

innovation in irrigation™



# GREENHOUSE SPRINKLERS APPLICATION GUIDE

This document is intended to assist in sprinkler choice and layout for irrigation in greenhouses, shade houses, and cold frames. Nelson sprinklers ideal for this application are the D10 Spray, S10 Spinner, R10TG Rotator™ and R2000 Rotator™ (see below). Page 2 and 3 provide application suggestions for single structures up to 32 feet (9.8 M) wide. Page 4 provides solutions for multiple structures connected together which form large open areas wider than 32 feet (9.8 M).



**D10 SPRAY**  
.54 - 5 GPM  
128 - 1144 LPH



**S10 SPINNER**  
.79 - 5 GPM  
187 - 1144 LPH



**R10TG ROTATOR™**  
1.27 - 5 GPM  
311 - 1144 LPH



**R2000 ROTATOR™**  
.67 - 3.54 GPM  
150 - 792 LPH

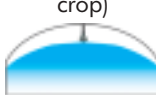




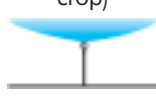






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Nelson products are warranted for one year from the date of original sale to be free of defective material and workmanship when used within the working specifications for which the products were designed and under normal use and service. The manufacturer assumes no responsibility for installation, removal or unauthorized repair of defective parts and the manufacturer will not be liable for any crop or other consequential damages resulting from any defects or breach of warranty. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES AND OF ALL OTHER OBLIGATIONS OR LIABILITIES OF MANUFACTURER. No agent, employee or representative of the manufacturer has authority to waive, alter or add to the provisions of this warranty nor to make any representations or warranty not contained herein. This product may be covered by one or more of the following U.S. Patent Numbers 4796811, RE33823, DES312865, 5058806, 5372307, 5875815 and other U.S. Patents pending or corresponding issued or pending foreign patents.

## GREENHOUSE, SHADE HOUSE, OR COLD FRAME

When irrigating inside structures or within a specified width, the use of a single row of sprinklers down the center provides the highest possible coverage uniformity. The table below suggests a spacing range and a sprinkler/plate combination for single row (down the center) irrigation for a given greenhouse size.

	WIDTH OF HOUSE			
	8 to 12 FEET 2.4 to 3.7 M	13 to 17 FEET 4 to 5.2 M	18 to 24 FEET 5.5 to 7.3 M	25 to 32 FEET 7.6 to 9.8 M
<b>INVERTED MOUNT</b> (60" above crop)  Spacing Range	<b>D10 SPRAY</b> Black Plate  5 to 9 Feet 1.5 to 2.7 M	<b>S10 SPINNER</b> Black Plate  4 to 8 Feet 1.2 to 2.4 M	<b>S10 SPINNER</b> Green Plate  6 to 12 Feet 1.8 to 3.7 M	<b>R10TG ROTATOR</b> Gray Plate  4 to 7 Feet 1.2 to 2.1 M
<b>UPRIGHT MOUNT</b> (24" above crop)  Spacing Range	<b>D10 SPRAY</b> Black Plate  4 to 8 Feet 1.2 to 2.4 M	<b>S10 SPINNER</b> Green Plate  8 to 12 Feet 2.4 to 3.7 M	<b>S10 SPINNER</b> Green Plate  8 to 12 Feet 2.4 to 3.7 M	<b>R2000 ROTATOR</b> K5 9° Plate  10 to 16 Feet 3.1 to 4.9 M

**NOTE:** To achieve the expected high uniformity, the following is required: no obstruction, precise vertical sprinkler alignment, no wind conditions and regulated pressures.

## GREENHOUSE, SHADE HOUSE, OR COLD FRAME

The quick pick tables below assist in quickly choosing the best sprinkler type, spacing between sprinklers, and pressure when irrigating with a single row of sprinklers in the center of a greenhouse or crop bed of a particular width. This combination provides the highest distribution uniformity with the fewest possible number of sprinkler heads.

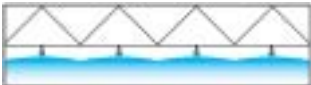


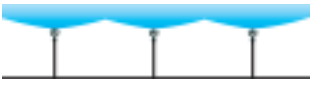



### SINGLE ROW INVERTED APPLICATIONS — 60" above the crop

WIDTH OF GREENHOUSE OR IRRIGATED BAND	SPRINKLER MODEL	SPACING BETWEEN SPRINKLERS	PLATE COLOR	NOZZLE SIZE/COLOR	PRESSURE IN PSI (BAR)
7.5 Feet (2.3 M)	D10 Spray	7 Feet (2.1 M)	Flat	#12 Purple	30 PSI (2 BAR)
10 Feet (3.1 M)	D10 Spray	7 Feet (2.1 M)	Flat	#12 Purple	30 PSI (2 BAR)
12.5 Feet (3.8 M)	D10 Spray	9 Feet (2.7 M)	Flat	#12 Purple	30 PSI (2 BAR)
15 Feet (4.6 M)	S10 Spinner	8 Feet (2.4 M)	Black	#12 Purple	35 PSI (2.4 BAR)
17.5 Feet (5.3 M)	S10 Spinner	8 Feet (2.4 M)	Black	#12 Purple	35 PSI (2.4 BAR)
20 Feet (6.1 M)	S10 Spinner	12 Feet (3.7 M)	Green	#12 Purple	35 PSI (2.4 BAR)
22.5 Feet (6.9 M)	S10 Spinner	9 Feet (2.7 M)	Green	#12 Purple	35 PSI (2.4 BAR)
25 Feet (7.6 M)	S10 Spinner	7 Feet (2.1 M)	Green	#12 Purple	35 PSI (2.4 BAR)
27.5 Feet (8.4 M)	R10TG Rotator	5 Feet (1.5 M)	Green	#12 Purple	35 PSI (2.4 BAR)
30 Feet (9.2 M)	R10TG Rotator	5 Feet (1.5 M)	Green	#12 Purple	35 PSI (2.4 BAR)
32.5 Feet (9.9 M)	R10TG Rotator	5 Feet (1.5 M)	Green	#12 Purple	35 PSI (2.4 BAR)

### SINGLE ROW UPRIGHT APPLICATIONS — 24" above the crop

WIDTH OF GREENHOUSE OR IRRIGATED BAND	SPRINKLER MODEL	SPACING BETWEEN SPRINKLERS	PLATE COLOR	NOZZLE SIZE/COLOR	PRESSURE IN PSI (BAR)
7.5 Feet (2.3 M)	D10 Spray	8 Feet (2.4 M)	Flat	#12 Purple	30 PSI (2 BAR)
10 Feet (3.1 M)	D10 Spray	8 Feet (2.4 M)	Flat	#12 Purple	30 PSI (2 BAR)
12.5 Feet (3.8 M)	D10 Spray	5 Feet (1.5 M)	Flat	#12 Purple	30 PSI (2 BAR)
15 Feet (4.6 M)	D10 Spray	5 Feet (1.5 M)	Flat	#12 Purple	30 PSI (2 BAR)
17.5 Feet (5.3 M)	S10 Spinner	9 Feet (2.7 M)	Green	#12 Purple	30 PSI (2 BAR)
20 Feet (6.1 M)	S10 Spinner	9 Feet (2.7 M)	Green	#12 Purple	30 PSI (2 BAR)
22.5 Feet (6.9 M)	S10 Spinner	8 Feet (2.4 M)	Green	#10 Dark Blue	30 PSI (2 BAR)
25 Feet (7.6 M)	S10 Spinner	10 Feet (3.1 M)	Black	#16 Dark Red	35 PSI (2.4 BAR)
27.5 Feet (8.4 M)	S10 Spinner	12 Feet (3.7 M)	Black	#18 Gold	35 PSI (2.4 BAR)
30 Feet (9.2 M)	R2000 Rotator	14 Feet (4.3 M)	K5 9° Gold	#16 Dark Red	40 PSI (2.8 BAR)
32.5 Feet (9.9 M)	R2000 Rotator	14 Feet (4.3 M)	K5 9° Gold	#16 Dark Red	40 PSI (2.8 BAR)

**GREENHOUSE OR SHADE HOUSE** — structures more than 32 feet (9.8 M) wide  
 For large open covered areas with inverted or upright mounting.

WIDTH OF HOUSE = MORE THAN 32 FEET (9.8 M) WIDE			
<p><b>INVERTED MOUNT</b></p>  <p>Spacing Range</p>	<p><b>S10 SPINNER</b> Gray Plate</p>  <p>24 Feet (7.3 M) or closer</p>	<p><b>R10TG ROTATOR</b> Gray Plate</p>  <p>22 Feet (6.7 M) or closer <b>OR</b> 22 Feet (6.7 M) between sprinklers and 34 Feet (10.3 M) or closer between pipes</p>	
<p><b>UPRIGHT MOUNT</b></p>  <p>Spacing Range</p>	<p><b>R2000 ROTATOR</b> 9° or 12° Plate</p>  <p>35 Feet (10.7 M) or closer</p>	<p><b>S10 SPINNER</b> Green Plate/Black Plate</p>  <p>24 Feet (7.3 M) or closer</p>	<p><b>R10TG ROTATOR</b> Black Plate</p>  <p>24 Feet (7.3 M) or closer <b>OR</b> 24 Feet between sprinklers and 34 Feet (10.3 M) or closer between pipes</p>

**NOTE:** To achieve the expected high uniformity, the following is required: no obstruction, precise vertical sprinkler alignment, no wind conditions and regulated pressures.

## NELSON MANUFACTURES A VARIETY OF PRODUCTS THAT ARE IDEAL FOR NURSERY CROP IRRIGATION

**R10TG, R2000, AND R2000WF ROTATORS™** — Rotator™ sprinklers provide the advantage of increased radius which allows coverage of a 30 foot greenhouse with a single row of sprinklers with the R10TG and higher uniformity in outdoor can yards.

**S10 SPINNER** — The S10 Spinner provides a gentle rain-like distribution of water with excellent uniformity. It provides higher flow rate capacity allowing the use of high application rates.

**D10 SPRAY** — The D10 Spray has no moving parts. It is a long radius spray for irrigation and misting.

**PRESSURE REGULATORS** — For pressure regulation at the beginning of an irrigation zone. Normally one is installed per greenhouse. The pressure regulator in effect evens flow from house to house which improves uniformity and allows more precise irrigation scheduling.

**MINI REGULATOR DRAIN CHECK** — The Mini Regulator Drain Check is installed one per sprinkler. It provides all the benefits of a pressure regulator and prevents dripping and drainage when the system is turned off.



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