



LIGHTNING
MOTORCYCLES

eMoto-Biography The Lightning Story



Ride the Lightning®



Ride the Lightning®



Lightning builds electric motorcycles that are powerful, responsive and precise to meet the demands of those who desire the pinnacle in motorcycle technology and performance. Elegant on the boulevard, eager on the road and dominant at the track.

Lightning has been the leader in electric motorcycle innovation, performance and engineering excellence since our founding in 2006 and the introduction of the Lightning E1, the first lithium battery sport bike in the world.

Lightning devoted our first nine years to research and development, followed by five years of rigorous testing, validation and winning in competition. Lightning began production after receiving our NHTSA and USDOT certifications in 2016. Lightning does not cease in the continual development of technological advancements in E-Moto mobility. Our latest innovation, the fastest fast charging available, the XFC® Xtreme Fast Charge System that can charge a 28.3kWh battery pack to 80% SoC in only 10 minutes.

Ride the Lightning is a register trademark of Lightning Motors Corporation.

Engineered by Enthusiasts for Enthusiasts





From The Beginning

Lightning Motors was founded by Richard Hatfield who after 25 years building a financial company decided to combine his passion for motorcycles with his commitment to the environment.

In 1995, Richard was invited to be the driver for an electric Porsche race team dedicated to winning a national electric vehicle road race championship. At that time, the battery technology didn't provide enough energy density, but the electric Porsche provided a glimpse into the possibilities of electric vehicle technology and ignited Richard's interest.

As a lifelong motorcyclist Richard believed that the lighter weight and aerodynamics of 2-wheel vehicles was better suited to the energy density of batteries.

This was the beginning of Lightning Motors Corporation quest to achieve parity with internal combustion engine motorcycles.

Since our founding Lightning has made continual e-Moto advancements with innovative and creative solutions, meeting the challenges and resulting in accomplishments once only imagined.



Nine years of research, development, reliability and durability validation in competition and in the hands of customers.



Founded in 2006 and in production since 2016.

Vision, Passion & Commitment



Innovation Through Competition

In 2006 when lithium battery technology became available, Lightning converted a Yamaha R1 race bike into the Lightning E1, which was the first lithium battery electric sport bike in the world. The E1 provided proof that lithium battery motorcycles could compete with gas motorcycles.

Based on our initial success, Lightning designed and built a new prototype electric superbike. In October 2009 Motorcyclist magazine proclaimed that "The Salt Flats Have Never Been This Quiet!" when Lightning broke a longstanding landspeed record at Bonneville.

Lightning continued developing the technology and won the first North American Zero Emissions Championship in 2010.

In 2011, Lightning broke its own landspeed record twice more and became the 1st electric motorcycle to exceed 200 mph.

Lightning continued the success in the 2012 FIM TTXGP ePower race series by achieving two 1st place finishes at Infineon Raceway, a 1st at the Laguna Seca race and winning the FIM World Finals at Le Mans, crowning Lightning as the FIM TTXGP World Champion.



Lightning crowned the 2010 FIM North American Champion TTXGP Zero Emissions Race Series ridden by Michael Barnes.



Lightning LS-218 World Land Speed Record 215.907 hitting 218mph at Bonneville Salt Flats ridden by Paul Thede.

Exceeding Expectation



Proven Performance

Each of these accomplishments was one step closer to Lightning's goal of winning a major motorsports event against the world's top ICE motorcycles. In 2013, Lightning won first overall at the Pikes Peak International Hill Climb beating every gas and electric motorcycles by over 20 seconds with a 10:00.694. An electric motorcycle record that has never been beat.

This was a historic milestone for Lightning. An accomplishment of a goal that only a few years prior most experts thought was impossible. With the Pikes Peak win, Lightning began to convert electric motorcycle skeptics into believers.



Lightning 2012 FIM World Champion TTXGP series after 1st place at Le Mans ridden by Miguel Duhamel.



Lightning performs extensive aerodynamic wind tunnel and CFD (Computational Fluid Dynamics) testing.



Pikes Peak International Hill Climb 2013, Carlin Dunne on his LS-218 first overall - beating every gas and electric motorcycle by 20 seconds with a 10:00.694.

Turning Skeptics Into Believers



Notable Lightning Milestones

2006

1st Lithium Battery
Sport Bike in the World
The Lightning E1

Lightning Motors Corp.
Founded in Silicon Valley
California, USA

2007

Lightning engineered &
developed a battery pack
and software to convert Prius
to PHEV mode. This project
was used by GM in their
Chevy Volt benchmark tests

2008

1st Lithium Battery ATV
in the World

2009

Our 1st E-Motorcycle World
Land Speed Record
173.038mph

Introduce CNC billet aluminum
chassis and swingarm

2010

Lightning FIM North
American Champion
E-Power TTXGP Series

2010

1st Electric with Motor &
Battery as Stressed
Chassis Member

1st Production Electric
Motorcycle with Oil
Cooled Motor

1st Production Electric
Motorcycle with all
Carbon Fiber Bodywork

Modular chassis design

2011

1st E-Motorcycle
to break 200mph
At Bonneville SCTA
World Record 215.907
Top speed 218mph

2012

Lightning FIM World
Champion TTXGP series
after win at Le Mans

1st Electric Race Team
to use energy from
Solar Power to charge
motorcycles in
competition

2013

1st Overall Pike's Peak
beat the world's best Gas
and Electric racing
motorcycles by
20 seconds, 10:00.694
electric record that still
stands

2014

1st AI Generative
Design Titanium
Swingarm – under 10lbs

1st Electric Motorcycle
Concentric / Eccentric
Swingarm Mount for
Tuning Weight Transfer
Swingarm available in
Aluminum Alloy or
Carbon Fiber

2016

NHTSA and
USDOT Production
Certification

LS-218 In Production
200hp / 900 lb ft torque
200+ mph
.40 hp/lb power to
weight ratio

2016

LS-218R First 750vdc
Production Motorcycle

2018

LS-218RR First 800vdc
Production HyperBike
Introduced

The Blade Fully Enclosed
Urban Commuter Introduced

2019

CCS Level 3 DC Fast
Charging Introduced as
standard equipment

Strike C 140hp
Introduced .29hp/lb
Under \$20,000

2020

Lightning Streetliner
Aero Strike 20kWh battery
200 mile hwy range

2022

XFC® Xtreme Fast Charge
System available up to
28.3kWh - 10 minute charge
time 20% to 80% SoC,
up to 120kw charge rate

2023

Strike R 151hp /
600 lb ft torque
Introduced .31hp/lb
power to weight ratio

LS-218 power increase
to 263hp / 1,100 lb ft
torque
.53 hp/lb power to
weight ratio

2024

Lightning Tachyon NB
Streetliner top speed
250+ mph – built with
lightweight Niobium
alloy components

Strike RR 194hp /
600 lb ft torque
Introduced .40 hp/lb
power to weight ratio

E-Moto Accomplishments Once Only Imagined





Leadership In Innovation



Lightning E1 debut in 2006
World's First Lithium Battery
Sport Bike



LS-218RR
Hyperbike 800v
200+ mph with
Carbon Fiber
Swingarm

Oil cooled motor on all LS-218s



Streetliner
Aero Strike
30% More
Highway
Range

200 mile range
65 mph highway speed



LS-218 Superbike
First Overall with
10:00.694 Minute Record
Run At Pikes Peak Beat
All Gas and Electrics
by 20 seconds



LS-218
Superbike
263hp
1,100 lb ft
200+ mph
.53 hp/lb

Since 2010 motor a stressed
member of chassis



2024 Strike RR
194hp

2022 Strike R
151hp

Lighter weight 481lbs
with 20kWh battery



Use of Lightweight
Materials Carbon Fiber,
Niobium alloys,
Aluminum, Titanium
improves range,
handling and braking



2012 First Solar
Power Charging
in Competition



Lightning Smart Dash
Set Riding Modes,
Regen Braking
& Charge Rate



First AI Generative
Design swingarm
under 10 lbs cast
titanium in 2014



2019 Strike C 142hp



Sparc
Mini-Moto
35hp
85 mph



Lightning Tachyon NB
Streetliner Niobium
alloy components



LS-218 Superbike
218mph at Bonneville
World Record



Swingarm
Extensions
for drag racing
or land speed
record



CNC Billet Aluminum &
Carbon Fiber Swingarms with
Concentric / Eccentric mount
for tuning weight transfer &
lower unsprung weight



10 minute charge times to 80% with
XFC Xtreme Fast Charge The Fastest
Fast Charging Available On Any Electric



1st Lithium Battery
ATV in the World
2008



Blade enclosed
commuter

Regen
Activated Brake
Light for Safety



CCS Level 3 DC Fast Charging
(up to 120kw) introduced
2019 as Standard Equipment
NACS J3400 compatible



2010 FIM North American
TTXGP Series Champion

2012 FIM TTXGP World
Champion after win at
Le Mans

Continual Technology Advancement In E-Moto Development



Lightning Proficiencies

Competencies	Capabilities	Internal Resources
Electric Powertrains	Mechanical Engineering	CNC Machining
Electric Motors	Electrical Engineering	Carbon Fiber Manufacturing
Motor Housings	Software Engineering	Dynojet® Dynamometer Testing & Tuning
Battery Packs	AutoDesk AI Generative Design / CAD	Wind Tunnel Testing
Chassis Design	Concept to Prototype	CFD – Computational Fluid Dynamics Testing
Gear Reduction Units	Battery Systems Design	Fast Parts Prototyping
Inverters / Controllers	Drive System Design	3D Printing
Battery Management Systems	Reliability and Durability Testing	Design Modeling Digital, Clay & 3D
Battery Charging Systems	Aerodynamic Testing	AI Generative Design
Thermal Dynamics	Vehicle Validation	Fabrication
Aerodynamics	Regulatory Compliance	Spray Booth
Solar Charging		Assembly
Mobile Energy Storage		

Nearing 20 Years of EV Industry Expertise





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Lightning Motors Corp

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United States of America

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