

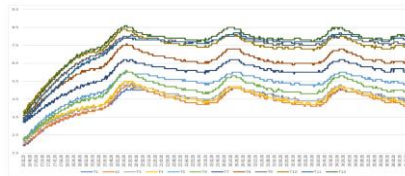
In addition to the supply & installation of our full range of display solutions, we also offer:

Independent product evaluation of all types of refrigerated display equipment, including retrofit solutions to improve temperature & energy efficiency performance.

The RJM team consists of experienced refrigerated cabinet designers & engineers and our knowledge of the applicable EN standards & test lab procedures places us in an ideal position to carry out on site evaluations of any refrigerated cabinet or counter.



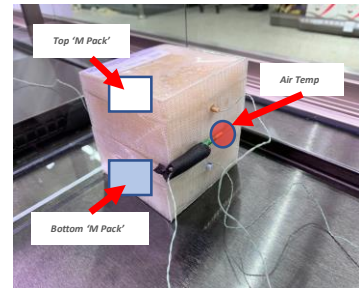
Counter fitted with temporary low screen



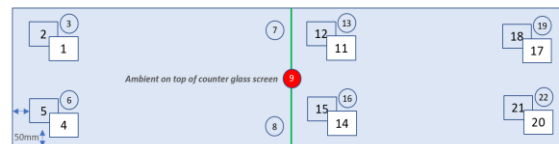
Performance Graphs

Example of test carried out to assess the impact on performance when a tall glass screen is replaced by a low glass screen to enable self service operation.

A full report & recommendations are issued upon test completion



Test probe / M Pack arrangement



Test probe / M Pack location diagram

Tests can be conducted using 'M Pack' test packages (the EN standard test product), live products or air temperatures dependant on the requirements

Our RJM team carry a set of diagnostic tools to carry out airflow & temperature evaluations of troublesome or poor performing display units. In addition we can carry out Thermal Imaging assessments to identify issues & present them in a visible format.

An typical assessment may be a refrigerated produce unit that was causing the ambient produce on the adjacent unit to spoil. The IR imaging (on right) identified that the internal baffle panels had been removed thus causing warm air to escape at low level.



IR imaging is also a great benefit when carrying out safety checks. Failing components or loose cables can easily be identified by their heat signatures as shown in the control panel (left).



Our **Technical Consultancy Services** extend beyond temperature performance, as shown in this example detailing our investigations concerning a humidification unit on a fresh meat counter.

All RJM **Field Service Reports** give our clients an overview of the problem, details of the investigation, conclusions & recommendations.

FIELD SERVICE REPORT

| | | | |
|-------------------|-----------------------|---------------------|---------------|
| SITE: | | PROJECT NO.: | |
| SUBJECT: | Meat Counter - Fogger | DATE: | 11th Jan 2017 |
| REPORT BY: | CG | C.C.: | |

Overview

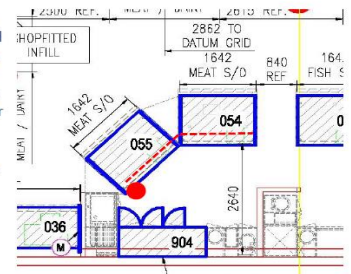
Following a survey by MML & Phoenix during Dec 2016, RJM were requested to investigate whether the existing fogger system could be modified to produce an increase in the fogger output, particularly to the LHS of the counter (sys 54). RJM carried out an inspection on the evening of 11th Jan 2017.

Investigation

The counter was supplied in 2010 by Blighline & is an angled deck comprising 1.6m cases operating on integral systems. The fogging system appears to be a UK adaptation rather than an OEM factory fitted item in that there is no supporting bracketry for the fog bar assembly.

The humidifier unit is located at the RHS of sys 55 as indicated by the RED circle on the adjacent diagram.

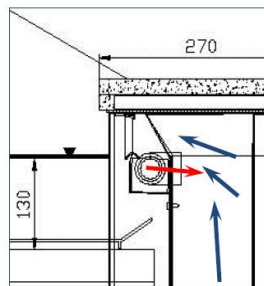
Upon arrival the counter was fully merchandised & discussions with the meat counter partner indicated that the LHS of the counter (sys 54) had never produced much fog & recently it had been non-existent.



Sys 54 was de-merchandised & after removal of the top discharge air grille the fog bar could be viewed. It is located in front of the evaporator coil directly behind the lower discharge air grille. There was little if any fog being produced from the entire 1.5m leg of fog bar beyond the 45 deg angle at the center of the overall counter.

Page 1 of 2

Of immediate note was the fact that the fog bar had been installed with the outlet holes facing the direction of the cabinet airflow. (Refer to adjacent diagram - Fog show in **RED**, case airflow in **BLUE**) Past experience gives us the knowledge that the case fans can produce a pressure greater than the humidifier unit & therefore the fog will simply condense in the fog bar rather than be drawn out into the cabinet airstream. To prove this theory the case was stripped down & case fans turned off whilst the humidification unit was left running. Fog was evident along the entire fog bar length & velocity readings showed that the pressurization of the fog bar whilst not under the influence of the case fans was also uniform, indicating that the issue is related to the distribution of the fog rather than the production of fog.



In order to use the case fan to draw the fog out of the fog bar, the LHS section of fog bar was cut & rotated through 180 deg so that the outlet holes were in the same direction as the case airflow. A temporary joint was made to reconnect the fog bar. The counter was reassembled & fog was clearly visible within the cabinet airflow as it entered the counter along its entire length.



Branch partners advised that they had never seen it produce that much fog in all the years it has been operating.

Conclusions & Next Steps

The humidifier unit appears to produce a sufficient volume of 'fog' however the design & orientation of the fog bar appears to be ineffective at distributing the fog into the cabinet airflow. The simple modification made by RJM would seem to greatly improve the amount of fog entrained within the airflow.

We recommend that a new fog bar is manufactured which incorporates holes to the front face & also drain holes to control the flow of any condensed water within the fog bar.

Page 2 of 2

We provide a one stop shop to identify and resolve all of your display cabinet problems, whether this is on site, in our labs or working with a supplier.

Contact us If you are experiencing refrigeration system problems then our technical services team are here to help. For further information visit:

www.ryan-jayberg.co.uk

