Weather Based Irrigation Technologies - Summary of Product Information and Features

Company Name	Accurate WeatherSet	Alex-Tronix	Aqua Conserve	Calsense	Cyber-Rain	ECO Research	ET Water Systems	Hunter (ET System)	Hunter (Solar Sync)	HydroPoint WeatherTRAK
Telephone	(818) 993-1449	(888) 224-7630	(877) 922-2782	(800) 572-8608	(818) 585-7178	(208) 407-2029	(415) 945-9383 ext. 223	(760) 591-7344	(760) 591-7344	(800) 362-8774 x106
Contact Person	Andrew Davis	George Alexanian	Bill Bounds	Rick Capitanio	Reza Pourzia	Larry Haley	Katherine Wing	Dave Shoup	Dave Shoup	Caroline Nordahl Brosio
Website	www.weatherset.com	www.alex-tronix.com	www.aquaconserve.com	www.calsense.com	www.cyber-rain.com	www.ecoresearch.com	www.etwater.com	www.hunterindustries.com	www.hunterindustries.com	www.weathertrak.com
Number of Residential Model Types	2	1	2	0	2	1	2	1	1	1
Number of Commercial Model Types	1	2	2	1	1	1	5	1		1
Date Product(s) Entered Market	1994	2005	1998	1993	2007	2005	2005	2006	April 2009	1997
Method of Operation and Water Savings										
Basis for Schedule: Historical Data		●	●	●	Back-up				●	Back-up
Basis for Schedule: On-site Sensor(s)	●	●	●	●[1]	●	●	●[1]	●	●	●[1]
Basis for Schedule: Remote Weather Station(s)/Sensors							●			●
Basis for Schedule: Weather Forecasts					●					
Weather Data Source	On-site solar and rain sensors	On-site temperature sensor and solar radiation estimated based on geographic location	16 preprogrammed ET curves with on-site temperature sensor	Historic ET data, evaporative atmometer type ET sensor, weather station or CIMIS data	Weather forecasts automatically from Internet and historic weather data	On-site temperature sensor and solar radiation estimated based on geographic location	Public & ETWS weather station data managed by centralized computer server	On-site weather station with full set of sensors	On-site temp, solar, & rain sensors	Public and private weather stations managed by central computer and wireless delivery
Manufacturer Reported Water Savings (Percent)	25	10 to 30	21 to 28[2]	20 to 40[2]	38	20 to 40	20 to 50	30	30	16 to 58[2]
Product Features										
Stand-alone Controller or Add-on to Existing	Stand-alone	Stand-alone and Add-on	Stand-alone	Stand-alone	Stand-alone	Add-on	Stand-alone	Add-on	Add-on	Stand-alone
Station or Zone Capacity	8-48	4-24	6-66	8-48	8-24, unlimited	Not Applicable	8-48	1-48	Not Applicable	6-48
Master Valve or Pump Circuit(s)	1	1	1-4	2	1	Not Applicable	2	Not Applicable	Not Applicable	1
Internal Power Transformer	Outdoor Models Only	Not Applicable	Commercial Only	●			●	Not Applicable	Not Applicable	●
Battery Powered - DC		●						Not Applicable	Not Applicable	
Station Circuit Current Rating (Amperes)	0.75 and 1.5	5.0 (DC pulse)	1.0	1.5	1.0	Not Applicable	1.1	Not Applicable	Not Applicable	0.375 and 0.5
Terminal Wire Size Range (Gauge)	12-20	12-18	12-18	14	max 14 solid & 16 stranded	Not Applicable	12 and smaller	Not Applicable	Not Applicable	12-20
Outdoor Installation	●	●	All Comm. & 2 Res.	●	●	●[1]	●	●	●	●
On-site Rain Gauge or Sensor w/ Rain Shutoff/Delay	●	●[1]	Incl. w/ Res, Comm Option[1]	●[1]	●[1]	●[1]	●[1]	●	●	●[1]
Rain Shutoff/Delay by Remote Sensor or Rain Forecast					●					●
Rainfall Irrigation Schedule Compensation	●			●		●	●	●		●
On-site Wind Gauge w/ High Wind Shut-off				●[1]	●[1]			●[1]		●[1]
High Wind Shut-off by Remote Sensor								●[1]		●[1]
On-site Temperature Sensor w/ Freeze Shut-off		●	●		●	●		●	●	●[1]
On-site Temperature Sensor w/ High Temp On or Off					●			●		
Freeze or High Temp Shut-off by Remote Sensor							●[1]			●
On-site Evaporative Atmometer Type "ET Sensor"				●[1]						
On-site Solar Radiation Sensor	●			●[1]				●	●	
On-site Humidity Sensor				●[1]				●		
Flow Sensor(s) Connectivity	5 models		12 Models	●	●		●			●[1]
Additional Sensor Terminals			With Adaptor[1]	●			●	●		●
Internet or Computer Interface				●	●		●			
Remote Control Device(s) for Controller				●[1]			●	●[1]		●[1]
Two-way Communication between Server and Receiver					●		●	Not Applicable	Not Applicable	Commerical Model
Station Circuit Testing	5 models	●		●	●		●	Not Applicable	Not Applicable	●
Surge and/or Lightning Protection	5 models	●	Etu & ET-SP Models	●[1]	●		●	●		●
SWAT Test Performance Report Available		●		●	●		●	●	●	●
Scheduling Features										
Fully Automatic Schedule (No Base Schedule Required)					●		●	●		●
Base Irrigation Schedule Required	●	●	●	●	●	●			●	
User May Define Non-Irrigation Days	●	●	●	●	●	●	●	●	●	●
Operable in Manual Clock Mode	●	●	●	●	●	●	●	●	●	●
Manual Operation by Station or Program	●	●		●	●	●	●	●	●	●
Variable Total Run Times	●	●	●	●	●		●	●	●	●
Irrigation Schedule Period(s)	Weekday or daily to 40 days	Week or up to 99 Day	Week or Odd/Even	7, 14, 21 or 28 Day	Week	Not Applicable	Unlimited Days	Weekday,1-31 day, odd/even	Not Applicable	8 Weeks,Odd/Even&Weekday
Available Start Times	10	4 per program	4-8	6 per manual program	4	Not Applicable	9			8 starts with 20 repeat cycles
Cycle/Soak Manual Input	●	●	●	●	●	Not Applicable	●			Optional
Cycle/Soak Periods Automatically Calculated					●	Not Applicable	●	●		●
Runs Concurrent Stations	●	●		●		Not Applicable	●			●
Number of Programs	5	4	4	7	4	Not Applicable	Unlimited	Not Applicable	Not Applicable	Unlimited
Percent Irrigation Adjust Feature		●	●	% of ET Adjust per station		Not Applicable	●	●		●
Station Distribution Uniformity/Efficiency Setting							●			●
Syringe Cycle or Program	●		●	●			●			●
New Landscape Establishment/Fertilizer Program			●	●	●	Not Applicable	●	●		
Review of Weather Information				●	●		●	●		●
Review of Irrigation or Water Use Information	●	●	●	●	●	●	●	●		●
English and Spanish Langauges Display				●	●					
Product Support and Warranty										
Warranty	3 Years	2 Years	3 Years	10 Years	2 Years	1 Year	3 Years	2 Years	2 Years	3 (Res) and 5 (Comm) years
Support: On-site Service Technicians	In Southern California	●		●			●			●
Support: Telephone Technicians	●	●	●	●	●	●	●	●	●	●
Support: Local Distibutors	In Southern California	●	●	●	Selected areas	●	●	●	●	●
Installation and Maintenance Requirements										
Professional Installation & Programming Recommended	●	Recommended for 2 models	Commercial Models	●			●	●	●	●
Ongoing Maintenance Required				Clean Sensors				Clean Sensors	Clean Sensors	
Battery Replacement Required		●	●			●	●	●	●	
Cost										
Suggested Retail Price	$222-$1,440	$150-$2,695	$264-$6,193	$1,050-$3,925	$399 and up[4]	$198	$831-$2,985	$450	$129	$340 and up[4]
Annual Service Cost	0	0	0	0	0	0	$75-$199	$0	$0	$48 and up[4]

1 - Optional add-on feature not included in controller price(s) shown
2 - Reported water savings documentation is published or publically available
3 - Scheduling guidelines or assistance provided with purchase
4 - Complete pricing information was not available for this report
5 - Controller back-up schedule based on recent ET good for 21 days without network connectivity which can be modified by user
6 - Includes remote monitoring of irrigation operation and tracks meter usage for savings reports

Weather Based Irrigation Technologies - Summary of Product Information and Features (cont.)

Company Name	HydroSaver[7]	Irrisoft Weather Reach	Irritrol	Rain Bird (ETMi & ETC)	Rain Bird (ESP-SMT)	Rain Master	The Toro Company	Tucor	Weathermatic	Weathermiser
Telephone	1-562-494-8686	(435) 755-0400	(800) 634-8873	Christen Brooker	(858) 268-2609	(805) 527-4498	(877) 345-8676	(800) 272-7472	(972) 278-6131	(505) 235-6999
Contact Person	Tom Carr	Steven Moore	Dan Winterton	(520) 741-6166	Don Clark	Steve Springer	Brian Ries	Larry Sarver	Brodie Bruner	Al Caprio
Website	www.hydrosaver.net	www.irrisoft.net	www.irritrol.com	www.rainbird.com/etmanager	www.rainbird.com/ESP-SMT	www.rainmaster.com	www.toro.com	www.tucor.com	www.smartline.com	www.weathermiser.com
Number of Residential Model Types	0	1	1	2	3	0	1	1	2	1
Number of Commercial Model Types	1	1	1	2	0	1	2	3	1	1
Date Product(s) Entered Market	1994	2002	2005	2006	June 2009	2002	2005	1995	2004	2003
Method of Operation and Water Savings										
Basis for Schedule: Historical Data	●	Back-up		Back-up	●	●		●		
Basis for Schedule: On-site Sensor(s)	●	●[1]	●[1]	●[1]	●	●[1]	●[1]	●	●	●
Basis for Schedule: Remote Weather Station(s)/Sensors		●	●	●		●[1]	●	●		
Basis for Schedule: Weather Forecasts										
Weather Data Source	Historic ET data and on-site "ET sensor"	Public & private weather stations data managed by centralized computer server	Public and private weather stations managed by central computer and wireless delivery	Public & private weather stations data managed by centralized computer server	solar + solar radiation, humidity & solar -- historic wind & humidity data	Automatic, historic or manually entered ET or with optional on-site weather station	Public and private weather stations managed by central computer and wireless delivery	Automatic, historic or manually entered ET or with optional on-site weather station	On-site temp & rain sensor and solar radiation estimated based on date & location	On-site temperature and humidity sensors
Manufacturer Reported Water Savings (Percent)	Not Available	20 to 50	16 to 58[2]	30-80	20-50	25 to 40	16 to 58[2]	25-50	20 to 50	34 to 52
Product Features										
Stand-alone Controller or Add-on to Existing	Stand-alone	Add-on	Stand-alone & Add-on	Add-on	Stand-alone	Stand-alone	Stand-alone	Stand-alone	Stand-alone	Add-on
Station or Zone Capacity	12-56	Not Applicable	6-24	Not Applicable	13	6-36	6-48	1-100	4-48	Not Applicable
Master Valve or Pump Circuit(s)	1	Not Applicable	1	Not Applicable	●	1	1-2	3	1	Not Applicable
Internal Power Transformer	●		●		●	●	●	●	Some Models	
Battery Powered - DC										
Station Circuit Current Rating (Amperes)	2.0	Not Applicable	0.5	1.0 (ETC)	1.0	1.0	0.5	Not Reported	1.5	Not Applicable
Terminal Wire Size Range (Gauge)	12-20	Not Applicable	12-18	14 to 26	14 to 20	12	12-18	18,16,14	14-18	Not Applicable
Outdoor Installation	●	●[1]	●	● (ETC)	●	●	Some Models	●	●	●[1]
On-site Rain Gauge or Sensor w/ Rain Shutoff/Delay	●	●[1]	●[1]	●[1]	●	●[1]	●[1]	●	●	
Rain Shutoff/Delay by Remote Sensor		●	●	●		●[1]	●	●		
Rainfall Irrigation Schedule Compensation		●	●	●	●	●[1]	●	●	●	
On-site Wind Gauge w/ High Wind Shut-off			●[1]					●		●[1]
High Wind Shut-off by Remote Sensor		●		●	●	●[1]		●		
On-site Temperature Sensor w/ Freeze Shut-off	●		●[1]			●[1]	●[1]	●	●	●
On-site Temperature Sensor w/ High Temp On or Off						●[1]				
Freeze or High Temp Shut-off by Remote Sensor		●		●		●[1]				
On-site Evaporative Atmometer Type "ET Sensor"										
On-site Solar Radiation Sensor	●					●[1]		●		
On-site Humidity Sensor	●					●[1]		●		●
Flow Sensor(s) Connectivity	●					●	●[1]	●		
Additional Sensor Terminals				● (ETC)		●		●	●	
Internet or Computer Interface						●		●		
Remote Control Device(s) for Controller				Planned for 2010 (ETC)	Planned for 2010	●[1]	●[1]	●	Planned for 2010	
Two-way Communication between Server and Receiver						●[1]		●		
Station Circuit Testing			●	● (ETC)	●	●	●	●	●	
Surge and/or Lightning Protection	●		●		●	●[1]	●	●[1]	●	
SWAT Test Performance Report Available			●	●	●		●	●	●	
Scheduling Features										
Fully Automatic Schedule (No Base Schedule Required)			●		●	●[1]	●		●	
Base Irrigation Schedule Required	●	●[3]		●[3]		●		●		●
User May Define Non-Irrigation Days	●	●	●	●	●	●	●	●	●	
Operable in Manual Clock Mode	●	●	●	●	●	●	●	●	●	●
Manual Operation by Station or Program	●		●	● (ETC)	●	●	●	●	●	
Variable Total Run Times			●	● (ETC)	●	●	●	●	●	
Irrigation Schedule Period(s)	7,14 & 28 Days, Odd/Even	Not Applicable	8wk-Odd/Even,Interval,Wkday		Days of Wk,Odd/Even, Cyclical	7 or 30 Day	8wk-Odd/Even,Interval,Wkday	14 Day &0dd/Even	Up to 31 Days & Odd/Even	Not Applicable
Available Start Times	12	Not Applicable	●	8 (ETC)	2 Watering Windows	5	●	12	8	Not Applicable
Cycle/Soak Manual Input		Not Applicable	Optional	● (ETC)		●	Optional	●	●	Not Applicable
Cycle/Soak Periods Automatically Calculated	●	Not Applicable	●		●	●	●		●	Not Applicable
Runs Concurrent Stations	3	Not Applicable	●	● (ETC)	●	●	●	●	●	Not Applicable
Number of Programs	6	Not Applicable	3	4 (ETC)	Up to 13	4	3-4	10	4	Not Applicable
Percent Irrigation Adjust Feature	●	Not Applicable	●	● (ETC)	●	●	●	●	●	Not Applicable
Station Distribution Uniformity/Efficiency Setting		Not Applicable	●		●	●	●			Not Applicable
Syringe Cycle or Program			●	● (ETC)	●	●	●	●		
New Landscape Establishment/Fertilizer Program				● (ETC)	●				●	
Review of Weather Information	●	●	●	●	●	●	●	●	●	
Review of Irrigation or Water Use Information	●	●		●	●	●	●	●	●	
English and Spanish Langauges Display	●			● (ETC)	●				Planned for 2010	
Product Support and Warranty										
Warranty	3 and 5 years	5 Years	5 years	3 Years	3 Years	5 Years	5 Years	5 Years	2 Years	1 Year
Support: On-site Service Technicians	In Southern Califonia									●
Support: Telephone Technicians	●	●	●	●	●	●	●	●	●	●
Support: Local Distibutors		●	●	●	●	●	●	●	●	
Installation and Maintenance Requirements										
Professional Installation & Programming Recommended	●	●	●	●	●	●	●	Recommended	●	
Ongoing Maintenance Required						Clean Sensors		Clean Sensors		
Battery Replacement Required		●							●	
Cost										
Suggested Retail Price	$1,800-$2,800[4,7]	$695-$795	$325-$909	$650 to $775	$325 to $450	$674-$4,039	$325-$3,050	$1,290-$1,980	$350-$950	$129.95-$1,295
Annual Service Cost	0	0-$350	$48-$84	0-$350	0	$120-$180	$48-$120	72-360	0	0

1 - Optional add-on feature not included in controller price(s) shown
2 - Reported water savings documentation is published or publically available
3 - Scheduling guidelines or assistance provided with purchase
4 - Complete pricing information was not available for this report
5 - Controller back-up schedule based on recent ET good for 21 days without network connectivity which can be modified by user
6 - Includes remote monitoring of irrigation operation and tracks meter usage for savings reports
7 - All information and prices are from June 2007 since manufacturer did not provide updated information for this report

Soil Moisture Based Irrigation Technologies - Summary of Product Information and Features

Company Name	Acclima	Aquaqspy (formerly Agrilink)	Baseline	Calsense	Dynamax	Irrometer	LawnLogic	MorpH2O	Tucor
Telephone	(866) 887-1470	(714) 966-1975	(208) 323-1634	(951) 352-3891	(800) 896-7108	(951) 689-1701	(925) 286-6185	Paul Remy	724-935-6850
Contact Person	Kingsley Horton	Molly VanWagner	Raven Woods	Rick Capitanio	Gary Woods	Tom Penning	Michael McLaughlin	801-866-1760	Larry Sarver
Web Page	www.acclima.com	www.aquaspy.com	www.baselinesystems.com	www.calsense.com	www.dynamax.com	www.irrometer.com	not available	www.morph2o.com	www.tucor.com
Number of Residential Model Types	5	1	2	0	1	1	1	1	
Number of Commercial Model Types	3	1	2	1	2	3	1	1	2
Date Product(s) Entered Market	2003	2006	2002	1986	2006	1985	2004	2008	2008
Method of Operation and Water Savings									
Interupts Operation of All Stations	●	●	●		●	Residential Models			●
Interupts Operation of Individual or Groups of Stations	●	Requires Multiple Controllers	●	●	Requires Multiple Controllers	Commercial Models	●	●	●
Manufacturer Reported Water Savings (Percent)	30 to 40[1]	20-50	30 to 50	20 to 40[1]	Not Available	24 to 60[1]	44 (one site only)		
Product Features									
Stand-alone Controller or Add-on to Existing	Both	Add-on	Both	Stand-alone	Both	Add-on	Add-on		Stand- alone
Type of Soil Moisture Sensor(s)	Digital Time Domain Transmission	Frequency Domain Reflectometry	Time Domain Transmission	Tensiometer	Frequency Domain Reflectometry	Electrical Resistance	Electrical Conductivity	Frequency Domain Reflectometry	Frequency Domain Reflectometry
Multiple Soil Moisture Sensors May Be Used	●	Requires Multiple Controllers	Commercial Models	●	Requires Multiple Controllers	Commercial Models	Multiple Sensors Required		●
Soil Moisture Sensor Capacity	1-36	1per Controller	6 & 25	48	1 or 2	1 to 16	1-32	1	10
Sensor(s) or Controller Connects to Existing Valve Wiring	●	●	●	●		Commercial Models	●	●	
Number of Soil Moisture Settings	1,000	Unlimitted	Unlimitted	Unlimitted	51 and 0-60%	4, 9 and 11	9		Unlimitted
Measures and Adjusts for Soil Conductivity	●			●		"Internally Compensated"			
Controller Displays Soil Conductivity	●								
Measures and Adjusts for Soil Temperature	●	●	●						
Controller Displays Soil Temperature	●		Commercial Models						●
Controller Station Capacity	6,12, 24, 36 & 64	Unlimited	12-200	8-48	Unlimited	Unlimited	1-32	4	1-100
Master Valve or Pump Circuit(s)	Commercial Models	Not Applicable	Commercial Models	2		Not Applicable	Not Applicable		3
Internal Power Transformer	Commercial Models		Commercial Models	●		Not Applicable	●[2]	Not Applicable	●
Battery Powered - DC	Commercial Models	●			Option Available	1 Model			
Station Circuit Current Rating (Amperes)	0.7	Not Applicable	Not Reported	1.5	3 & 10	Not Applicable	Not Applicable	Not Applicable	
Outdoor Installation	●	●[2]	●[2]	●	●[2]	All Models, Commercial option	●[2]	●	●[2]
Rain Gauge or Sensor Compatible w/ Rain Shutoff/Delay	●		●	●		●			●
Flow Sensor Compatible	Commercial Models		Commercial Models	●	●	●			●
Additional Sensor Terminals	●		Commercial Models	●	●	●			●
Remote Control Device for Controller	Commercial Models[2]		Commercial Models	●[3]	●				●
System Testing and Diagnostics	●		●	●					●
Surge and/or Lightning Protection	●		●	●[3]		●	●		●
Scheduling Features									
Fully Automatic Schedule (No Base Schedule Required)	Commercial Models		Commercial Models		Commercial Models				
Variable Total Run Times	●		Commercial Models	●	Commercial Models		●		
User May Define Non-Irrigation Days	●	Not Applicable	Commercial Models	●		Not Applicable	Not Applicable	Not Applicable	●
Operable in Manual Clock Mode	●	Not Applicable	●	●		Not Applicable	Not Applicable	Not Applicable	●
Manual Operation by Station or Program	●	Not Applicable	Commercial Models	●		Not Applicable	Not Applicable	Not Applicable	●
Irrigation Schedule Period(s)	Odd/Even, Nth Day & Custom	Not Applicable	All options available	7, 14, 21 or 28 day		Not Applicable	Not Applicable	Not Applicable	●
Cycle/Soak Manual Input	●	Not Applicable	●	●		Not Applicable	Not Applicable	Not Applicable	●
Cycle/Soak Periods Automatically Calculated		Not Applicable				Not Applicable	Not Applicable	Not Applicable	Not Applicable
Available Start Times	Up to 6 or On Demand	Not Applicable	8	6		Not Applicable	Not Applicable	Not Applicable	12
Irrigation Pause/Resume	●	Not Applicable	Commercial Models	●		Not Applicable	Not Applicable	Not Applicable	●
Runs Concurrent Stations	●	Not Applicable	Commercial Models	●	●	Not Applicable	Not Applicable	Not Applicable	10
Number of Programs	Up to 40	Not Applicable	Up to 10	7	2	Not Applicable	Not Applicable	Not Applicable	12
Syringe Cycle or Program	●	Not Applicable	Commercial Models	●		Not Applicable	Not Applicable	Not Applicable	●
Review of Recent Irrigation Information	●		Commercial Models	●					●
English and Spanish LanGauges Display	Commercial Models	Universal Display		●					Universal Display
Product Support and Warranty									
Warranty	2 Years	2 Years	1 and 3 (sensor only) Years	10 Years	1 Year	1 Year	1 Year	2 Years	2 Years
Support: On-site Service Technicians	Some Locations			●	Some Locations	Some locations			
Support: Telephone or InternetTechnicians	●	●	●	●	●	●	●	●	●
Support: Local Distibutors	●	Some Locations		●	Some Locations	●	●		●
Installation and Maintenance Requirements									
Professional Installation & Programming Recommended	Commercial Models	●	Commercial Models	●	Commercial Models	Commercial Models	Commercial Models		●
Battery Replacement Required	5 to 10 years				Optional			●	
Cost									
Suggested Retail Prices[3]	$147-$2,997	$329	$149-$4,295	$1,260-$4,135	$470-$570	$100 to $3,146	$249.95-$2,149	$250	$1,470-$2,160

1 - Reported water savings documentation is published or publically available
2 - Optional add-on feature not included in controller price(s) shown
3 - Prices include controller and soil moisture sensor(s)