



RAYMOND
ENERGY ⚡ SOLUTIONS

Raymond’s commitment to innovation and improvement drives everything we do. Our team works closely with you to understand your energy needs and deliver solutions tailored for both your current and future goals.

MISSION:

Enabling the transformation of material handling through intelligent energy solutions that power vehicles, facilities, and progress—sustainably and efficiently.

VISION:

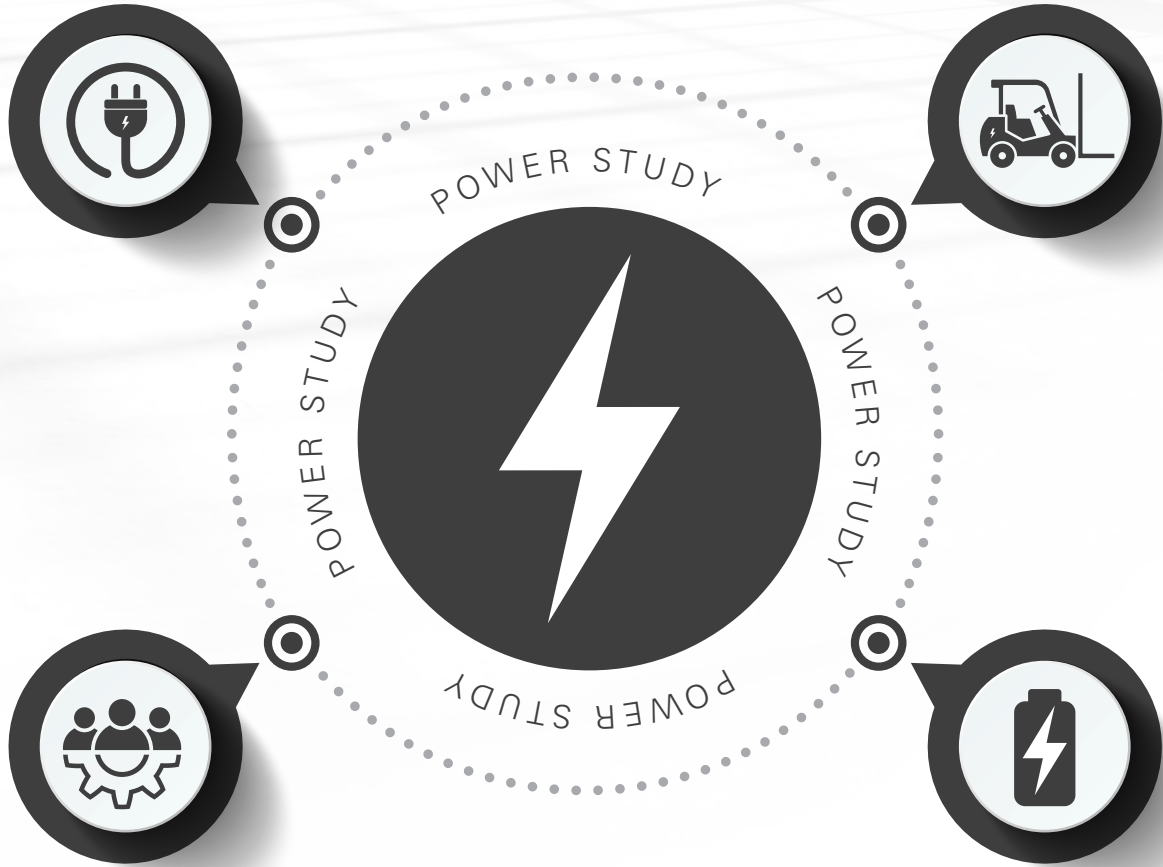
Advancing efficient, clean energy innovation that optimizes operational performance while driving sustainability across the material handling industry.

FACILITY ENERGY

- Consumption Economics Modeling / Reporting
- On-site Storage plus Solar
- Peak Shaving, Demand Response, & Load Shifting
- Energy Asset Manager

SERVICES

- Power System Maintenance
- Captive Leasing
- Training
- Recycling
- Energy Asset Manager
- Energy as a Service (EaaS) & Professional Services



TRUCKS

- Eco-Performance
- Integrated CAN Communication to Battery & Charger
- Tuning & Optimization for Lithium & HFC
- Plug & Charge

ENERGY PRODUCTS

- Lead Acid
- Lithium-Ion (NMC & LFP)
- Hydrogen Fuel Cells
- Universal Chargers (LAB, LIB, TPPL)



	<div>Pb</div> <div>LEAD-ACID</div>	<div>Pb²</div> <div>ADVANCED LEAD-ACID (TPPL)</div>	<div>Li</div> <div>LITHIUM-ION (LFP)</div>	<div>Li²</div> <div>LITHIUM-ION (NMC)</div>
CHARGING	Conventional / Opportunity	Conventional / Opportunity	Fast Charge	Fast Charge
APPLICATION	Light / Medium / Heavy 1/2/3 Shifts	Medium Duty 1/2 Shifts	Medium Duty 2+ Shifts	Heavy Duty 3 Shifts
AVAILABLE VOLTAGES	24V, 36V, 48V, 80V	24V, 36V, 48V	24V, 36V, 48V	24V, 36V, 48V
WARRANTY	Value Flat-Plate: 2 Years Full Conventional Flat-Plate: 5 Years Full Premium Flat-Plate: 5 Years Full/1600 Cycles Essential Tubular, Low Maintenance Tubular, Max Performance Tubular: 5 Years Full + 1 Year Prorated/1800 Cycles	Small Format (137Ah): 3 Years Battery 2 Years On-board Charger Large Format (660, 700, 770, 840Ah): 4 Years Full + 1 Year Prorated* <i>* Requires standard WiiQ</i>	5 Years / 3500 Cycles	8 Years / 5000 Cycles
CAPACITIES	Premium Flat-Plate: 85, 100, 125Ah Conventional Flat-Plate, Essential Tubular: 85, 125Ah Low Maintenance Tubular: 90, 100, 125Ah Max Performance Tubular: 100, 140Ah	137, 660, 700, 770, 840Ah	456, 604, 912Ah	282, 564, 846, 1128Ah
USE IN COLD STORAGE	Yes Max Performance Tubular Only	No	Yes	Yes* <i>* Limited applications</i>
RECOMMENDED FOR HARSH ENVIRONMENTS	No	No	Yes, IP69 Rating	No
UL LISTING	Type E and EE	Type E and EE	UL 2580	UL 2580
MAINTENANCE	Extensive	No watering or weekly equalize charging, periodic inspection recommended	No watering or weekly equalize charging, periodic inspection recommended	No watering or weekly equalize charging, periodic inspection recommended
DATA CONNECTION	Data Communication with iBATTERY Product	Data Communication with iBATTERY Product	Integrated CAN Communication (PSI)	Integrated CAN Communication (PSI)
COST PER KWH	\$	\$\$	\$\$\$	\$\$\$\$

BATTERY
QUICK
COMPARISON

LEAD ACID BATTERIES

Lead acid batteries offer a lower upfront cost and operate effectively within a variety of applications.



- + Full range of flat-plate and tubular lead acid batteries available
- + Multiple SKUs available for Quick Ship
- + 24V, 36V, 48V, 80V*
- + 184 - 1440Ah

* Available upon request



EASILY ACCESS
BATTERY ACCESSORIES
AND PARTS WITH
RAYMOND’S EXCLUSIVE
iPARTS® WEB PORTAL.

ADVANCED LEAD ACID BATTERIES



Small Format

- + Thin Plate Pure Lead (TPPL)
- + 24V
- + 137Ah
- + E or EE Rated
- + On-board charger



Large Format

- + Thin Plate Pure Lead (TPPL)
- + 24V, 36V, 48V
- + 660, 700, 770, 840Ah
- + Conventional/Opportunity charge 1-2 shifts

LITHIUM-ION BATTERIES

Lithium-ion batteries deliver greater efficiency, superior capacity retention, faster charging, longer run-times, and a lower total cost in a reliable, low-maintenance power solution.



Energy Essentials Distributed by Raymond
Lithium-ion Battery

- + 24V, 36V, 48V
- + 282, 564, 846, 1128Ah
- + 8 years / 5000 cycles warranty
- + 3 shift ambient and/or high-usage application
- + Single cable battery



Raymond Lithium Battery

- + 24V, 36V, 48V
- + 456, 604, 912Ah
- + 5 years / 3500 cycles warranty
- + Cold storage (internal thermal management)
- + Harsh environments (IP69 rating)
- + Dual cable battery



8250 with integrated Lithium-ion Battery

- + 24V
- + 105Ah and 210Ah
- + Integrated heaters, drive away protection
- + EE Rated



8210 Aftermarket Option

- + 24V
- + 105Ah
- + Integrated heaters
- + EE Rated

CHARGERS

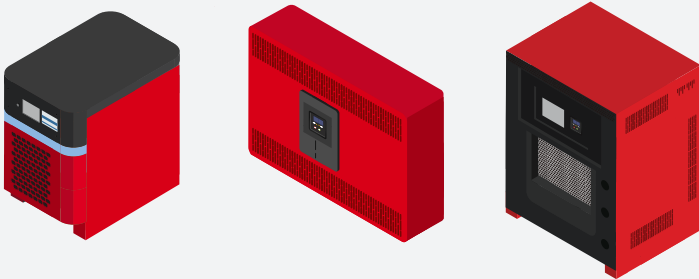
Battery chargers for every material handling environment, budget and battery type. All backed by the industry’s only six-year standard warranty.

Lithium-ion Battery Chargers

- + ACT Quantum Charger
- + Power Designers Charger

Lead Acid Battery Chargers

- + Stryten Charger
- + Power Designers Charger



Single cable batteries (Energy Essentials Distributed by Raymond lithium-ion batteries) require single cable chargers.

Dual cable batteries (Raymond Lithium batteries) are compatible with single or dual-cable chargers.



ALTERNATIVE ENERGY SOLUTIONS

Raymond will work hand-in-hand with customers who need advanced energy solutions, like fuel cells. Our energy team will partner with these customers to meet their energy strategies.

Hydrogen Fuel Cells

- + Alternative power source that supports emissions and sustainability goals
- + Highly scalable and effective even in cold storage environments

INTEGRATION

WHAT IS PSI AND PSL?

To protect operators and equipment, sudden loss of power to an industrial truck with electric brakes is unacceptable. Raymond requires either power source limiting (PSL) or power source integrated (PSI) communication between the electric power source (EPS) and the truck in order to utilize a lithium-ion battery or a fuel cell.

- + Enables controlled deceleration when battery reaches 0% state of charge
- + Data from the CAN Bus integrated to the trucks vehicle manager

NO CAN BUS COMMS (NONE)

- + No communication to truck
- + No integration of data to truck dashboard or iWAREHOUSE
- + Battery state of charge (BSOC) via externally mounted display
- + Appropriate only with non-electric braking systems

NO CAN BUS COMMS (PSL)

- + Signal to the truck 10 seconds before shutdown, prevents electric brakes from abruptly locking
- + Battery state of charge (BSOC) is displayed on a separate externally mounted display

INCLUDES CAN BUS COMMS (PSI)

- + All functionality from no CAN bus communication (PSL), plus:
- + Enables lift interrupt capability
- + Battery data (battery state of charge (BSOC) & codes) displayed on the truck’s dashboard
- + All battery data integrated to iWAREHOUSE Energy Asset Manager reports

THERE ARE TRUCK SIDE CHANGE POINTS WHEN CONVERTING YOUR ENERGY SOURCE AND AN S207 IS REQUIRED.

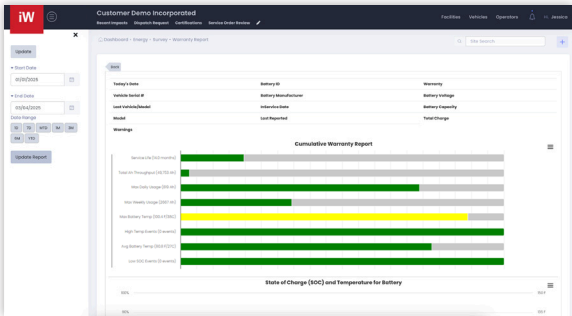
iWAREHOUSE® ENERGY ASSET MANAGER

- + Enables data-driven battery management of your power system, providing key statistics to help you maximize efficiency, prolong battery life, increase uptime, and reduce costs.

TO ACCESS ENERGY ASSET MANAGER:

- + iWAREHOUSE Telematics is required
- + Lead acid batteries require iBATTERY® Battery Monitoring Solutions
- + Lithium-ion batteries and fuel cells do not need anything additional, as they are part of the connected ecosystem

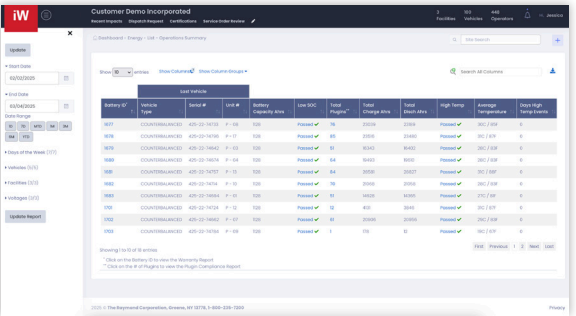
iWAREHOUSE ENERGY ASSET MANAGER REPORTS



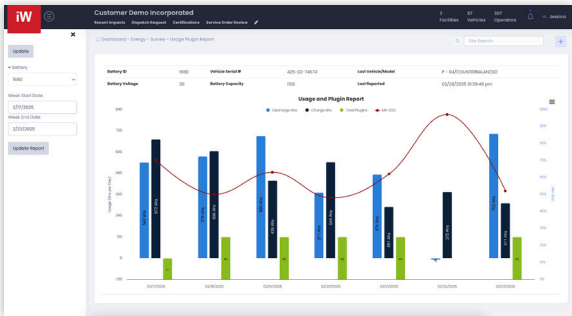
BATTERY WARRANTY REPORT



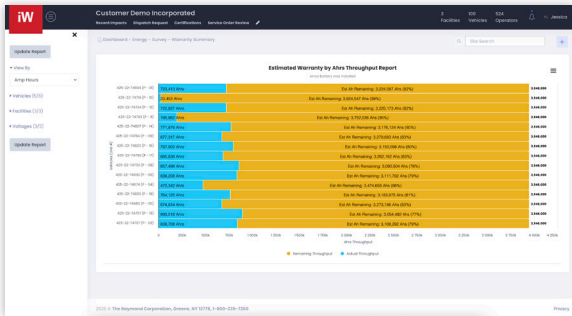
STATE OF CHARGE REPORT



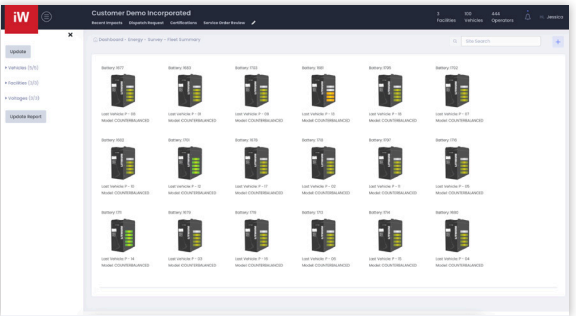
OPERATIONS SUMMARY REPORT



USAGE AND PLUGIN COMPLIANCE REPORT



FLEET WARRANTY REPORT



FLEET SUMMARY REPORT



POWER STUDIES

- + Can be completed on both electric and internal combustion forklifts
- + Performed in as little as 2 weeks
- + Receive a customized report based on application and your data that recommends the best energy source and capacity, charger size, strategic charger installation, cable management solutions, and lift truck parking options
- + Real time monitoring



PROFESSIONAL SERVICES

- Data analysts that work with you to understand your data and turn it into actionable insights that move your business forward
- + Identify, integrate and optimize the right energy management and control systems for your unique needs



ENERGY FINANCING

- Procure, maintain, and manage the energy solutions you need
- + Leasing with competitive residuals
 - + Rentals
 - + Other agreements
 - + Energy as a Service



CONSULTING

- + Meet sustainability goals
- + Cut energy costs
- + Create efficient processes
- + Understand how processes impact energy consumption



SUSTAINABILITY

Our complete family of material handling equipment and power solutions is engineered with sustainability in mind. Our clean technologies, including electric forklifts and a full suite of integrated energy solutions, are made to help you use energy more efficiently, reuse energy when possible, recycle materials, and reduce waste.

RAYMOND ENERGY SOLUTIONS ARE:

- + Designed to lower energy consumption, which means lessening your footprint
- + Manufactured from recyclable materials
- + Engineered to maximize energy efficiency without sacrificing performance

IMPROVING THE CIRCULARITY OF OUR PRODUCTS THROUGH:

- + Agreements with major recyclers nationwide
- + Lithium-ion take-back program to extend lifespan of lithium-ion batteries, and to recycle batteries ready for disposal

RAYMOND

ROI CALCULATORS

Available on raymondcorp.com

IC VS. ELECTRIC FORKLIFT CALCULATOR

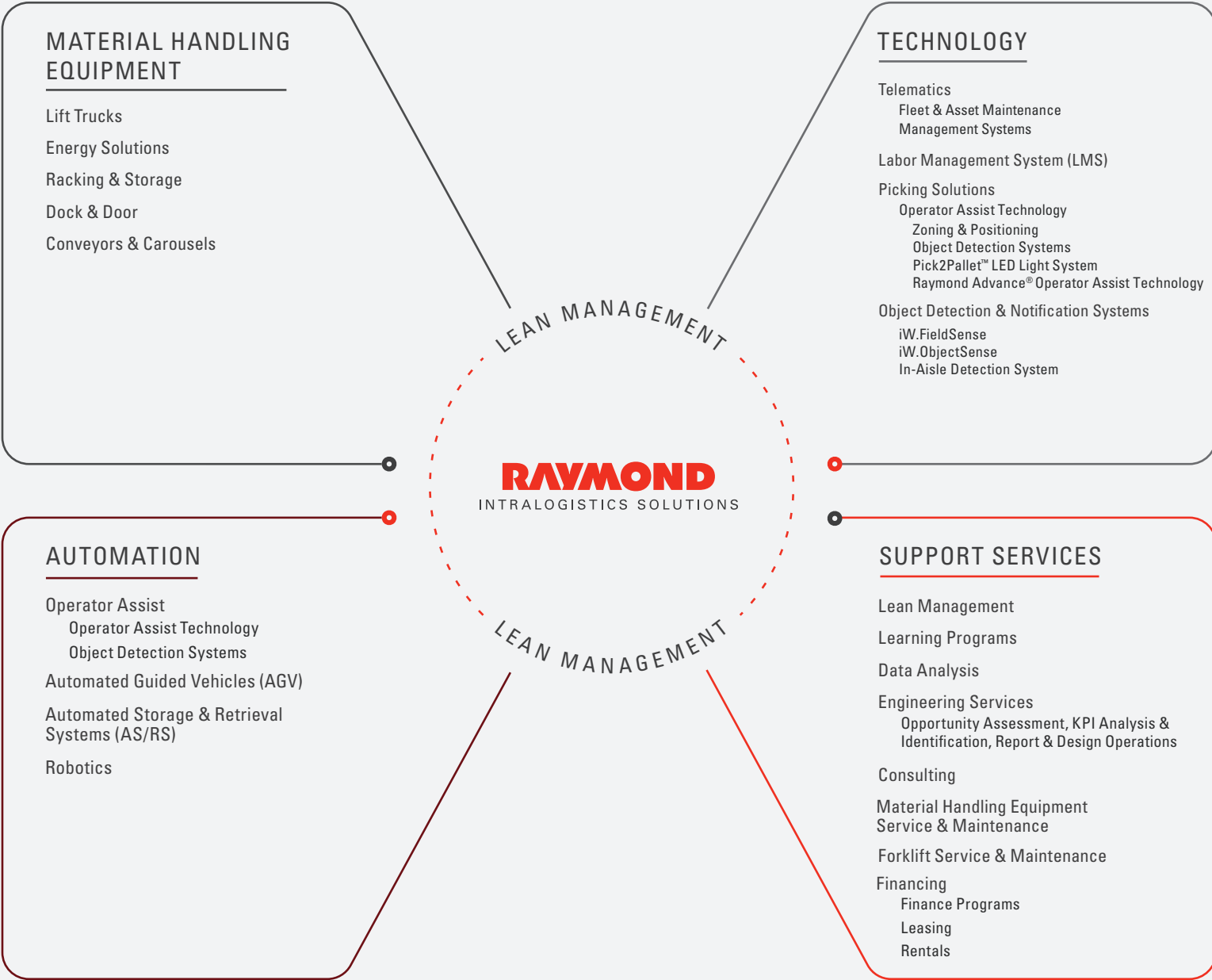
+ Cost of ownership summary

+ Cost savings per year

LITHIUM-ION ROI CALCULATOR

+ Visibility into costs associated with lead acid vs. lithium-ion batteries

+ Return on investment breakdown





End-to-Endless Solutions for Your Business

Raymond's energy offerings are part of our end-to-endless intralogistics solutions — a unique mix of innovative products, best-in-class methodologies and software-based, data-powered solutions that work together to help you achieve your goals.

Learn more at www.raymondcorp.com/products/energy-solutions

Due to continuous product improvement, specifications are subject to change without notice or obligation. Energy Essentials Distributed by Raymond, iBATTERY, iWAREHOUSE, iWAREHOUSE GATEWAY, and Raymond are U.S. trademarks of The Raymond Corporation. UL is a registered trademark of UL LLC.
©2025 The Raymond Corporation, Greene, NY. Printed in USA.