Pro High-Efficiency Nozzle Written Specifications

**Part 1 – General**

* 1. The nozzle shall be an adjustable-arc spray nozzle designed for high-uniformity water application with a matched precipitation rate of approximately 1.6 in/hr (40 mm/hr) across the 8' to 17' (2.4 m to 5.2 m) radius product line. The arc shall be adjustable from 0° to 360° using the thick, easy-grip nozzle top. The nozzle top shall have a clear right-edge indicator on the base and a left-edge indicator on the top for ease of installation and field adjustment. Color-coded with natural hues, the nozzle shall blend with the landscape while providing clear field identification. The nozzle shall offer high-efficiency performance from a smooth, well-defined, high-uniformity spray pattern with more head water than traditional spray nozzles. With matched precipitation and user-friendly features, the nozzle shall bring maximum water savings to traditional spray nozzle systems.

**Part 2 – Parts and Material**

1. The nozzle shall be available in the following models:
* 8A-HE – High-efficiency nozzle, 8' (2.4 m), 0° to 360° adjustable arc, olive green
* 10A-HE – High-efficiency nozzle, 10' (3.0 m), 0° to 360° adjustable arc, dark blue
* 12A-HE – High-efficiency nozzle, 12' (3.7 m), 0° to 360° adjustable arc, brown
* 15A-HE – High-efficiency nozzle, 15' (4.6 m), 0° to 360° adjustable arc, black
* 17A-HE – High-efficiency nozzle, 17' (5.2 m), 0° to 360° adjustable arc, gray
1. Plastic material description
2. The nozzle shall be made of a color-coded acetal.
3. The base shall be made of a black acetal.
4. The acetal materials shall have UV stabilizers for outdoor applications.
5. Metal component materials
6. The radius adjustment screw shall be made of stainless steel.
7. Filter screen description
8. Each nozzle shall come with a separate filter screen for debris protection when installed underneath the nozzle.
9. The filter screens shall be made of polyethylene.
10. The screen mesh size shall be dependent on the nozzle model.
	1. 60 mesh: 8A-HE
	2. 40 mesh: 10A-HE, 12A-HE, 15A-HE, 17A-HE
11. Color description
	1. Each model shall have its own designated, color-coded nozzle top using natural hues to blend with the landscape while providing field identification.
12. 8A-HE – olive green
13. 10A-HE – dark blue
14. 12A-HE – brown
15. 15A-HE – black
16. 17A-HE – gray
17. Nozzle threads
18. The nozzle shall be fit for installation in pop-up bodies having a 5/8-27 UNS male-threaded stem at all common pop-up heights.
	1. Warranty
19. The nozzle shall be installed in accordance with the manufacturer’s published instructions. It shall carry a conditional 2-year exchange warranty. The product shall be the Pro High-Efficiency Nozzle, as manufactured for Hunter Industries Incorporated, San Marcos, California.

**Part 3 – Function and Operation**

1. Operating pressure
2. The nozzle shall operate between 20 to 40 PSI (1.0 to 3.0 bar; 100 to 300 kPa).
3. The recommended operating pressure shall be 30 PSI (2.1 bar; 210 kPa).
4. Flow rates
5. Flow rates shall depend on the specific Pro High-Efficiency Nozzle model.
6. As the arc is adjusted, the flow rate shall change to maintain matched precipitation.
	1. Radius description
7. The radius of throw shall depend on the specific Pro High-Efficiency Nozzle model.
8. At the recommended 30 PSI (2.1 bar; 210 kPa) operating pressure, full- or part-circle sprinklers shall be capable of radius reduction up to 20% using a stainless steel radius adjustment screw.
9. Arc adjustment
10. The arc shall be adjustable from 0° to 360° using the nozzle top.
11. The adjustable spray pattern shall have a hard right stop with an adjustable left edge. Adjustments to open the arc shall require turning the nozzle top counterclockwise. Adjustments to reduce the arc shall require turning the nozzle top clockwise.
12. At the 0° arc setting, the spray pattern shall close off.
	1. Application rate
		1. The nozzle shall produce and maintain a matched precipitation rate of approximately 1.6 in/hr (40 mm/hr) and no greater than 2.4 in/hr (60 mm/hr) throughout the arc adjustment range at the recommended operating pressure of 30 PSI (2.1 bar; 210 kPa) when spaced at 50% of the irrigated diameter.

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