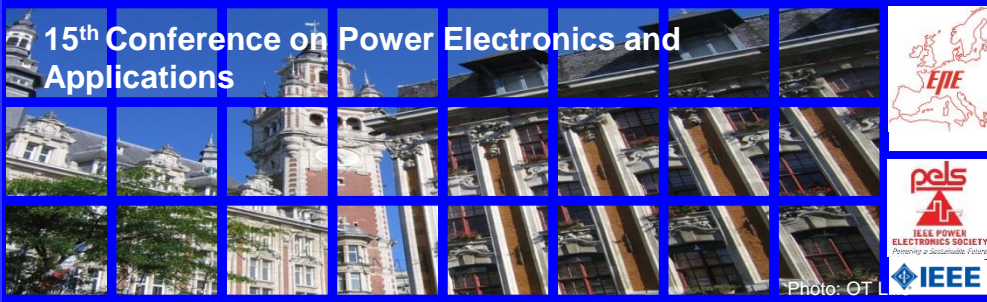


**EPE'13  
ECCE Europe**

**3-5 September 2013  
Lille, France**



**ELECTRIC & HYBRID VEHICLES  
AWARENESS FORUM**

**SEPT  
04  
12-18h**



Organized by :  
**MEGEVH**  
*French network on HEV's*  
In the framework of:  
**EPE'13  
ECCE Europe**  
3-5 Sept. 2013  
Lille, France

**ELECTRIC & HYBRID  
VEHICLES  
AWARENESS FORUM**



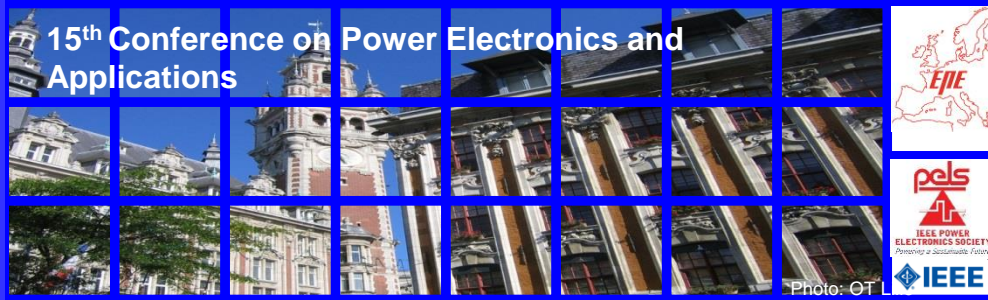
**Free Trial**  
**BIKES • MOTORBIKES • ELECTRIC AND HYBRID CARS**

**LILLE GRAND PALAIS WALKWAY**



# EPE'13 ECCE Europe

3-5 September 2013  
Lille, France



## ELECTRIC & HYBRID VEHICLES AWARENESS FORUM

### EPE'13

**EPE '13-ECCE Europe:** the 15th European Conference on Power Electronics and Applications organized by the L2EP



**Attendees:** above 1000 scientists and engineers coming from more than 40 countries

**Purposes:** presentations and discussions of latest developments in the field of electrical systems and applications

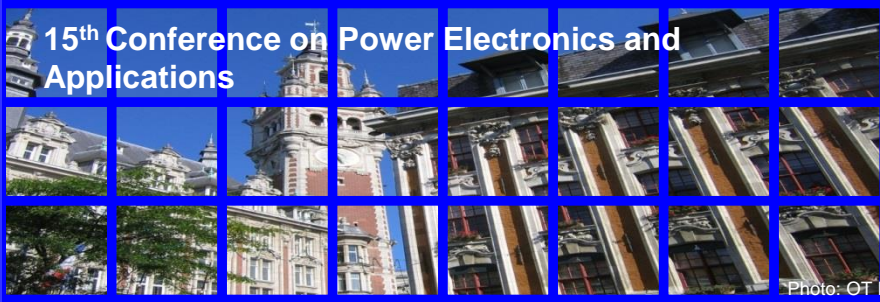
**Main topic:** clean future transportation systems

**VAL Anniversary:** celebrating the 30<sup>th</sup> years of the first automatic subway in Lille

**Public awareness forum:** informing local people about new electro-mobility solutions

**The “Carbon Care” actions:** for a more environment-friendly conference (details hereafter)





## ELECTRIC & HYBRID VEHICLES AWARENESS FORUM

Name

# 30<sup>th</sup> VAL Anniversary

Features

VAL 206

1983

It's the 30<sup>th</sup> VAL Anniversary, don't hesitate to visit the VAL exposition in the Lobby of Lille Grand Palais

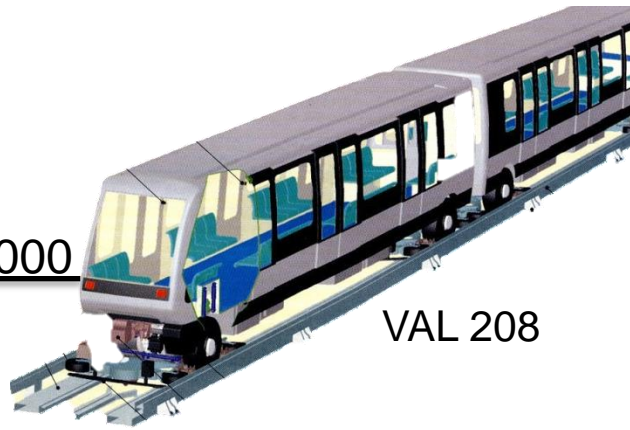
2013

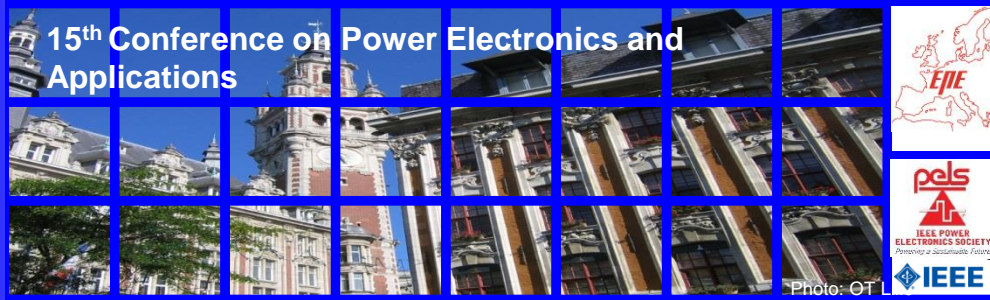
Next subway

2016

2000

VAL 208





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

**VAL 206**

**SIEMENS**  
Transportation Systems

### **Features**

**Type:** 2 cars Light Automatic Vehicle

**Drives:** Two 120 kW Direct current machines a car

**Supply:** 750 V rail

**Minimum waiting time:** 66 s

**Capacity:** 154 Passengers

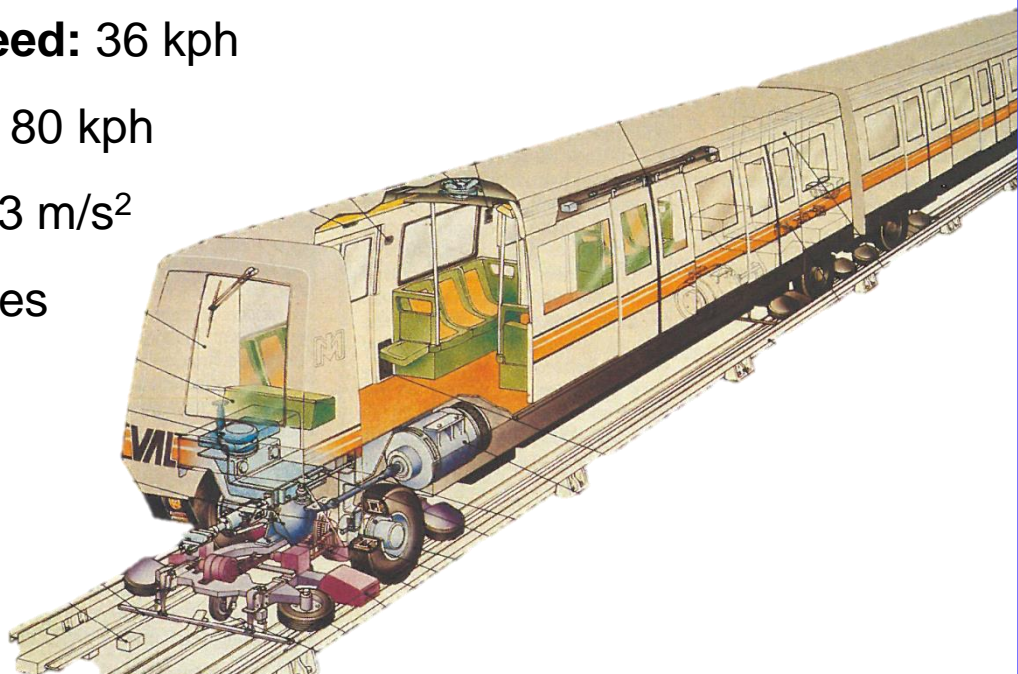
**Commercial speed:** 36 kph

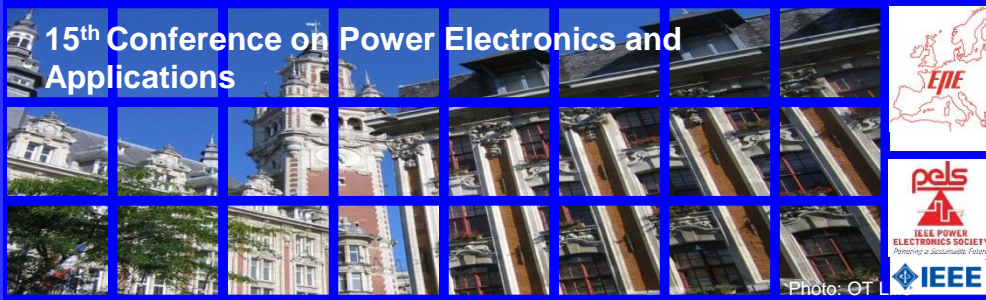
**Maximal speed:** 80 kph

**Acceleration:** 1,3 m/s<sup>2</sup>

**Weight:** 31 Tonnes

**Year:** 1983





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

**VAL 208**

**SIEMENS**  
Transportation Systems

### **Features**

**Type:** 2 cars Light Automatic Vehicle

**Drives:** Four 65 kW permanent magnet synchronous machines a car

**Supply:** 750 V rail

**Minimum waiting time:** 60 s

**Capacity:** 150 à 253 Passagers

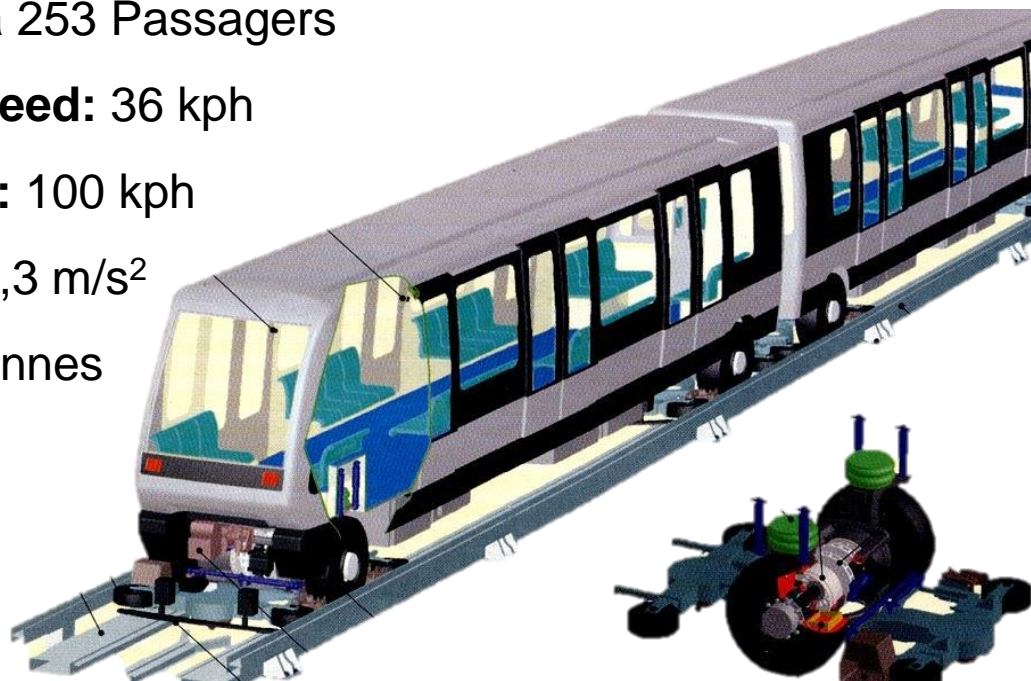
**Commercial speed:** 36 kph

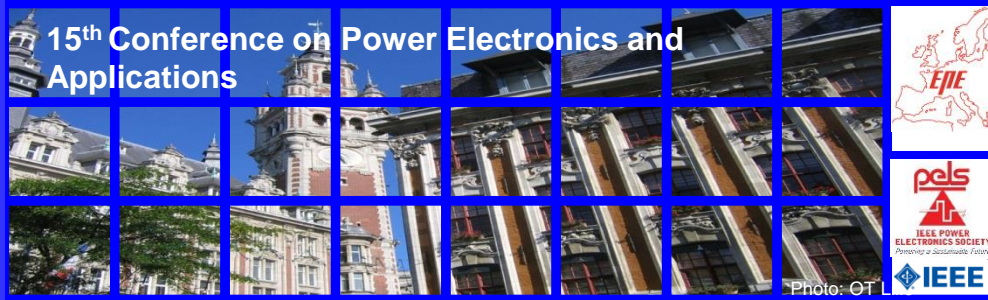
**Maximal speed:** 100 kph

**Acceleration:** 1,3 m/s<sup>2</sup>

**Weight:** 29,5 Tonnes

**Year:** 2000



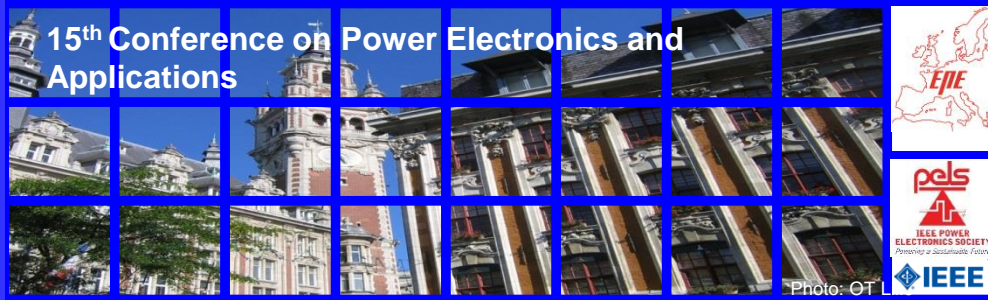


## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

The main goal of the awareness forum is to offer to conference attendees and local people an overview of the new transportation modes.

The awareness forum presents a wide range of electric and hybrid-electric cars going from electric bikes to electric cars. It also presents different electric recharge infrastructures.

People concerned by electric transportation (users, retailers, constructors or academics) are staying at the different stand to provide information.



## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*Sweden*

***Volvo V60 Plug-In Hybrid***



### **Features**

**Type:** hybrid Vehicle

**Drive:** five-cylinder turbodiesel + electrical machine

**Speed max:** 230 km/h (143 mph)

**Horse power:** 160 kW (diesel) + 50 kW (electrical)

**Autonomy:** 50 km (31 miles) in Pure mode

**Weight:** 2058 kg

**Year:** 2013



### **Particularities**

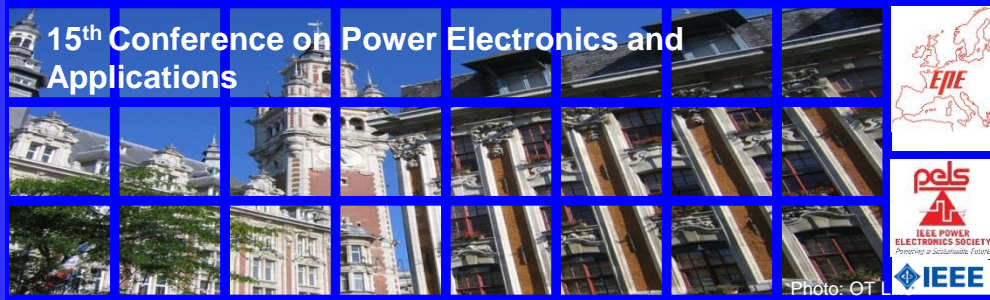
3 Drive modes: thermal/ Hybrid/ electrical

CO<sub>2</sub> Emissions in hybrid mode: 48 g/km

*Used by:*



Vrije  
Universiteit  
Brussel



## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**ZOE**



### **Features**

**Type:** electric car

**Drive:** synchronous machine 65 kW

**Speed max:** 135 km/h (84 mph)

**Battery:** lithium ion (22 kWh)

**Autonomy:** 210 km (130 miles)

**Weight:** 1468 kg (battery: 290 kg)

**Year:** 2013



### **Particularities**

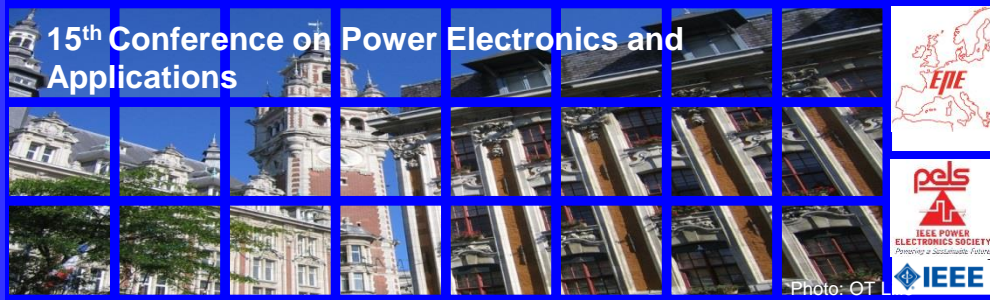
Driving license is needed

Transmission: automatic

*Manufactured by:* *used by:*







## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

***Kangoo Z.E***



### **Features**

**Type:** electric car

**Drive:** synchronous machine 44 kW

**Speed max:** 130 km/h (81 mph)

**Battery:** lithium ion (22 kWh)

**Autonomy:** 170 km (110 miles)

**Weight:** 1410 kg

**Year:** 2011



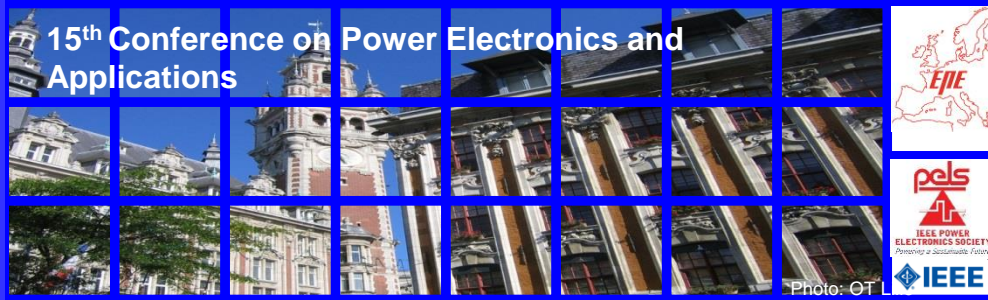
### **Particularities**

Driving license is needed

International Van of the Year for 2012

*Manufactured by:* *used by:*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

***Mia L***



### **Features**

**Type:** electric car

**Drive:** induction machine 18 kW

**Speed max:** 100 km/h (62.1 mph)

**Battery:** lithium ion (12kWh)

**Autonomy:** 125 km (78 miles)

**Weight:** 850 kg

**Year:** 2012



### **Particularities**

Driving license is needed

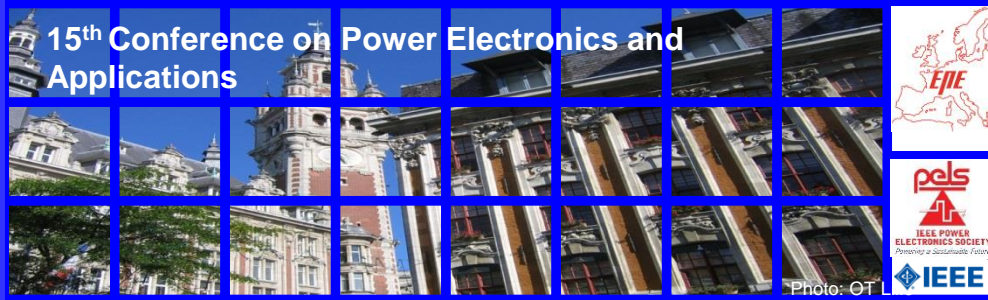
3 seats car with a central driving seat

Transmission: single gear

*Saled by:*

Altermove  
La boutique du déplacement urbain





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*Italy*

**Tazzari ZERO**



### **Features**

**Type:** electric car

**Drive:** induction machine 15 kW

**Speed max:** 90 km/h (56 mph)

**Battery:** lithium – ion 80 V - 160 Ah

**Autonomy:** 70 km (43.5 miles)

**Weight:** 542 kg (battery: 142 kg )

**Year:** 2009



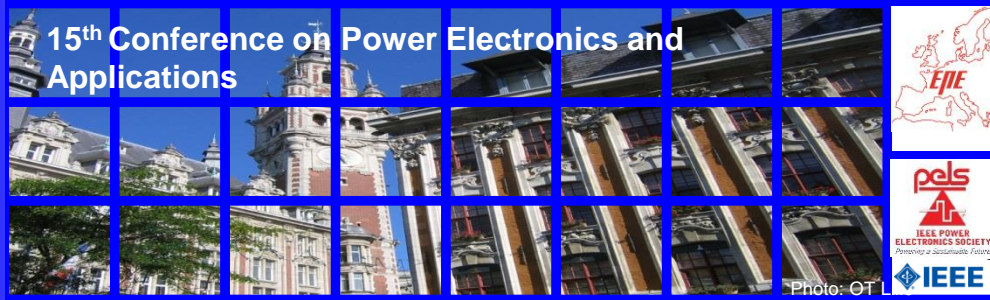
### **Particularities**

Driving license is not needed

4 Drive modes: Race/Economy/Standard/Rain

Used by:





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

***Twizy***



### **Features**

**Type:** electric car

**Drive:** induction machine 4 to 13 kW

**Speed max:** 45 to 80 km/h (28 to 50 mph)

**Battery:** lithium ion (7 kWh)

**Autonomy:** 100 km (62 miles)

**Weight:** 474 kg (battery: 99 kg)

**Year:** 2012



### **Particularities**

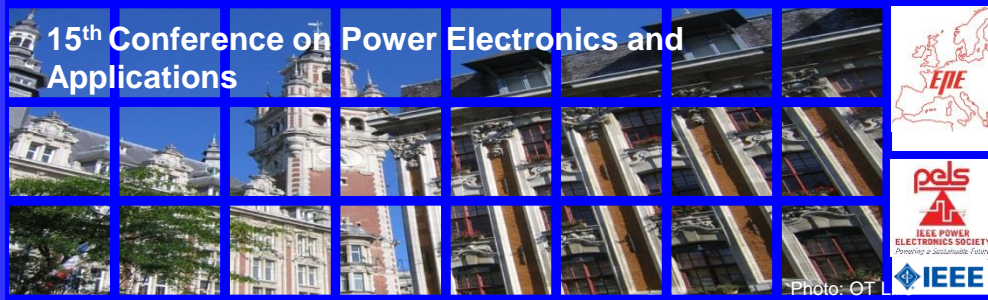
Driving license is needed

Transmission: single gear

Length: 2,337 m

*Manufactured by:*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

USA

**Zero-DS 11.4**



### **Features**

**Type:** electric moto

**Drive:** synchronous machine 11,4 kW

**Speed max:** 153 km/h (95 mph)

**Battery:** lithium Ion 48V – 15 Ah

**Autonomy:** 203 km (126 miles)

**Weight:** 179 kg

**Year:** 2013



### **Particularities**

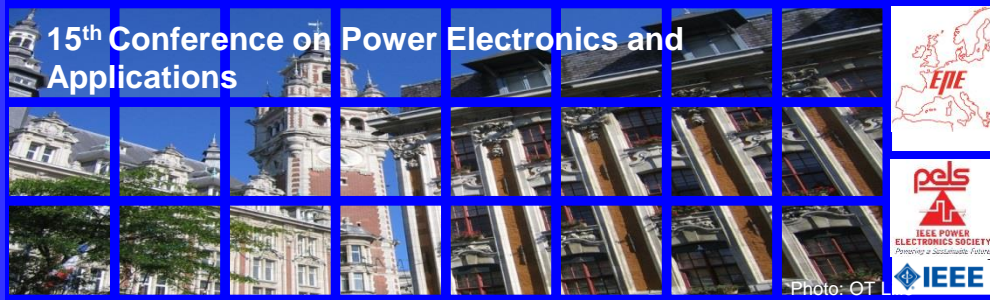
Transmission: single gear

Charging time: 7 hours

*Saled by:*

Altermove  
La boutique du déplacement urbain





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**Clymene**



### **Features**

**Type:** electric scooter

**Drive:** synchronous machine 1500 W

**Speed max:** 45 km/h (28 mph)

**Battery:** lead acid (48 V – 40 Ah)

**Autonomy:** 70km (43.5 miles)

**Weight:** 98 kg

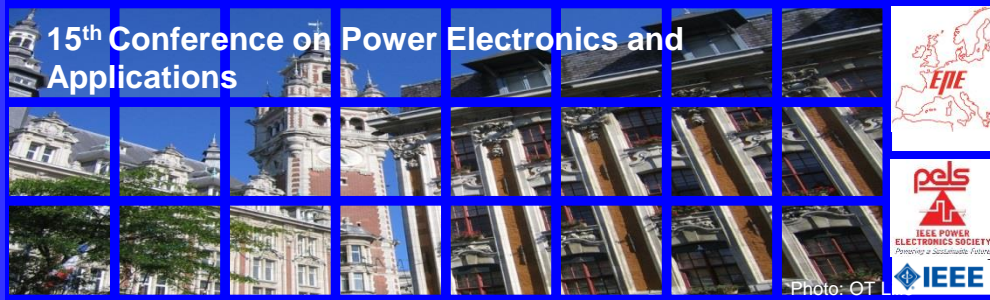


### **Particularities**

Driving license is not needed

*Manufactured and saled by :*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**E-Mo**



### **Features**

**Type:** electric scooter

**Drive:** synchronous machine 1200 W

**Battery:** lithium ion 48V – 15 Ah

**Autonomy:** 35 - 40 km (21.7 – 24.8 miles)

**Weight:** 50 kg

**Year:** 2012



### **Particularities**

Driving license is not needed

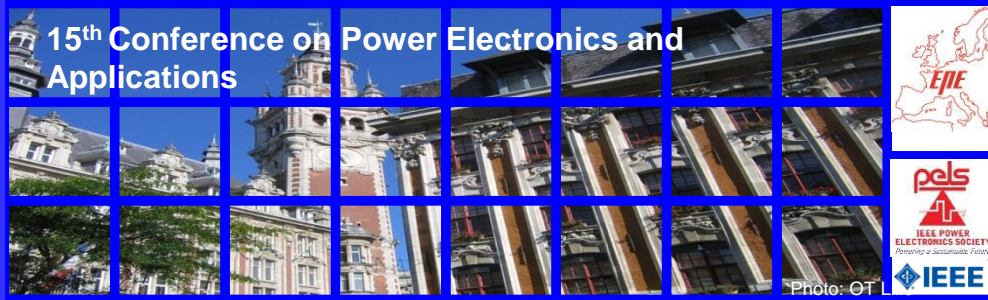
Transmission: single gear

Charging time: 3 hours

*Saled by:*

Altermove  
.com  
La boutique du déplacement urbain





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**Pigmy**



### **Features**

**Type:** electric scooter

**Drive:** synchronous machine 1200 W

**Speed max:** 45 km/h (28 mph)

**Battery:** Lead acid (60 V – 20 Ah) or Lithium (48V – 30 Ah)

**Autonomy:** 60km (37 miles)

**Weight:** 74 kg (lithium) / 97 kg (Lead acid)



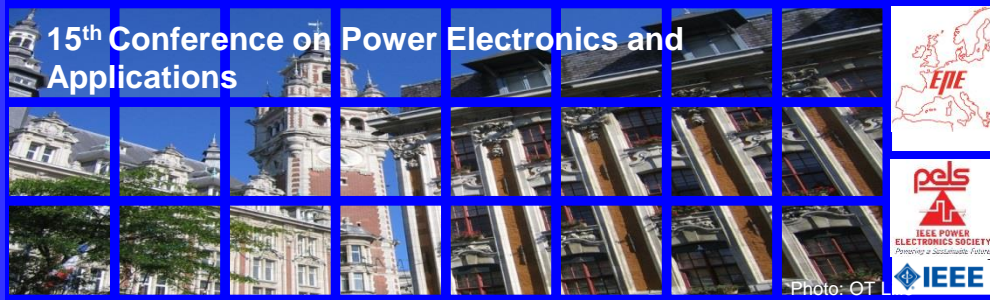
### **Particularities**

Driving license is not needed

*Manufactured and saled by :*







## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**Amazon**



### **Features**

**Type:** electric scooter

**Drive:** synchronous machine 1200 W

**Speed max:** 45 km/h (28 mph)

**Battery:** lead acid (48 V–24 Ah) or Lithium (48V–30 Ah)

**Autonomy:** 60km (37 miles)

**Weight:** 79 kg (lithium) / 105 kg (Lead acid)

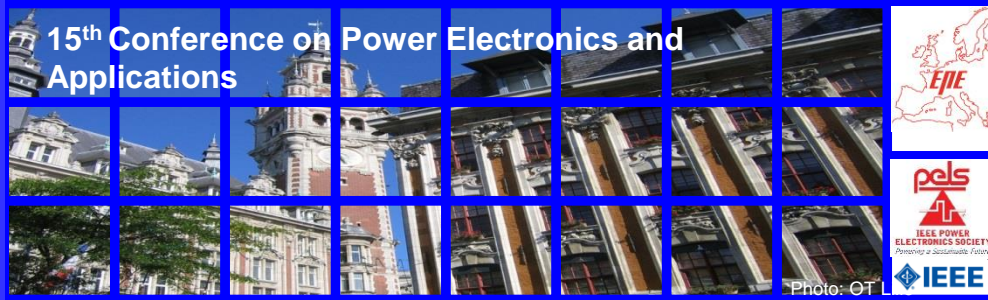


### **Particularities**

Driving license is not needed

*Manufactured and saled by :*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

***IO Cruiser***



### **Features**

**Type:** electric bike

**Drive:** synchronous machine (7 phases) 750 W

**Speed max:** 25 km/h (15.5 mph) with assistance

**Battery:** nikel Metal Hydride (NIMH) 36 V - 9 Ah

**Autonomy:** 25 - 35 km (15.5 – 21.7 miles)

**Weight:** 35 kg

**Year:** 2004



### **Particularities**

Drive is inserted inside the rear wheel

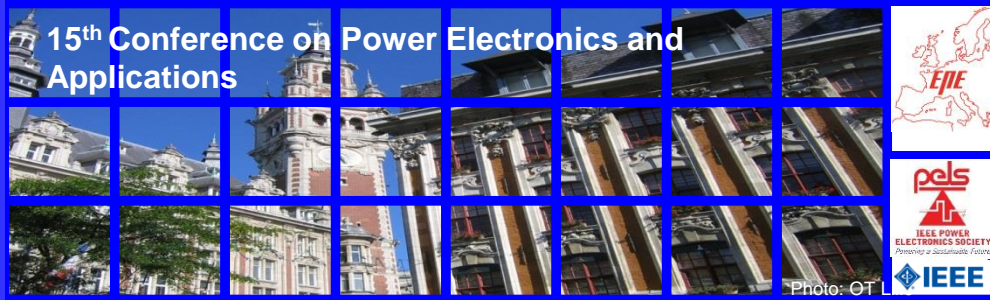
Battery is inserted inside the front wheel

Regenerative braking is allowed

This bike is used by policeman in New York

*Used by:*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**Watt's Up S4**



### **Features**

**Type:** electric bike

**Drive:** synchronous machine 250 W

**Speed max:** 25 km/h (15.5 mph) with assistance

**Battery:** lithium ion 24 V - 10 Ah

**Autonomy:** 30 - 35 km (18.6 – 21.7 miles)

**Weight:** 26.2 kg (battery: 3.1 kg)



### **Particularities**

Drive is inserted inside the front wheel

Transmission: 7 gears

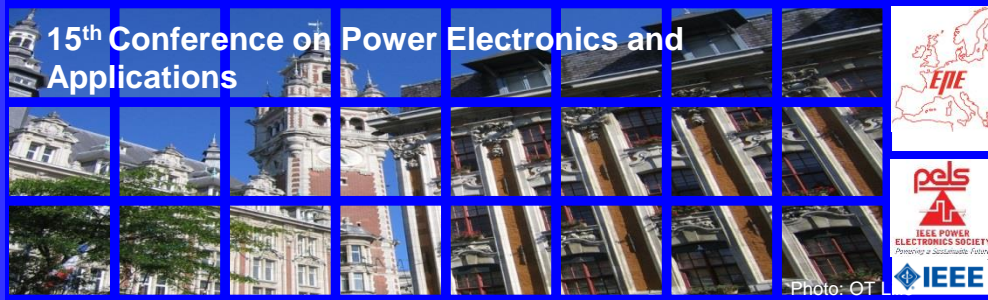
Charging time: 4h 30min maximum

*Saled by:*

Altermove

La boutique du déplacement urbain





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*Germain*

***E-Gret One***



### **Features**

**Type:** electric scooter

**Drive:** synchronous machine 250 W

**Speed max:** 20 km/h (12.4 mph) with assistance

**Battery:** lithium ion 36 V - 8 Ah

**Autonomy:** 23 km (14.3 miles)

**Weight:** 15.5 kg



### **Particularities**

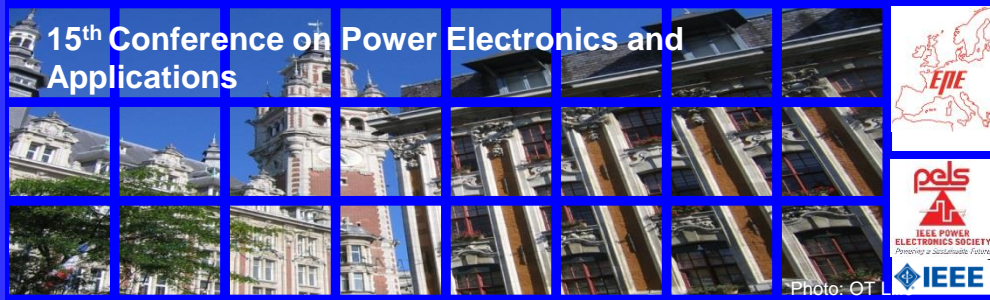
Transmission: 3 gears

Charging time: 4 hours

*Saled by:*

Altermove  
.com  
La boutique du déplacement urbain





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*Spain*

***E-Motion City 28***



### **Features**

**Type:** electric bike

**Drive:** brushless synchronous machine 250 W

**Speed max:** 25 km/h (15.5 mph) with assistance

**Battery:** lithium ion 26 V - 8 Ah

**Autonomy:** 35 - 70 km (21.7 – 43.5 miles)

**Weight:** 21,8 kg (battery: 2,3 kg)



### **Particularities**

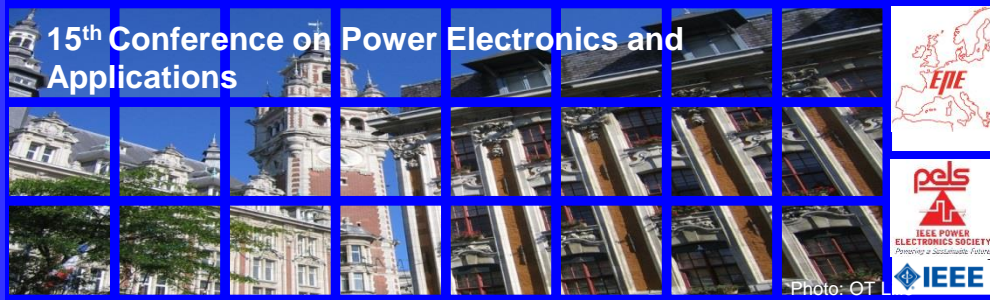
Battery and controller are hidden in the frame

Transmission: 8 gears

3 assistance modes: Eco, Standard, Sport

*Used by:*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**V'Lille**



### **Features**

**Type:** electric bike

**Drive:** electrical machine 250 W

**Speed max:** 25 km/h (15.5 mph) with assistance

**Battery:** lithium Iron 24 V - 10 A

**Autonomy:** 25 - 45 km (15.5 – 28 miles)

**Charging time:** 5 hours



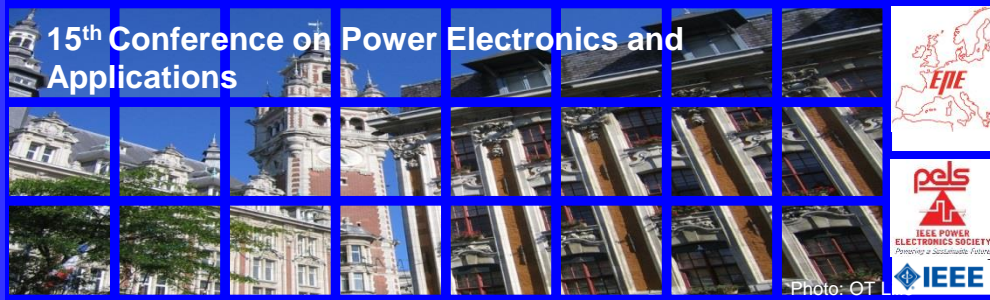
### **Particularities**

Battery are located under the rear luggage rack

Transmission: 6 gears

*Exploited by:*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*Germain*

***Velo Taxi***

**veloform**

### **Features**

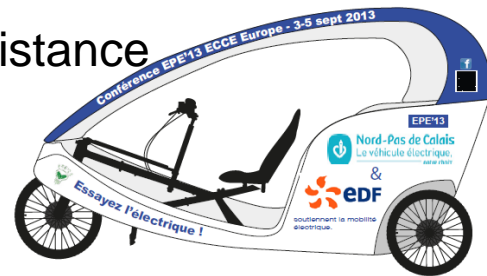
**Type:** electric bike

**Drive:** electrical machine 250 W

**Speed max:** 25 km/h (15.5 mph) with assistance

**Battery:** Lead acid (12 V – 17.2 Ah)

**Weight:** 150 kg



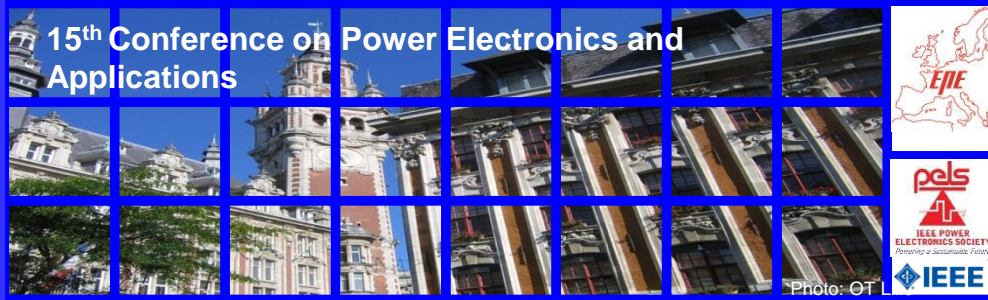
### **Particularities**

This bike is used by the EPE conference to reduce the ecological conference foot print.

This bike is financed by EDF and the Nord-Pas-de-Calais council



**Nord-Pas de Calais**  
Le véhicule électrique,  
notre choix.



## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**GNS Plug**



### **Features**

**Type:** Charging station

**Plugs number:** 2 or 4 plugs

**Delivered power:** 3 to 22 kWh per plug

**Output voltage:** 230V AC +/-10%

**Output Current:** 0-32 A AC

**Weight:** 20-37 kg



### **Particularities**

The most adaptable charging station on the market

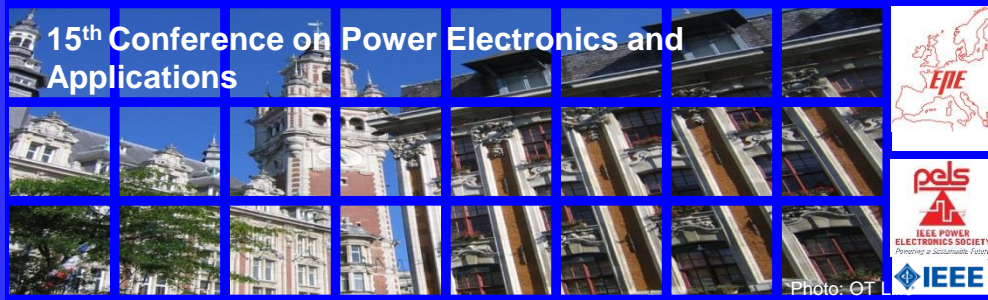
2 versions: wall or ground-mounted

2 plug version: domestic plug and type 3

*Manufactured by:*







## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

**BBR Plug**



### **Features**

**Type:** Charging station

**Plugs number:** 1 or 2 plug(s)

**Delivered power:** 3 to 7 kWh per plug

**Output voltage:** 230V AC +/-10%

**Output Current:** 0-32 A AC

**Weight:** 21,5-30,5 kg



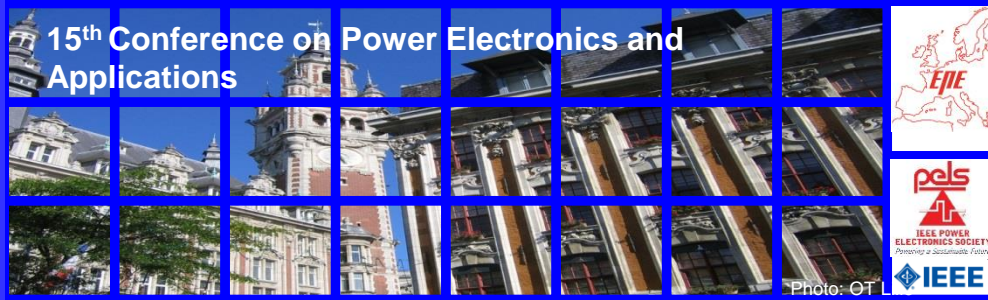
### **Particularities**

Diameter: 14 cm

2 plug version: domestic plug and type 3

*Manufactured by:*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **Name**

*France*

***EV Stream Plug***



### **Features**

**Type:** Charging station

**Plugs number:** 1 plug

**Delivered power:** 3 to 7 kWh

**Output voltage:** 230V AC +/-10%

**Output Current:** 0-32 A AC

**Weight:** 4 kg - 16 kg

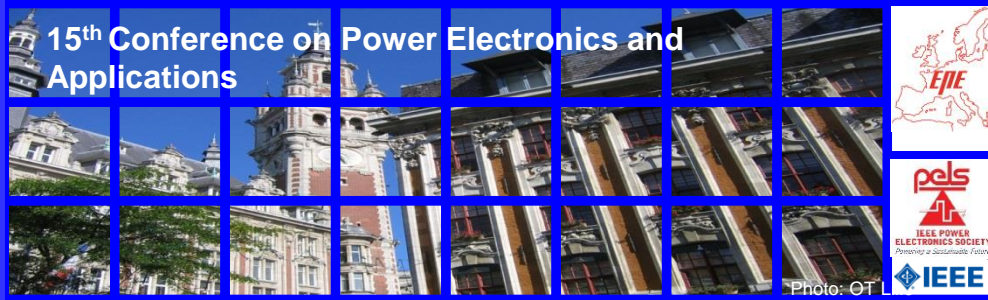


### **Particularities**

1 plug version: domestic plug and type 3

*Manufactured by:*





## **ELECTRIC & HYBRID VEHICLES AWARENESS FORUM**

### **"Carbon Care" actions**



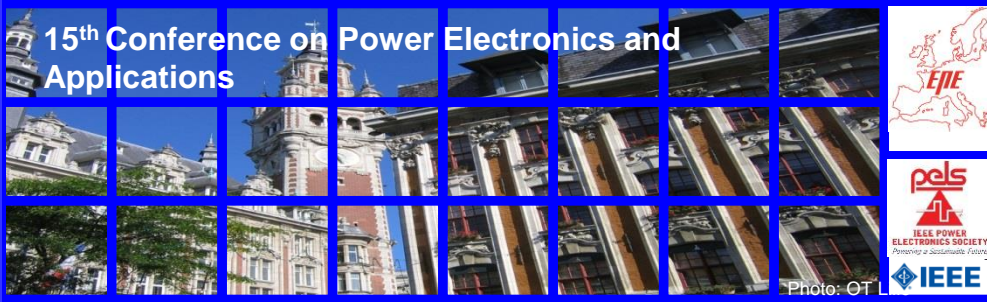
#### **Three steps for a more environment friendly conference**

- 1. Reduction of the ecological footprint of the conference (e.g., taxi-bikes)**
- 2. Estimation of greenhouse gases (GHG) emitted by the conference**  
→ 1203 tons equivalent CO<sub>2</sub> (90% from transport)
- 3. Regional and international projects for GHG mitigation**
  - Trees plantation in a Northern France Park  
→ 51 oaks (local mitigation) (e.g. 2010)
  - The reforestation of a National Park of Argentina  
→ 7.6 ha of young trees (global mitigation) (e.g. 2010)



EPE'13  
ECCE Europe

3-5 September 2013  
Lille, France



# ELECTRIC & HYBRID VEHICLES AWARENESS FORUM

Thank you contributors  
of the awareness forum

Altermove  
La boutique du déplacement urbain



Vrije  
Universiteit  
Brussel

15h30  
INTERNATIONAL

Distributeur officiel  
Dolphin  
electric scooters and bikes



Nord-Pas de Calais  
Le véhicule électrique,  
notre choix.



Université  
Lille1  
Sciences et Technologies



Transpole  
Lille Métropole

