



## Non Potable Water Irrigation System | Design Guide



The Intelligent Use of Water™

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## Non-Potable Water Irrigation Systems

As water conservation becomes increasingly important, designing and maintaining landscape spaces that will ensure sustainability is becoming more critical than that ever.

New Green Codes are becoming more prevalent than ever before, stronger regulations for landscape irrigation of areas such as, parks, schools cemeteries, multi-unit housing complexes and other approved uses worldwide requiring the use of recycled water.

This guide will provide you with the right tools and resources that you need to design with the latest non-potable irrigation solutions and achieve maximum water savings for your next green project.

Designed to stand up to the harsh chemicals that are often found in recycled water, Rain Bird Non-potable products provide everything you need to use this valuable resource more effectively and efficiently.



Pump Stations



Central Control



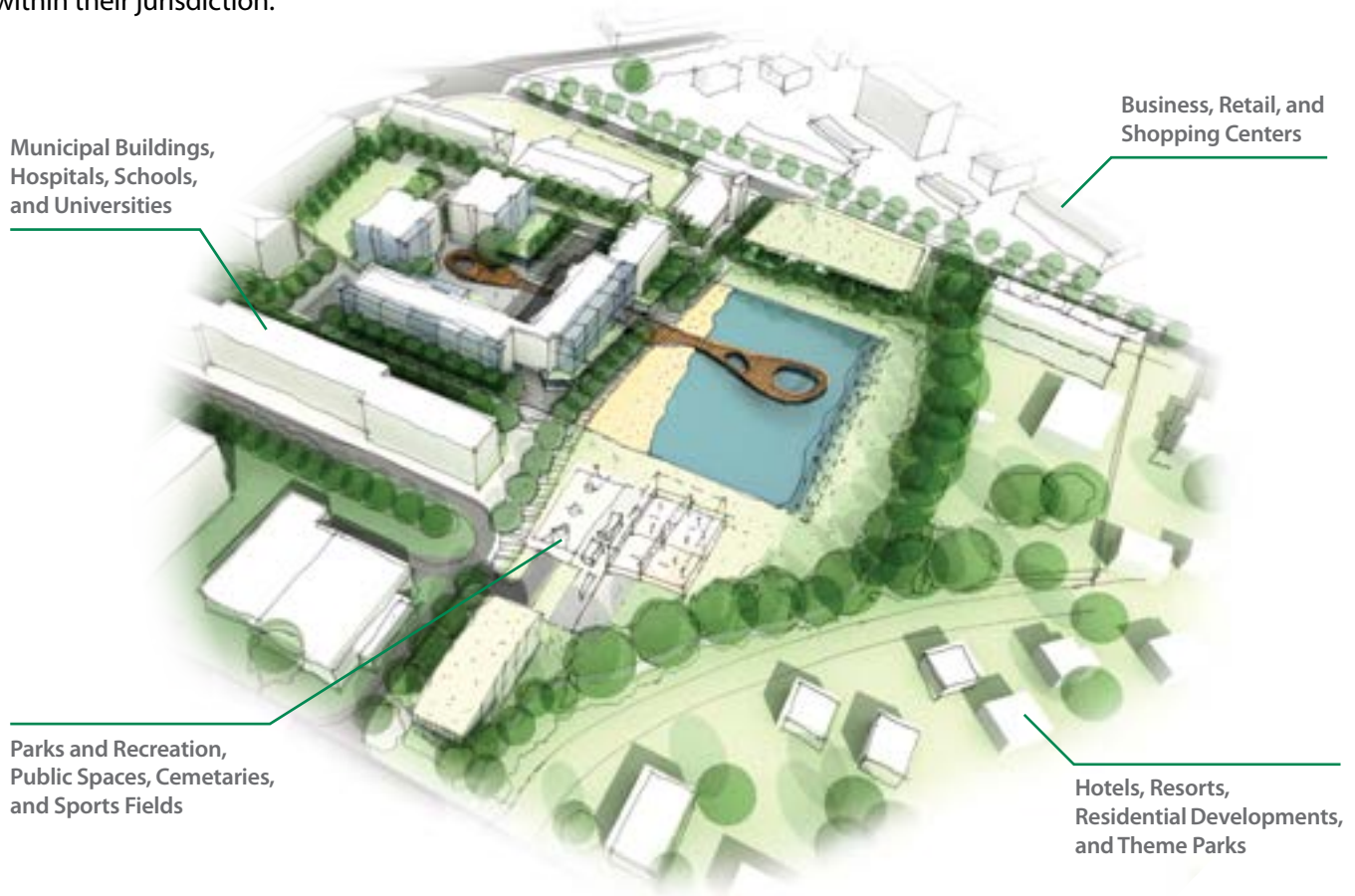
Valves



Emission Devices

## Reclaimed Water for Irrigation Applications

If you're interested in using recycled water for irrigation, you must first determine whether it's feasible for your property. The first step is ensuring that you have access to a recycled water supply. Even the most progressive water utilities and districts currently recycling wastewater are not able to provide it to all areas and addresses within their jurisdiction.



Only Rain Bird offers end-to-end solutions for recycled water applications and has been a leading advocate for The Intelligent Use of Water™ for over 80 year, leading the way in reclaimed water use, with end-to-end solutions that let us get more from every drop.

1

**Pump Stations**



2

**Central Control**



3

**Valves**

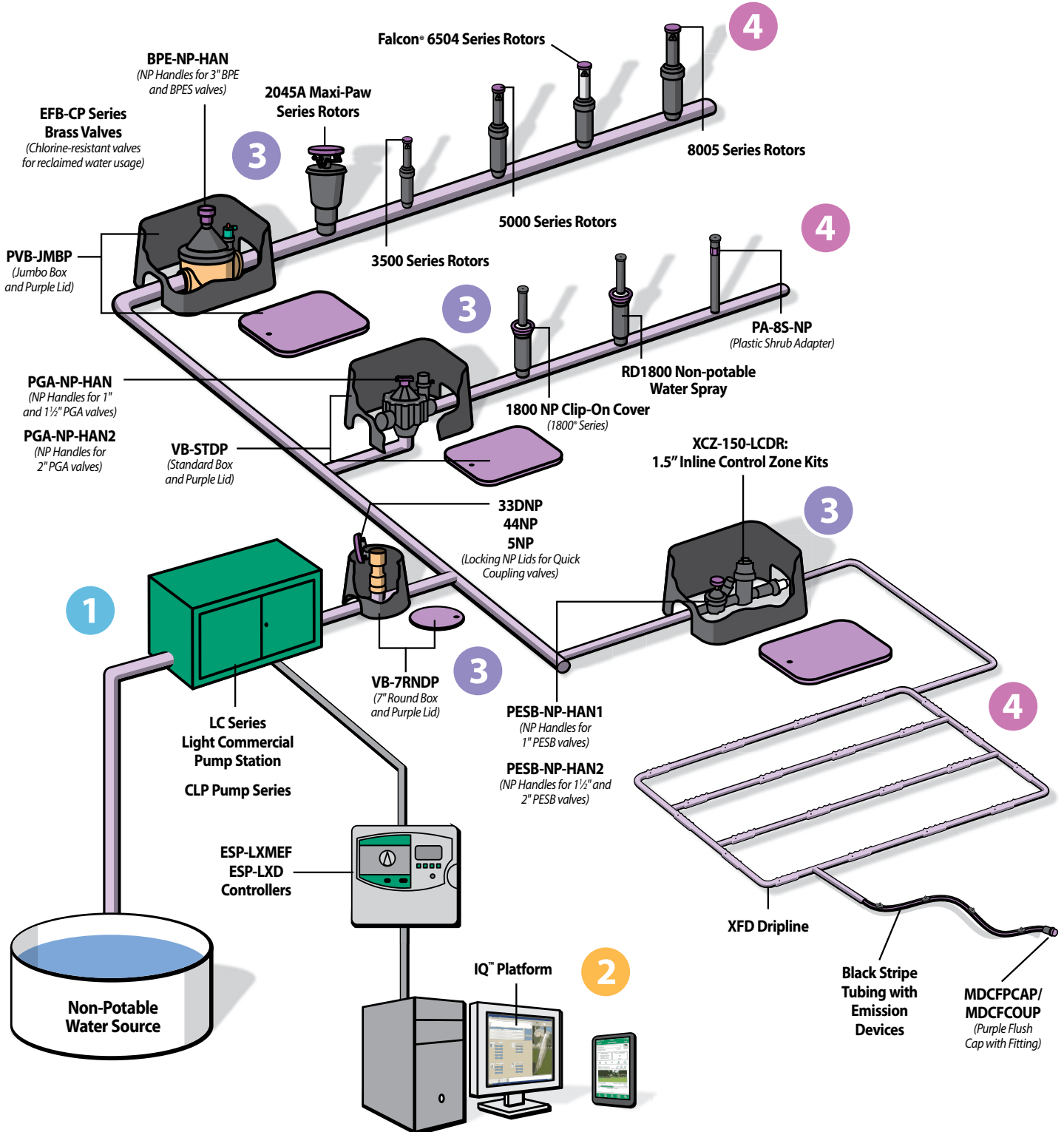


4

**Emission Devices**



# Anatomy of a Non-Potable Water Irrigation System



Irrigation design is for graphical representation only.

### Anatomy of a Commercial Non-Potable Water Irrigation System

This non-potable design guide highlights Rain Bird product and technology solutions for a healthy landscape that uses non-potable water.

### Landscape Drip

- Control Zone Kits
- Purple PC Diffuser Cap
- Purple Flush Cap with Fitting



### Rotors

Purple Covers for Rotors:

- 3500
- 5000/5000 Plus
- Falcon® 6504
- 8005
- 2045A Maxi-Paw™



### Valves

Durable chlorine-resistant valves and accessories for reclaim applications:

- PESB-R
- EFB-CP
- Quick-coupling Valves
- Valve Boxes and covers



### Non-Potable Water Supply

There are multiple potential water harvesting sources. Common sources on a commercial site are:

- Rainwater harvesting
- Stormwater harvesting
- HVAC condensate
- Greywater from showers, sinks, washers
- Other



### Central Control and Controllers

- IQ V3.0 Platform
- ESP-LXMEF Modular Controllers
- ESP-LXD Series Two-Wire Decoder Controllers





### XF Dripline

A wide variety of Rain Bird XF Dripline options for on-grade, sub-surface or sloped applications available in purple models to designate use with recycled water systems.



### RWS Root Watering

Purple Grate



### Pump Stations

- LC Series Pump Stations
- CLP Series Pump Stations



### Sprays

- Purple Covers for Spray Heads:
- RD1800 Series Spray Heads
  - Purple Plastic Shrub Adapter
  - Non-Potable 1800 Spray Head Cover



*Irrigation design is for graphical representation only.*



# Pump Stations





## Pump Stations

Rain Bird is the only irrigation manufacturer to offer pump stations, so you can take a totally integrated approach to recycled water irrigation with one trusted partner. By ensuring correct water pressure and delivering the right flow of water, our pump stations allow you to maximize the efficiency of your system.



### Pump Stations models for Non potable Systems

- LC Series Light Commercial Pump Station
- CLP Pump Series



## Case Study

### H-E-B Park Edinburg, Texas

#### PROJECT OVERVIEW:

In Edinburg, Texas, the Rio Grande FC Toros have a new stadium and playing field. H-E-B Park consists of a 9,700-seat professional soccer stadium, an outdoor amphitheater, three practice fields for youth soccer, a playground, and picnic areas. The entire site, including landscaped areas in the parking lot and surrounding the stadium, use Rain Bird commercial and drip irrigation products.

#### RESULTS:

The soccer stadium uses a Rain Bird CLP variable drive pump and ESP-LXD Series Two-Wire controller with IQ-Cloud v. 3.0 for remote water management. Flow sensors are installed on each system to measure flow at the stadium, practice fields and surrounding landscape. The sensors send accurate flow data to IQ to enable the flow management feature. IQ manages the irrigation schedules based on the flow capacity and demand. Doing so enables more efficient use of the pump, which can run continuously without having to cycle on and off, and helps complete the watering in a short period of time.



Credit category of LEED for the Integrative Process (IP)= 1 point for the implementation stage when demonstrating at least one On-Site non potable water supply source was analyzed for at least two of the water demand elements including landscape irrigation and Site elements.

## LC Series Pump Stations

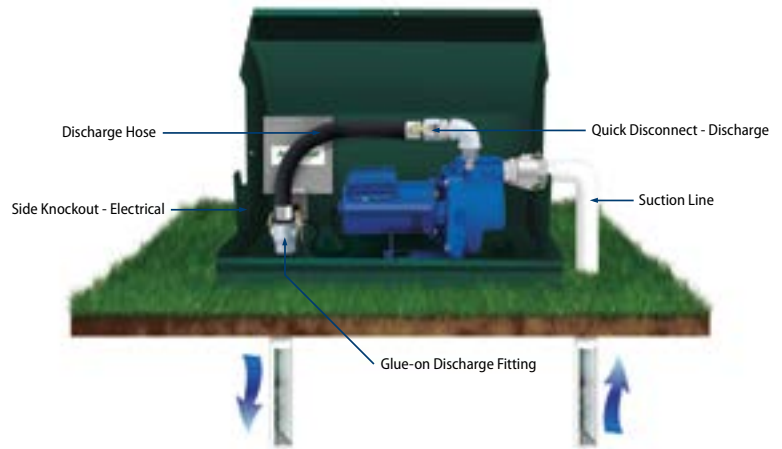
The LC Series by Rain Bird is a complete pump package that includes a professional-grade pump, the highest quality pump protection and simple to install and operate fixtures all housed in a unique enclosure designed specifically for a pump. With this complete solution the days of retro fitting often non-compatible parts together and housing them in a makeshift enclosure are over.

### Features

- Complete irrigation pump solution
- Available in 3/4, 1, 1 1/2, 2 and 3 HP models
- Up to 62 psi boost pressure
- Quick disconnects for easy installation
- Powder coated enclosure for long lasting finish
- Pressure loss and high temperature shut down protection
- Made in the USA

### Applications

- Suction lift or boost
- Potable or recycled water supply
- Residential, Light Commercial, Parks & Recreational



### Pump Weights

- LC750: 170 lbs
- LC1000: 175 lbs
- LC1500: 175 lbs
- LC2000: 185 lbs
- LC3000: 200 lbs

### Enclosure

- UL Listed
- Nema 3R
- Powder-coated steel

| Model   | Description                                | Pump        | Discharge | Suction |
|---------|--|-------------|-----------|---------|
| LC750   | Rain Bird LC Series - 3/4 hp, 1 ph, pump   | 3/4 hp pump | 1-1/2"    | 2"      |
| LC 1000 | Rain Bird LC Series - 1 hp, 1 ph, pump     | 1 hp pump   | 1-1/2"    | 2"      |
| LC1500  | Rain Bird LC Series - 1 1/2 hp, 1 ph, pump | 1.5 hp pump | 1-1/2"    | 2"      |
| LC2000  | Rain Bird LC Series - 2 hp, 1 ph, pump     | 2 hp pump   | 1-1/2"    | 2"      |
| LC3000  | Rain Bird LC Series - 3 hp, 1 ph, pump     | 3 hp pump   | 1-1/2"    | 2"      |

▼ Click the icons below for more information

#### Design & Technical Resources



DRAWINGS



WRITTEN SPECS



TECH SPECS



RESOURCES

### How To Specify

#### LC 750

Model Light Commercial Pump  
Horse Power 3/4 HP

## CLP Series

Rain Bird's CLP Series pump station is designed for boost and flooded suction-lift applications. The CLP Series is a complete pump package that is simple to install and operate. It includes a professional-grade pump, a marine-grade aluminum enclosure, highest quality pump protection, and optional mounting for a Rain Bird controller. Home owner associations, small sports fields, schools, parks, and small agricultural projects are ideal applications.



CLP Series  
(Suction Lift shown)

### Features

- Plumbing Configurations
  - Inlet and discharge piping on opposite sides of the enclosure (as shown)
  - ¾" and 2" Priming Ports Included
- Isolation valve
- Marine grade aluminum enclosure and deck
- Fused main power disconnect
- Pump Control Runs based on signal from irrigation controller, or from optional Flow Start Switch (Boost model only)
- 130° F Temperature cutout switch

### CLP Series Performance Data

| HP  | Model       | Description   | Maximum Flow |     |     |     | Voltage | Phase           |
|-----|-------------|---|--------------|-----|-----|-----|---------|-----------------|
|     |             |   | GPM          | PSI | GPM | PSI |         |                 |
| 3   | CLP03VNASA1 | Compact Low Profile 3HP VFD Pump Station 200V,1P 3P   | 40           | 50  | 95  | 20  | 200VAC  | Single or Three |
| 3   | CLP03VNASB3 | Compact Low Profile 3HP VFD Pump Station 480V,3P      | 40           | 50  | 95  | 20  | 480VAC  | Three Phase     |
| 5   | CLP05VAASC1 | Compact Low Profile 5HP VFD Pump Station 200V,1P 3P   | 30           | 72  | 85  | 44  | 200VAC  | Single or Three |
| 5   | CLP05VAASD3 | Compact Low Profile 5HP VFD Pump Station 480V,3P      | 30           | 72  | 85  | 44  | 480VAC  | Three Phase     |
| 5   | CLP05VBASC1 | Compact Low Profile 5HP VFD Pump Station 200V,1P 3P   | 50           | 53  | 160 | 31  | 200VAC  | Single or Three |
| 5   | CLP05VBASD3 | Compact Low Profile 5HP VFD Pump Station 480V,3P      | 50           | 53  | 160 | 31  | 480VAC  | Three Phase     |
| 5   | CLP05VCASC1 | Compact Low Profile 5HP VFD Pump Station 200V,1P 3P   | 80           | 36  | 220 | 21  | 200VAC  | Single or Three |
| 5   | CLP05VCASD3 | Compact Low Profile 5HP VFD Pump Station 480V,3P      | 80           | 36  | 220 | 21  | 480VAC  | Three Phase     |
| 5   | CLP05VHASC1 | Compact Low Profile 5HP VFD Pump Station 200V,1P 3P   | 50           | 60  | 140 | 30  | 200VAC  | Single or Three |
| 7.5 | CLP07VDASE1 | Compact Low Profile 7.5HP VFD Pump Station 200V,1P 3P | 40           | 99  | 95  | 68  | 200VAC  | Single or Three |
| 7.5 | CLP07VDASG3 | Compact Low Profile 7.5HP VFD Pump Station 480V,3P    | 40           | 99  | 95  | 68  | 480VAC  | Three Phase     |
| 7.5 | CLP07VEASE1 | Compact Low Profile 7.5HP VFD Pump Station 200V,1P 3P | 60           | 66  | 180 | 42  | 200VAC  | Single or Three |
| 7.5 | CLP07VEASG3 | Compact Low Profile 7.5HP VFD Pump Station 480V,3P    | 60           | 66  | 180 | 42  | 480VAC  | Three Phase     |
| 7.5 | CLP07VFASE1 | Compact Low Profile 7.5HP VFD Pump Station 200V,1P 3P | 100          | 46  | 240 | 29  | 200VAC  | Single or Three |
| 7.5 | CLP07VFASG3 | Compact Low Profile 7.5HP VFD Pump Station 480V,3P    | 100          | 46  | 240 | 29  | 480VAC  | Three Phase     |
| 10  | CLP10VGASH1 | Compact Low Profile 10HP VFD Pump Station 200V,1P 3P  | 80           | 82  | 200 | 55  | 200VAC  | Single or Three |
| 10  | CLP10VGASD3 | Compact Low Profile 10HP VFD Pump Station 480V,3P     | 80           | 82  | 200 | 55  | 480VAC  | Three Phase     |
| 10  | CLP10VIASH1 | Compact Low Profile 10HP VFD Pump Station 200V,1P 3P  | 110          | 61  | 260 | 46  | 200VAC  | Single or Three |
| 10  | CLP10VIASD3 | Compact Low Profile 10HP VFD Pump Station 480V,3P     | 110          | 61  | 260 | 46  | 480VAC  | Three Phase     |

▼ Click the icons below for more information

#### Design & Technical Resources



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### How To Specify

CLP 03 V N AS A1



Motor  
HP: 03



Pump Curve  
N



Voltage  
A1: 200VAC single or three phase  
B3: 480VAC three phase



# Central Control and Controllers



## Central Control and Controllers

With features like ET-based scheduling, flow management, and Cycle+Soak™, Rain Bird central control products help you eliminate overwatering and runoff that are undesirable in recycled water areas. When local water authorities require water use reporting, these systems allow you to report by water type to save you time and effort.



### Central Control Product Lines for Non potable Systems

- IQ™ Platform
- ESP-LXMEF
- ESP-LXD



### Case Study

#### City of West Torrens, South Australia

##### PROJECT OVERVIEW:

The City of West Torrens Council manages more than 42 hectares of irrigated public open space. The council is faced with expensive water (AUD\$3.24 per kilolitre), thus using water efficiently is a high priority. In addition, resources required to manage the irrigation systems must be used wisely. With IQ-Cloud, the council could eliminate the need to have software hosted on their own servers and would gain remote access to the irrigation systems from anywhere using iPad minis.

Rain Bird’s Global Weather service was also implemented to provide Internet-based weather data to IQ-Cloud. The weather data is used for ET-based scheduling on 95 percent of sites. IQ-Cloud automatically adjusts the irrigation schedules based on the landscape’s evapotranspiration rate. The data helped reduce water usage during the most recent season, which was wetter and cooler than average. The council saved approximately AUD\$48,000 in water costs during the first season that fully utilized all of the IQ-Cloud features, or approximately half the amount invested to upgrade to IQ-Cloud.



Credit category of LEED for the Integrative Process (IP)= 1 point for the implementation stage when demonstrating at least one On-Site non potable water supply source was analyzed for at least two of the water demand elements including landscape irrigation and Site elements.

## The New Rain Bird® IQ™ Platform

The ultimate tool for remote water management. With the new IQ-Cloud v. 3.0, you can control your irrigation system from any device, anywhere. With set up that takes less than five minutes, multi-user access and no recurring annual fees, you finally have the option you've been waiting for.

### Features Available on the IQ Platform

- Manage irrigation schedules based on weather conditions
- Automate e-mail alerts and alarms to manage exceptions
- Know which zones are operating and where, down to the minute
- Create and share reports on total water usage
- Restrict access to the satellite controllers with pin code
- Monitor system performance and identify problems with Flow Watch™
- Remote diagnostics for two-wire systems
- To ensure customer's systems are compatible with future technologies and feature enhancements, hardware upgrades will be required every 5 years



IQ v3.0 Software



IQ v3.0 Cloud

Choose **IQ-Cloud** if you manage HOAs, schools, parks, municipal sites, or other properties, and want mobile access to the irrigation systems from your tablet or smartphone, and would like to share access with other people on your team.



IQ v3.0 Enterprise

**IQ-Enterprise** lets you implement IQ-Cloud on a private server when you need to comply with strict IT protocols. IQ-Enterprise is perfect for managing hospitals, universities and government or military properties. You can use your organization's wireless network to reduce or eliminate cellular data fees.



IQ v3.0 Desktop

Choose **IQ-Desktop** when you only need to access the irrigation systems you manage from your computer and don't need mobile access. If you are a grower or farmer and the operation of your irrigation system is centralized, IQ-Desktop might be the right option for you.

### How To Specify

#### IQ V3.0 SOFTWARE

**IQADVCECD:** 5-Satellite Capacity with advanced feature packs included

**IQ5SATSWU:** Software 5-Satellite Capacity Upgrade

▼ Click the icons below for more information

#### Design & Technical Resources



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TECH SPECS



RESOURCES

## Rain Bird® ESP-LX Series Controllers

Controllers combine modularity with advanced water management and Extra Simple Programming

The ESP-LXME Enhanced Controller offers flow sensing and management with modular station capacity from 8 to 48 stations. Station modules are available in 4-, 8- and 12-station models.

### Water Management Features

- Optional Flow Smart Module™ with Learn Flow utility and flow usage totalizer — standard on ESP-LXMEF
- FloWatch™ protection for high and low flow conditions with user defined reactions (requires flow sensor)
- FloManager™ manages hydraulic demand, making full use of available water to shorten total watering time
- SimulStations™ are programmable to allow up to 5 stations to operate at the same time
- Station sequencing by station numbers or station priorities



ESP-LXME Controller

- Water Windows by program plus Manual MV Water Window
- Cycle+Soak™ by station
- Rain Delay
- 365-Day Calendar Day Off
- Programmable Station Delay by program
- Normally Open or Closed Master Valve programmable by station
- Weather Sensor programmable by station to prevent or pause watering
- Program Seasonal Adjust
- Global Monthly Seasonal Adjust

| Model      | Description   |
|------------|---|
| ESP8LXME   | 8-Station Controller, 120VAC                          |
| ESP12LXMEF | 12-Station Controller with Flow Smart Module, 120VAC  |
| IESP8LXME  | 8-Station Controller for International Market, 230VAC |
| FSMLXME    | Flow Smart Module for ESPLXME/F Controller            |
| ESPLXMSM8  | 8-Station Module for ESP-LXME/F Controller            |
| ESPLXMSM12 | 12-Station Module for ESP-LXME/F Controller           |
| ESPLXMEFP  | ESPLXME Controller Front Panel Only                   |

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### Design & Technical Resources



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### How To Specify

#### ESP-LXME

Base Controller without Flow Smart Module  
ESP-8LXME:  
8-station base

#### ESPLXMSM4

Station Modules  
ESPLXMSM4:  
4-Station Module  
ESPLXMSM8:  
8-Station Module  
ESPLXMSM12:  
12-Station Module

Base Controller with Flow Smart Module  
ESP-12LXMEF:  
12-station base

#### FSM-LXME

Flow Smart Modules  
FSM-LXME Flow Smart Module

## ESP-LXD Series Two-Wire Decoder Controller

The ESP-LXD controller has been designed to maintain the look, feel and ease of programming of the ESP-LXM controller but with an interface to a two-wire path for decoder-based irrigation.

### Advanced Features

From Cycle+Soak™ to Contractor Default Program™, the ESP-LXD offers innovative features proven to cut installation expenses, troubleshooting time and water use.

### Unprecedented Flexibility

A modular design makes the ESP-LXD the perfect fit for a range of large residential and commercial projects—from the straightforward to the most complex.

### 200-Station Capacity

The ESP-LXD offers the ability to expand from 50 stations to up to 200 stations. So you can handle sites large or small, while stocking fewer controllers and components.



ESP-LXD Decoder Controller

### Built-In Flow Management

FloManager® ensures you don't overtax your water supply, while Flo-Watch™ quickly identifies and isolates high or low flow situations, such as mainline breaks.

### Smart Approved Watermark

Rain Bird's ESP-LXD controller has received the Smart Approved Watermark. Established in Australia and recognized worldwide, this elite designation identifies products and services that help reduce water use.

| Model     | Description                                   |
|-----------|---|
| ESP-LXD   | 50-station, 120 VAC                           |
| IESPLXD   | 50-station for international markets, 230 VAC |
| IESPLXDEU | 50-station for Europe, 230 VAC                |
| IESPLXDAU | 50-station for Australia, 240 VAC             |

▼ Click the icons below for more information

**Design & Technical Resources**

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**How To Specify**

Controller  
**ESP-LXD**

Models  
 ESP-LXD: 120v Outdoor  
 IESP-LXD: 230v Intl  
 IESPLXDEU: 230V (EU)  
 IESP-LXDA: 240V (AUS)

Modules & Cartridges  
**ESPLXD-SM75**

Models  
 75-station module  
 PBC-LXD: Program Backup Cartridge





# Valves



## Valves

Constructed from heavy-duty, glass-filled nylon and designed with chlorine- and chemical-resistant diaphragms and components, these Rain Bird valves will perform effectively year after year. Valve boxes with purple lids ensure everyone is aware of recycled water use.



### Valve Product Lines for Non potable Systems

- PESB-R Series Valves
- EFB-CP Series Valves
- Quick-Coupling Valves
- Purple Valve Boxes and Lids
- Purple Valve Handle Assembly
- Drip Control Zone kits



## Case Study

### Mountain Equipment Co-op - Burlington, Ontario

#### PROJECT OVERVIEW:

Mountain Equipment Co-op (MEC) is a leading supplier of outdoor gear, clothing and camping equipment. In designing an irrigation system for the company's Burlington, Ontario site, an extensive project team was charged with reducing potable landscape water use by 100 percent, thus fulfilling LEED® credits for water efficiency. Featuring two cisterns, the recommended system design would capture and reuse rainfall for landscape irrigation, as well as toilet flushing.

#### RESULTS:

By combining weather-based control with rainwater recycling, the site has raised its annual water savings to 100 percent or 1,014,554 litres, the equivalent of nearly \$2,000. In addition to saving water and money, ET Manager™ has saved the site's maintenance staff time by minimizing the need for manual adjustments to the watering schedule.



Credit category of LEED for the Integrative Process (IP)= 1 point for the implementation stage when demonstrating at least one On-Site non potable water supply source was analyzed for at least two of the water demand elements including landscape irrigation and Site elements.

## PESB-R Series Valves

Durable chlorine-resistant valves for recycled water irrigation applications

A true recycled water irrigation valve, able to handle chlorine and other chemicals found in recycled water systems. PESB-R Series valves offer long life and efficient, trouble-free performance – even in harsh recycled water applications. Constructed of heavy-duty, glass-filled nylon, these valves resist clogging and feature a patented scrubber to actively fight dirt, algae and other particles from blocking the pilot flow.

### Advanced Features

- Stronger, glass-filled nylon bonnet
- Enhanced diaphragm materials
- Robust, one-piece solenoid
- Stainless steel studs molded into the body
- External bleed
- Slow-closing operation
- Self-cleaning pilot filter scrubber
- Chlorine-resistant materials

150-PESB-R



### Specifications

- Pressure: 20 to 200 psi (1.38 to 13.80 bar)
- Flow: 0.25 to 200 gpm (0.06 to 45.40 m<sup>3</sup>/h; 0,02 to 12,60 l/s)
- Flow with PRS-Dial: 5 to 200 gpm (1.14 to 45.40 m<sup>3</sup>/h; 0,32 to 12,60 l/s)
- Temperature: Up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

| Model      | Description    | Height           | Length       | Width        |
|------------|----------------|------------------|--------------|--------------|
| 100-PESB-R | 1" (26/34)     | 6 1/2" (16.5 cm) | 4" (10.2 cm) | 4" (10.2 cm) |
| 150-PESB-R | 1 1/2" (40/49) | 8" (20.3 cm)     | 6" (15.2 cm) | 6" (15.2 cm) |
| 200-PESB-R | 2" (50/60)     | 8" (20.3 cm)     | 6" (15.2 cm) | 6" (15.2 cm) |

▼ Click the icons below for more information

#### Design & Technical Resources



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RESOURCES

### How To Specify

100 - PESBR - PRS-D

Size  
100: 1" (26/34)  
150: 1 1/2" (40/49)  
200: 2" (50/60)

Model  
PESB-R:  
scrubber  
model

Optional Feature  
PRS-Dial: pressure  
regulating module  
(must be ordered  
separately)

Note: Valve and PRS-Dial module must be ordered separately.  
For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

## EFB-CP Series Brass Valves

Electric remote control valves don't come any better than EFB-CP Series red brass valves. Need a contamination-proof, self-flushing screen that cleans itself and resists debris build-up in dirty water? The EFB-CP's the one!

Ideal for non-potable water valve applications, the EFB-CP is designed to handle chlorine and other harsh chemicals found in recycled water systems.

EFB-CP Series valves offer long life and superior performance in high pressure applications.

### Features

- Red brass body and bonnet for longer life and more rugged performance at 200 psi (13,80 bar)
- Reverse flow feature ensures valves fail in the closed position if the diaphragm tears or rips. Prevents flooding, water waste and landscape damage
- One-piece solenoid design with captured plunger and spring for easy servicing
- Prevents loss of parts during field service
- Low-power requirement allows for longer wire runs without increased wire gauge
- Manual internal and external bleed
- Adjustable flow control



150-EFB-CP

### Specifications

- Pressure: 15 to 200 psi (1,04 to 13,80 bar)
- Flow with/without PRS-D: 5 to 200 GPM (1.14 to 45,40 m<sup>3</sup>/h; 0,32 to 12,60 l/s)
- Temperature: up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

| Model      | Description     | Height           | Length           | Width            |
|------------|-----------------|------------------|------------------|------------------|
| 100-EFB-CP | 1" (26/34)*     | 6" (15.2 cm)     | 4 1/2" (11.4 cm) | 3 1/4" (8.3 cm)  |
| 150-EFB-CP | 1 1/2" (40/49)* | 6 1/2" (16.5 cm) | 5 1/2" (14 cm)   | 4 1/2" (11.4 cm) |
| 200-EFB-CP | 2" (50/60)*     | 7" (17.8 cm)     | 6 3/4" (17.1 cm) | 5 3/4" (14.6 cm) |

▼ Click the icons below for more information

#### Design & Technical Resources



DRAWINGS



WRITTEN SPECS



TECH SPECS



RESOURCES

### How To Specify

100

Size  
100: 1" (26/34)  
150: 1 1/2" (40/49)  
200: 2" (50/60)

PESBR

Model  
PESB-R:  
scrubber  
model

PRS-D

Optional Feature  
PRS-Dial: pressure  
regulating module  
(must be ordered  
separately)

Note: Valve and PRS-Dial module must be ordered separately.  
For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

## Wide Flow Commercial Control Zone Kit with Scrubber Valve & Pressure Regulating, Basket Filter

### Features

- Rain Bird Control Zone Kits provide all of the components necessary for on/off control, filtration, and pressure regulation in a single package, making them simple to order and easy to install
- Complete kit is the simplest, smallest and most reliable Control Zone Kit for commercial applications between 3 and 20 gpm (11 and 76 l/m)
- Includes the reliable, proven PESB-R Valve which provides patented scrubbing action, making this kit ideal for commercial dirty water applications
- Includes the Pressure Regulating, Basket Filter. In addition, the threaded top makes it easy to remove and clean the stainless steel screen



X CZ-100-PRBR

### Operating Range

- Flow: 0.3 to 20.0 gpm (1.13 to 75.7 l/m)\*
- Inlet Pressure: 15 to 150 psi (1,0 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150° F (66° C)

| Model         | Description   |
|---------------|---|
| X CZ-100-PRBR | 1" PESBR Valve and 1" Pressure Regulating (40psi) Basket Filter |

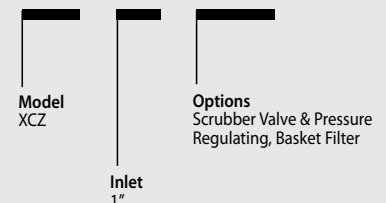
▼ Click the icons below for more information

#### Design & Technical Resources

- DRAWINGS
- WRITTEN SPECS
- TECH SPECS
- RESOURCES

### How To Specify

#### X CZ - 100 - PRBR



## 1.5" Inline Commercial Control Zone Kit

Run Up to 62 gpm for Large Zones

- High Flow Range: Allows for larger drip zone coverage with one control zone kit, saving labor cost, material cost and installation hassle.
- Low Friction Loss: Allows usage in zones with lower head pressure.
- Fully Assembled: Saves installation labor cost by ensuring all key components are included and that the direction of flow in individual components is assembled properly.
- Inline Configuration: Fewer connection points, which fits two kits instead of just one in a jumbo valve box. Also provides more access for maintenance and components.



### Valve Type

- X CZ-150-LCDR: 1.5" PESB-R
- Power: 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush Current: 0.41A (9.84 VA) at 60Hz
- Holding Current: 0.14A (3.43VA) at 60Hz
- Coil Resistance: 30-39 Ohms
- Two-wire compatible with ESP-LXD Decoders

### Operating Range

- Flow Range: 15 to 62 gpm (56.8 l/min to 234.69 l/min)
- Inlet Pressure: 15 to 115 psi (1.03 to 7.9 bar)
- Regulated Pressure: 40 psi (2.8 bar)
- Filtration: 120 mesh (130 micron)
- Water Temperature: 33° F up to 110° F (0.5° C to 43° C)
- Ambient Temperature: 33° F up to 125° F (0.5° C to 52° C)

| Model         | Description  |
|---------------|--|
| X CZ-150-LCDR | 1.5 in. Inline Commercial Control Zone Kit - 40 psi, disc filter, scrubber valve |

▼ Click the icons below for more information

**Design & Technical Resources**

DRAWINGS

WRITTEN SPECS

TECH SPECS

RESOURCES

**How To Specify**

X CZ - 150 - LCDR

Model  
X CZ

Inlet  
1.5"

Filter  
LCDR: Disc filter for reclaimed water

## Quick Coupling Valves Brass Irrigation Valves

Industrial-strength brass quick-coupling valves for convenient water access in potable and non-potable systems.

### Features

- Rugged, red brass construction for long life and reliable performance.
- Reliable operation with strong corrosion-resistant stainless steel spring
- 33-DNP, 44-NP, 44-NP ACME, and 5-NP covers marked with “Do Not Drink!” warnings in English and Spanish



33-DNP, 44-NP,  
44-NP ACME

### Specifications

- Pressure: 5 to 125 psi (0.35 to 8.63 bar)
- Flow: 10 to 125 gpm (2.27 to 28.38 m<sup>3</sup>/h; 37.8 to 473 l/m)
- 33-DNP, 44-NP and 5-NP flow: 10 to 70 gpm (2.27 to 15.89 m<sup>3</sup>/h; 37.8 to 265 l/m)

### Dimensions (height)

- 33-DNP: 43/8” (11.1 cm)
- 44-NP: 6” (15.2 cm)
- 44-NP ACME: 6” (15.2 cm)
- 5-NP: 5 1/2” (14.0 cm)

| Model      | Description  |
|------------|--|
| 33-DNP     | 3/4” (20/27) Non-potable, Purple Locking Rubber Cover, 2-Piece Body            |
| 44-NP      | 1” (26/34) Non-potable, Purple Locking Rubber Cover, 2-Piece Body              |
| 44-NP ACME | 1” (26/34) Non-potable, Purple Locking Rubber Cover, 2-Piece Body, ACME thread |
| 5-NP       | 1” (26/34) Non-potable, Purple Locking Rubber Cover, 1-Piece Body              |

**Note:** For non-US applications, it is necessary to specify NPT or BSP thread type

### How To Specify

**44 - NP - ACME**

Model  
33  
44  
5

Cover  
DNP  
NP

Thread  
Blank: NPT  
ACME: 44-NP only

**Note:** This specifies a 44-NP-ACME valve: 1” (26/34) Non-potable, Purple Locking Rubber Cover, 2-Piece Body, ACME thread

▼ Click the icons below for more information

#### Design & Technical Resources



DRAWINGS



WRITTEN SPECS



TECH SPECS



RESOURCES

## Purple Valve Boxes and Lids

Rain Bird® PVB Professional series offers rugged, no-nonsense dependability, but with a price tag that can meet any budget. Coupled with the Rain Bird® VB Specification series, you have a full range of reliable valve boxes that deliver strength and value to any project.

### Features

- Lid can be removed by inserting a finger or screwdriver at access slots.
- Lid marking area makes it easy to label the valve box.
- Beveled lid edges help prevent damage to lids from lawn equipment.
- Snap-in overlapping lid Skid-resistant texture



Purple Valve Boxes and Lids

| Model | Description |
|-------|-------------|
|-------|-------------|

| PVB Professional Series Non-Potable Valve Boxes |  |
|---|--|
| PVB6RNDP  | 6" round black body & overlapping purple lid   |
| PVB10RNDP                                       | 10" round purple body & overlapping purple lid |
| PVBSTD  | 12" standard purple body & drop-in purple lid  |
| PVBJMBP   | 12" purple body & drop-in purple lid           |
| PVBJMBEXT                                       | 6" purple body & overlapping purple lid        |

| VB Series Non Potable Valve Box Lids |  |
|--------------------------------------|--|
|--------------------------------------|--|

|             |                             |
|-------------|-----------------------------|
| VB-STD-PL   | Standard (Purple Lid Only)  |
| VB-JMB-PL   | Jumbo (Purple Lid Only)     |
| VB-10RND-PL | 10" Round (Purple Lid Only) |
| VB-7RNDPL   | 7" Round (Purple Lid Only)  |

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS



WRITTEN SPECS



TECH SPECS



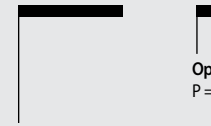
PVB RESOURCES



VB RESOURCES

### How To Specify

PVBSTD - P



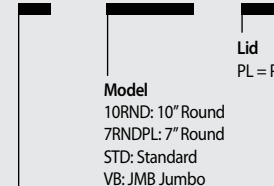
Options  
P = Purple body & lid

Model  
PVB Professional Series  
Standard Valve Box

**Note:** Note: 6" and MST models are black bodies only.

### How To Specify

VB - 10RND - PL



Lid  
PL = Purple lid

Model  
10RND: 10" Round  
7RNDPL: 7" Round  
STD: Standard  
VB: JMB Jumbo

**Note:** Note: 6" and MST models are black bodies only.



## Purple Valve Handle Assemblies

For retrofit applications on existing valves that do not have purple markings designating use of recycled water, Rain Bird offers purple retrofit valve handle assemblies for PGA, PESB and BPE valves.

### Features

- Purple flow control handle identifies valve as part of a non-potable system
- Easily field installed
- Sizes for all Rain Bird Commercial Valves



PGA-NP-HAN



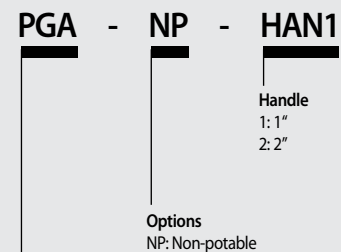
PEB-NP-HAN



BPES-NP-HAN

| Model       | Description                                   |
|-------------|---|
| PGA-NP-HAN1 | Purple Handle (Fits 1" and 1 1/2" PGA Valves) |
| PGA-NP-HAN2 | Purple Handle (Fits 2" PGA Valves)            |
| PEB-NP-HAN1 | Purple Handle (1" PEB/PESB Valves)            |
| PEB-NP-HAN2 | Purple Handle (1 1/2" and 2" PEB/PESB Valves) |
| BPE-NP-HAN  | Purple Handle (3" BPE/BPES Valves)            |

### How To Specify



Valve Models  
 PGA Valves  
 PEB/PESB Valves

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS



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RESOURCES



# Emission Devices



## Emission Devices

Designed to handle the challenges of recycled water use, these Emission Devices are built to last. Some feature special internal components that filter debris from your system, while others can easily withstand chlorine and other chemicals that reduce a regular spray's lifespan. Visible purple indicators ensure everyone knows recycled water is being used.



### Emission Devices Product Lines for Non potable Systems

#### ROTORS

- 3500 Series Rotors
- 5000 Series Rotors
- Falcon® 6504 Series Rotors
- Rain Bird® 8005 Rotors
- 2045A Maxi-Paw™

#### SPRAYS

- RD1800™ Series Spray Heads
- PA-8S-NP Shrub Adapter

#### DRIP

- XFD Purple Dripline
- Drip Compression Fittings
- XBS - Black Stripe Tubing



## Case Study

### LEGOLAND, Carlsbad, CA

#### PROJECT OVERVIEW:

At LEGOLAND®, a family theme park in California, 90% of the landscaping is irrigated using recycled water from the City of Carlsbad. In early 2011, Rain Bird asked Chris Bruchez, Landscaping Supervisor at the park, to field test a new spray head, the RD1800™, which is constructed of material designed to withstand the harsh chemicals used in recycled water. Mr. Bruchez was eager to try out the new spray head since he had success with another recycled product, the PESB-R valve, which uses the same material in its diaphragm.

#### RESULTS

Mr. Bruchez installed more than 200 sprays in a couple of zones for the field test. Since early 2011, he has not replaced an RD1800 due to components breaking down because of the chemically treated recycled water saving him replacement cost and maintenance time. "I really liked the way the spray has performed during this (field test) time," Bruchez said, "Now it's just a matter of replacing 10,000 more sprays with RD1800s."



Credit category of LEED for the Integrative Process (IP)= 1 point for the implementation stage when demonstrating at least one On-Site non potable water supply source was analyzed for at least two of the water demand elements including landscape irrigation and Site elements.

## 3500 Series Rotors

Compact Residential Rotor. Big on Value and Convenience

The 3500 Series Rotor is an easy to use short to mid-range 1/2" gear-drive rotor, offering value and convenience for smaller turf areas and densely planted landscapes. Utilizing a simple flat-bladed screwdriver, the 3500's arc adjustment is quick and easy.

### Features

- Rain Curtain™ nozzles deliver even distribution over the entire radius including large wind resistant droplets and gentle close-in watering resulting in greener turf using less water
- Oversized wiper seal prevents leaks and protects internals from debris
- Arc adjustment through the top of the rotor requiring only a flatblade screwdriver
- 3 year trade warranty

0.37 to 0.83 in/hr  
(9 to 21 mm/h)

25 to 55 psi  
(1.7 to 3.8 bar)

0.54 to 4.6 gpm  
(2.0 to 17.4 l/m)  
(0.12 to 1.04 m<sup>3</sup>/h)

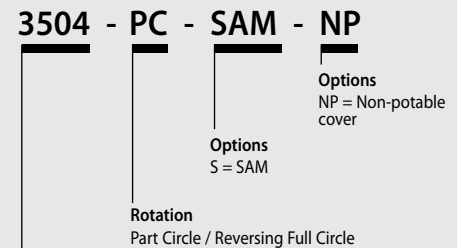
4" (10.2 cm)  
Shrub: 7" (17.8 cm)  
4": 6 5/8" (16.8 cm)  
 1/2" (20/27) NPT



3504-PC

| Model          | Description                                       |
|----------------|---|
| 3504-PC-SAM-NP | 4" part/reverse full circle with SAM and NP cover |

### How To Specify



Model  
3500 Series 4" pop-up

▼ Click the icons below for more information

#### Design & Technical Resources



DRAWINGS



WRITTEN SPECS



TECH SPECS



RESOURCES

## 5000 Series Rotors

Engineered to deliver a uniform spray pattern, giving you superior distribution uniformity and a consistently green lawn with less water.

### Features

- Rain Curtain™ Large water droplets and gentle close-in watering ensure efficient coverage and green grass
- Durable, oversized Leak-Free Seal prevents puddling and guarantees consistent pop-up and retraction for years
- Heavy-duty retract spring and cover assembly for extra durability in residential or commercial applications
- Self-flushing arc adjustment port that prevents buildup of debris
- Pressure-activated triple-blade multi-function wiper seal protects internals from debris and assures positive pop-up and retraction



5000 Series

0.20 to 1.01 in/hr  
(5 to 26 mm/h)

25 to 65 psi  
(1.7 to 4.5 bar)

0.76 to 9.63 gpm  
(3.0 to 36.6 l/m)  
(0.17 to 2.19 m³/h)

Shrub: 4" (10.2 cm)  
6" (15.2 cm)  
12" (30.5 cm)

Shrub: 7 3/4" (19.7cm)  
4": 7 3/8" (18.5 cm)  
6": 9 5/8" (24.5 cm)  
12": 16 7/8" (42.9 cm)  
3/4" (20/27) NPT

| Model         | Description   |
|---------------|---|
| 5000+SPCSAMNP | 5000S Shrub Plus Part Circle SAM Non Potable              |
| 5000S+PCSR    | 5000S Plus Shrub PRS PC SAM NP                            |
| 5004PCNP      | 5004 Part Circle Non Potable                              |
| 5004+PCSAMRNP | 5004 Plus Part Circle SAM PRS Non Potable                 |
| 5004+PCSAMRNS | 5004 Plus Part Circle SAM PRS Stainless Steel Non Potable |
| 5006+PCSAMNP  | 5006 Plus Part Circle SAM Non Potable                     |
| 5006+PCSAMRNP | 5006 Plus Part Circle SAM PRS Non Potable                 |
| 5006+PCSAMRNS | 5006 Plus Part Circle SAM PRS Stainless Steel Non Potable |
| 5012+PCSAMRNP | 5012 Plus Part Circle SAM PRS Non Potable                 |
| 5000S+PCSR    | 5000S PLUS SHRUB PRS PC SAM NP                            |

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS



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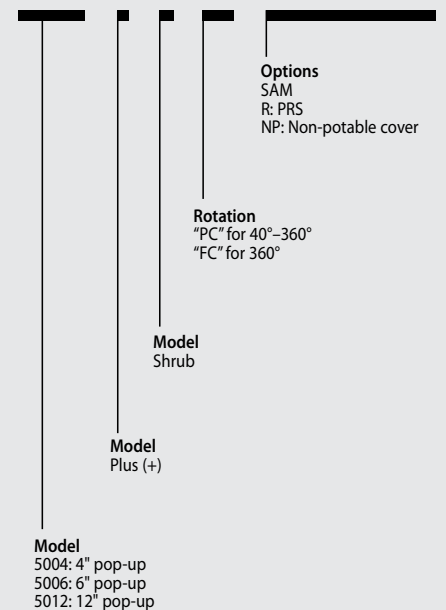
TECH SPECS



RESOURCES

### How To Specify

5004 - + - S - PC - SAM - R - NP



Note: Certain specifications not available for some rotor series.

## Falcon® 6504 Series

Reliable and Economical

The Falcon 6504 one of the toughest rotors in the field. Ideal for large turf sites such as parks, athletic fields, cemeteries, schools and commercial applications.

### Features

- Ratcheting stem just like standard spray bodies
- 3-port, color-coded Rain Curtain nozzles for optimal long range, mid-range, and close-in watering
- SAM Seal-A-Matic check valve
- Self-adjusting stator does not require replacement when changing nozzles
- Heavy-duty, stainless steel retract spring ensures positive popdown
- 5 year warranty



Falcon® 6504 Series

0.37 to 1.14 in/hr  
(9 to 29 mm/h)

30 to 90 psi  
(2.1 to 6.2 bar)

2.9 to 21.7 gpm  
(10.8 to 82.2 l/m)  
(0.66 to 4.93 m³/h)

4" (10.2 cm)  
8½" (21.6 cm)  
1" (26/34) NPT  
or BSP

| Model         | Description                                     |
|---------------|---|
| 6504-FC-NP    | Full-circle, non-potable cover                  |
| 6504-PC-NP    | Part-circle, non-potable cover                  |
| 6504-FC-SS-NP | Full-circle, stainless steel, non-potable cover |
| 6504-PC-SS-NP | Part-circle, stainless steel, non-potable cover |

*Note: All models available with BSP threads*

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS



WRITTEN SPECS

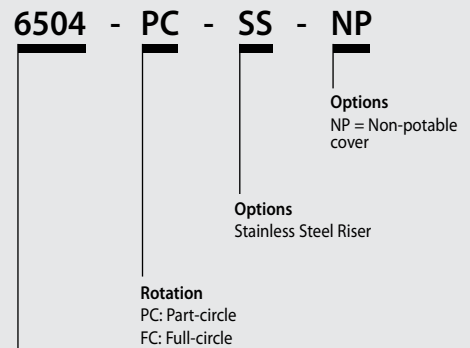


TECH SPECS



RESOURCES

### How To Specify



Model  
6504: Falcon

*Note: Certain specifications not available for some rotor series.*

## 8005 Series Rotors

Protect Your Turf with High Performance, Vandal and Abuse Resistant Rotors from 39' to 81'

The Rain Bird® 8005 Rotor, with its extensive customer identified features and 80 foot radius, is ideal for watering sportsfields, parks and other large turf applications.

### Features

- Vandal resistance, brass reinforced turret for increased side impact durability
- Memory Arc® returns the rotor to its original arc setting
- Non-strippable drive mechanism prevents damage from vandals
- Easy, wet, dry arc adjustment with slotted screwdriver through top of rotor from 50° to 330° part-circle, 360° non-reversing full-circle.
- Full and part circle operation in one unit
- Left and right side trips adjustable for ease of installation without turning the case and loosening the pipe connection
- SAM Seal-A-Matic check valve
- 3-port, color-coded Rain Curtain nozzles for optimal long-range, mid-range, and close-in watering
- 5 year warranty



8005 Series

0.48 to 1.23 in/hr  
(12 to 31 mm/h)

50 to 100 psi  
(3.5 to 6.9 bar)

3.8 to 36.3 gpm  
(14.4 to 137.4 l/m)  
(0.86 to 8.24 m³/h)

5" (12.7 cm)  
 10 1/8" (25.7 cm)  
 1" (26/34) NPT or BSP

| Model      | Description   |
|------------|---|
| 8005-SS-NP | 1" NPT female threaded inlet (5" stainless steel covered riser stem with non-potable cover) |

|         |   |
|---------|---|
| 8005-NP | 1" NPT female threaded inlet (plastic riser stem with nonpotable cover) |
|---------|---|

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS



WRITTEN SPECS

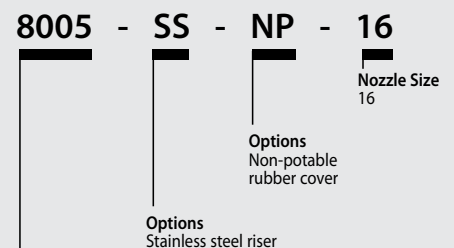


TECH SPECS



RESOURCES

### How To Specify



Model  
8005 Series

Note: For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

## 2045A Maxi-Paw™

The Maxi-Paw's powerful throw permits maximum spacing and offers superior close-in watering and uniform water distribution. Low pressure loss and an efficient, straight-through flow design conserve energy and are ideal for dirty water applications.

### Features

- Proven impact drive with straight-through flow for superior performance in dirty water
- Five standard trajectory and two low angle (LA) color-coded nozzles for matched precipitation and in a wide range of Applications
- 360° full-circle OR arc adjustable from 20° to 340°
- Side and combination 1/2" or 3/4" bottom inlet for design flexibility
- 3 year warranty



2045A Maxi-Paw

0.28 to 1.21 in/hr  
(7 to 31 mm/h)

25 to 60 psi  
(1.7 to 4.1 bar)

1.5 to 8.4 gpm  
(0.9 to 0.53 l/s)  
(0.34 to 1.91 m³/h)

3" (7.6 cm)  
9 3/10" (23.6 cm)  
1/2" or 3/4" FPT or BSP bottom inlet; 1/2" FPT or BSP side inlet

| Model      | Description   |
|------------|---|
| 2045ASAMNP | Part/Full Circle Maxi-Paw with with SAM and non-potable cover |

|         |  |
|---------|--|
| 2045ANP | Part/Full Circle Maxi-Paw with non-potable cover |
|---------|--|

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS



WRITTEN SPECS



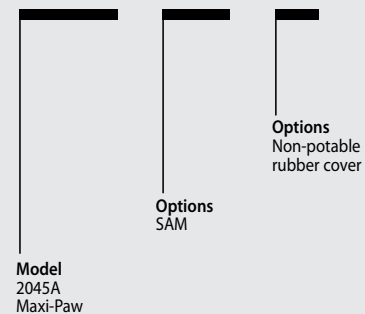
TECH SPECS



RESOURCES

### How To Specify

#### 2045A - SAM - NP





## RD1800™ Series Spray Heads

The RD1800 Series has been built to withstand harsh operating conditions such as chemically treated recycled water (reclaimed / nonpotable), dirty water containing grit, debris, and other particulates, and high operating pressures common in commercial irrigation systems.

### Features

- Exclusive comolded, pressure activated Triple-Blade Wiper
- Seal to assure a positive seal without excess “flow-by”, which enables more heads to be installed on the same valve.
- Precision-controlled flushing at pop-up and retraction clears debris, assuring positive stem retraction in all soil types.
- Debris pockets in the base of the spray body prevent recirculation of harmful debris during operation to reduce wear on the wiper seal and stem.
- Designed for use with all Rain Bird nozzles – Rotary Nozzles, U-Series, MPR, VAN, HE-VAN, and SQ Series.
- Parts developed to be resistant to corrosion in treated recycled water containing chlorine and other chemicals.



| Model            | 4"               | 6"               | 12" |
|------------------|------------------|------------------|-----|
| RD04             | –                | –                | –   |
| RD04-NP          | –                | –                | –   |
| RD04-S-P-30-NP   | RD06-S-P-30-NP   | RD12-S-P-30-NP   |     |
| RD04-S-P-30-F-NP | RD06-S-P-30-F-NP | RD12-S-P-30-F-NP |     |
| RD04-S-P-45-NP   | RD06-S-P-45-NP   | RD12-S-P-45-NP   |     |
| RD04-S-P-45-F-NP | RD06-S-P-45-F-NP | RD12-S-P-45-F-NP |     |

▼ Click the icons below for more information

### Design & Technical Resources



### How To Specify

RD-XX - X - Nozzle

**Nozzle**  
See Rotary Nozzle, U-Series, MPR, VAN, HE-VAN and SQ Nozzle specifications for more information

**Options**  
S: Seal-A-Matic™ check valve  
P30: 30 psi (2.1 bar) in-stem pressure regulation  
P45: 45 psi (3.1 bar) in-stem pressure regulation  
F: Flow-Shield™ Technology  
NP: Non-potable water use indicating cover

**Model**  
RD-04: 4" (10 cm) pop-up height  
RD-06: 6" (15 cm) pop-up height  
RD-12: 12" (40 cm) pop-up height

*Note: Flow-Shield™ Technology available in P30 and P45 models only. Specify sprinkler bodies and nozzles separately.*

## PA-8S-NP Shrub Adapter

Adapts Rain Bird nozzles for use with 1/2" (15/21) MPT threaded risers

### Features

- Accepts protective, non-clogging 1800 Series filter screen (shipped with nozzle) and PCS Series screens.
- Durable, non-corrosive plastic construction.
- Purple plastic shrub adapter for easy identification of a non-potable water system (PA-8S-NP).



PA-8S-NP



| Model    | Description                  |
|----------|------------------------------|
| PA-8S-NP | Purple Plastic Shrub Adapter |

## 1800 NP Cover

Non-Potable 1800 Spray Head Cover

### Features

- Designed for excellent retention on 1800 Series Spray Body covers
- Purple plastic cover for easy identification of non-potable water system
- Marked with "Do Not Drink!" warning in both English and Spanish
- Snaps onto all 1800R Series Spray Body covers



1800-NPCAP



| Model      | Description                              |
|------------|--|
| 1800-NPCAP | Purple cover for 1800 Series Spray Heads |

## XFD Purple On-Surface Dripline

The Most Flexible, Pressure-Compensating In-line Emitter Tubing Available to Irrigate Ground Cover, Dense Plantings, Hedge Rows and More

### Features

- Extra flexible tubing for fast, easy installation
- Dual-layered tubing (brown over black or purple over black) provides unmatched resistance to chemicals, UV damage and algae growth
- Patent pending emitter design provides for increased reliability
- Longer lateral runs than competition
- Unique material offers significantly greater flexibility, allowing tighter turns with fewer elbows for easier installation
- Choice of flow rates, spacing and coil lengths provides design flexibility for a variety of non-turfgrass applications
- Use an Air/Vacuum Relief Valve Kit when installation is below soil



Purple XFD Dripline

### Operating Range

- Pressure: 8.5 to 60 psi (0.58 to 4.1 bar)
- Flow rates: 0.6 gph and 0.9 gph (2.3 l/h and 3.5 l/h)
- Temperature: Water up to 100° F (37.8C); Ambient up to 125° F (51.7C)
- Required filtration: 120 mesh

### Specifications

- Outside diameter: 0.634" (16.1 mm)
- Inside diameter: 0.536" (13.6 mm)
- Wall thickness: 0.049" (1.2 mm)
- Spacing: 12" or 18"
- Lengths: 100', 250', and 500' coils
- Use with XF Dripline Insert Fittings, Rain Bird Easy Fit Compression Fittings, or Twist Lock Fittings

| Model                   | Description   |
|-------------------------|---|
| XFDP-06-12-500 (Purple) | XFD Purple On-Surface Dripline, 0.61 gph (2.3 l/h) flow rate, 12" (30.5 cm) emitter spacing, 500' (152.4 m) tubing length |
| XFDP-06-18-500 (Purple) | XFD Purple On-Surface Dripline, 0.61 gph (2.3 l/h) flow rate, 18" (45.7 cm) emitter spacing, 500' (152.4 m) tubing length |
| XFDP-09-12-500 (Purple) | XFD Purple On-Surface Dripline, 0.92 gph (3.5 l/h) flow rate, 12" (30.5 cm) emitter spacing, 500' (152.4 m) tubing length |
| XFDP-09-18-500 (Purple) | XFD Purple On-Surface Dripline, 0.92 gph (3.5 l/h) flow rate, 18" (45.7 cm) emitter spacing, 500' (152.4 m) tubing length |

▼ Click the icons below for more information

#### Design & Technical Resources



DRAWINGS



WRITTEN SPECS

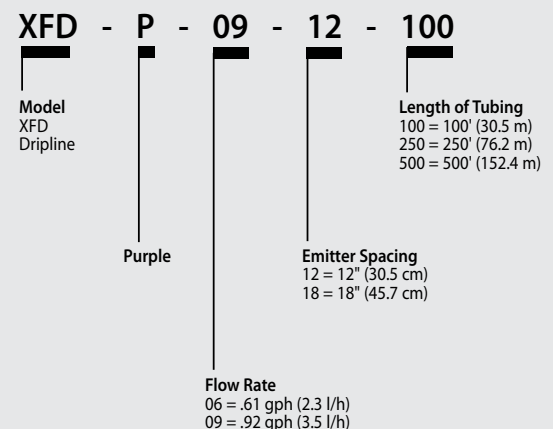


TECH SPECS



RESOURCES

### How To Specify



## XFS-CV Dripline

With Copper Shield™ Technology and Heavy-Duty Check Valve

### Features

- Rain Bird's low-profile emitter design reduces in-line pressure loss, allowing longer lateral runs, simplifying design and reducing installation time
- Variety of emitter flow rates, emitter spacing and coil lengths provide design flexibility for either sub-surface turf or sub-surface shrub and groundcover applications
- XFS Sub-Surface Dripline emitters are protected from root intrusion by Rain Bird's patent-pending Copper Shield™ Technology resulting in a system that does not require maintenance or replacement of chemicals to prevent root intrusion
- The pressure-compensating emitter design provides a consistent flow over the entire lateral length ensuring higher uniformity for increased reliability in the pressure range of 8.5 to 60 psi
- Dual-layered tubing (copper over black) provides unmatched resistance to chemicals, algae growth and UV damage
- Grit Tolerant: Rain Bird's proprietary emitter design resists clogging by use of an extra-wide flow path combined with a self-flushing action



XFS-CV Dripline



### Made with Recycled Content

All Rain Bird XF Dripline (XFD, XFS, XFCV, XFS-CV) qualify for LEED credit 4.2 because they contain at least 20% Polyethylene post-consumer recycled material by cost. These come in an assortment of coil sizes, flow rates, and emitter spacing

### Operating Range

- Pressure: 8.5 to 60 psi (0.58 to 4.14 bar)
- Flow rates: 0.4 gph, 0.6, and 0.9 gph (1.6 l/h, 2.3 l/hr and 3.5 l/hr)
- Temperature:
  - Water: Up to 100°F (37.8° C)
  - Ambient: Up to 125°F (51.7° C)
- Required Filtration: 120 mesh

| Model             | Description                         |
|-------------------|-------------------------------------|
| XFS-CVP-06-12-500 | XFS-CV 0.6GPH 12" SPC PURPLE 500 FT |
| XFS-CVP-06-18-500 | XFS-CV 0.6GPH 18" SPC PURPLE 500 FT |
| XFS-CVP-09-12-500 | XFS-CV 0.9GPH 12" SPC PURPLE 500 FT |
| XFS-CVP-09-18-500 | XFS-CV 0.9GPH 18" SPC PURPLE 500 FT |

| Model               | Description                                |
|---------------------|--|
| XFS-CVP-S-06-12-500 | XFS-CV 0.6GPH 12" SPC PURPLE STRIPE 500 FT |
| XFS-CVP-S-06-18-500 | XFS-CV 0.6GPH 18" SPC PURPLE STRIPE 500 FT |
| XFS-CVP-S-09-12-500 | XFS-CV 0.9GPH 12" SPC PURPLE STRIPE 500 FT |
| XFS-CVP-S-09-18-500 | XFS-CV 0.9GPH 18" SPC PURPLE STRIPE 500 FT |

Click the icons below for more information

### Design & Technical Resources



DRAWINGS



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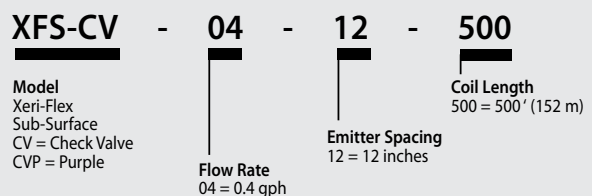


TECH SPECS



RESOURCES

### How To Specify



Purple stripe also available

## XBS - Black Stripe Tubing

High quality, flexible tubing for use in any low-volume irrigation system

### Features

- 1/2" & 3/4" blank tubing extruded from polyethylene resin materials for consistent durability
- 1/2" tubing is now available in two different sizes: 0.600" I.D. X 0.700" O.D. and 0.615" I.D. X 0.705" O.D.
- Available in five color stripes to differentiate zones
- UV-resistant for installations at or below grade
- Compact coils for easy storage and shipping



Black Stripe Tubing

| Model      | Description   | Outside Diameter | Inside Diameter  | Wall Thickness  |
|------------|---|------------------|------------------|-----------------|
| XBS700P100 | 1/2" tubing, 100 foot (30 m) coil with purple striping  | 0.700" (17.8 mm) | 0.600" (15.2 mm) | 0.050" (1.3 mm) |
| XBS700P500 | 1/2" tubing, 500 foot (152 m) coil with purple striping | 0.700" (17.8 mm) | 0.600" (15.2 mm) | 0.050" (1.3 mm) |
| XBS500P    | 1/2" tubing, 500 foot (152 m) coil with purple striping | 0.705" (18 mm)   | 0.615" (15.6 mm) | 0.045" (1.2 mm) |
| XBS940P500 | 3/4" tubing, 500 foot (152 m) coil with purple striping | 0.940" (24 mm)   | 0.820" (21 mm)   | 0.060" (1.5 mm) |

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS

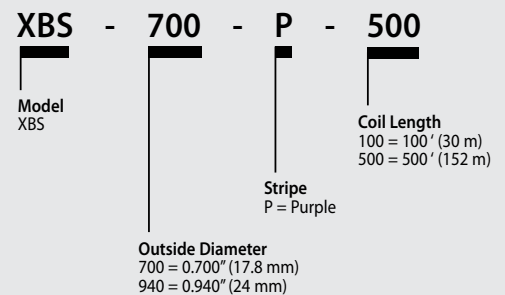


TECH SPECS



RESOURCES

### How To Specify



## Removable Flush Cap

For Easy Fit Fittings (Purple, to designate non-potable water)

### Features

- Faster and easier to install—requires up to 50% less force to install tubing, making your installation project faster and easier
- Fittings and adapters that can accommodate virtually connection situation, great for maintenance and retrofitting existing systems.
- Works with virtually any manufacturer’s ½” tubing, where the outside diameter ranges from .630” to .669” (16mm to 17mm), and threaded EasyFit adapters are compatible with threaded PVC Pipe Fittings.



MDCFPCAP

### Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)
- Accepts tubing O.D. of 0.630” to 0.669” (16 -17mm)

| Model    | Description                           |
|----------|---------------------------------------|
| MDCFPCAP | Purple to designate non-potable water |

## PC Diffuser Cap

### Features

- Cap snaps securely onto the PC Module and XB emitter outlet to create bubbler effect and prevent wash out
- Designed for quick and easy installation
- Made of UV-resistant polyethylene material.

PC-DIFF-PPL



| Model       | Description                           |
|-------------|---------------------------------------|
| PC-DIFF-PPL | Purple to designate non-potable water |

## RWS/RWS-Mini Accessories

Investment Protection

### Features

- Deep and broad roots yield transplantation survivability, stability in high winds, fast and healthy growth. Watering Efficiency
- Subsurface irrigation minimizes run-off and evaporation. Landscape Aesthetics
- Installs at grade and helps minimize damage

RWS-GRATE-P



| Model       | Description                                  |
|-------------|--|
| RWS-GRATE-P | Root Watering System 4” (10 cm) Purple Grate |

▼ Click the icons below for more information

### Design & Technical Resources



DRAWINGS



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RESOURCES

## Top Green Codes and Green Programs

### International Plumbing Code (IPC)

#### GG120-14

404.1 Landscape irrigation systems. Landscapes shall be designed to limit or eliminate the use of potable water for irrigation. Irrigation of exterior landscaping shall comply with Sections 404.1.1 and 404.1.2

### Green Globes

#### 3.c Alternative Water

##### 3.c.1 UFC 1-200-02, Paragraph 2-4.3 Alternative Water

"Where life-cycle cost-effective and permitted by local laws and regulations, use alternative water sources."

Requirements:

**3.c.1.1:** Submit documentation of water efficient landscape and irrigation strategies, such as water reuse and the use of harvested rainwater.

### LEED

#### Leadership in Energy and environmental design

- 1 point for the Water Efficiency goal credit category (WE) if a total of 50% outdoor water use reduction is achieved.
- Credit category of LEED for the Integrative Process (IP)= 1 point for the implementation stage when demonstrating at least one On-Site non potable water supply source was analyzed for at least two of the water demand elements including landscape irrigation and Site elements.

### California AB1881

#### California Model Efficient Landscape Ordinance

##### § 492.14 Recycled Water.

- The installation of recycled water irrigation systems shall allow for the current and future use of recycled water.
- All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws.
- Landscapes using recycled water are considered Special Landscape Areas.

The ET Adjustment Factor for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0.

### ASHRAE 189.1

#### Water Use Efficiency Prescriptive Option

##### 6.4.1 Site Water Use

Maximum 1/3 of improved landscape area is allowed to be irrigated with potable water

##### SS WE EE IEQ MR CO alternate on-site sources of water:

Alternate on-site sources of water include, but are not limited to:

- rainwater or stormwater harvesting,
- air conditioner condensate,
- gray water from interior applications and treated as required,
- swimming pool filter backwash water,
- cooling tower blowdown water,
- foundation drain water,
- industrial process water, or
- on-site wastewater treatment plant effluent.

<http://www.kcashrae.org>

#### Landscape irrigation (404.1.2 IgCC/402.1.2 WEP)

- Requires landscape irrigation systems be designed to reduce potable water use by 50%.

Water Conservation and Efficiency - WEP 2015

#### Non-Potable Moved from IgCC to International Plumbing Code (IPC)

- Included in 2015WEP

## The Intelligent Use of Water.™

LEADERSHIP • EDUCATION • PARTNERSHIPS • PRODUCTS

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At Rain Bird, we believe it is our responsibility to develop products and technologies that use water efficiently. Our commitment also extends to education, training and services for our industry and our communities.

The need to conserve water has never been greater. We want to do even more, and with your help, we can. Visit [www.rainbird.com](http://www.rainbird.com) for more information about The Intelligent Use of Water.™



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