



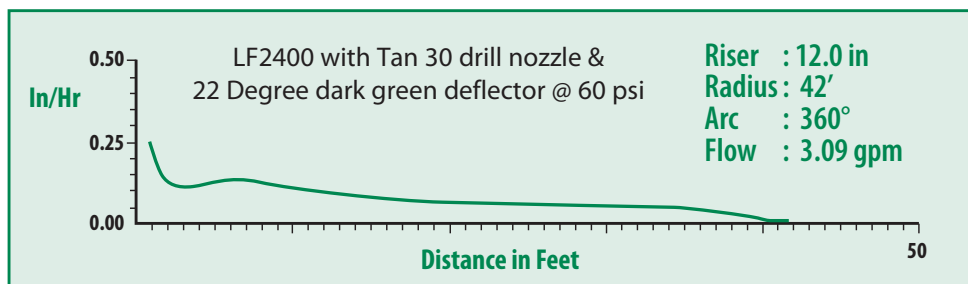
LF™ Series Sprinkler Quick Reference

Cranberry Bog Frost Protection Irrigation 50' x 40' Triangular

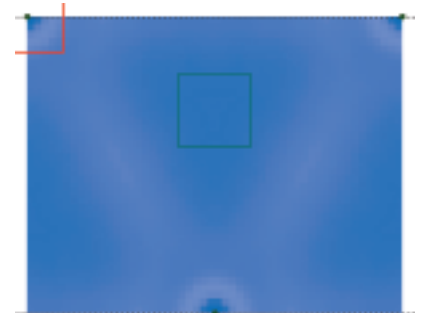
For decades, Rain Bird's legendary brass impact sprinklers have been the standard for frost protection applications. Now, a new legend is in the making - The LF™ Series Sprinkler.

The LF™ Series hybrid impact sprinkler provides the key elements for efficient frost protection; high uniformity, fast rotation times and reliable cold temperature operation. Competitive plastic sprinklers that utilize liquid silicone as a braking medium may slow down as the silicone thickens in response to decreases in temperature. Rain Bird's LF™ Series sprinklers feature the spring and arm of a conventional impact sprinkler. These mechanisms are shielded from ice build up (often responsible for slowing) by a durable, plastic, drive housing. The LF™ Series sprinklers have been successfully tested to temperatures as low as 8° F. (-13° C.), showing virtually no reduction in rotation time.

The LF™ Series sprinkler has provided outstanding uniformity in hot and cold climates all over the world for over 4 years. It has been successfully used for frost protection in the United States, Chile, Australia and China.



SPACE PRO Densogram



DU = 87%, CU = 91%,
5%SC = 1.2, AR = .15"/hr

For additional information on the world's most uniform sprinkler, contact your Rain Bird Dealer or visit www.rainbird.com

Performance for alternate spacings available via Rain Bird's Uniformity Pro @ www.rainbird.com



Rain Bird® LF™ Series Sprinklers
"Uniformity Rivalled only by Rain"

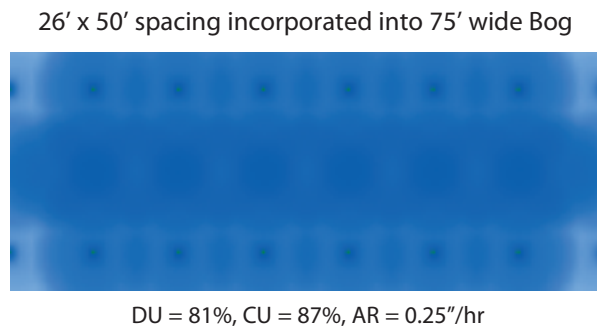
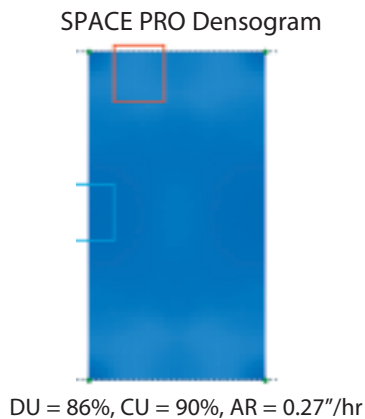


Cranberry Bog “Edge Effect”

When designing an irrigation system for frost protection for cranberries, it is critical to understand how the “edge effect” impacts uniformity and application rate. Cranberry bogs pose a unique scenario because the width of a typical bog is relatively narrow and the border between bogs interrupts the sprinkler head spacing. While the edge effect diminishes the uniformity in all irrigation systems, the performance diminishment in a bog is more pronounced due to the fact that it will impact a larger percentage of the area of the bog.

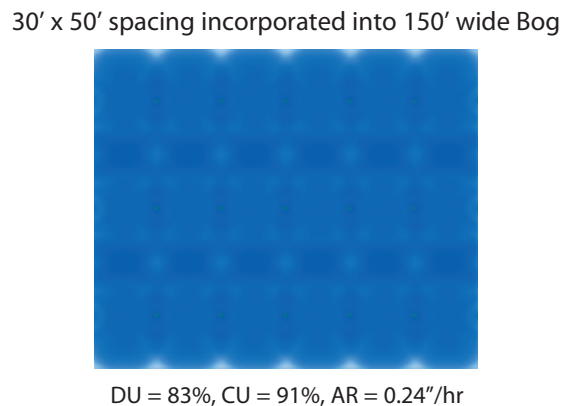
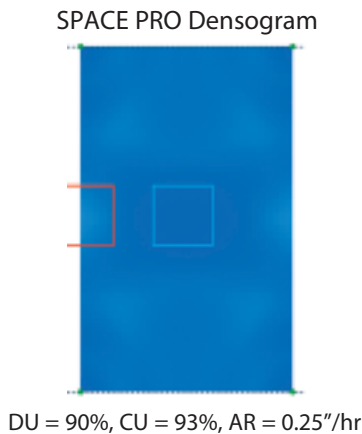
Consider the following example: a 26'x 50' rectangular spacing of LF2400 with Black Nozzle & 22° Deflector at 55psi provides the performance listed under the SPACE densogram below left. This is good performance for frost protection. However, incorporating this spacing into a 75' wide bog (typically two laterals each 12.5' from the edge with head spacing of 26'), decreases the uniformity as shown under the SPACE densogram below right. Uniformity is optimal in only the middle of the bog; uniformity at the edges suffers.

26' x 50' Rectangular



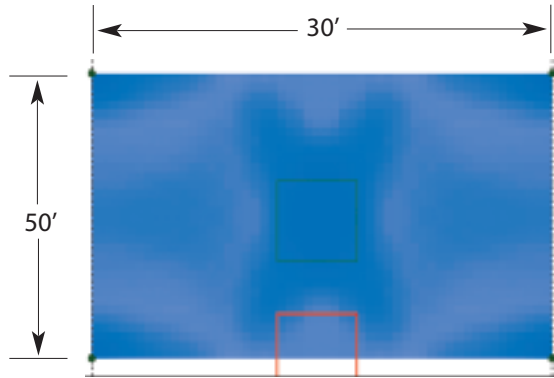
Similarly, a 30' x 50' rectangular spacing of LF2400 with Black Nozzles and 13° deflectors @ 60 psi yields performance changes illustrated below when placed in a 150' wide bog. (Heads are 25' in from the edge of the bog and spaced every 30' down the lateral). Once again distribution uniformity at the edges is diminished.

30' x 50' Rectangular



30' x 50' Rectangular

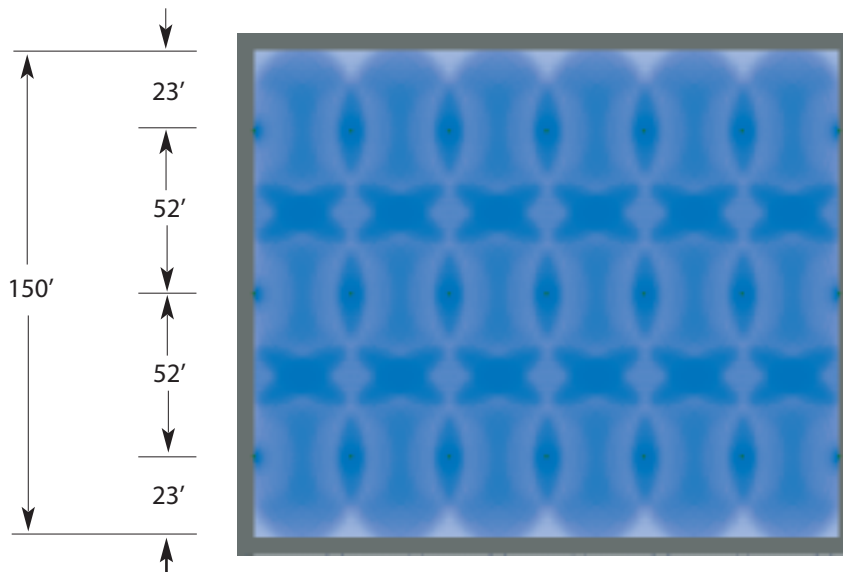
For a .15"/hr bog application rate on 30'x 50' rectangular spacing use
LF1200 with 12° pink Deflector and Tan 30 Drill nozzle @ 40psi
DU = 86%, CU = 88% (between heads), 2.53 gpm/head



On a 75' Wide Bog with 2 laterals 12.5' in from the edges, this configuration provides a bog uniformity of; DU = 87%, CU = 89% when edge effect is taken into account.

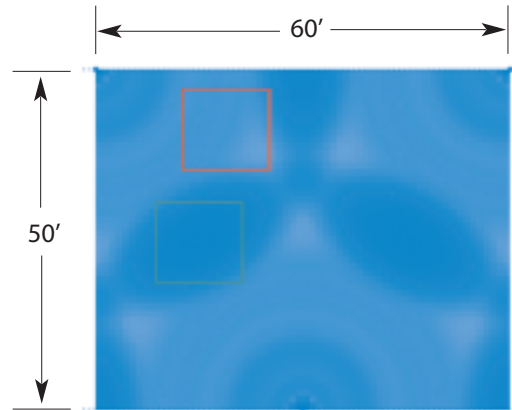


On a 150' Wide Bog with 2 laterals, each 23' in from the edges, this layout produces a bog uniformity of; DU = 81%, CU = 86%



60' x 50' Triangular

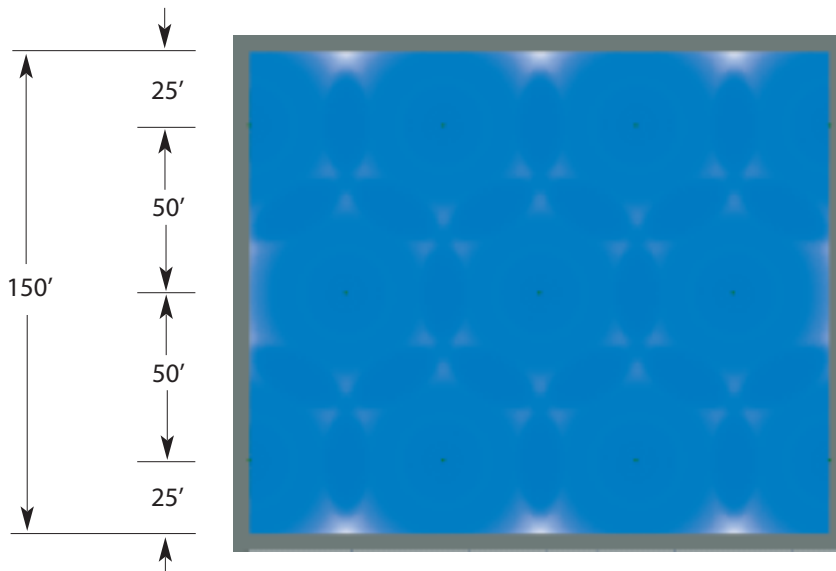
For a .11"/hr bog application rate on 60'x 50' Triangular spacing use LF2400 with 15° Tangerine Deflector and Red 1/8" nozzle @ 60psi
DU = 89%, CU = 90% (between heads), 3.52 gpm/head



On a 75' Wide Bog with 2 laterals 12.5' in from the edges, this configuration provides a bog uniformity of; DU = 88%, CU = 91% when edge effect is taken into account.



On a 150' Wide Bog with 2 laterals 23' in from the edges, this layout produces a bog uniformity of; DU = 82%, CU = 89%



While the bog layout performance in the above examples is still acceptable for frost protection, this is not always the case. Uniformity can diminish significantly depending on how head spacing conforms to the dimensions of the bog. Be sure to provide bog dimensions to your irrigation system designer to allow for system design taking the edge effect into consideration.