

Amerex Corporation

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Subject: Back-shelf Shadow
Model: Height of 20" or Less
Date: January 5, 2018
File: 0079.1.A_

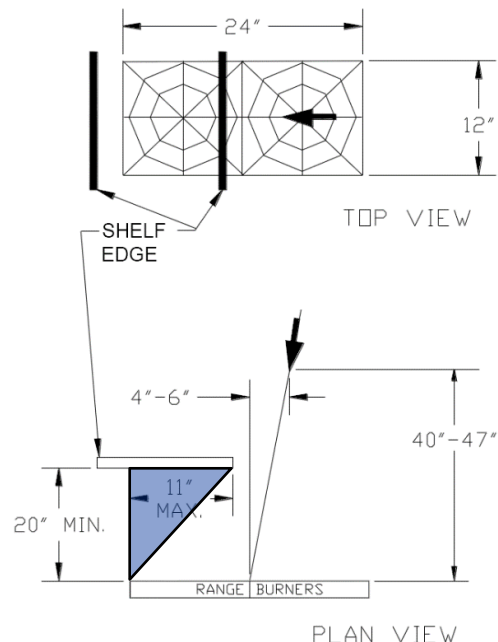
To Whom It May Concern:

Our KP Restaurant Fire Suppression System is UL Listed per UL Standard 300 fire test specifications. Our existing listing allows you to use our single flow point nozzle, Amerex P/N 11982, for the appliance specific protection of a range with a back-shelf. Our listed coverage requires that the back-shelf be at least 20" high and must not cover more than 11" of the back burners as shown in the diagram below. The nozzle is to be installed at a height between 40-47" above the cooking surface and 4-6" forward of the center of the two burners.

RANGE PLUS BACK-SHELF PROTECTION OVERHEAD APPLIANCE NOZZLE (P/N 11982)

The Amerex appliance nozzle (P/N 11982) has a one flow point value and will protect a range burner area of 12" x 24" (31 X 61 cm) from an overhead position. The back shelf must be at least 20" high (51 cm) and must not cover more than 11" (28 cm) of the back burners. The nozzle must be located 40 – 47" (102 – 119 cm) above the range surface, on the burner centerline, 4-6 inches (10 – 15 cm) forward of the center of the two burners and aimed at the center of the hazard area.

Note: Maximum & minimum heights must be measured from the tip of nozzle to the surface of the appliance.



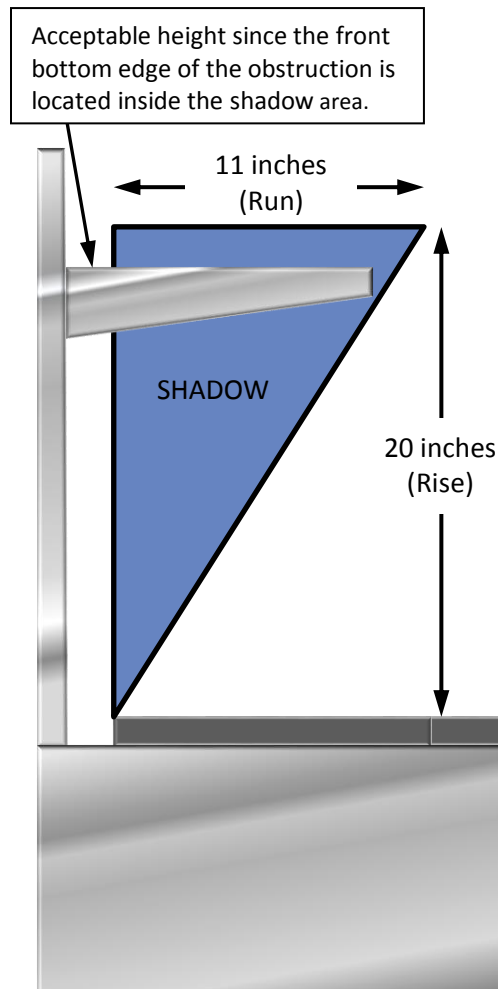
A back-shelf, or other obstruction, serves as a barricade that restricts the distribution of the wet chemical agent onto the cooking surface. Our testing and listing proves that our nozzle placement will deliver enough wet chemical agent onto the cooking surface beneath the back-shelf to achieve extinguishment even with some of the agent being deflected by the back-shelf. There is an area directly beneath the back-shelf that some in our industry reference as the back-shelf "shadow". The shadow area is a void that is out of reach of the nozzle spray pattern and is incapable of receiving any agent. Any solid object located in this area would not hinder the performance of our system with the existing listed nozzle location.

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If a back-shelf is positioned at a lower height than what is listed in our KP Restaurant Fire Suppression System Manual P/N 20150, we do permit the use of our single flow point nozzle, Amerex P/N 11982, for range protection only if the entire back-shelf falls within the parameter of the shadow area. This application is also approved for use when a cheese-melter or salamander are the obstruction above the range.



You can use a Rise-to-Run calculation to confirm the back-shelf is inside the shadow area. Rise-to-Run can be calculated simply through the division of the two dimensions. Please see the examples below.

$$20''/11'' = 1.818''/1'' = \text{RISE}/\text{RUN}$$

For every 1.818" of rise you can have 1" of run.

Ex. 18.18" minimum height for a 10" run/back-shelf

$$11''/20'' = 1''/0.55'' = \text{RISE}/\text{RUN}$$

For every 1" of rise you can have 0.55" of run.

Ex. 19" height could have a back-shelf up to 10.45"

This recommendation is only approved for obstructions installed above the cooking surface at 20" or less and do not cover more than 11" of the back burners.

If you have any further questions, please feel free to contact me at (205) 655-3271.

Sincerely,

Derek P. Wester, CFEI
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