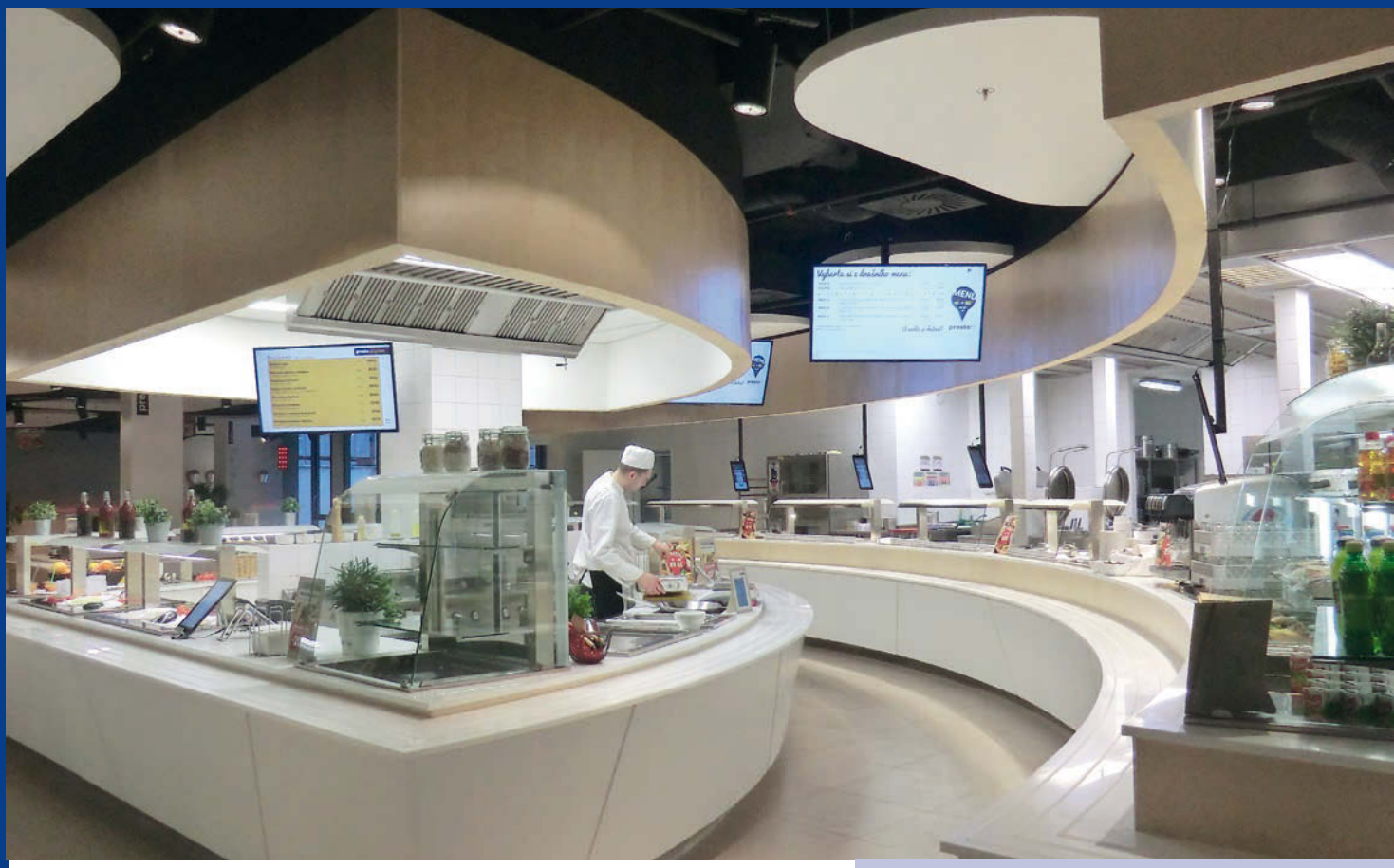
Prague Florentinum, Czech Republic



Description

2014 saw the opening of the prestigious Florentinum building in the centre of Prague. It was at once the recipient of several awards, such as the Best Office Development and the LEED Platinum Award, which is the highest level of the international „Green Building Certification".

The staff canteen of the office building was equipped with GIF ventilated ceilings both in the main kitchen and the serving area.

As a result of the specific extraction of steam from the production kitchen and the separate cooking and serving areas it was unnecessary for these sections to be divided off from each other.

The sophisticated appearance of the guest area was taken into account in the design of the ventilated ceiling so as to reflect exactly the rounded contours of the serving counters.

- **Two GIF ventilated ceilings in the prestigious Florentinum building, Prague**
- **Adaptation of the GIF kitchen ventilated ceiling to the round contours of the serving area**
- **The GIF ventilated ceiling ends on the side of the serving area of the production kitchen with a visible, curved partition**
- **In order to deal with the intensive use of the cooking appliances and the small ceiling surface the ventilation installations in the ceiling consist of Active Cassettes, Restaurant Systems and Flat System Ceiling**

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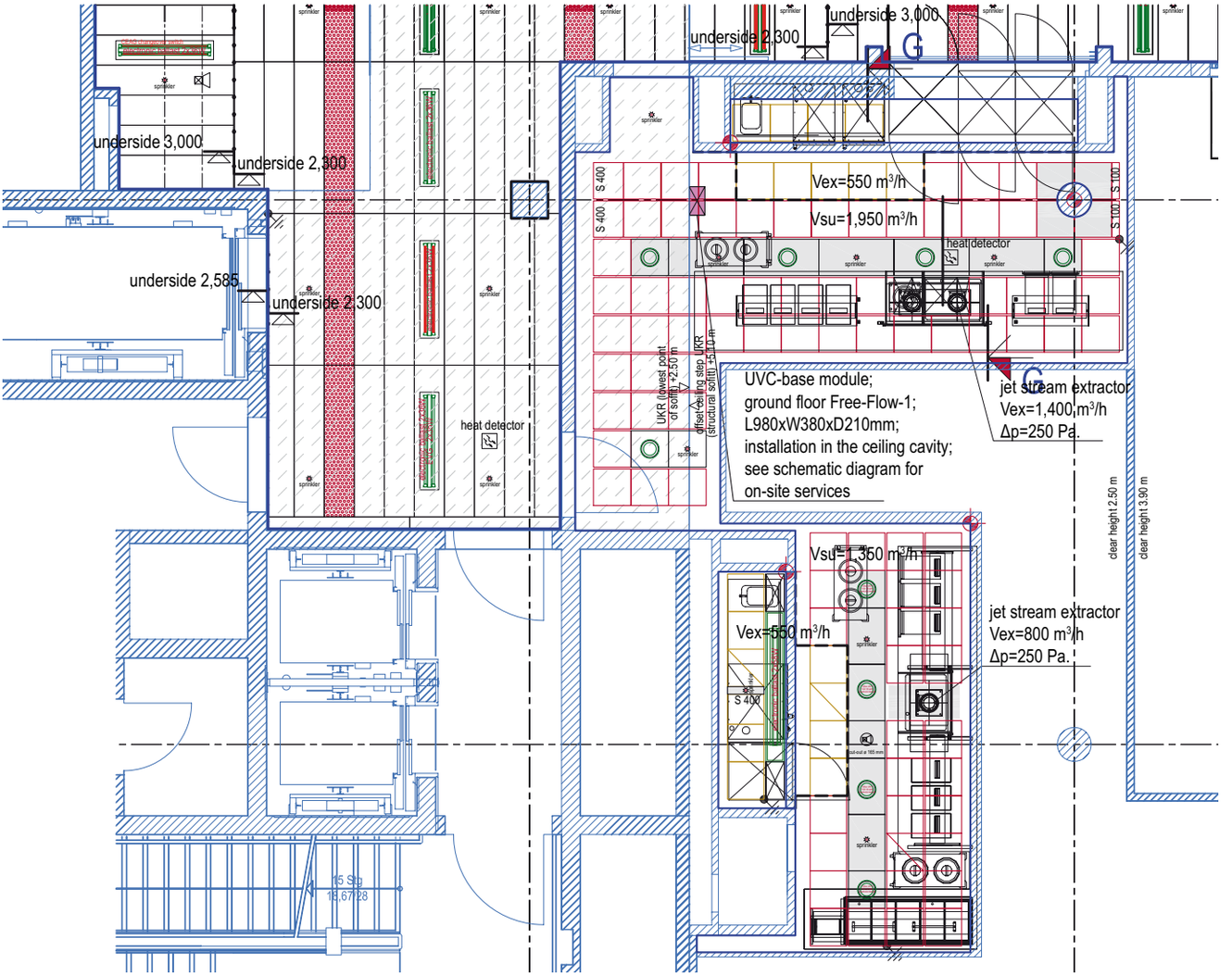
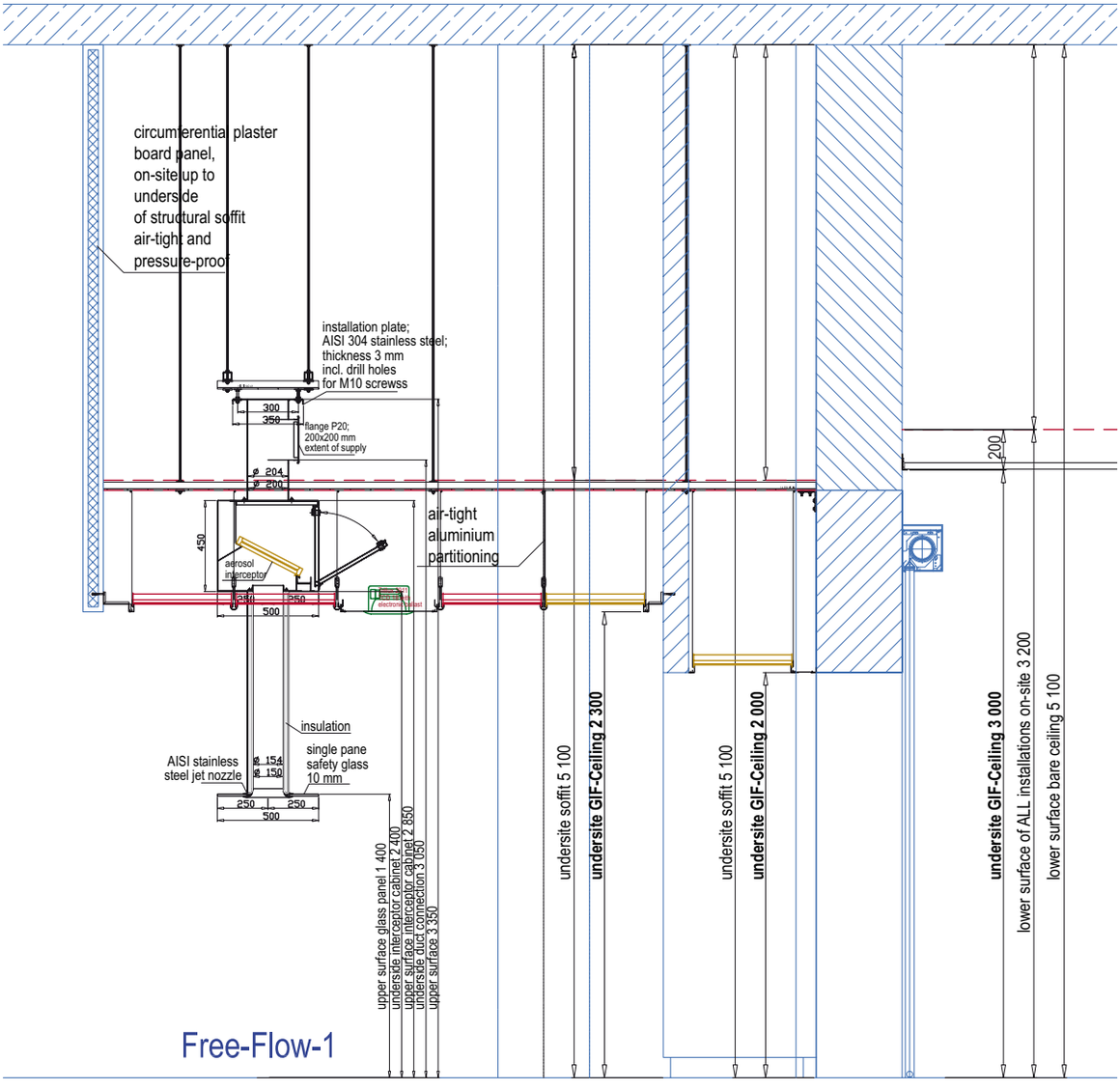
13. Detailed Solutions

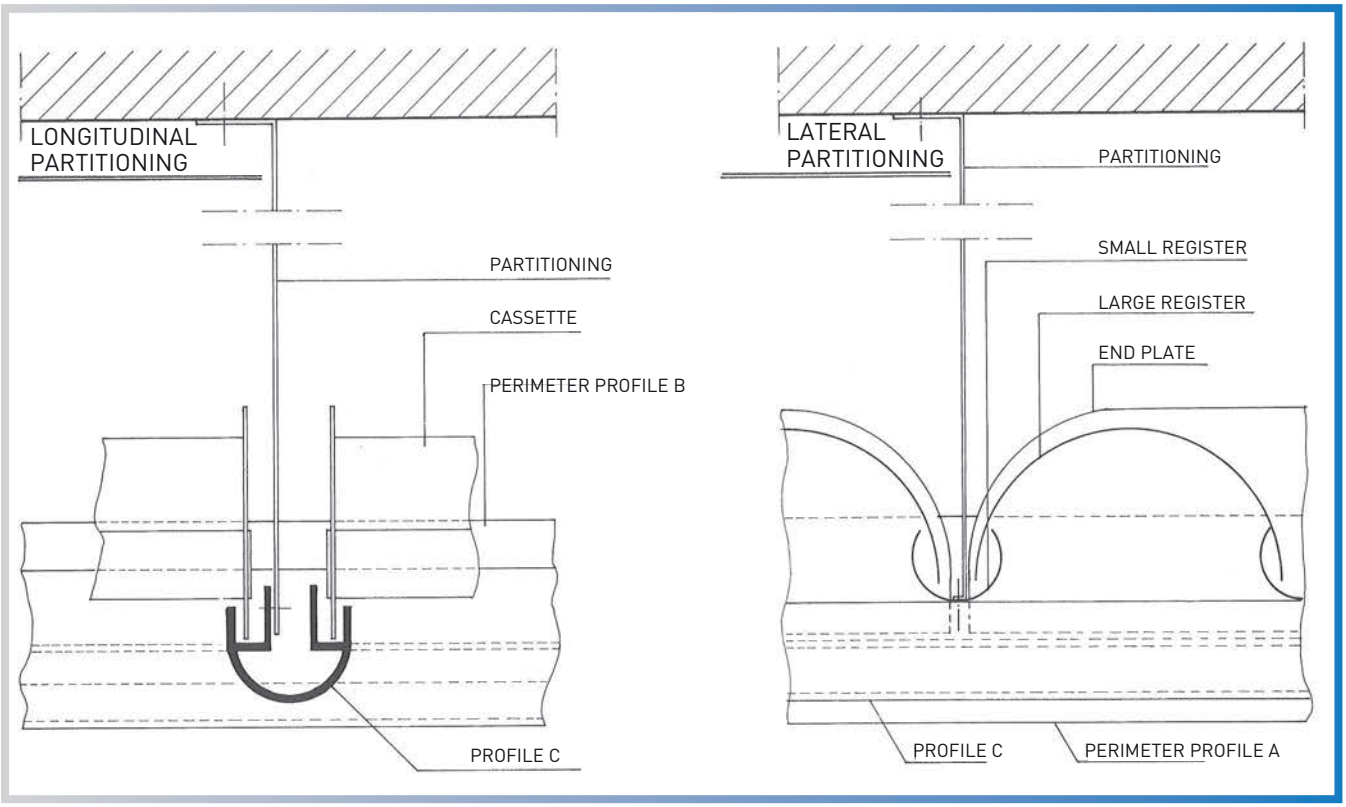


Cross section G – G

Scale 1:25



GIF Partitioning



Material: Aluminium (ALMgSi 0.5)

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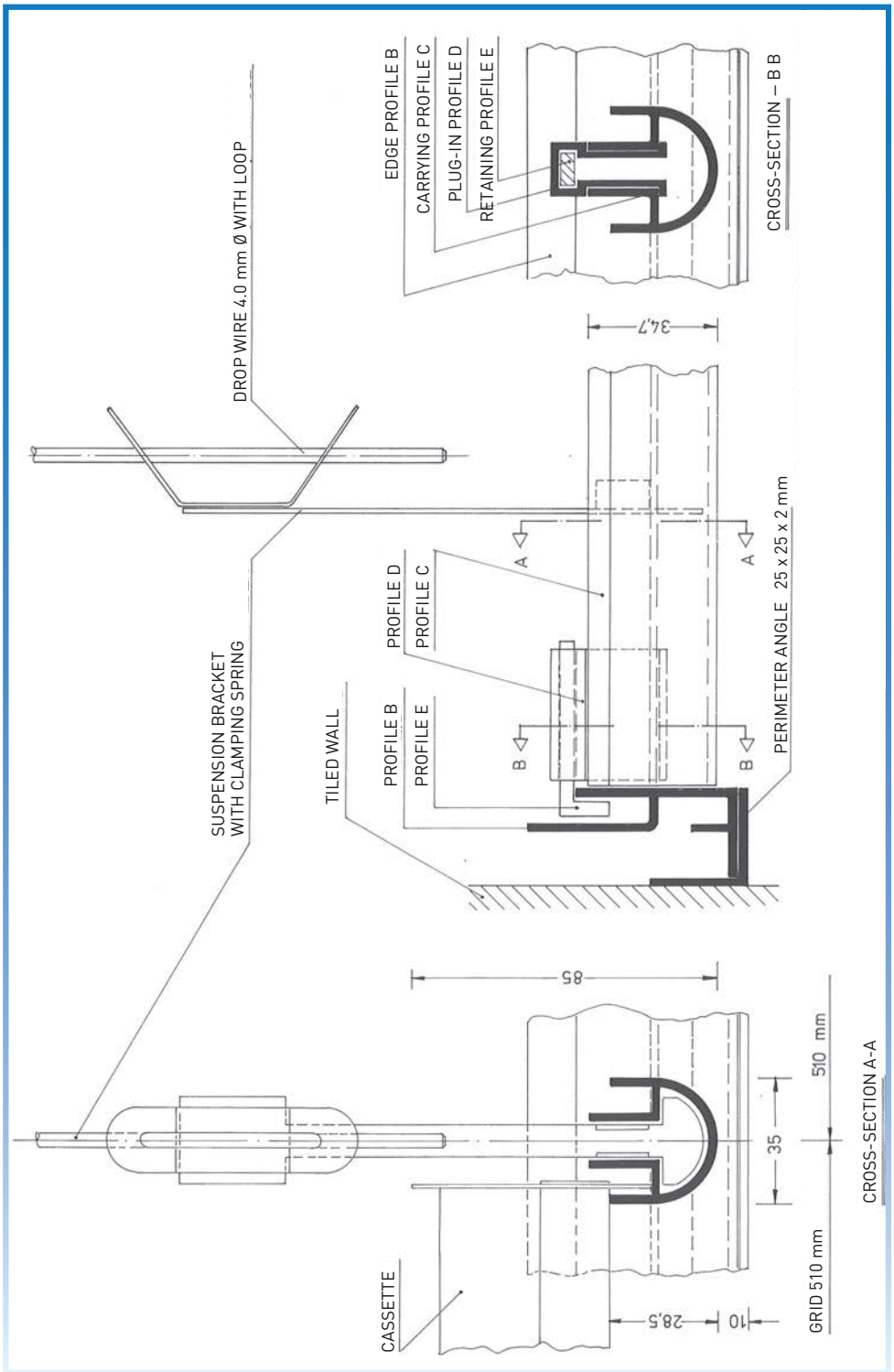
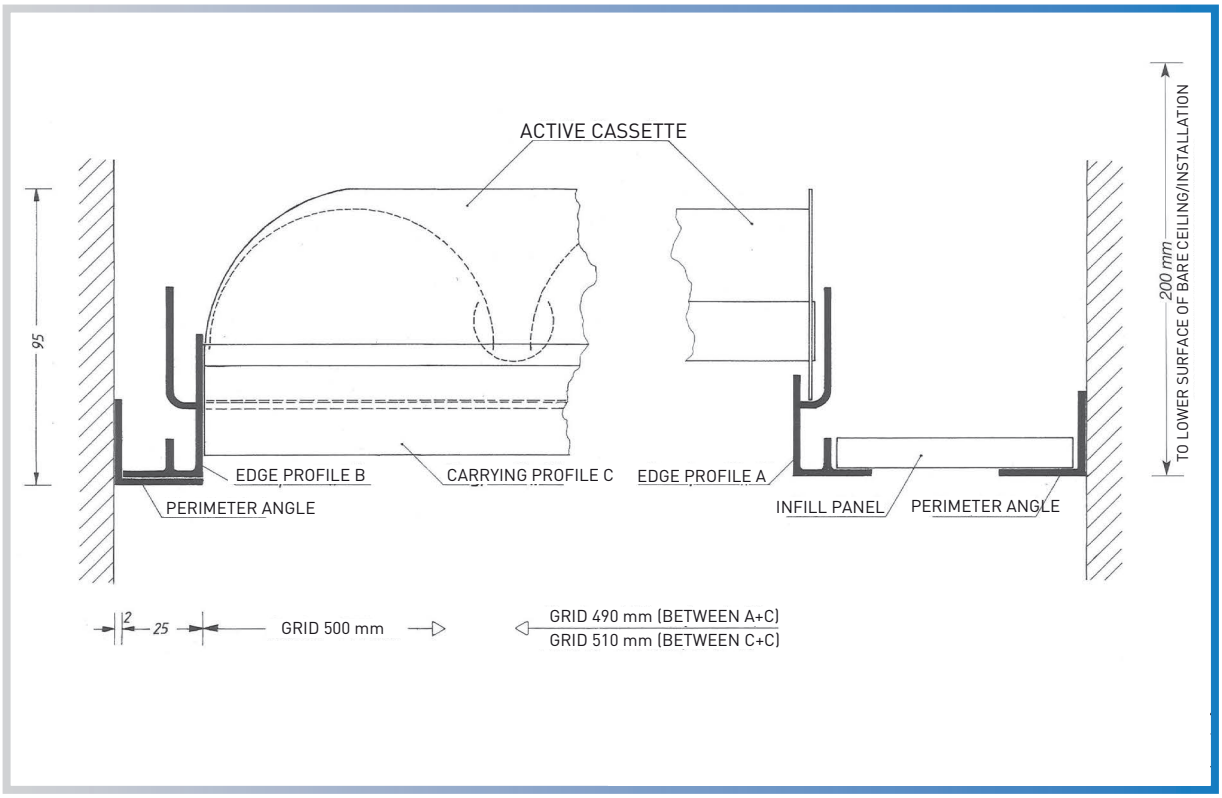
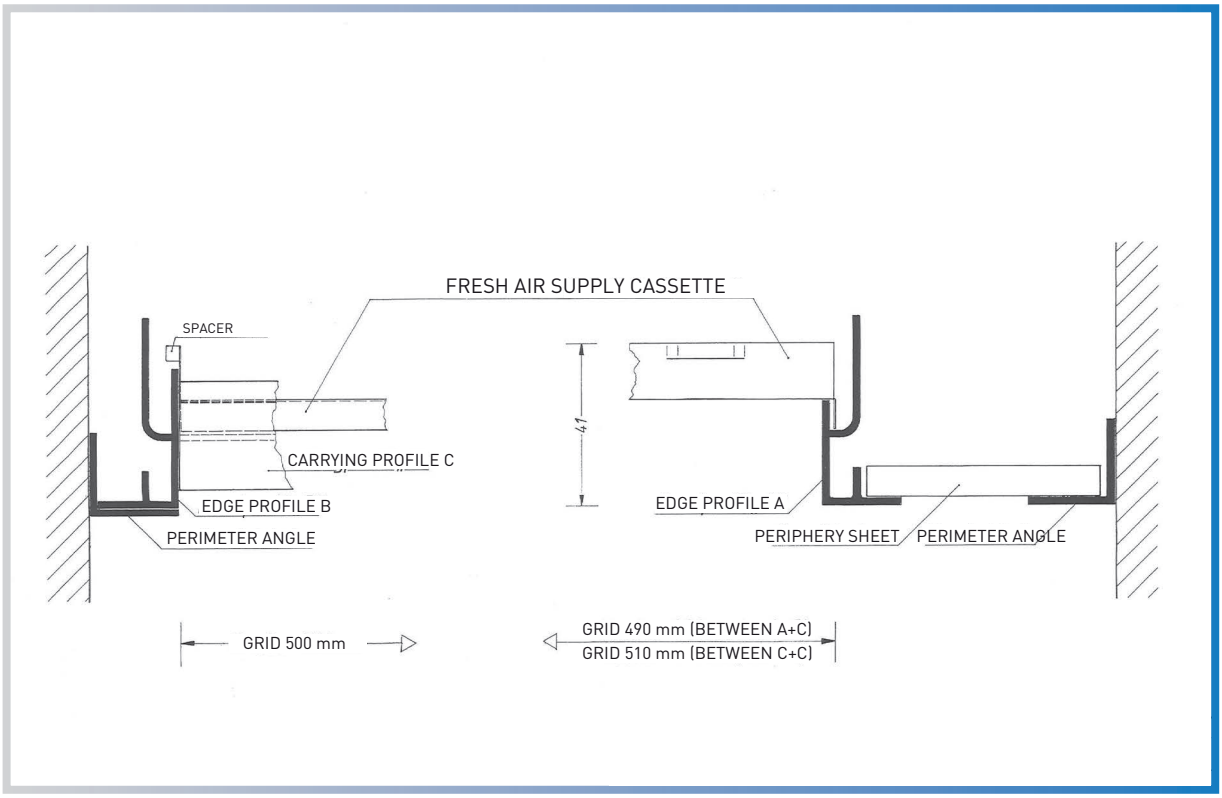
GIF Suspension Grid



Wall connection, GIF Ceiling





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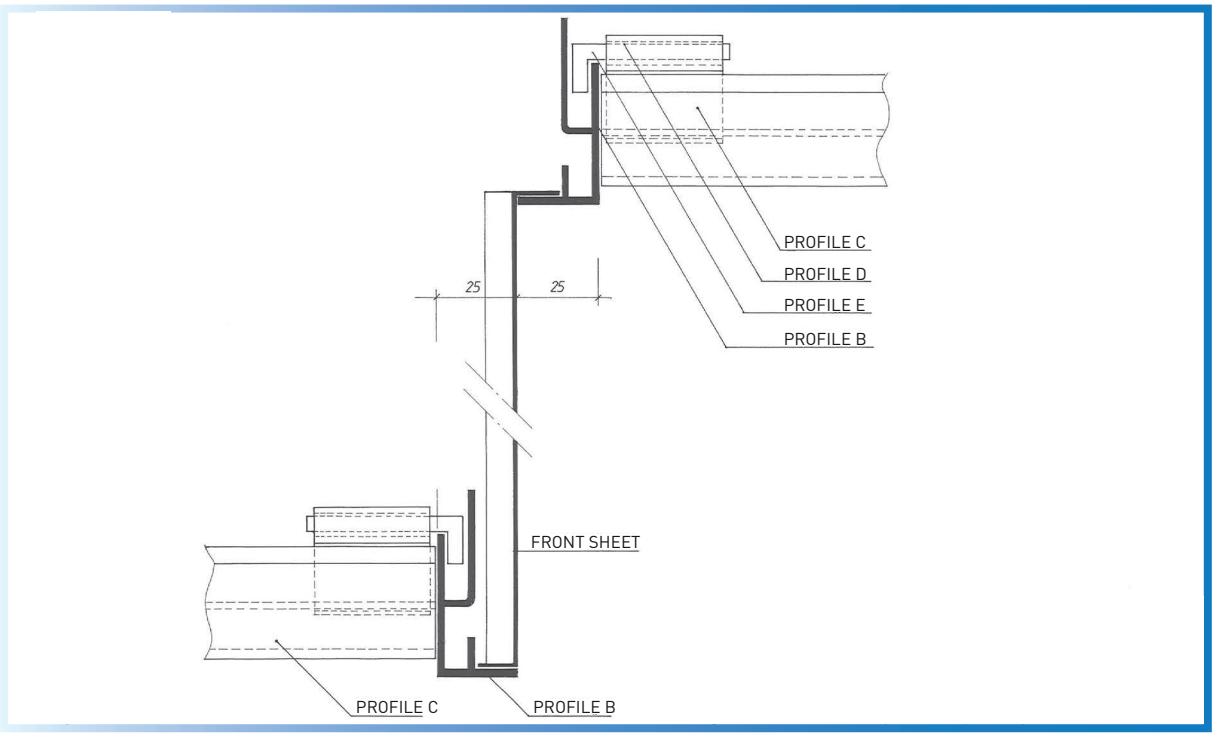
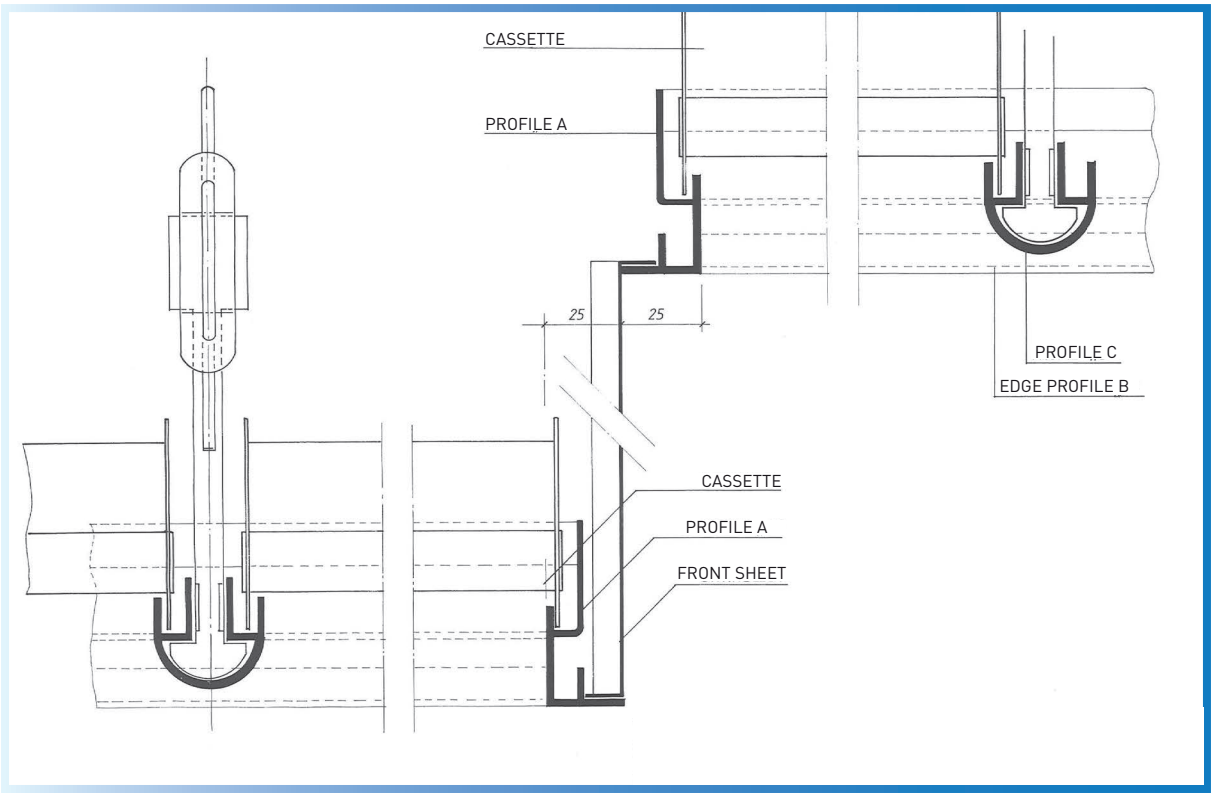
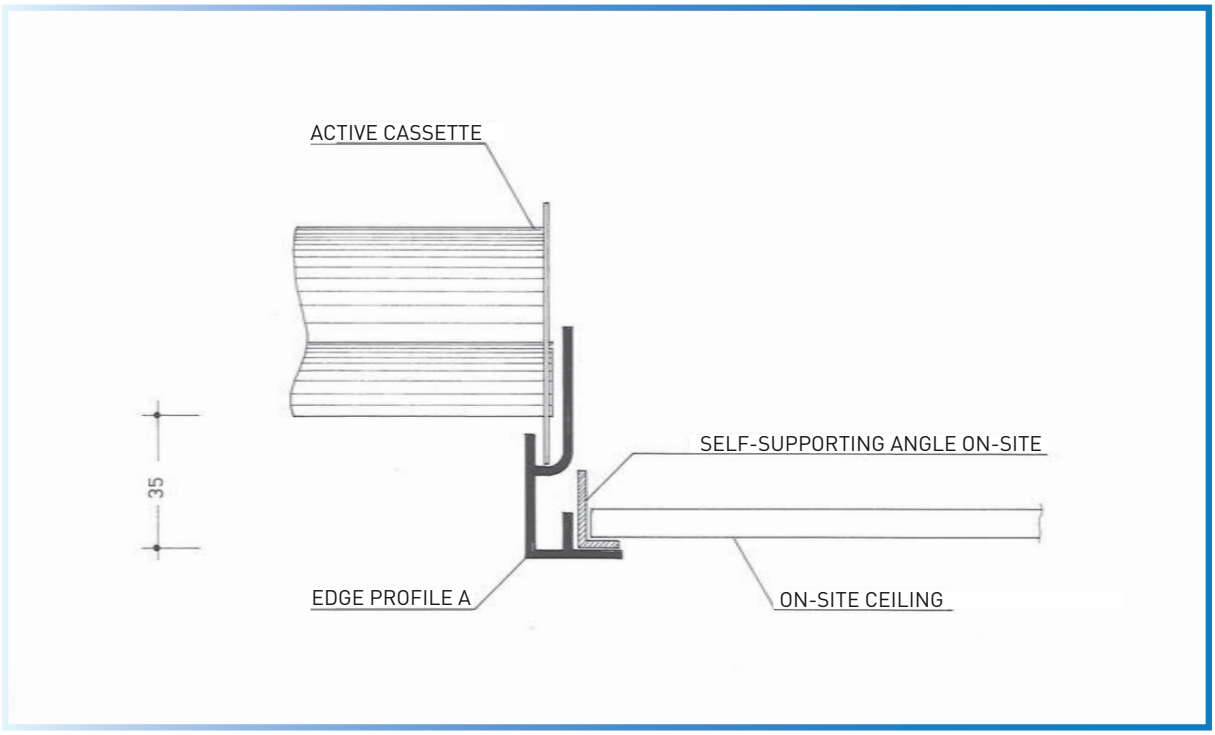
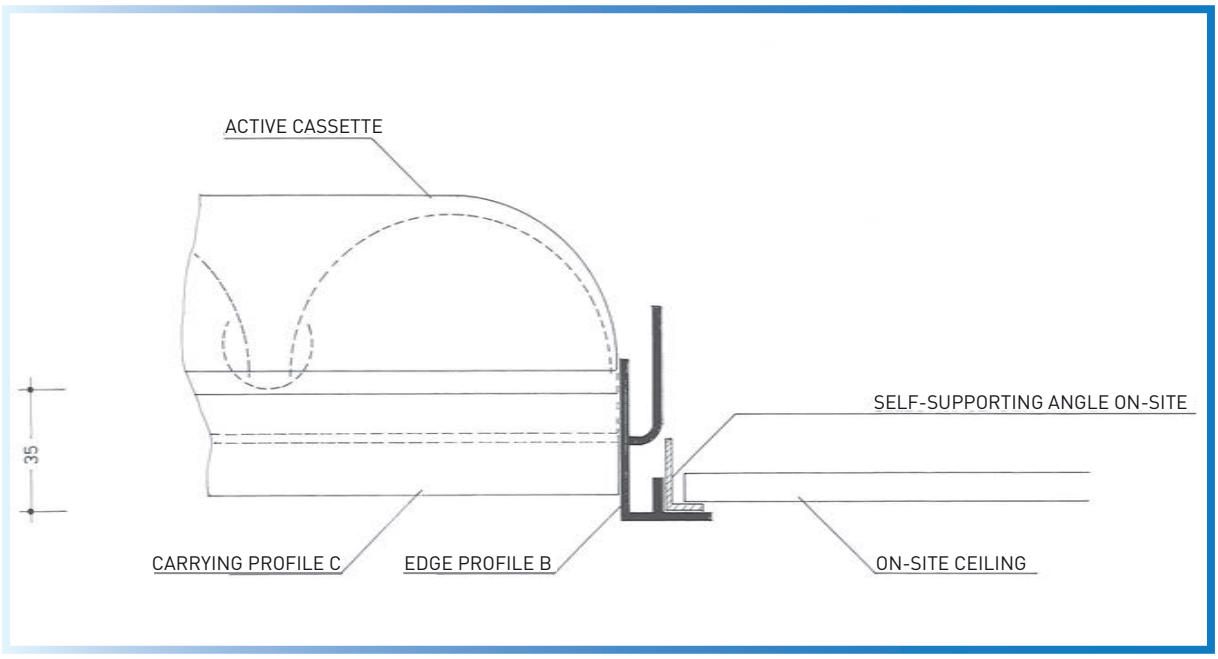
GIF Ceiling Offset





Connection of the GIF Ceiling to the on-site ceiling





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14. Comparison of costs

Comparison of costs

Comparison of costs

Comparison of costs

Comparison of costs

Comparison of costs

Comparison of costs

Comparison of costs

Comparison of costs

14

Comparison
of costs

Comparison of costs

Area-active GIF Ventilated Ceilings

The contents of a GIF quotation for a ventilated ceiling consist of:

Area-active solution
from wall to wall including:

- lighting
- components for extraction and supply of air
- fully reversible

versus

Extraction hoods

In order to make a comparison of costs the following should be included in the price calculation of an extraction hood:

+ ceiling panels or similar
+ lighting
+ air supply components
+ inspection openings
+ coverings, sheathings
+ additional channel networks

It is also recommended that in addition to costs, other aspects such as quality, hygiene and work safety should also be considered.

15. Cleaning Instructions

GIF ActiveVent

Cleaning the cassette ceiling

1
Wear gloves in order to protect you hands from injury.

2
Carefully remove the cassettes from the C-profiles. Only hold the cassettes by the side plates or the small registers.

3
Pull the cassettes that need cleaning towards you and lift them out one after the other until the entire row is empty. (Up to 10 cassettes can be removed at one time.)

4
If the cassettes are very dirty, spray them with a fat-dissolving cleaning agent on both sides.

5
Place the cassettes in the dishwasher basket. After washing, allow the cassettes to dry and remove residual water with a cloth.

6
By spraying the cassettes with a care product they will be extra shiny.

7
Insert the clean cassettes carefully into the C-profiles, linking one to another, and push them away one after the other (max. 10 cassettes) until the row is complete again.

8
If you buy additional cassettes they can be interchanged with dirty cassettes without interrupting the cooking process.

Cleaning the cassette ceiling

Partial cleaning
– Example: office canteen approx. 231 m² + x

35 m² Frying and deep frying area,
Cleaning every 4 weeks
Restaurant system,
cleaning every 1-2 weeks

52 m² Cooking and steam area,
Cleaning every 2-3 months

34m² Food warming area,
Cleaning every 6 months

110m² Fresh air supply area,
Inspection and cleaning every 12 months

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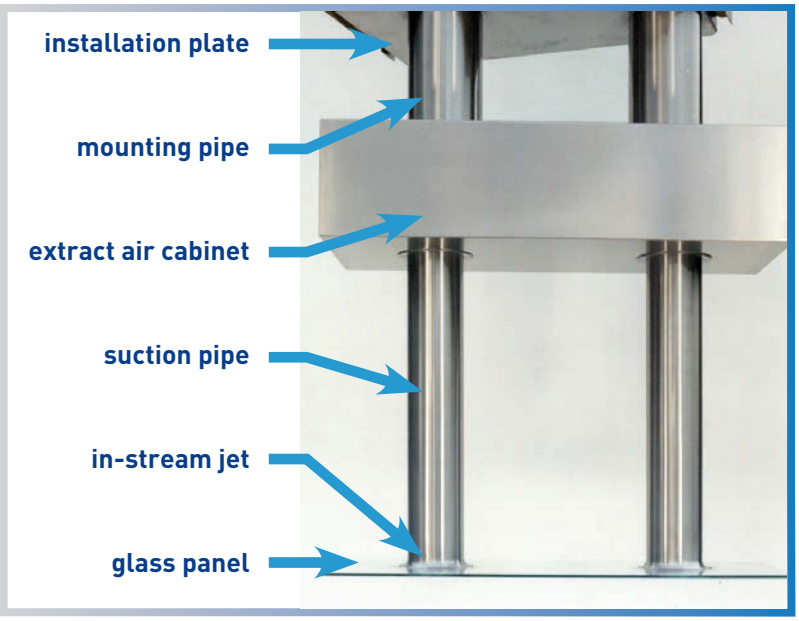
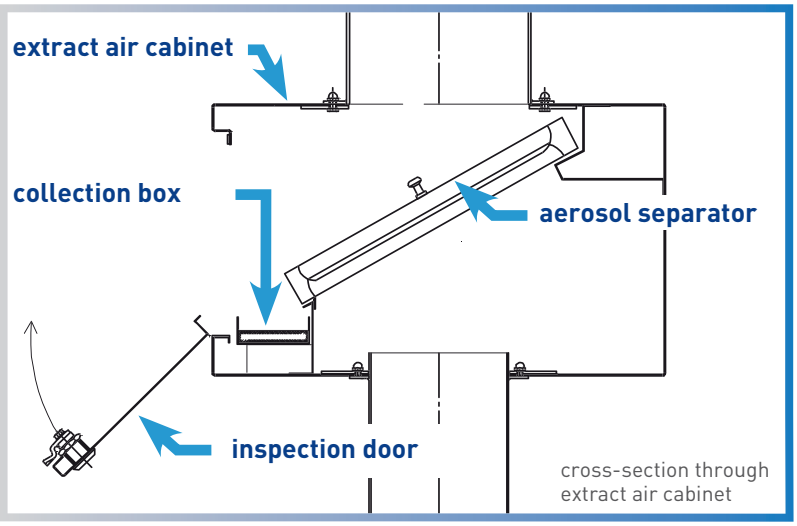
Cleaning the Jet Stream Plate





Please note:
Before you use any cleaning or care products familiarise yourself with the materials and substances the individual components are made of. Chlorine containing or bleaching agents should not be used for cleaning. Stainless steel parts should only be treated with alkaline cleaning agents, which contain small amounts of acid-free oil, and should not be treated with acidic cleaning agents.

Aerosol separators:
The aerosol separators should be cleaned every 1-5 working days according to the operating requirements, but at least every 14 working days.

Collecting box:
The collecting box(es) should be cleaned every 1-2 weeks according to the operating requirements, but at least every 4 weeks.

- **Do not use scouring, abrasive agents**
- **Rinse with clean water immediately after each cleaning process**
- **Do not use cleaning agents of unknown origin**

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Cleaning the Jet Stream Extractor

General advice

Avoid hard banging with metallic objects – the glass panel could break. Should the glass panel break, the operation of the kitchen and food counters must be stopped immediately.

Careful: Do not place any hot cookware on the glass panel – the glass panel could break.

Cleaning

1
The extract air box is opened with an allen key. Then lower the lid carefully.

When removing the aerosol separator, lift it by the handles and then grip it on the sides with both hands and remove.

2
The aerosolate from the separator is collected in the collecting troughs. Grip the stop ridges of the collector box and

keep it horizontally to avoid any overflow. Dispose of the grease according to local regulations.

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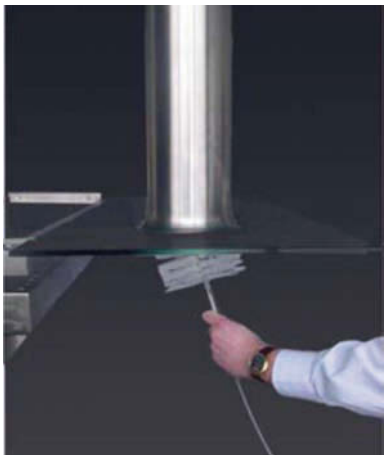
Cleaning the Jet Stream Plate

3
The separators can generally be cleaned in the dishwasher. An inclined or vertical position is ideal with the drain vent positioned downwards.
After the cleaning process, the surface should be metallic bright, if not, soak the separator in a rinsing bath and clean it in the dishwasher again.

Encrusted and charred residues from frying and grilling can best be handled with a special grill cleaner. Inserting the separators is done in reverse order. The individual separators are interchangeable.

4
The drain vent must be located at the lowest point so that the aerosolate can be drained into the collecting troughs unimpeded.

Please note:



The suction pipe should be regularly cleaned with a special brush included in the delivery contents.

Place a cloth soaked in a foamy soap solution over the brush and clean the suction pipe. Intense soiling should subsequently only be cleaned with the brush. Then dry the damp suction pipe with a cleaning cloth over the head of the special brush.

16. Contact Addresses World-Wide

GIF ActiveVent

16

Contact
Addresses
World-Wide

Contact Addresses World-Wide

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Reutte / Tirol

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Melbourne

(BE) Belgium
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Enghien

(CH) Switzerland
Gastrotechnik AG
Bern

(CL) Chile
P&E Soluciones Industriales
Santiago

(CN) China and
Hong Kong
Peak Honour International Ltd.

(ES) Spain
Luis Capdevila s. a.
Barcelona

(GB) Great Britain
Interflow UK
Shrewsbury

(GR) Greece
XENEX Anastasios Kioulpapas S.A.
Avlonas Attikis

(HR) Croatia
SE-MA Ing. d.o.o.
Samobor

(IE) Ireland
AIRCONMECH LTD
Co Wexford

(IL) Israel
AVS Ltd.
Jerusalem

(IT) Italy
Eurotechno s.r.l
Bresso / Milano

(NL) The Netherlands
Miviko B. V.
BR Doesburg

(PL) Polen
Klimaoprema Polska Sp. z o.o.
Pułtusk

(PT) Portugal
Friemo Equipamentos Hoteleiros S.A.
Pedroso/Porto

(SE) Sweden
Laim AB
Vellinge

(TR) Turkey
A&G Makina Elektronik SAN
Istanbul