CALUMINO
intelligent thermal sensing

How Intelligent Thermal Sensing Creates Productive, Cost-Efficient Workspaces

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The days of entirely in-person operations are gone. A [recent JLL survey](#) found that 87% of organizations have deployed a hybrid work model. While improving the employee experience is key driver of this shift—60% of companies cite it as a top priority—79% said the primary driver of their hybrid work program is optimizing space utilization.

Put simply, underutilized rooms are costly, while overutilized spaces can negatively impact employee performance. Intelligent thermal sensing from Calumino can help companies optimize workspace usage. **Here's how.**

THE NEED FOR INTELLIGENT WORKSPACE MANAGEMENT

Businesses recognize the need for effective workspace management, but several challenges can frustrate optimization efforts.

Employee Dissatisfaction

According to recent research from [The Journal of Buildings and Cities](), 81% of employees "expressed dissatisfaction with at least one aspect of their workplace, and 67% with more than one." Top issues include poor acoustics, inadequate temperature control, and limited space.

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These frustrations can negatively impact workspace utilization. For instance, if meeting rooms are not sized appropriately, employees may find themselves with either too much or too little space for their needs. A meeting for four people might end up in an oversized 20-person boardroom, while smaller spaces remain in high demand and overcrowded.

Space Bottlenecks

Businesses may also struggle with bottlenecks when space isn't properly utilized. Consider a team that reserves a meeting room but changes plans at the last minute without updating the booking system. The result is a space that goes unused and, unless a staff member walks by and looks inside, unnoticed.

Poorly Optimized Workspaces

Staff tend to congregate where they can easily communicate and collaborate. While this benefits productivity, too much of a good thing can negatively impact operations. For example, a communal working space designed for 20 employees might regularly host 30 or even 40. This leads to overcrowding and noise, making it difficult for staff to work.

Without intelligent monitoring, businesses may experience overbooked spaces on some days and underutilized areas on others. This inefficiency affects productivity and can increase operational costs as companies struggle to allocate resources effectively.

BENEFITS OF INTELLIGENT SENSING TECHNOLOGY

There are several different sensing technologies for detecting people in a space, but only thermal sensing can accurately count multiple people without compromising their privacy and at an affordable price point.

Traditionally, thermal sensors have been used solely as motion sensors to detect occupancy. A new type of sensor by Calumino utilizes proprietary MEMS technology to provide additional features. For example, it enables accurate people counting and tracking, allowing the collection of new data. In addition, Calumino's in-house artificial intelligence (AI) can detect human presence, accurately count up to 10 people, and pinpoint an individual's location within 10 square feet, all while protecting their privacy, thanks to Calumino's natively low 28x15 resolution.

Utilizing this data offers multiple benefits, including:

Optimize Space Usage

With Calumino's thermal sensing technology, businesses can accurately detect human presence and identify individuals' x-y location within a space. This provides valuable data on the number of people in a workspace at any given time, offering insights for more advanced analytics.

Potential options to optimize space usage include:

- **Improving office design:** Sensors determine where staff spend the most time and predict future space usage over weeks, months, or even years based on current usage patterns. This allows companies to redesign offices for maximum efficiency.
- **Reducing ghost bookings:** Captured usage data can help reduce the risk of "ghost bookings"—instances where rooms remain empty during reserved timeslots. New training or policies may be necessary to address these gaps.
- **Staggering staff attendance:** By analyzing when and how staff use office spaces, businesses can create staggered attendance schedules to ensure enough resources are available for all employees.

Enhance Employee Experience

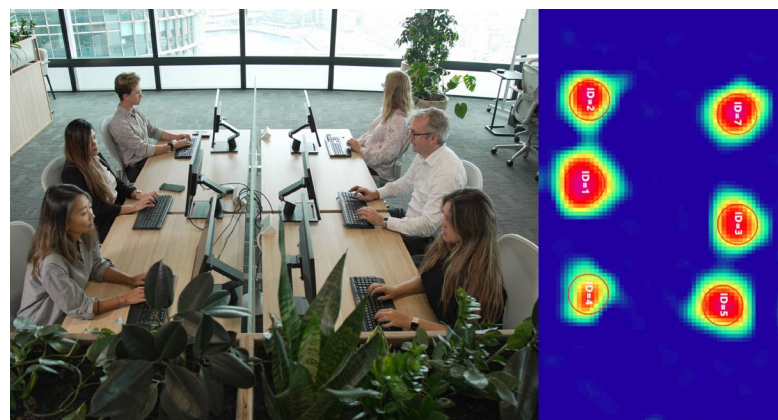Thermal sensing can also improve the employee experience by:

- **Providing the right furniture and equipment:** AI-enabled sensors from Calumino provide an accurate analysis of workspace occupancy. With this data, companies can ensure that frequently utilized spaces are equipped with floorplans, furniture, and amenities that make it easier for staff to work.
- **Increasing availability of highly desired spaces:** Occupancy data can help identify the days with the highest on-site attendance and whether actual space usage matches intended purposes. For example, if a conference room is meant for meetings but sensors show it's full of staff working every day, this may indicate a mismatch. Speaking to staff may reveal that other workspaces are either too crowded or poorly designed for the work they need to complete, leading them to use the room intended for conferences instead.

Optimize Operations and Save Costs

Finally, thermal sensing can help optimize operations and reduce costs. Possible use cases include:

- **Reducing space on lease:** Sensor data can pinpoint how many people are in a space versus its listed capacity. If staff numbers consistently exceed intended capacity, this may indicate the need for a redesign or a shift to new spaces. Examining data over time, meanwhile, can help companies predict how much square footage they will likely need in the future.
- **Optimizing cleaning patterns:** Analysis of staff usage patterns can pinpoint office areas that require more regular cleaning and those that can be cleaned every two weeks or every month. This helps reduce total cleaning costs and ensure highly used areas are safe and sanitary.
- **Reducing HVAC and lighting costs:** Uniform policies for heating and lighting can cost companies money. By using sensor data to determine where staff spend most of their time, companies can create room- and time-specific HVAC plans informed by actual usage.

MAKING THE MOST OF SMART THERMAL SENSING WITH CALUMINO

Thermal sensing allows companies to improve the employee experience, reduce overall costs, and enhance operational efficiency—all while maintaining strict privacy standards.

The challenge? Balancing price and performance. With AI-enabled, next-generation smart thermal sensors from Calumino, companies can have the best of both worlds: intelligent thermal detection that pinpoints employee positions but keeps their privacy intact.

Make the most of smart thermal sensing with Calumino.
Get your evaluation kit today.