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Smart Water Application Technologies (SWAT) Performance Report

Testing Agency: Center for Irrigation Technology **www.californiawater.org**

Product: Rain Bird ESP-SMT Smart Control System

Product Type: Climatologically Based Controller

Product Description: The Rain Bird ESP-SMT Smart Control System includes the controller and on-site sensor to monitor weather conditions and estimate the daily reference ETo. The weather sensor features a tipping rain bucket that suspends irrigation instantly if rainfall is detected and measures and accounts for effective rainfall to prevent over or under watering.

SWAT Protocol*: Turf and Landscape Equipment Climatologically Based Controllers 8th Draft Testing Protocol (Sept. 2008)

The concept of climatologically controlling irrigation systems has an extensive history of scientific study and documentation. The objective of this protocol is to evaluate how well current commercial technology has integrated the scientific data into a practical system that meets the agronomic needs of turf and landscape plants. The evaluation is accomplished by creating a virtual landscape subjected to a representative climate to evaluate the ability of individual controllers to adequately and efficiently irrigate that landscape. After initial programming and calibration the controller is expected to perform without further intervention during the test period. Performance results indicate to what degree the controller maintained root zone moistures within an acceptable range. If moisture levels are maintained without deficit, it can be assumed the crop growth and quality will be adequate. If moisture levels are maintained without excess it can be assumed that scheduling is efficient.

***All SWAT protocol may be viewed at www.irrigation.org**

Rain Bird ESP-SMT Smart Control System SWAT Performance Summary

Irrigation Adequacy	Irrigation Excess
Minimum of 6 test zones: 100% **Maximum of 6 test zones: 100%** **Mean/Average of 6 test zones: 100%** **Irrigation Adequacy** represents how well irrigation met the needs of the plant material. This reflects the percentage of required water for turf or plant material supplied by rainfall and controller-scheduled irrigations. Research suggests that if this value is between 80% and 100%, the acceptable quality of vegetation will be maintained.	**Minimum of 6 test zones: 0%** **Maximum of 6 test zones: 6.8%** **Mean/Average of 6 test zones: 1.5%** **Irrigation Excess** represents how much irrigation water was applied beyond the needs of the plant material. This reflects the percentage of water applied in excess of 100% of required water according to data from CIMIS station #80 Fresno State, Fresno during the test period.

Product Detail Supplied by Manufacturer

Rain Bird ESP-SMT Smart Control System **www.rainbird.com**

Installation	Data Source	Data Link	Initial Purchase	Additional Hardware	Additional Fees
Upgrade existing ESP- Modular Controllers or install as new system	On-site weather sensor with temperature sensor and tipping rain bucket	Two quick-connect low voltage terminals	Purchase price includes four station base model controller, weather sensor and heavy-duty, adjustable mounting bracket	❑ Optional three-station expansion modules	None

Additional Features

Zones	Time of Day	Day of Week	Other	If Data Link is Discontinued
4-station base expands up to 13 stations with hot swappable three-station expansion modules	Capable of restricting watering time of day through two water windows, plus a third "Grow-In" selection	Capable of restricting watering by odd and even days, day of week and cyclical (2-14 days)	❑ Extra Simple Programming (ESP) ❑ Wizards simplify programming ❑ Backlit display improves readability ❑ Instant rainfall shutoff and useable measurement prevents over or under watering ❑ Uses proven "Moisture-Balance" programming method ❑ Automatic "Cycle & Soak" based on soil type ❑ Established or "Grow-In" irrigation modes ❑ Save/Restore Contractor Settings retrieve easily ❑ English/Spanish option for display text ❑ All information stored in non-volatile memory	Zones are irrigated based on the highest ETo value from the past seven days. Red alarm light illuminates to inform user of a communication problem.