



# io7 Brighter EV Charging

## Ratio io7

Innovative dual EV charging pillar with built-in professional, high performance lighting.



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# FW THORPE PLC

Ratio EV Charging is a joint investment between FW Thorpe Plc and Ratio Electric in the Netherlands.

Ratio EV Charging designs and manufacture EV charging products at it's factory in Redditch in the Midlands specifically to suit and serve the UK market.



## About FW Thorpe

FW Thorpe Plc was founded in Birmingham in 1936 by Frederick William Thorpe and his son, Ernest. Based in a factory in Small Heath, Birmingham, the company initially designed and manufactured vitreous enamelled steel reflector luminaires.

Today FW Thorpe Plc specialises in professional lighting and control systems which are sold throughout the world, and currently employs over 900 people. The Group management team is passionate about developing the business for the benefit of the shareholders, employees and customers. It's aim is to create stakeholder value through market leadership in the design, manufacture and supply of lighting systems, with the additional EV charging division complementing the skillsets and customer base of the lighting businesses.

## Ratio Electric

Ratio EV Charging aims to create a sustainable future through innovation, and provide accessible and no nonsense products that enable people to move towards a world powered by renewable energy.

Established in 1960, Ratio Electric specialises in the development, manufacture and supply of electrical power connection and distribution systems in four core areas: e-mobility (electrical vehicle chargers and cables), marine, data centre and industry. Today Ratio Electric continues to supply high quality, functional and affordable products to OEM's, installers and specialised wholesalers.





# Sustainability

Ratio, as part of the FW Thorpe Group of companies, is committed to minimising the environmental impact of its activities across all operations.

The FW Thorpe Group of companies has been officially recognised as being carbon neutral, with systems of reduction, measurement and certified offsetting in place, since 2012. Third party assessment provides independent assurance of the Group's long-standing commitment to sustainability across all of its operations worldwide. Being carbon neutral means that FW Thorpe Plc offsets the carbon dioxide emissions it generates (scopes 1 and 2 of the Greenhouse Gas Protocol) by its business activities.

FW Thorpe Plc is a carbon neutral company through a combination of measures. Company-wide initiatives such as energy use minimisation, self-generation of renewable energy through solar photovoltaic (PV) units, and procurement of renewable energy have reduced the Group's carbon footprint, whilst trees in the Group's award-winning carbon offsetting afforestation project absorb the remaining carbon dioxide produced.

## The Road to net-zero

In 2022, FW Thorpe initiated a robust data collection process to calculate its full carbon footprint, extended to include upstream and downstream activities – for example those throughout its supplier and customer relationships. The Group's carbon emission reduction plan is aligned with the Paris Agreement 1.5°C scenario (reactive) and its full Scope 1, 2 and 3 emissions for the 2021 base year, 2022, and the previous financial year 2023 have been calculated.

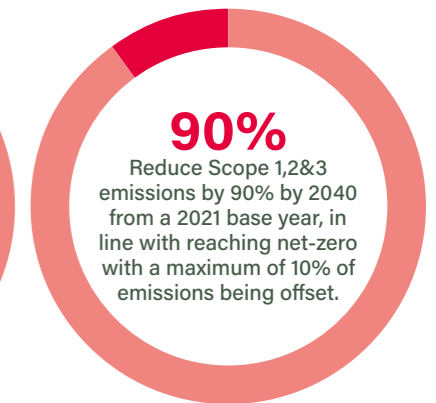
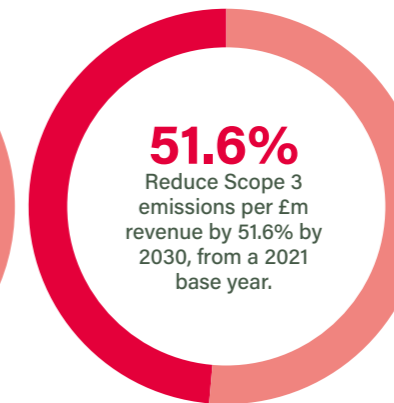
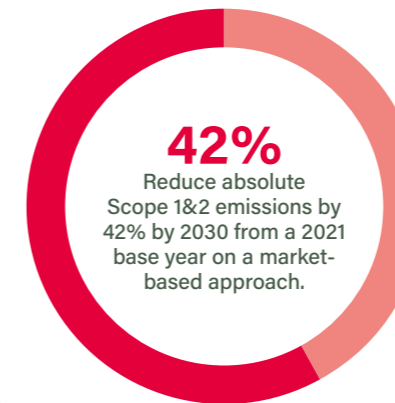
**The goal is ultimately to reach net-zero in 2040, 10 years before the UK's target for achieving net-zero greenhouse gas (GHG) emissions by 2050.**



**179,412**  
trees planted  
on 215 acres

## Emission reduction targets

FW Thorpe has set and submitted the following Science aligned targets for validation by the Science Based Targets Initiative:



## Carbon offsetting

In 2009, FW Thorpe Plc purchased 215 acres of farmland in Wales. To date, 179,412 trees have been planted for carbon sequestration. Based on the Group's calculated emissions, it has been confirmed that enough trees have been planted for FW Thorpe Plc to have been carbon neutral since 2012.

The carbon capture tree-planting scheme (quality-assured by the government-backed Woodland Carbon Code) is independently certified to ISO 14064-3 and ISO 14065 standards. The Woodland Carbon Code is an independent standard, devised by a group led by the UK Forestry Commission, to certify that woodland creation projects can accurately measure how much carbon is captured and stored.

FW Thorpe has completed its woodland creation project in Devauden, Wales and has recently purchased a further 195 acres of land in Herefordshire. The land has significant potential for connecting existing woodlands for biodiversity and landscape enhancement and the transition from grazing sheep to woodland creation will have little to no impact on food security.



# io7 Charging

The io7 has been specifically designed to enable EV charging in a multitude of environments.

The io7 can be configured to suit the user's power availability and charging needs, internet connectivity, lighting requirements and budget.



Retail



Hotels



Apartments



Carparks



Workplace



## Features

- ✦ Extruded aluminium body for long life and high durability
- ✦ Designed for easy of installation and maintenance
- ✦ Maximised power capacity - intelligent software ensures the optimum amount of charge to each vehicle
- ✦ Flexible payment/usage methods including optional contactless payment, plug & charge, mobile app or RFID controlled charging
- ✦ OZEV (Office for Zero Emission Vehicles) grant approved
- ✦ OCPP 1.6 compliant enables connection to any 3rd party back office system
- ✦ Over-the-air software updates
- ✦ Accessibility approved PAS 1899 compliant
- ✦ Designed and manufactured in the UK
- ✦ BSi Kitemark accredited



# io7 Lighting

The io7 has a high performance built-in illuminated head for general area lighting. The sophisticated LED optic provides excellent ground illumination and high light uniformity ensuring users are able to correctly and safely connect to the charger. The high performance nature of the illuminated head means that it can be incorporated into the overall exterior lighting solution of the site.

## Emergency lighting\*

The io7 is available with integral emergency lighting allowing for illumination of walkways in the event of an emergency. Where io7s are placed along emergency routes, the emergency lighting facility will illuminate the way to fire assembly points highlighting any cables or potential trip hazards on the way.

## DESIGNED FOR TOUGH ENVIRONMENTS

The lighting unit is sealed to IP66.

## Illuminate the car

The additional lighting aids location of the charging sockets, and provides illumination in the bonnet storage or boot area when finding the charging cable.

## DIE-CAST ALUMINIUM HEAD UNIT

Excellent thermal management of LEDs for long 100,000 hour life.

## HIGH PERFORMANCE OPTICS

Superior luminaire spacing with high uniformity

## DUSK TILL DAWN LIGHTING

The io7 comes with a photocell as standard to switch lighting on and off when required.

## HIDDEN OPTICAL COMPARTMENT

Low glare and less than 2% upward light, a requirement for preventing light pollution in many inner city and rural applications.

## Wireless controls

The io7 can offer superior lighting controls, emergency status reporting and energy management on the same platform as the building luminaire installation.

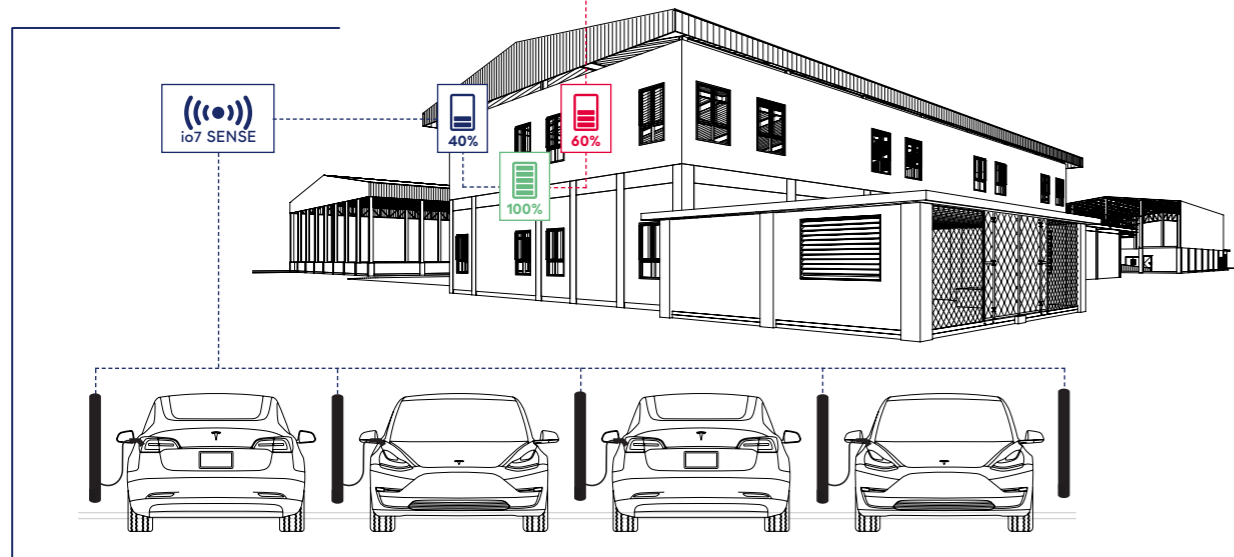
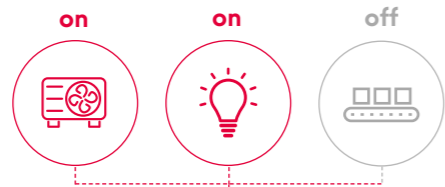
## EXTRUDED ALUMINIUM BODY

Long life and high durability

\*optional extra

# Load Management

Load management of EV charging equipment is designed to maximise charging speeds whilst protecting the electrical installation and building infrastructure.



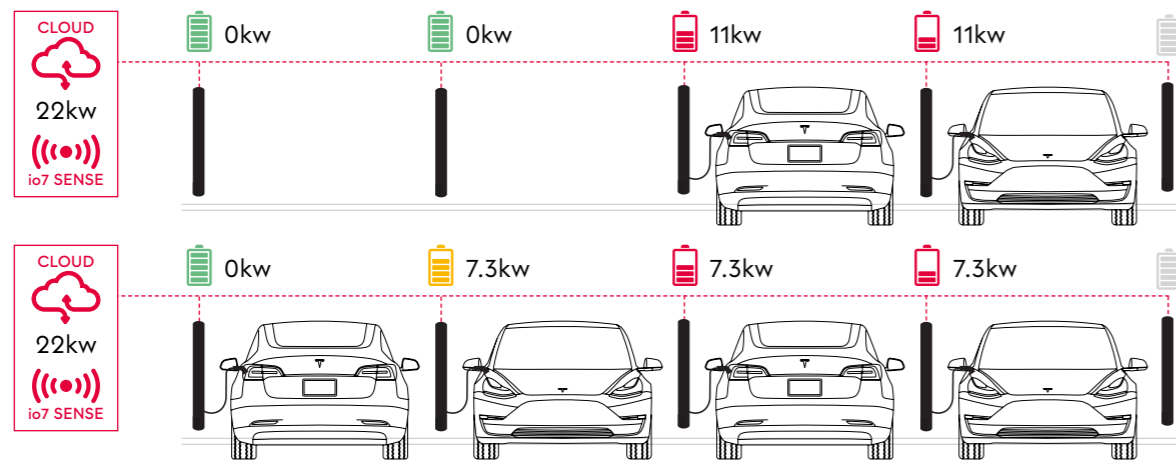
## Dynamic Load Management

Monitors the building's energy supply and usage, calculating the power available and distributing it equally to the EV charger installation.

As the building power consumption increases e.g. heavy machinery being switched on or off, the io7 Sense will increase or decrease the power available to the EV charger installation.

## Static Load Management

Involves the installation of EV charging equipment on a dedicated power supply that has a known fixed power capacity. The EV chargers are designed to effectively manage this power supply by evenly distributing the load between them as more sockets are utilised. This can be done at Cloud level (using back-office software) or locally to the chargers using the io7 Sense.



io7 Sense Lite



io7 Sense Pro



## io7 Sense

The io7 is available with both static and dynamic load management systems.

	io7 Sense		Connectivity		
	io7 Lite	io7 Pro	Ethernet	Wi-Fi	4G
Static Load Management					
>5 or less pillars			✓	✓	
>6-16 pillars		✓	✓	✓	✓
Dynamic Load Management					
>5 or less pillars	✓		✓	✓	✓
>6-16 pillars		✓	✓	✓	✓

✓ - Recommended Option

Product Code	Description
38903	io7 Sense Lite, 250A
38904	io7 Sense Lite, 400A
38900	io7 Sense Pro





# Ratio for Quality



**Lighting head** emits less than 2% light pollution

**Socket 1** indicator LED

**RFID antenna** or optional contactless payment

**Socket 2** indicator LED

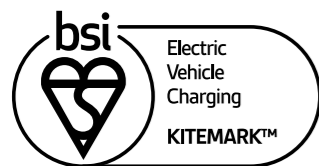
**Aluminium body** for long life and high durability

**Lower access door** for simple maintenance

Sockets made in the Netherlands at Ratio Electric

Plastics sourced within the UK

Castings and extrusion manufactured within 30 miles of the Ratio factory



The io7 has been engineered to redefine the benchmarks of sustainability, starting with its construction techniques. Crafted with a commitment to environmental responsibility, each and every component has been carefully selected to ensure minimal ecological impact throughout its lifecycle.



## Renewable electricity generation

In line with the FW Thorpe carbon reduction initiatives, Ratio has installed solar photovoltaic (PV) units on the roof of its manufacturing site to harness and utilise as much natural energy as possible. The power generated by the PV arrays is distributed across the business, providing power to the plant and machinery whilst also charging the Ratio fleet of hybrid and electric vehicles.

In addition to the power generated by the PV arrays, all purchased electricity now comes from renewable sources thus deeming 100% of Ratio's electricity consumption to be from renewable energy.



## Circularity

The principles of circularity aim to eliminate waste by keeping as much of the original product material in use for as long as possible. All Ratio products are designed with circularity in mind using recycled materials, the minimum number of components, longevity and reparability.

The body of the io7 is primarily constructed from recycled aluminium, often reclaimed from old engine blocks and other automotive components.

The io7 has been designed to achieve a long and reliable lifetime which is extended further by its simple serviceability. However once end of life is reached, the io7 can easily be disassembled and recycled, minimising the impact on the environment.





All io7 charging pillars have: **Standard Lighting**, **VPN SIM** and **Data** included as standard

Product Code	Description	Socket	CT / MID	Height
38905	Single Phase	Twin Socket	CT	1.5m Optic
38906	Single Phase	Twin Socket	MID	1.5m Optic
38907	Three Phase	Twin Socket	CT	1.5m Optic
38910	Three Phase	Twin Socket	MID	1.5m Optic
38935	Single Phase	Single Socket	CT	1.5m Optic
38936	Three Phase	Single Socket	MID	1.5m Optic
38937	Single Phase	Single Socket	CT	2.5m Optic
38939	Single Phase	Single Socket	MID	2.5m Optic

Dimensions & Specifications	
Charging System	IEC 61851 Mode 3
Supply Voltage	Single phase / three phase, 230 / 400V, 16A / 32A
Charging Power	7.4kW & 22kW
Protections	AC 30mA, DC 6mA
Housing	Polyester powder coated aluminium
Dimensions	Dia. 165mm x 1500mm
Weight	17Kg
Enclosure Rating	IP54 (lighting head IP66)
Operating Temperature	-25c to +40c
Marking	UKCA, BSI Kitemark
O-PEN	PME fault detection on single and three phase versions
Metering	CT clamp or MID meter versions
Standards	BS EN IEC 61851-1:2019 / BS EN IEC 61851-21-2:2021 / BS EN IEC 61000-6-1:2019 / BS EN IEC 61000-6-3:2021 / BS 7671:2018+A2:2022
EV Connections	Ocpp1.6J
Internet Connections	Internet, Ethernet, Wi-Fi and 4G - Sim card supplied as standard

Radar and SmartScan versions to be used in conjunction with Thorlux Lighting control systems.



Our charge point management software provides the complete EV charging solution, ensuring data and payments can be easily customised and managed via a single software platform.



## Ratio for Business

### Take Charge with Access controls

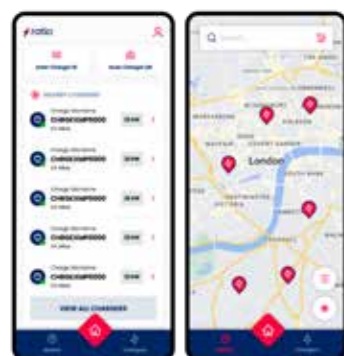
- ✦ Restrict access – allow charging to only the drivers you want
- ✦ Set Opening times – set different availability times to different user groups

### Maximise Revenue potential

- ✦ Allow public charging – set opening hours and manage multi-tariffs\*
- ✦ Charger visibility – attract drivers to your location via Zap-Map\*, Google Maps and Apple Maps

### Remote Maintenance

- ✦ Click to fix – perform soft and hard resets, and unlock connectors remotely with a click of a button



### Full Visibility

- ✦ Generate reports on a wide range of activities

### Payment made simple

- ✦ Full Tarrif control – set up different tariffs to different users with the ability to make use of flexi-tariffs
- ✦ Payment options – Google Pay, Apply Pay, credit and debit card
- ✦ QR Stickers – allow users to connect for payment via QR code

\*Additional charges may apply

