



Refrigerant Management

for Critical Cooling and Refrigeration

The Bacharach Parasense Platform: Refrigerant Management for Your Organization

The Parasense platform from Bacharach puts you in control of refrigerant management across your organization, from detailed single site analysis to full enterprise reporting:

- Confident compliance with legislation
- Reduce refrigerant use
- Increase plant performance
- Save operating costs, increase profit margins
- Identify maintenance requirements early
- Track and report against corporate sustainability goals
- Refrigerant intelligence providing complete visibility of consumption metrics
- Simple and easy to use system



Why Refrigerant Management?

Refrigerant Management is the efficient, safe and cost-effective operation of your refrigeration equipment. Today, this means complying with evolving legislation, ensuring product quality and the safety of colleagues and customers, reducing operating expense and improving margins, while striving for 24/7/365 equipment uptime.

Refrigerant management is not just a cost saving exercise. Effective management of your refrigeration is critical to your organization's success and ability to compete in your market. Your organization's reliance on refrigeration means that it is a strategic asset and should be treated as such.

Meeting Regulatory Requirements

Refrigeration equipment owners are required to keep robust records of the use of refrigerants, including the type and amount of each refrigerant in each piece of equipment, as well as the repair of identified leaks within a specified time range. For large, multi-site supermarkets, food processors, cold storage facilities, or data centers, this is a complex process that involves people at multiple locations, as well as repair and service contractors. For these organizations, managing refrigerant usage with spreadsheets is not a realistic option. Refrigeration equipment owners need a solution to track refrigeration assets, refrigerant usage, and leak repairs that can be securely accessed anywhere and at any time.

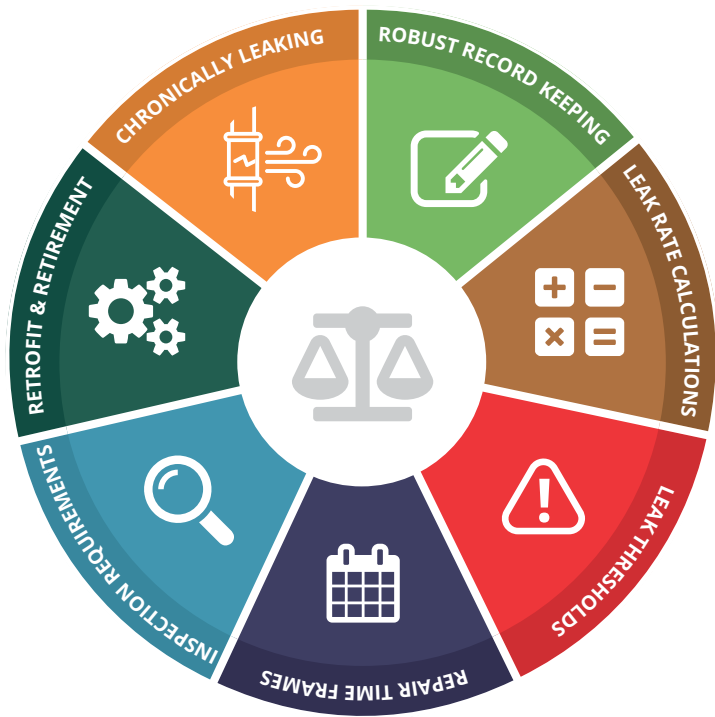


EPA Refrigerant Recycling and Emissions Reduction Program

It's important to use a system that ensures your compliance with the following EPA Section 608 regulatory compliance:

- Robust record keeping
- Leak rate calculations
- Equipment leak thresholds
- Leak repair time frames
- Leak inspection requirements
- Retrofit and retirement timescales
- Chronically leaking appliance reporting

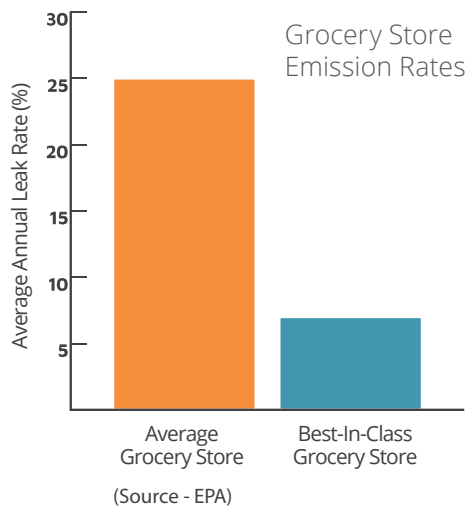
The Parasense refrigerant management and compliance software from Bacharach makes compliance as simple as possible. It blends a user toolset complete with compliance calendar, automated leak rate calculator, intuitive analysis, guided data entry and compliance reporting.



Operating costs

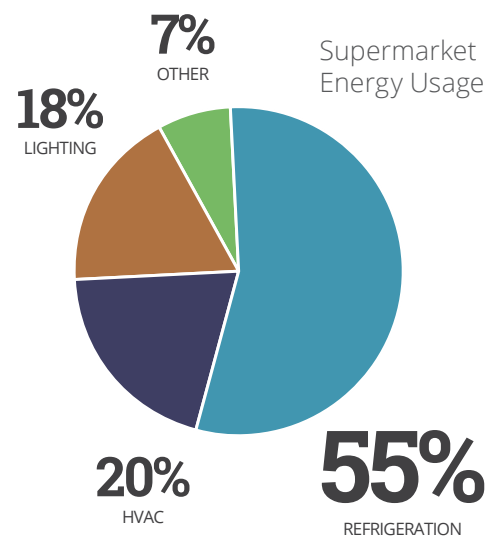
The average leak rate for grocery stores is estimated to be 25% per year. Best practice implementations can currently achieve leak rates of 7%.

As the cost of refrigerant rises, this has an increasing effect on an organization's profit. For an organization operating at 1% margin, saving \$10,000 in refrigerant re-charge is the equivalent to generating \$1,000,000 of revenue.



Energy efficiency

Combined refrigeration and HVAC can account for 75% of energy usage in supermarkets. Further, refrigeration equipment uses significantly more energy when the refrigerant charge is less than optimal. Ignoring the impact of low-level leaks on energy consumption is an ongoing and hidden cost.



Refrigerant Tracking and Compliance

With the Bacharach Parasense platform, it's incredibly easy to keep track of your refrigerants across your entire enterprise. We recognize that achieving compliance and best in class refrigerant leak rates requires close collaboration and team work between equipment owners, internal teams, and contracted service providers. This is why the Parasense platform has been designed to empower your teams to seamlessly work together. With no user limit or cost per user fee, your whole team can access and update your system ensuring you have the most up to date information at your fingertips.

Refrigerant Review

The Parasense platform refrigerant tracking dashboards empower owners to track refrigerant across all equipment over the entire enterprise. Users can review the cause of refrigerant emissions, identify opportunities for improvement, track repairs and ultimately minimize the consumption of refrigerant.



Leak Rate Calculations

Whenever refrigerant is added to an appliance, the 12 month rolling leak rate must be calculated. This is automatically carried out in the Parasense platform along with scheduling a leak check if the threshold is exceeded.

Aggregating leak rates at site, region and company level make it swift and easy to identify where to focus and prioritize resources to achieve your goals.

The screenshot displays the Parasense Leak Rate Calculations screen. The left sidebar contains navigation options: Refrigerant Tracking & Compliance, Refrigerant Usage, Compliance Calendar, Record Event, Site Inventory, and Reports. The main content area shows a 'Please select procedure' dialog box with various options for leak rate calculation and equipment management. The options include: Add Refrigerant, Leak Inspection, Leak Repair, Apply for Extension (Request), Refrigerant/Leak Decision, Repair/Plan, Retirement Plan, Refrigerant Recovery, Refrigeration Equipment Refill, Refrigeration Equipment Removal, EPA 125% Chronically Leaking Report, and Calibration (Leak Detection Equipment). Below the dialog box is a table of equipment units with columns for Equipment, Refrigerant, Full Charge, Manufacturer Model, Serial #, and Equipment Type. The table shows a list of equipment units with their respective leak rates and full charges. The table is scrollable, and a 'Next >>' button is located at the bottom right.

Equipment	Refrigerant	Full Charge	Manufacturer Model	Serial #	Equipment Type
5003	R-404A	100.00	100.00	100.00	Refrigeration Equipment
5004	R-404A	100.00	100.00	100.00	Refrigeration Equipment
5005	R-404A	100.00	100.00	100.00	Refrigeration Equipment



Reports and Notifications

Inspections can happen at any time, unannounced. When this happens, it must be simple for site managers to swiftly and seamlessly provide correct and accurate reports. One click reporting on the Parasense platform, make this as simple as possible. Meanwhile, periodic internal reports provide managers and teams visibility into the current state and performance of your refrigerant management strategy.

Regulation Workflow

The regulation workflow has been carefully designed to distill regulations into clear processes, procedures and tasks that are easy to understand and follow. All users are guided through the same, correct procedure and any compliance tasks are scheduled automatically.

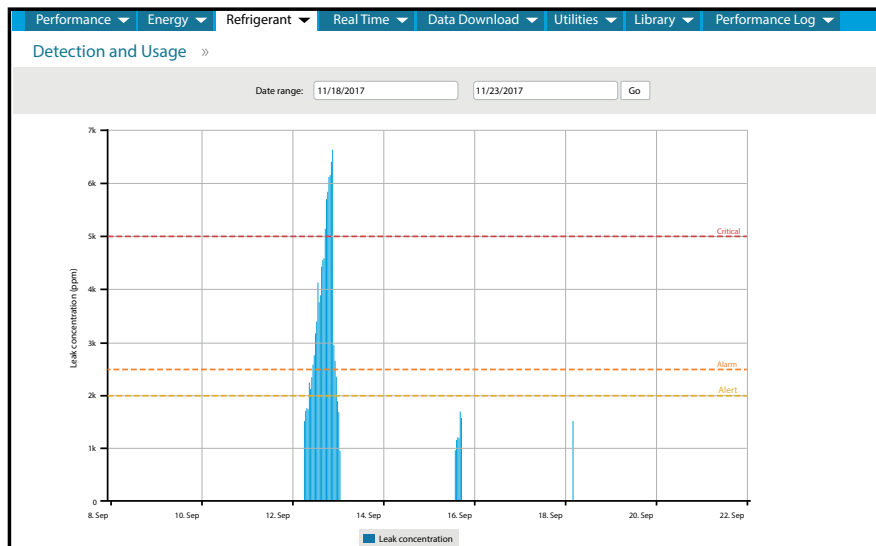
Compliance Calendar

Any up-coming actions and required compliance tasks are automatically scheduled by the compliance calendar. This provides ample opportunity for planning and collaboration between teams. The full history of all activities is also available here making it simple to retrieve and cross-reference historical events.

When	Where	What	Procedure	Who	Compliance Score	Event Id	Work Order Id	Go to...
Upcoming Tasks								
This Week (2)								
< 3 days 1/18/2020	9179 - Richmond North Region	Company employee R-404A (3 lbs)	Leak Inspection		★			Check For Leaks
< 3 days 1/18/2020	9179 - Richmond North Region	Self-administered R-404A (3 lbs)	Leak Inspection		★			Check For Leaks
Next Week (1)								
< 10 days 1/26/2020	9116 - South North Region	MSA? PROP. ROOM R-404A (30 lbs)	Leak Inspection		★			Check For Leaks
Historical Tasks								
This Week								
Last Week								

Automatic Leak Detection

Integrating leak detection with the Parasense platform gives the opportunity for rapid response times empowering engineering, refrigerant and maintenance managers to achieve the highest operational performance with the lowest refrigerant emissions and operating expenses.



Reducing Refrigerant Emissions

The cost of refrigerant is a major factor for implementing automated leak detection. Leak detectors designed for safety compliance (e.g. ASHRAE 15, EN 378) are not suitable for detecting low-level leaks.

Low-level leaks, from around 1 - 50PPM, need higher performance detection technology, as well as the flexibility to detect different refrigerant gases in the same environment. In areas that have frequent air exchanges, low-level leaks will simply not be found unless an automated leak detector with 1PPM detection capability is used.

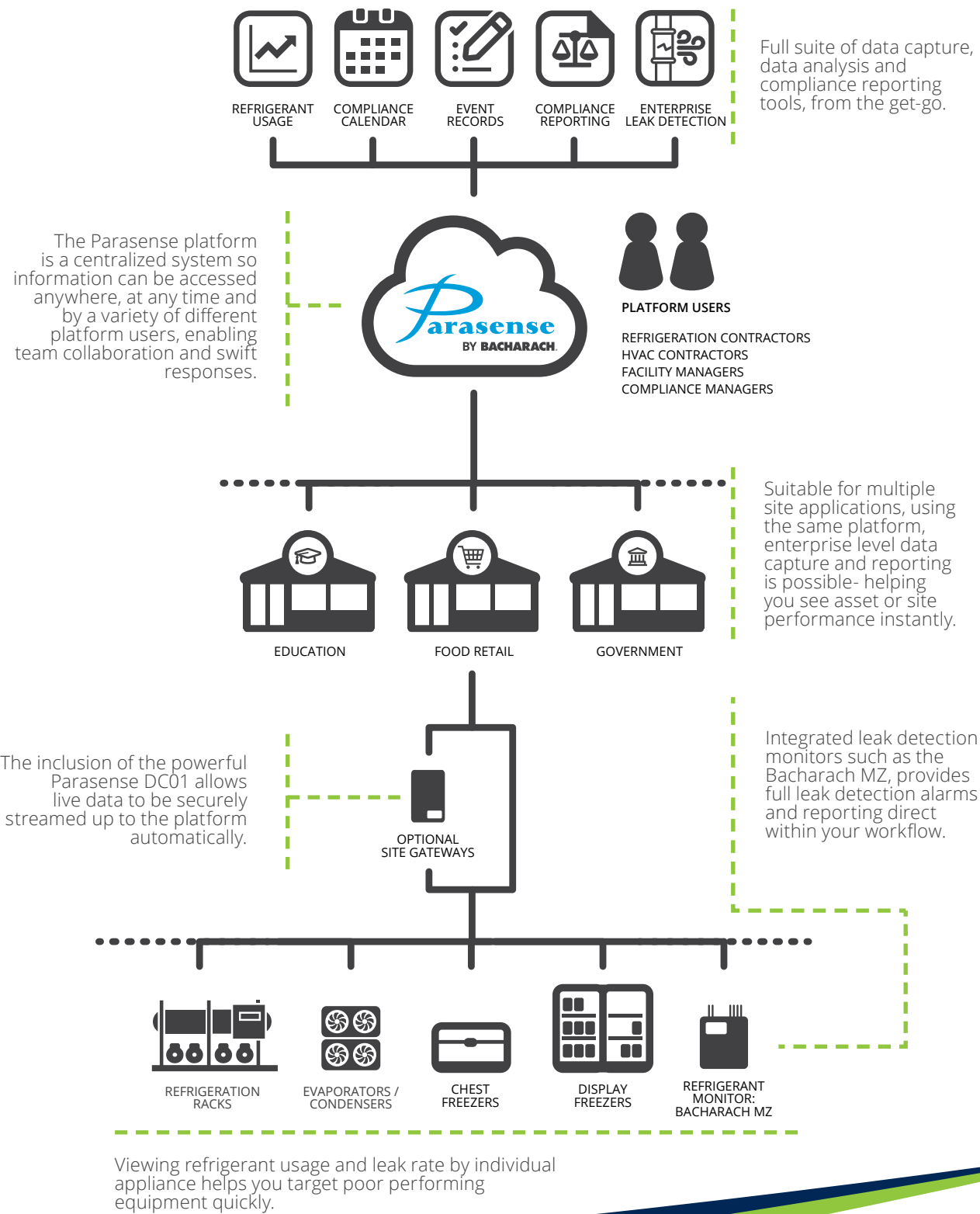


High Performance Refrigerant Monitoring

Bacharach's Multi-Zone (MZ) leak detection unit delivers the best refrigerant leak detection available, with industry-leading minimum detection levels of 1PPM for halogenated gases, the fastest sampling frequency and the widest range of refrigerants accurately detected, with 16 zone detection and over 60 gases.

The Bacharach MZ enhances effective refrigerant management, detecting leaks early to enable cost savings by reducing refrigerant recharge, enhancing energy efficiency and reducing risk of refrigeration failure and produce loss. The unit connects seamlessly with the Parasense platform providing live data feeds for refrigerant analysis and reporting.

Enterprise Level Features



Parasense Refrigerant Tracking & Compliance Software & Services

Not everyone has the team or resources to dedicate to implement an effective refrigerant management strategy so we have additional services to help make your organization a leader of sustainability.

Software

Use the Parasense Refrigerant Tracking & Compliance software to empower your team to effectively ensure compliance, manage refrigerant and coordinate technicians and contractors.

Refrigerant Tracking & Compliance Software

- Capture all information required for regulatory compliance
- Owner and contractor access
- Unlimited Users, Sites, and Equipment
- Easy online access to data for all stakeholders
- Automated notifications:
 - Upcoming required actions
 - Potential compliance violations
 - Compliance violations
 - To assist with contractor coordination to support regulatory requirements
- Compliance workflow to guide and support compliance with the following legislation:
 - EPA Section 608
 - CARB Sections 95380-95398
 - AQMD
 - EU 517/2014 (F-Gas)

TRAINING & SUPPORT:

- Online training materials

Managed Services

Let our experts manage your refrigerant compliance needs, coordinating technicians and sub-contractors, and support your teams in the event of regulatory action. Proactively highlighting areas of opportunity for reducing refrigerant usage and how to address them.

Software and Managed Services

- All of the software features plus...
- Parasense prepares and provides monthly refrigerant consumption progress reports
- Parasense provides ongoing support for management of site and equipment database.
- Parasense audits retrofit and retirement plans for compliance, and applications for compliance extension
- Parasense reviews database for contractor certification
- Parasense reviews and highlights subcontractors performance with respect to:
 - Completion of inspections
 - Repairs
 - Testing
 - Record keeping
- Parasense assists in the coordination of subcontractors to ensure timely completion of inspections, repairs, testing, and record keeping
- Parasense identifies and highlights areas of concern for compliance and increased refrigerant consumption
- Parasense reviews owner refrigerant tracking and compliance strategy implementation.
- Parasense reviews required reports for equipment owners to submit to regulatory bodies
- Parasense compiles and submits required data in event of regulatory body inspection or enforcement requests, liaising with regulatory body representatives

TRAINING & SUPPORT:

- Email & telephone support for equipment owners and contractors
- Custom team and contractor training by webinar and video conference with ongoing support
- Online training materials



Contact us now
Visit our website: www.mybacharach.com/refrigerant-management
or call: **(540) 948-9919** to find out more.

