

5 Valuable Metrics from a Connected Dust Collector That Can Make Your Job Easier

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If you work in Operations/Maintenance, Purchasing, or Environmental Health & Safety, you probably don't have a lot of extra time to think about your facility's dust collection system.

Your critical production equipment probably gets all the attention. You just want to know that your dust collection system is doing its job, so you can focus on yours.

What if rather than just sitting there in the corner, doing its thing, your dust collector could help make your job easier?

Well, now it can.

Donaldson's iCue™ connected filtration service connects to your dust collector, continuously monitors its operation, and provides real-time performance data that can make your job easier.

It's not often that a single piece of technology can benefit such a diverse group of manufacturing stakeholders, but that's exactly what the iCue service does. Operations/Maintenance, Purchasing, and Environmental Health & Safety professionals will have instant access to information that can help them reduce unplanned downtime, optimize collector efficiency, and confidently track compliance data. Easier than ever before.



**Operations/
Maintenance**



Purchasing



**Environmental
Health & Safety**



Accurate system performance information at your fingertips.

Until recently, monitoring a dust collection system meant manually reading instrument panels, then recording and interpreting the data — time-consuming tasks that may not provide all the information you need to make smart decisions.

Now, the iCue connected filtration service can handle that monitoring, putting accurate, real-time information at your fingertips to help optimize collector efficiency, reduce unplanned downtime, and simplify compliance documentation.

Data recorded manually can only reflect a point in time, but connected monitoring is continuous, letting you see trends and spot deviations, producing benefits for all stakeholders — Operations/Maintenance, Purchasing, and Environmental Health & Safety.

- **Minimal hardware — installs in minutes**
- **No need to modify or replace existing controller**
- **Automated data capture simplifies compliance reporting**
- **Secure cloud communication keeps data separate from your internal networks**
- **Early alerts so maintenance can address issues before they escalate**
- **Works with nearly all major dust and fume collector brands**

Stop replacing filters before their time (or worse).

In addition to helping ensure that your dust collection system is operating properly, the iCue service can help indicate when filters need replacing — so you can be sure you're getting maximum life and optimal performance from your filters.



5 Valuable Dust Collector Metrics... and Why They Matter.



1

Differential Pressure

Are your filters working properly?

A filter should be replaced when it's packed with dust and can no longer be pulsed off by the self-cleaning mechanism. When the Differential Pressure (DP) — the drop in pressure as air passes through the filter — exceeds recommended levels, the filter is likely expired.

The iCue service delivers:

■ Early alerts about potential filter issues

- A sudden spike can mean a plugged airline or failed cleaning mechanism
- A rapid drop can mean a ruptured or damaged filter
- In either case, you'll receive an alert so you can address the issue

■ Time to anticipate filter changes

- See when filters are approaching maximum life
- Plan filter changes around scheduled downtime

The iCue service can help you:



Ops./Maint.

- Anticipate filter changes
- Proactively address potential filter issues



Purchasing

- Reduce unnecessary filter changes
- Avoid expensive rush filter orders



EH&S

- Address potential emissions risks
- Automate critical compliance reporting



2

Particulate Concentration

Are you exceeding emissions or exposure limits?

Many industries have regulations for hazardous dust and fumes, so it's important to have your air quality tested, establish a baseline concentration, and track particulate levels to remain within targets. A small filter leak can go unnoticed and cause dust to exceed targeted levels.

The iCue service delivers:

- **An alert to prompt immediate attention before exposure limits are breached**
- **Accurate compliance data between tests**
 - Automates compliance data and air quality tracking
 - Can limit the number of expensive manual stack tests required by monitoring particulate trends in real time

The iCue service can help you:



Ops./Maint.

- Proactively address potential filter issues



Purchasing

- Limit additional testing expenses



EH&S

- Address potential emissions risks
- Automate critical compliance reporting



3

Compressed Air Pressure

Is your filter-cleaning mechanism working?

Most dust collectors have a self-cleaning mechanism that uses compressed air to pulse dust from the filters. If this mechanism is not working, dust can lodge in the filters, causing them to expire prematurely.

The iCue service delivers:

- Alerts when air pressure weakens
 - Maintenance can rebalance the system to restore normal cleaning
- Data for extending filter life
 - Increased filter lifespan can save significantly on parts, labor, and unplanned downtime

The iCue service can help you:



Ops./Maint.

- Identify self-cleaning mechanism issues



Purchasing

- Reduce unnecessary filter changes



EH&S

- Address potential exposure risks
- Automate critical compliance reporting

CASE STUDY

How Monitoring Compressed Air Pressure Saved Nearly \$20,000

A metalworking operation was seeing short filter life (less than six weeks) for unexplained reasons. Their iCue service data indicated the compressed air pressure was inadequate to pulse-clean the filters.

Adjusting the compressed air system extended the average filter life from six weeks to one year, saving \$19,703 annually in time, parts, and labor.



4

Relative Airflow

Are you pulling enough — or too much — air?

Insufficient airflow, the velocity of air moving through hoods and ducts into the collector, can leave nuisance dust in breathing zones, while too much airflow can draw in valuable process materials — or potential ignition sources.

The iCue service delivers:

- **Insight into system issues**
 - Low-trending airflow could mean a malfunctioning fan or a ductwork design issue
 - Overly-strong velocity could result in the loss of process materials and related revenue
- **Cost-effective filter replacement notifications**
 - Combined with DP, airflow data helps confirm when filters are nearing expiration. Replacing them when warranted, rather than at set intervals, helps maximize filter life and reduce costs.

The iCue service can help you:



Ops./Maint.

- Reduce unplanned downtime



Purchasing

- Reduce unnecessary filter changes



EH&S

- Address potential exposure risks



5

Hopper Obstruction

Are you risking dust back-up?

In dust collectors with a hopper and conveying system that handle agglomerative powders, humidity can condense the material and cause it to plug the equipment. Filtration stops and heavy dust can quickly back up into the facility's air.

The iCue service delivers:

- **Early plugging detection**
 - A hopper sensor triggers an alert when material begins to congeal, so crews can address the obstruction before it stops filtration
- **Clean-up cost management**
 - Preventing a full-blown obstruction can help reduce the potential for employee exposure, unplanned downtime, and labor costs associated with cleaning the collector and plant

The iCue service can help you:



Ops./Maint.

- Reduce unplanned downtime



Purchasing

- Reduce site clean-up labor costs



EH&S

- Address potential exposure risks

CASE STUDY

How Advanced Notice Saved \$6,000




A livestock feed mill filtered sticky material that frequently plugged the hopper and filled the plant with dust, requiring two hours of downtime and clean-up for every incident. Donaldson's iCue

connected filtration service provided earlier notice of hopper plugging, reducing the fix time to 15 minutes, avoiding clean-up costs, and saving \$5,899 per incident.



iCue Connected Filtration Service

Like we said, it's not often that a single piece of technology comes along that can benefit Operations/Maintenance, Purchasing, and Environmental Health & Safety professionals, but that's exactly what the iCue service does:

	 Operations/Maintenance	 Purchasing	 Environmental Health & Safety
Differential Pressure	<ul style="list-style-type: none"> Anticipate filter changes Proactively address potential filter issues 	<ul style="list-style-type: none"> Reduce unnecessary filter changes Avoid expensive rush filter orders 	<ul style="list-style-type: none"> Address potential emissions risks Automate critical compliance reporting
Particulate Concentration	<ul style="list-style-type: none"> Proactively address potential filter issues 	<ul style="list-style-type: none"> Limit additional testing expenses 	<ul style="list-style-type: none"> Address potential emissions risks Automate critical compliance reporting
Compressed Air Pressure	<ul style="list-style-type: none"> Identify self-cleaning mechanism issues 	<ul style="list-style-type: none"> Reduce unnecessary filter changes 	<ul style="list-style-type: none"> Address potential exposure risks Automate critical compliance reporting
Relative Airflow	<ul style="list-style-type: none"> Reduce unplanned downtime 	<ul style="list-style-type: none"> Reduce unnecessary filter changes 	<ul style="list-style-type: none"> Address potential exposure risks
Hopper Obstruction	<ul style="list-style-type: none"> Reduce unplanned downtime 	<ul style="list-style-type: none"> Reduce site clean-up labor costs 	<ul style="list-style-type: none"> Address potential exposure risks

The iCue service is available in the
US, Canada, Europe, and Asia Pacific.

To learn more about Donaldson's iCue connected filtration
service, or to schedule a free demo, contact us at:

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