

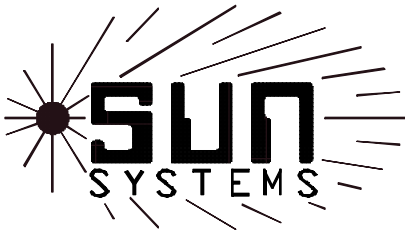
EC0x Environmental Chamber Summary Table

| Model | | EC0A | EC01 | EC02 | EC03 |
|---|---|--|---|---|---|
| Chamber Volume | | 0.37 ft ³ (0.010 m ³) | 0.7 ft ³ (0.020 m ³) | 2.2 ft ³ (0.062 m ³) | 3.0 ft ³ (0.085 m ³) |
| Test Chamber Dimensions [Inches(Centimeters)] | | 10.0 (25.4) W 8.0 (20.3) H 8.0 (20.3) D | 12.0 (30.5) W 9.75 (24.75) H 10.25 (26.0) D | 20.0 (50.8) W 12.0 (30.5) H 16.0 (40.6) D | 20.0 (50.8) W 12.0 (30.5) H 22.0 (55.9) D |
| Overall Dimensions [Inches(Centimeters)] | | 17.5 (44.5) W 13.25 (33.7) H 20.0 (50.8) D | 21.0 (53.3) W 16.0 (40.6) H 24.0 (61.0) D | 30.0 (76.2) W 19.5 (49.5) H 30.0 (76.2) D | 30.0 (76.2) W 19.5 (49.5) H 36.0 (91.4) D |
| Heat/Cool Rate of Change | | 0.5°C/sec (30°C/min) | 0.5°C/sec (30°C/min) | 0.25°C/sec (15°C/min) | 0.25°C/sec (15°C/min) |
| Air-Flow (CFM, Vertical) | | 60 ft ³ /min | 60 ft ³ /min | 150 ft ³ /min | 300 ft ³ /min |
| Power Options | 100/115 VAC, 50/60 Hz Single Phase | * | * | * | |
| | 208/220 VAC, 50/60 Hz Single Phase, 3/4 Wire | * | * | * | * |
| | 240 VAC, 50 Hz Single Phase, 3 Wire | * | * | * | * |
| Power Requirement | | 1600 Watts | 1800 Watts | 2200 Watts | 3000 Watts |
| Expendable Gas Coolant Usage | LCO ₂ | @0°C | 1.8 lbs/hr | 2 lbs/hr | 3.5 lbs/hr |
| | | @-55°C | 4 lbs/hr | 6 lbs/hr | 11 lbs/hr |
| | LN ₂ | @0°C | .7 lbs/hr | 1 lb/hr | 2 lbs/hr |
| | | @-55°C | 2.2 lbs/hr | 3 lbs/hr | 5.5 lbs/hr |
| Weight; Net/Shipping | | 38/55 lbs | 49/68 lbs | 80/100 lbs | 98/115 lbs |
| Controller Section (included in chamber cost) | | MODEL TC01 (also available for RETROFIT) | | | |
| Temperature Setpoint Range | | -73°C to +300°C in 0.1° Steps (LN ₂ Option; -100°C to +300°C) | | | |
| Time at Temperature Range | | 0.1 to 1800 minutes or Continuous (Optionally, 0.1 to 1800 hours) | | | |
| Temperature Ramping Rate Control | | Not Controlled Locally | | | |
| Programmable Set Temps and Times | | 10 Programmable Set Temperatures and Times | | | |
| Absolute Error (not including probe error) | | ±0.4°C | | | |
| Long Term Stability (per month) | | ±0.3°C | | | |
| Temperature Resolution | | 0.1°C | | | |
| Line Voltage Sensitivity (105-125 VAC) | | ±0.2°C | | | |
| Programmable Temperature Loop Control | | 1 to 1800 Cycles of Programmable Set Temperatures and Set Times or Continuous | | | |
| Temperature Control Technique | | PID Algorithm / Pulse Width Modulated, Programmable from Remote Interfaces | | | |
| Local Operation | | 16 Key Keyboard / 4 Digit Display | | | |
| Remote Operation | | Built-in IEEE-488 / RS232 Interfaces | | | |
| Additional I/O Capability | | IEEE-488 to RS232 Transparent Mode, 2 Auxiliary Outputs, 1 Auxiliary Input | | | |
| Safety Features | | Open/Short Probe Detection, Adjustable Over Temperature Thermostat, Software Upper Temperature Limit | | | |
| Convenience Features | | Heat and Cool Enable/Disable Switches | | | |

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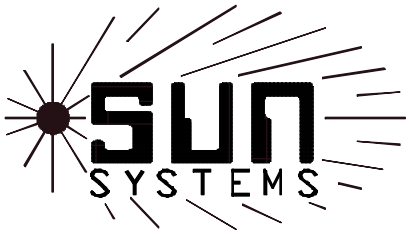
EC1x Environmental Chamber Summary Table

| Model | | EC1A | EC11A | EC10 | EC11 | **EC1.3w |
|---|---|---|--|---|---|---|
| Chamber Volume | | 0.37 ft ³ (0.010 m ³) | 0.37 ft ³ (0.010 m ³) | 0.7 ft ³ (0.020 m ³) | 0.7 ft ³ (0.020 m ³) | 1.37ft ³ (0.040 m ³) |
| Test Chamber Dimensions [Inches(Centimeters)] | | 10.0 (25.4) W 8.0 (20.3) H 8.0 (20.3) D | 10.0 (25.4) W 8.0 (20.3) H 8.0 (20.3) D | 12.0 (30.5) W 9.75 (24.75) H 10.25 (26.0) D | 12.0 (30.5) W 9.75 (24.75) H 10.25 (26.0) D | 14.0 (35.6) W 13.0 (33.0) H 13.0 (33.0) D |
| Overall Dimensions [Inches(Centimeters)] | | 17.5 (44.5) W 13.25 (33.7) H 20.0 (50.8) D | 17.5 (44.5) W 13.25 (33.7) H 20.0 (50.8) D | 21.0 (53.3) W 16.0 (40.6) H 24.0 (61.0) D | 21.0 (53.3) W 16.0 (40.6) H 24.0 (61.0) D | 26.5 (67.3) W 21.0 (53.3) H 31.0 (78.7) D |
| Heat/Cool Rate of Change | | .5°C/sec 30°C/min | 1.0°C/sec (60°C/min) | 0.5°C/sec (30°C/min) | .8°C/sec (48°C/min) | 0.33°C/sec (20°C/min) |
| Air-Flow (CFM, Vertical) | | 60 ft ³ /min | 120 ft ³ /min | 60 ft ³ /min | 120 ft ³ /min | 250 ft ³ /min |
| Power Options | 100/115 VAC, 50/60 Hz Single Phase | * | | * | | |
| | 208/220 VAC, 50/60 Hz Single Phase, 3/4 Wire | * | * | * | * | * |
| | 240 VAC, 50 Hz Single Phase, 3 Wire | * | * | * | * | * |
| Power Requirement | | 1600 Watts | 4200 Watts | 1800 Watts | 4200 Watts | 3000 Watts |
| Expendable Gas Coolant Usage | LCO ₂ | @0°C | 1.3 lbs/hr | 1.3 lbs/hr | 2 lbs/hr | 2 lbs/hr |
| | | @-55°C | 4 lbs/hr | 4 lbs/hr | 6 lbs/hr | 6 lbs/hr |
| | LN ₂ | @0°C | .7 lbs/hr | .7 lbs/hr | 1 lb/hr | 1 lb/hr |
| | | @-55°C | 2.2 lbs/hr | 2.2 lbs/hr | 3 lbs/hr | 3 lbs/hr |
| Weight; Net/Shipping | | 38/55 lbs | 38/55 lbs | 49/68 lbs | 49/68 lbs | 77/94 lbs |
| Controller Section (included in chamber cost) | | MODEL TC10 (NOT available for retrofit) | | | | |
| Temperature Setpoint Range | | -73°C to +315°C in 0.1°C Steps (LN ₂ Option: -184°C to +315°C) Except for **EC1.3w -73°C to +400°C in 0.1°C Steps (LN ₂ Option: -184°C to +400°C) | | | | |
| Time at Temperature Range | | 1.0 sec to 99 hr 59 min 59 sec or Continuous | | | | |
| Temperature Ramping Rate Control | | Locally Controlled from 0.01°C/min up to the Specified Heat/Cool Rate of Change | | | | |
| Programmable Set Temps and Times | | Number of Set Temperatures and Set Times Limited Only By Available Program Memory. Typically 100+ Segments | | | | |
| Absolute Error (not including probe error) | | ±0.25°C | | | | |
| Long Term Stability (per month) | | ±0.2°C | | | | |
| Temperature Resolution | | 0.02°C | | | | |
| Line Voltage Sensitivity (105-125 VAC) | | ±0.1°C | | | | |
| Programmable Temperature Loop Control | | 1 to 65,535 FOR/NEXT Loop Executions for 10 Loops, Nesting Supported | | | | |
| Temperature Control Technique | | PID Algorithm / Pulse Width Modulated, Programmable from Keyboard or Remote Interfaces | | | | |
| Local Operation | | 29 Key Keyboard / 2 Line LCD | | | | |
| Remote Operation | | Built-in IEEE-488 / RS232 / RS422 Interfaces | | | | |
| Additional I/O Capability | | Electrically Isolated USER Temperature/Voltage Probe, 4 Channels of Analog Input and Analog Output, 16 Bit Address/8Bit Data Parallel Port, 56 KBit Auxiliary High Speed Serial Port, IEEE-488 to RS232/RS422 Transparent Mode, 5 Auxiliary Outputs, 8 Auxiliary Inputs | | | | |
| Safety Features | | Open/Short Probe Detection, Adjustable Over Temperature Thermostat, Software Upper and Lower Temperature Limit | | | | |
| Convenience Features | | Heat/Cool Enable/Disable Switches, Battery-backed Memory for Programs, Setup Menus for Probe CAL, Remote Interrupt Operation and Default Conditions for Alarms and Interfaces, Time of Day Clock | | | | |

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EC1x Environmental Chamber Summary Table cont.

| EC12 | EC13 | EC13HA | EC15HA | EC16 | EC16HA |
|---|---|---|---|---|---|
| 2.2 ft ³ (0.062 m ³) | 3.0 ft ³ (0.085 m ³) | 3.0 ft ³ (0.085 m ³) | 5.0 ft ³ (0.142 m ³) | 6.16 ft ³ (0.174 m ³) | 6.16 ft ³ (0.174 m ³) |
| 20.0 (50.8) W 12.0 (30.5) H 16.0 (40.6) D | 20.0 (50.8) W 12.0 (30.5) H 22.0 (55.9) D | 20.0 (50.8) W 12.0 (30.5) H 22.0 (55.9) D | 20.0 (50.8) W 12.0 (30.5) H 36.0 (91.4) D | 22.0 (55.9) W 22.0 (55.9) H 22.0 (55.9) D | 22.0 (55.9) W 22.0 (55.9) H 22.0 (55.9) D |
| 30.0 (76.2) W 19.5 (49.5) H 30.0 (76.2) D | 30.0 (76.2) W 19.5 (49.5) H 36.0 (91.4) D | 30.0 (76.2) W 19.5 (49.5) H 36.0 (91.4) D | 30.0 (76.2) W 19.5 (49.5) H 50.0 (127.0) D | 32.0 (81.3) W 29.5 (74.9) H 36.0 (91.4) D | 32.0 (81.3) W 29.5 (74.9) H 36.0 (91.4) D |
| 0.25°C/sec (15°C/min) | 0.25°C/sec (15°C/min) | 0.5°C/sec (30°C/min) | 0.4°C/sec (24°C/min) | 0.4°C/sec (24°C/min) | .4°C/sec (24°C/min) |
| 150 ft ³ /min | 300 ft ³ /min | 600 ft ³ /min | 600 ft ³ /min | 600 ft ³ /min | 600 ft ³ /min |
| * | | | | | |
| * | * | * | * | * | * |
| * | * | * | * | * | * |
| 2200 Watts | 3000 Watts | 6000 Watts | 6000 Watts | 6000 Watts | 6000 Watts |
| 3.5 lbs/hr 11 lbs/hr 2 lbs/hr 5.5 lbs/hr | 5 lbs/hr 15 lbs/hr 2.5 lbs/hr 7.5 lbs/hr | 5 lbs/hr 15 lbs/hr 2.5 lbs/hr 7.5 lbs/hr | 5 lbs/hr 15 lbs/hr 2.5 lbs/hr 7.5 lbs/hr | 12 lbs/hr 35 lbs/hr 6 lbs/hr 18 lbs/hr | 12 lbs/hr 35 lbs/hr 6 lbs/hr 18 lbs/hr |
| 80/100 lbs | 98/115 lbs | 108/125 lbs | 138/175 lbs | 139/160 lbs | 165/185 lbs |
| MODEL TC10 (NOT available for retrofit) | | | | | |
| -73°C to +315°C in 0.1°C Steps (LN ₂ Option: -184°C to +315°C) Except **EC1.3w -73°C to +400°C in 0.1°C Steps (LN ₂ Option: -184°C to +400°C) | | | | | |
| 1.0 sec to 99 hr 59 min 59 sec or Continuous | | | | | |
| Locally Controlled from 0.01°C/min up to the Specified Heat/Cool Rate of Change | | | | | |
| Number of Set Temperatures and Set Times Limited Only By Available Program Memory. Typically 100+ Segments | | | | | |
| ±0.25°C | | | | | |
| ±0.2°C | | | | | |
| 0.02°C | | | | | |
| ±0.1°C | | | | | |
| 1 to 65,535 FOR/NEXT Loop Executions for 10 Loops, Nesting Supported | | | | | |
| PID Algorithm / Pulse Width Modulated, Programmable from Keyboard or Remote Interfaces | | | | | |
| 29 Key Keyboard / 2 Line LCD | | | | | |
| Built-in IEEE-488 / RS232 / RS422 Interfaces | | | | | |
| Electrically Isolated USER Temperature/Voltage Probe, 4 Channels of Analog Input and Analog Output, 16 Bit Address/8Bit Data Parallel Port, 56 KBit Auxiliary High Speed Serial Port, IEEE-488 to RS232/RS422 Transparent Mode, 5 Auxiliary Outputs, 8 Auxiliary Inputs | | | | | |
| Open/Short Probe Detection, Adjustable Over Temperature Thermostat, Software Upper and Lower Temperature Limit | | | | | |
| Heat/Cool Enable/Disable Switches, Battery-backed Memory for Programs, Setup Menus for Probe CAL, Remote Interrupt Operation and Default Conditions for Alarms and Interfaces, Time of Day Clock | | | | | |

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