



MUNRO



2022 TEXAS

- VS -

2020 CALIFORNIA

TESLA MODEL Y

COMPARISON

AND

BATTERY REPORT



COMPARISON REPORT OVERVIEW

This report provides a cost analysis of the parts and labor associated with the manufacturing and assembly of a 2020 Fremont, California and a 2022 Austin, Texas built Tesla Model Y. The vehicles are compared to highlight execution differences and their impact on vehicle cost and weight.

The report outlines carry over, modified, and unique assemblies between the 2020 Fremont and the 2022 Austin versions of the Tesla Model Y.

Unique	Completely different Part or Assembly from 2020 Model Y
Modified	Part or Assembly retains common hard points but is in some respects different than on the 2020 Model Y
Carry Over	No change in Part or Assembly from 2020 Model Y

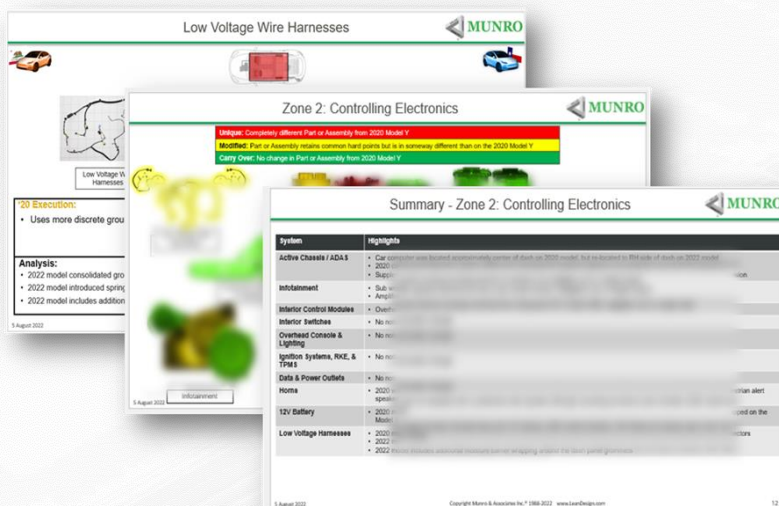
- The 2020 Tesla Model Y was produced in Fremont, California. The vehicle was one of Tesla's first application of a heat pump and three-piece rear body casting. It had a conventional under-slung battery pack secured to the underside of the floor pan. The battery pack was comprised of 2170 cells.
- The 2022 Austin, Texas Tesla Model Y also includes a heat pump and incorporates the notable evolution of a single piece rear body casting, a single piece front body casting, and a structural battery pack comprised of 4680 cells.

COMPARISON COST PROCESS

The 2020 Model Y cost model baseline was generated by disassembling the vehicle and capturing the assembly operations and component weights in Munro’s Design Profit® software. The fabrication processes were then mapped to determine materials and manufacturing process costs. Using the 2020 Model Y cost model, the 2022 Model Y unique and modified assemblies were estimated using Munro’s Exclusion Costing process. The 2022 Tesla Model Y ECUs and other electronics were not dismantled and analyzed in this report. As such, differences in semi conductor selection that may have led Tesla to a new part revision were noted but not further analyzed.

ZONE SUMMARIES

- The report is broken down into four vehicle zones. The execution differences within each zone subsystem are highlighted and analyzed to define weight and cost deltas.
 - Zone 1 – Body and Chassis
 - Zone 2 - Controlling Electronics
 - Zone 3 – Interior and Safety
 - Zone 4 - Powertrain and Battery Pack



The screenshot displays three overlapping windows from the Munro software. The top window is titled 'Low Voltage Wire Harnesses' and shows a wire harness diagram. The middle window is titled 'Zone 2: Controlling Electronics' and features a red and yellow banner with the text: 'Unique: Completely Different Part or Assembly from 2020 Model Y' and 'Modified: Part or Assembly retains common part points but is in some way different than on the 2020 Model Y'. The bottom window is titled 'Summary - Zone 2: Controlling Electronics' and contains a table with the following data:

System	Highlights
Active Chassis / ADA's	<ul style="list-style-type: none"> • Car computer uses bonded electronic power of each on 2020 model, but is located in the side of each on 2022 model • 2020: • 2021: • 2022:
Infotainment	<ul style="list-style-type: none"> • 2020: • 2021: • 2022:
Interior Control Modules	<ul style="list-style-type: none"> • Over:
Interior Switches	<ul style="list-style-type: none"> • No in:
Overhead Console & Lighting	<ul style="list-style-type: none"> • No in:
Ignition Systems, RKE, & Tires	<ul style="list-style-type: none"> • No in:
Data & Power Outlets	<ul style="list-style-type: none"> • No in:
Home	<ul style="list-style-type: none"> • 2020: • 2021: • 2022:
12V Battery	<ul style="list-style-type: none"> • 2020: • 2021: • 2022:
Low Voltage Harnesses	<ul style="list-style-type: none"> • 2020: • 2021: • 2022:



BATTERY REPORT OVERVIEW

This report provides additional details on the 2022 Austin version of the Tesla Model Y 4680 structural battery pack.

- Intra-pack thermal circuit illustrating cooling lines and connections for coolant and refrigeration fluids. Both heating and cooling circuits are included.
- Pack electrical topology including electrical and electronic component locations, HV and LV wire harness layouts, connection points.
- CAD illustrating the Pack components and its BIW packaging
 - CAD layout of the battery pack top, bottom and penthouse covers and internal battery pack components (excludes penthouse components).
 - Attachment points to the BIW and packaging reference to the BIW sills and giga-castings.





REPORT PRICING

Many elements from the prior 2020 Model Y Benchmark report are used in the 2022 Model Y reports to provide background and elaborate on the cost progression and cost deltas. The addition of the 2020 data brings relevant value and context to the 2022 Model Y report. Accordingly, the pricing of the 2022 Model Y Comparison and Battery reports is contingent on the prior purchase of the 2020 Model Y Benchmark report.

1. Clients who purchased the 2020 Model Y Benchmark report are offered the following at a discount.

2022 Model Y Comparison & Battery Report

2. All other Clients will need to purchase the 2020 Model Y report in conjunction with the 2022 Model Y Comparison and Battery reports.

Contact for pricing

Please contact reports@leandesign.com for inquiries.



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REPORT DELIVERY

- All reports and accompanying deliverables are made available for easy access through a secure File Transfer Protocol (FTP) site.
- A user-friendly PDF format ensures ease of viewing, sharing, and printing.
- The large reports feature a linked table of contents, allowing users to easily navigate the report contents and quickly locate specific data.



FREQUENTLY ASKED QUESTIONS

- **Were any OEMs involved in the study?**

No. Neither Tesla nor any supplier's quoted costs were used in this study.

- **Is there any Tesla proprietary information in this report?**

No. All data was developed through Munro's proven methodologies, obtained by analyzing Munro's purchased production-version Model Y.

- **Are the components costed using country specific costing centers?**

Yes. Munro uses country-specific labor rates and working patterns, factory floor costs, utility rates, and loan interest rates.

- **Is this a Costing or Pricing report?**

This is a Costing Report. Pricing has too many variables.

- **How can I receive more details on the contents of the reports?**

Questions regarding report contents should be sent to reports@leandesign.com. Munro will respond with clarification, and if necessary, meet virtually to discuss and review. Complex and/or detailed requests may require additional consulting fees.

- **Are Sample reports available?**

Sample reports are available. Please contact reports@leandesign.com

Note: Some data may be redacted.