



Tesla Model 3 China Benchmark Report ***Analysis for \$40,000 USD***

The Munro US Long Range Premium Package Model 3 cost analysis reconfigured to a Standard Package Trim level.

Purchasers of this report will receive the following:

All Report Costs Represented in RMB

A. Zone Quick Cost Estimate Reports with Zone Summaries

- Zone 1** Body and Chassis
- Zone 2** Controlling Electronics
- Zone 3** Interiors and Safety
- Zone 4** Powertrain and Battery Pack

B. Vehicle Costed Bill of Material (CBOM) with weights and most materials identified.

- CBOM reports the vehicle as manufactured in China using China material, machine, and labor rates.

C. Side by Side Report

- US manufactured Long Range Premium Package compared to China manufactured Long Range Premium Package and Standard Package.



Description of the Analyzed Tesla 3

Base or Standard Equipment Trim Package

- ❖ The Base Model 3 at \$35,000 has been promised for almost a year now and its launch date continues to be delayed. The Base Model 3 is expected to have:
 - 258 HP, 317 lb-ft torque, all-electric RWD using one rear drive MGU for the rear wheels.
 - 50 kWh microprocessor controlled, lithium-ion battery
 - 264 miles of range
- ❖ Munro has disassembled the Premium Package Tesla Model 3 down to: nuts, bolts, sensors, PCBs, battery pack, control management, drivetrain, etc. This package has been de-contented and reconfigured to develop the Standard Equipment package.
- ❖ Munro documented our assumptions and findings related to weights, number of parts, materials and suppliers, where possible, and conducted a complete Munro Vehicle Quick Cost Analysis.
- ❖ Technical Disclaimer: The goal of this analysis is to establish a should cost value for manufacturing the vehicle and its sub-systems. These cost totals do not include tooling, Engineering Research and Development (ER&D), testing and calibration, or logistics.

Report Delivery

- ❖ All reports and accompanying deliverables will be made available for easy access through a secure File Transfer Protocol (FTP) site.
- ❖ A user-friendly PDF format will help ensure that customers can easily locate a wide range of materials in addition to the reports.
- ❖ The large reports utilize hyperlinks within a table of contents to facilitate the ability to easily navigate throughout the contents and quickly find specific data and information to meet user needs.

Tesla Model 3 Teardown and Benchmarking Study



Cost Estimates

Each Zone is broken down to systems and components for Quick Cost Estimating (QCE). QCE is gaining popularity due to the need for speed-driven results. In response, Munro has developed a proprietary methodology. Quick Cost estimates provide the customer with approximate versus detailed costs which are more expensive and time consuming to generate. A Quick Cost analysis will deliver complete vehicle estimates with an accuracy of +/- 8%. This level of accuracy provides OEM's and Suppliers the ability to make sound comparisons and directional decisions.

[Richman from EPA]

“Munro is recognized as being technically competent, highly experienced, knowledgeable, and creative in benchmarking and lean engineering of automotive and non-automotive systems. Costing models are thorough, covering all elements of total production cost.”

Costed Bill of Materials

Material Name	Material Name	Supplier Name	Total Cost*	Weight (kg)	Item Qty	Weight (kg)
...

Low Voltage Wire Harnesses

- Total Terminal
- Total Connector
- Located: Main attached to front Harness routed to dash panel, a

Component Summary

Zone	Zone 2: Controlling Electronics
System	Low Voltage Wire Harnesses
Part	Wire Harness Assy Main LV Power Distr, Front Trunk
Supplier Name/Code	-
Material	Wire Harness

Data & Power Outlets

Component Summary

Zone	Zone 2: Controlling Electronics
System	Data & Power Outlets
Part	Power & Data Module, Console
Supplier Name/Code	-
Material	Commodity Item
Parts	1
Fasteners	0
Total Weight (kg)	0.07

Material Cost**

Process Cost

SG&A and Profit

Total Cost*

* Excluding tooling, ER&C
** Includes material cost

Disclaimers

This cost analysis utilizes the Quick Cost Estimating method:

Quick Cost Estimating (QCE) is gaining popularity due to the need for speed driven and accurate results. In response, Munro has developed a proprietary methodology. The goal of QCE is to provide the customer with approximate, rather than technical costs which are much more expensive and time consuming to generate. A QCE's level of accuracy provides customers with the ability to make sound comparisons and directional decisions with confidence.

The QCE process starts with the disassembly of the vehicle and the creation of a bill of materials and a bill of process within Design Profit® Software, which is referred to as a cost map. For each component in the Design Profit® cost map, properties such as material, manufacturing process, complexity, weight, size, etc. are analyzed to determine how it should be costed. The QCE process relies on Munro's expertise, knowledge base, process calculators, and supporting labor, material, and manufacturing & machinery databases. The costs reported for this analysis will include material costs (raw material & purchased parts), process costs (manufacturing and assembly of components), and final assembly costs for the supplier and OEM.

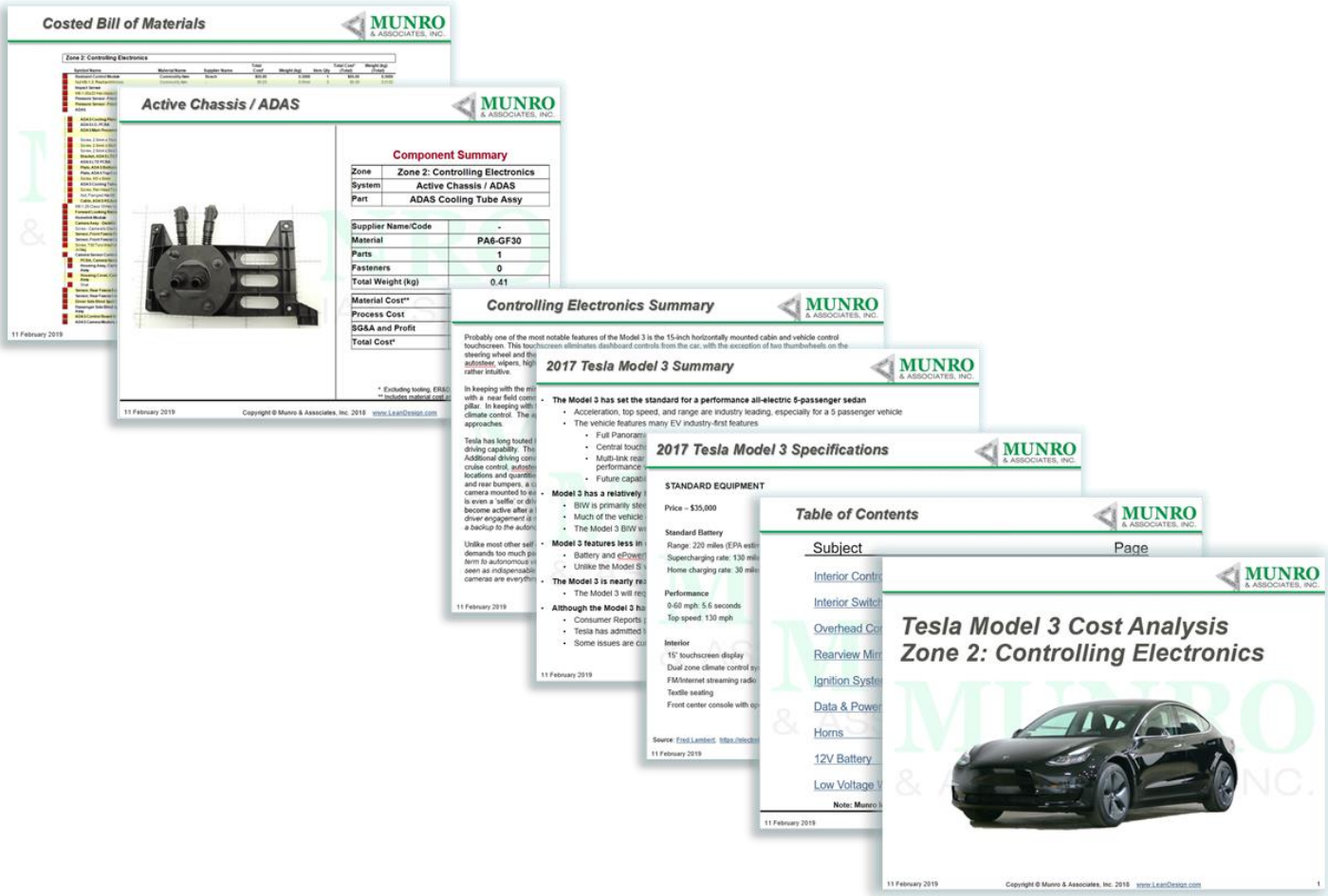
Tesla Model 3 Teardown and Benchmarking Study



A

Model 3 Zone Benchmark Report

- ❖ The Benchmark Report is highly advantageous for OEMs or Tier Suppliers looking to effectively expand and compete in new EV markets.
- ❖ The report is a comprehensive cost analysis of all four Zones of the vehicle.
- ❖ This report contains descriptive and pictorial detail on every facet of the vehicle from manufacturing to Quick Cost Analysis.
- ❖ Those who purchase the report will receive:
 - a. Vehicle Executive Summary
 - b. Zone Summary
 - c. Zone Quick Cost Estimate by sub assembly and component
 - d. Zone Costed Bill of Material



Tesla Model 3 Teardown and Benchmarking Study



B

Vehicle or Zone Summary Costed Bill of Material

- ❖ The vehicle costed bill of material is a consolidated view of the information presented in the Zone reports. An overall vehicle CBOM report is provide, in addition to CBOM sections at the end of each Zone report.
- ❖ The bill of material is an indented format and includes:
 - Part name
 - Material
 - Supplier (as is feasible)
 - Total Cost
 - Weight
 - Quantity
 - Total Weight

Tesla Model 3							Total Cost*	Weight (kg)
Symbol Name	Material Name	Supplier Name	Total Cost*	Weight (kg)	Item Qty	Total Cost* (Total)	Weight (kg) (Total)	
■ Rear Shock Assembly	Multiple							
■ Rear Coil Spring Assembly	Commodity Item							
■ Rear Spring Bottom Pad	NBR							
■ Rear Coil Spring	Commodity Item							
■ Rear Spring Top Pad	NBR		\$0.93	0.1180	1	\$0.93	0.11	
■ Bolt Lwr Control Arm to Rear Cradle Assy	Commodity Item	-	\$0.60	0.1492	2	\$1.20	0.29	
■ Nut Lower Control Arm to Rear Cradle Assy	Commodity Item	-	\$0.10	0.0322	2	\$0.20	0.06	
■ Bolt, Suspension Link Toe to Rear Cradle Assy	Commodity Item	-	\$0.44	0.1065	2	\$0.88	0.21	
■ Washer, Suspension Link Toe to RR Cradle	Commodity Item	-	\$0.11	0.0276	2	\$0.22	0.06	
■ Nut Suspension Link Toe to RR Cradle Assy	Commodity Item	-	\$0.06	0.0189	2	\$0.12	0.03	
■ Bolt Upper Top Control Arm to RR Cradle Assy	Commodity Item	-	\$0.45	0.1142	2	\$0.90	0.22	
■ Nut Upper Top Control Arm to Cradle	Commodity Item	-	\$0.10	0.0322	2	\$0.20	0.06	
■ Bolt M12 Lower Suspension Link Rear to RR Cradle	Commodity Item	-	\$0.31	0.0963	2	\$0.62	0.17	
■ Bolt Upper Control Arm Link to RR Cradle	Commodity Item	-	\$0.32	0.0963	2	\$0.64	0.17	
■ Nut Upper Control Arm Link to RR Cradle Assy	Commodity Item	-	\$0.07	0.0212	2	\$0.14	0.04	
■ Nut M10 Swaybar Link to Swaybar	Commodity Item	-	\$0.05	0.0147	2	\$0.10	0.02	
■ Bolt M6x1x15 ABS Sensor Wire Brkt to RR Knuckle	Commodity Item	-	\$0.02	0.0071	2	\$0.04	0.01	
■ Mounting Bracket, RR Sups. Assy, RH	Steel 1018 - Coil	-	\$0.88	0.2724	1	\$0.88	0.27	
■ Mounting Bracket, RR Sups. Assy, LH	Steel 1018 - Coil	-	\$1.03	0.2735	1	\$1.03	0.27	

Side by Side Summary Example

Please note the costed bill of material is provided in PDF format and will not be available or provided in Excel.




C

Side by Side Report

- ❖ The vehicle Side by Side Report is a high level comparison between three vehicle trim packages. It compares the US built Long Range & Premium Trim Package, Estimated China built Long Range & Premium Trim Package, and Estimated China built Standard Range & Trim Package.
- ❖ The report provides a comparison of total cost and weight between the three different trim packages. A quick analysis explaining the difference between trim packages is included on system slides.


Side-by-Side Comparison

Rear Suspension




US Premium Tesla Model 3

Cost	Weight (kg)



China Premium Tesla Model 3


Cost	Weight (kg)




China Standard Tesla Model 3

Cost	Weight (kg)


Tesla Model 3 Side-by-Side Analysis



USA
Long Range Premium Package



China
Long Range Premium Package



China
Standard Package

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C

Side by Side Report

- ❖ The China Version of the Tesla Model 3 is currently a speculative estimate of the vehicle content and cost that will be produced out of the future Tesla China production plant. As the plant is not currently operational, and has yet to produce any vehicle, estimates of Production, Performance, and Trim level differences are based on published information when available, or based on automotive industry typical trends related to option and trim level adjustments of content.
- ❖ The adjustments made in content, shown on the two previous pages, are typical of industry and do not effect what are believed to be the main selling features of the Model 3. Below is a list of additional content that could be removed in a more aggressive content adjustment of the vehicle to a standard trim package. However, these adjustments do represent an impact on primary features of the vehicle.
- ❖ These cost totals do not include tooling, Engineering Research and Development (ER&D), testing and calibration, logistics, or other Tesla overhead costs related to sales, marketing, etc.
- ❖ Assume that the Standard Trim Level Vehicle will have the same Sales Price in the US and China, since it will be produced in-country and will not be subject to tariffs.
- ❖ US Sales Price is \$35,000, per Tesla publications.
- ❖ Exchange Rate is ¥6.79 to \$1.
- ❖ All Labor Rates were adjusted based on Economic Data for the differences between the US and Chinese Market
- ❖ All Material Costs per Kg were adjusted based on market research for the differences between the US and Chinese Markets



FAQ (Frequently Asked Questions)

- ❖ Was Tesla involved in the study?
No, Tesla proprietary costs nor any Tesla 3 suppliers quoted costs were used in this study.
- ❖ Is there any Tesla 3 propriety (stolen) IP in this report?
No. All data was developed through Munro's proven methodologies from th purchased production Tesla 3
- ❖ Is the car costed using only NAFTA costing centers?
Yes, Munro includes labor, factory floor cost, taxes and SG&A for OEM or Tier Suppliers.
- ❖ Is this a Costing or Pricing report?
This is a Costing Report. Pricing has too many variables.

Legal Disclaimers & Sales Condition

- ❖ How can I see the sample report before purchasing?
Please contact your regional Munro sales person. They can provide sample information in digital PDF format NOTE: critical data will be hidden in the sample.
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Internal Company correspondence is authorized.
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- ❖ If there is a request for someone from Munro to visit and to explain in detail the report, is it possible to do or is it included in the price of report?
No, it is not included in the price of report.
Munro will visit if the customer pays for the travel and daily fee.
- ❖ If there are a few but specific questions on the content of report, is it possible to support a phone or e-mail communication?
Yes, please contact the local area sales person and we will respond with our answers.