

Zehnder multi-service foil

Heating and cooling, lighting and additional services



Zehnder multi-service foil

In conjunction with Whitecroft Lighting

Product Information

The evolutionary multi-service foil panel combines radiant heating and cooling, lighting and additional features to deliver a groundbreaking new solution.

The multi-service foil is a culmination of Zehnder’s expertise in radiant heating and cooling and Whitecroft Lighting’s market-leading capabilities in lighting manufacture.

The multi-service foil incorporates an LED Lighting solution into a Radiant Heating and Cooling foil; other controls, detectors and functions can be integrated as required.

The foil provides a practical and aesthetically pleasing feature within the built environment. These qualities, combined with the additional features the foil offers, contribute towards creating a sustainable and inspirational learning environment in educational and commercial spaces.

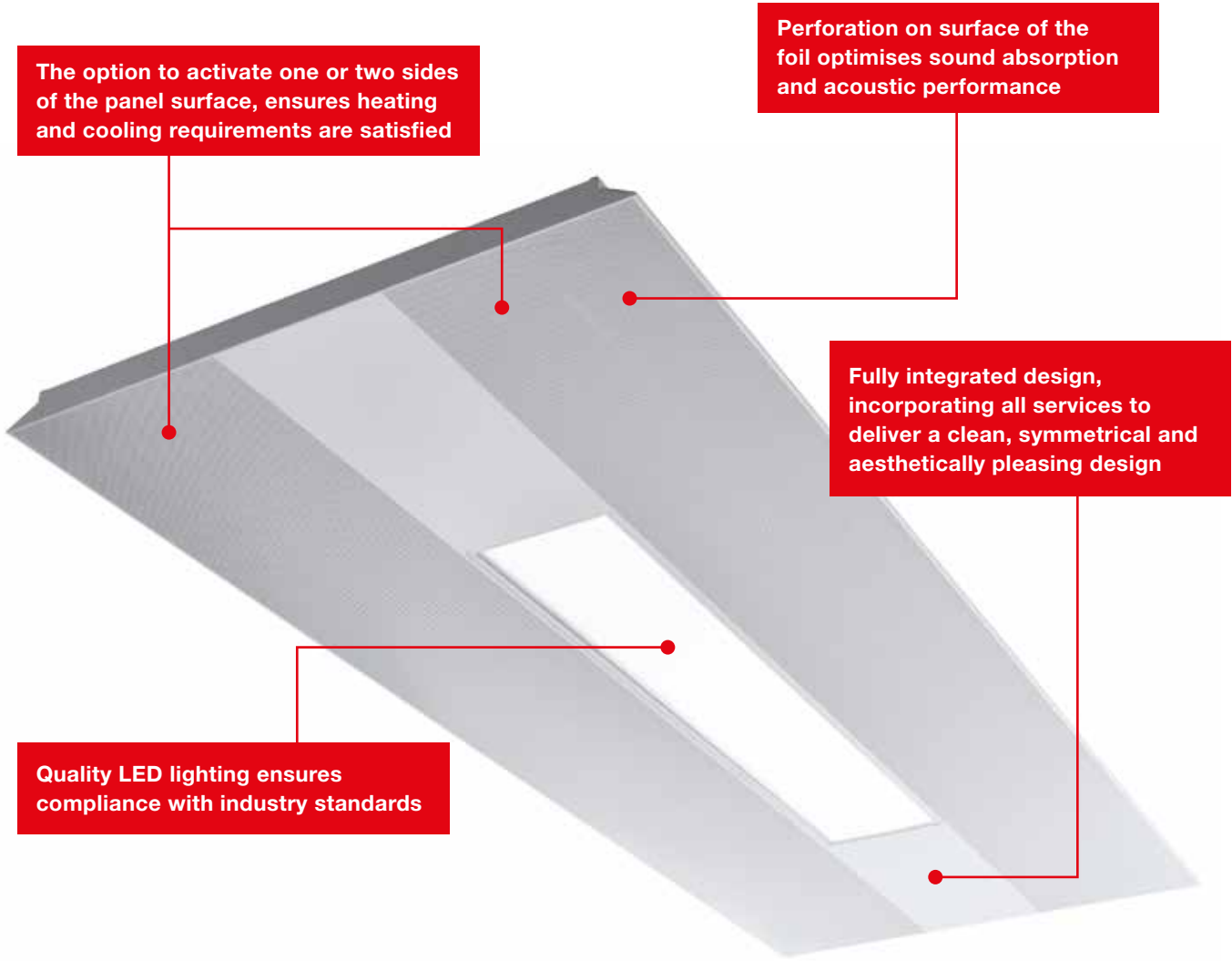
In addition, it aids those involved in the project lifecycle ensuring ease of specification, reduced installation time and low maintenance.

Operating Information

- Maximum working temperature: 80°C
- Maximum test pressure: 7.8 bar
- Maximum working pressure: 6 bar
- Tested to EN14037, EN12464 and ISO 354

Bespoke design ensures best performance

Integrated services deliver on heating, cooling and lighting output



ADVANTAGES

Easy to install with plug ‘n’ play connections

Suitable for both heating and cooling

Quality lighting ensures compliance with industry standards

Delivers on sound absorption and acoustic performance through the perforated surface

Fully integrated design, incorporating all services within one panel to deliver a clean, symmetrical and aesthetically pleasing design

Ease of maintenance integrates comfortably with Building Maintenance Programmes

Responsive and energy efficient - can reduce CO2 emissions by up to 25%

Fully compliant to Building Bulletin 93 Acoustic Design of School Standards

Developed with the installer in mind: cable management, lighting module integration, hanging and levelling of the panel and ease of hydraulic connection

Activated on both sides of the foil to ensure heating and cooling output is maximised

Lighting controls



Service integration



Public address


Sprinkler heads

Smoke detection


Developed with the installer in mind

Cable and hose management features aid the installation process


Easily inter-connect foils via flexible hoses for long length panel runs



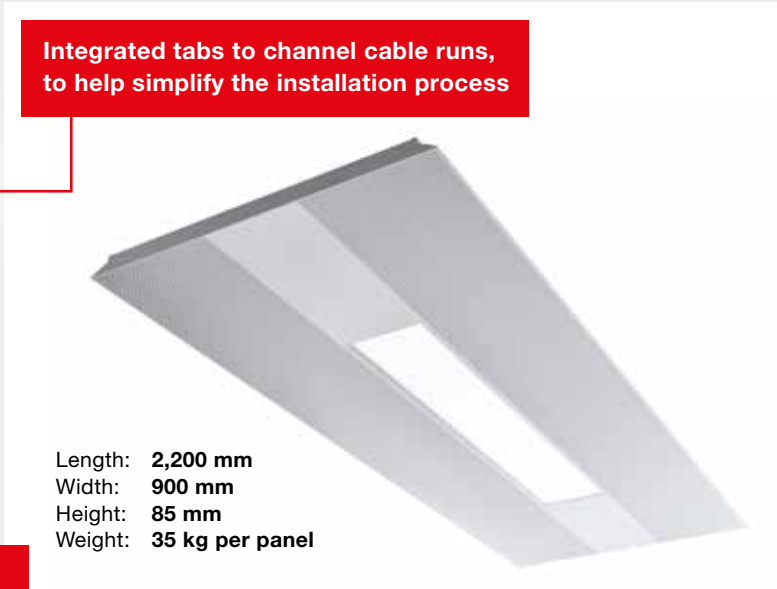
With its 'plug 'n' play' approach, the lighting module integration reduces installation complexity




Integrated tabs to channel cable runs, to help simplify the installation process



Additional holes have been incorporated to aid securing of hoses



Length: 2,200 mm
Width: 900 mm
Height: 85 mm
Weight: 35 kg per panel



Technical data at-a-glance

Heating and Cooling Performance

Heating Performance

K	7.3161
n	1.1466

Δt (K)	Output
70	955
68	923
66	892
64	861
62	831
60	800
58	770
56	739
55	724
54	709
52	679
50	649

Δt (K)	Output
48	619
46	590
44	561
42	531
40	503
38	474
36	445
34	417
32	389
30	361
28	334
26	307

Δt (K)	Output
24	280
22	253
20	227
18	201
16	176
14	151
12	126
10	103

Cooling Performance

K	9.2275
n	1.083

Δt (K)	Output
15	173
14	161
13	148
12	136
11	124
10	112
9	100
8	88
7	76
6	64
5	53
4	41
3	30
2	20
1	9

ESFA Technical Standards and Performance in Schools

When referring to the ESFA (Education & Skills Funding Agency's) Output Specification "Annex 2F Mechanical Services and PHE (Technical Annex) v7", it is important to note that the Radiant Temperature Asymmetry (RTA) within each space should be calculated considering the radiant panel 'active area' and not the entire panel area if only part of the panel is active. For the Zehnder Foil product, there is the option of activating either one (single) or two (dual) sides of the panel; this is equivalent to either 33% or 66% of the panel face area being active, so in the case of our standard 2,200 x 900 mm panel (1.98m² total face area), the active areas shall take into account formulae in BS 7726 or reference tables in Annex 2F with 0.65m² for the single activation panel or 1.3m² for dual sided activation.

For a seated person, the difference in plane radiant temperature between the upper and lower parts of the space shall be taken with respect to a small horizontal plane 0.6m above floor level in accordance with CIBSE Guide A Section 1.6.6.4 (2015 Edition). RTA should not exceed 7K for sedentary activity the only exception should be for vulnerable pupils e.g. those with low mobility. To that end, the RTA should be reduced to 5K.

See Table 1
Radiant Temperature Asymmetry, right;

Table 1 Radiant Temperature Asymmetry, RTA = 7K			
		RTA = 7K	RTA = 5K
Flow/Return Temperature (°C)	Assumed Emitter Temperature (°C)	Panel width (mm)	Panel width (mm)
		900	900
		Minimum panel height above finished floor level (m)	Minimum panel height above finished floor level (m)
50/30	40	< 2.4	< 2.4
60/40	50	2.55	3.20
70/40	55	2.85	3.55
70/50	60	3.2	4.0
80/60	70	3.75	4.60
82/71	76.5	4.1	5.0

Additional factors to consider

- The design shall take account of the mean water temperature, size of radiant panels and the available mounting height
- The arrangement of panels should ensure an even distribution of heat
- Radiant panels shall 'not be located directly above teaching walls or ... (an occupant is) standing for prolonged periods of time' unless RTA calculations deem that the installation is suitable
- The option of integrating luminaires and acoustic absorbers within radiant panels shall be considered
- The surface temperature of ceiling mounted radiant panels in classrooms or offices shall be 'limited to meet BS EN 15251'

Full documents can be accessed at gov.uk/esfa

Product codes and accessories

Product codes

Material codes	Description
10013170	Whitecroft multi service foil active radiant perforated RAL 9006 matt L 2,200 mm x W 900 mm aperture 1,200 mm. Without flexible hoses
10013171	Whitecroft multi service foil active radiant perforated RAL 9006 matt L 2,200 mm x W 900 mm aperture 1,500 mm. Without flexible hoses
10013943	Whitecroft multi service foil non-active radiant perforated RAL 9006 matt L 2,200 mm x W 900 mm aperture 1,200 mm. Without flexible hoses
10013944	Whitecroft multi service foil non-active radiant perforated RAL 9006 matt L 2,200 mm x W 900 mm aperture 1,500 mm. Without flexible hoses
10013172	Whitecroft multi service foil infill perforated RAL 9006 matt L 1,200 mm x W 900 mm. With 2 x 2,500 mm flexible hoses
10013173	Whitecroft multi service foil infill perforated RAL 9006 matt L 800 mm x W 900 mm. With 2 x 1,500 mm flexible hoses
10013174	Whitecroft multi service foil infill perforated RAL 9006 matt L 400 mm x W 900 mm. With 2 x 1,000 mm flexible hoses
10014320	Whitecroft multi service foil active radiant perforated RAL 9010 matt L 2,200 mm x W 900 mm aperture 1,200 mm. Without flexible hoses
10014321	Whitecroft multi service foil active radiant perforated RAL 9010 matt L 2,200 mm x W 900 mm aperture 1,500 mm. Without flexible hoses
10014322	Whitecroft multi service foil non-active radiant perforated RAL 9010 matt L 2,200 mm x W 900 mm aperture 1,200 mm. Without flexible hoses
10014323	Whitecroft multi service foil non-active radiant perforated RAL 9010 matt L 2,200 mm x W 900 mm aperture 1,500 mm. Without flexible hoses
10014324	Whitecroft multi service foil infill perforated RAL 9010 matt L 1200 mm x W 900 mm. With 2 x 2,500 mm flexible hoses
10014325	Whitecroft multi service foil infill perforated RAL 9010 matt L 800 mm x W 900 mm. With 2 x 1,500 mm flexible hoses
10014327	Whitecroft multi service foil infill perforated RAL 9010 matt L 400 mm x W 900 mm. With 2 x 1,000 mm flexible hoses



Accessories

Material codes	Description
40005985	Flexible hose, 12 mm x 12 mm, Length 2,500 mm
40018352	Flexible hose 12 mm x 12mm, Length 2,000 mm
49519227	Flexible hose, 12 mm x 12 mm, Length 1,500 mm
49519228	Flexible hose, 12 mm x 12 mm, Length 1,000 mm
49519076	Flexible hose, 12 mm x 15 mm, Length 1,000 mm
49519077	Flexible hose, 12 mm x 15 mm, Length 1,500 mm
49519277	Hanging wire, 1.5 mm, Length 1,000 mm
49519254	Hanging wire, 2 mm, Length 1,000 mm
40015572	Sail-connection clamp, front side

For further information on lighting specification, visit www.whitecroftlighting.com/products/foil-radiant



ALWAYS THE BEST CLIMATE

“We strive to improve the quality of life by providing the finest indoor climate solutions.”



Excellent team
Every day we combine passion, expert knowledge and commitment to give you the best results.



Great solutions, products and services
Great products and unique service for an energy-efficient, healthy and comfortable indoor climate.



First choice for customers
Always close to the needs of our customers, to grow with you and overcome all challenges together.

WE ARE THE SPECIALISTS FOR A HEALTHY, COMFORTABLE AND ENERGY-EFFICIENT INDOOR CLIMATE

The broad and clearly structured portfolio from the Zehnder Group is split into four product lines. Consequently, we can provide our customers with the right product, perfect system and matching service for all types of projects – from new build to renovations, single or multi-occupancy homes, as well as commercial projects. This variety ensures that our wealth of experience is continuously expanding, providing tangible added value to our customers on a daily basis.



Decorative radiators
Our individual decorative radiators for living and bathrooms make a home not only warmer but also more attractive. Created by renowned designers, they impress with excellent functionality.



Comfortable indoor ventilation
Our comfortable indoor ventilation is energy-efficient and provides a healthy indoor climate. It promotes the wellbeing of the occupants and increases the value of the property.



Heating and cooling ceiling systems
Zehnder ceiling systems are convenient and energy-efficient for heating and cooling. They are perfectly attuned to the relevant environment.



Clean air solutions
Clean air systems from Zehnder reduce the level of dust in the air, create a healthier working environment and reduce the amount of cleaning required.

OUR BRANDS REPRESENT INNOVATION, QUALITY AND DESIGN



The Zehnder brand offers excellent indoor climate solutions within the product lines of decorative radiators, comfortable indoor ventilation, heating and cooling ceiling systems and clean air solutions.

BISQUE

The Bisque brand offers beautiful but practical radiators in the most exciting styles, colours and shapes for homes and more.



The Greenwood Airvac brand offers a range of low energy, smart residential ventilation solutions from intermittent extract fans to whole house ventilation with heat recovery.

Visit our website to access more information

- Product Brochures
- CPD Information
- BIM Components
- Case Studies
- Specification Tools
- Product Datasheets
- Technical Brochures
- Educational Videos



© Copyright Zehnder Group UK Ltd 2019

All information believed to be correct at the time of going to press. E&OE. All goods are sold according to Zehnder Group UK Ltd's Standard Conditions of Sale (available on request). All dimensions are in millimetres unless otherwise shown. Zehnder Group UK reserves the right to change specifications without prior notice.

Zehnder Group UK Ltd

Registered office: Concept House,
Watchmoor Point, Camberley,
Surrey GU15 3AD
Registered in England No. 2296696

Head Office: Customer Services: 01276 408404

Email: orders@zehnder.co.uk

Web: www.zehnder.co.uk