

Overview: The Peppermill Casino in Reno, Nevada was in need of a lint filtration system to handle its heavy-duty laundry operation. They contacted Air Dynamics who was able to provide a superior LRS II system that filters all lint prior to exhausting into the facilities ducting.



Peppermill Hotel and Casino

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The Application:

Peppermill Casino in Reno Nevada was concerned about accumulating too much textile lint from their continuous laundry and operations. Their current lint removal system was inefficient and maintenance intensive. With the near 24/7 operation at the Peppermill Resort, the volume of particulate, and the fine grain nature of the lint, caused it to pass through the mesh screen in the outdated lint systems. Realizing the seriousness of the issue, such as the increased risk of fire, the management at Peppermill worked with Maxwell Mechanical and Air Dynamics to find a solution to their challenge.

The Challenge:

Peppermill had new ironers that generated more lint into the production area, creating a fire hazard. While the laundry facility was still safe for the time being, prolonged use with the current system could lead to a fire or poor working conditions.

Initially, Air Dynamics' engineers

were hoping to perform a retrofit of the old lint removal system. This sometimes is more cost effective than installing new equipment. However, due to the design limitations of the prior system and its' inability to handle the output of the laundry/dryer process at Peppermill, it was determined that the entire old system would need to be replaced with more efficient units. Air Dynamics' engineers recommended the advanced LRS II designed by Air Dynamics to tackle filtration in heavy-duty laundry applications. Already proven in high-volume laundry facilities and marine applications the LRS II is a proven effective solution for minimizing the chance of fire in the exhaust (ducting) systems.



Air Intake Louvers located near the main laundry dryer vents. The louvers are 100% blocked with lint (brown material)

Providing the Best Solution, by Designing the Best Product:

Air Dynamics performs a ACGIH certified industrial ventilation risk assessment and analysis for each project. This begins with a site visit. Air Dynamics employees visited the Peppermill Casino and took detailed measurements of spacing, laundry system specifications, and dryer details. It is during this phase that additional inefficiencies or issues that may have been previously unknown to the client are identified. Noticing these details are what sets Air Dynamics apart. The solutions are not off-the-shelf, or out-of-the-box. Air Dynamics' systems are turn-key and M.T.O (made-to-order) so they focus on the entire process to ensure optimal efficiency and performance. Therefore, the comprehensive site visit is essential to the project, and is the first step to ensuring a complete solution to the challenge.

This is combined with careful research conducted on the dryer and ancillary ventilation systems. Research on the performance of the dryers is critical to match with the lint removal systems capabilities. If it is too small, the system will not handle the quantity of lint being produced in the process,

and if it is too large the power requirements will cause wasted energy expenditures.

Once the site-visit and research was conducted, Air Dynamics proposed their LRS II designed to integrate seamlessly into Peppermill's laundry system. The proposed design featured the LRS II with a total exhaust value of 12,000 CFM to collect lint for the two Chicago Ironers – Models 3200 & 5200. Each of the LRS II's feature filters with 99.97% efficiency at one-half micron.

An example of the advanced capabilities of the LRS II is obvious when we compare the standard 200 mesh filtration of most lint systems to the LRS II. 200 mesh, or 74 microns, filters material that is about the size of a grain of sand. The LRS II's filters operating at 0.5 micron are **400% more efficient**. This level of filtration can capture bacteria and other pathogens, as well as all lint passing through the system.

The lint removal efficiency was optimized at Peppermill by installing compound hoods over the ironers to capture the lint at the source. These



Steps covered in lint from inefficient cyclonic lint filters.

special hoods were powered by a boost fan that collected lint into the capture hoods. All the LRS II modules were controlled by a control panel that had both automatic and manual control. The control panel also featured a rotary disconnect for safety.

The entire system was connected via ACGIH certified ventilation ducting and capture hoods designed to transition the dirty air stream through the LRS II filters and exhaust clean air into the existing ductwork of the Peppermill facility. It is critically important when venting highly flammable lint into ducting that passes through the interior of a structure to remove any residual material.

Once the LRS II modules were installed the Air Dynamics' team follows through the turn-key process by overseeing start-up and commissioning of the system. After determining satisfactory results, Peppermill was provided with a full manual and training by Air Dynamics' engineers to facilitate full support for future operations.

Conclusion:

Air Dynamics successfully provided a customized LRS II system to mitigate any lint from the Peppermill Casino laundry area. Compared to

alternative systems, the LRS II outperforms other lint filter systems. This is due to the high filtration efficiency.

Air Dynamics Industrial Systems Corporation was founded in 1991 and designs, manufactures, and installs industrial portable and central vacuum systems, environmental test chambers, pneumatic conveying, and industrial dust collectors and other air & material moving systems. All their projects are turn-key, where a project manager follows the project from conception and design through installation, commissioning, and start-up. Visit us on-line to view our successful installations on a global scale.

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Successfully installed LRS II in the Peppermill Casino



Industrial Dust Collectors • Environmental Test Chambers

Pneumatic Conveying • Portable & Central Vacuum Systems



**DESIGNED &
MANUFACTURED
IN THE U.S.A**