

# MULTIPLE EFFECT STILLS

## OVERVIEW:

- Produces Water For Injection (WFI) in accordance with all recognized pharmacopoeias
- Options for simultaneous and exclusive pure steam production
- Meets/exceeds the current standards of the pharmaceutical industry and cGMP requirements
- All fabrication is by MECO in the U.S. (spare parts available)
- Modular system design for ease of expansion
- Efficient component layout allows for ease of maintenance and calibration
- Optional complete validation package with IQ/OQ protocol execution
- Supported by MECO 24-hour customer service
- Backed by warranty

## PRODUCT HIGHLIGHTS:

### Standard Features

- Unit is completely piped, wired and assembled on skid(s) at the factory
  - Fully functional FAT
  - Reduces installation costs and startup time
- Vertical natural circulation evaporators
  - Reduces scale effects
  - No circulation pumps or spray nozzles required
  - Straight tubes in evaporator
    - Individual tubes can be replaced as opposed to replacing the entire tube bundle
    - No residual stresses or surface finish problems commonly found with U-tubes
- Dual condensers
  - Eliminate possible contamination between feed and cooling water
- Hot stand-by option
  - Improved response to distillate demand
  - Elimination of bio-growth
- Sanitary construction and connections
- PID loop control of WFI temperature
- PID Loop Control of feed water level
- Optional PID loop control of first effect pressures
- PLC based controls

### Equipment Details

- Double tubesheet heat exchangers
- Sloped piping and low point drains
- Minimum deadlegs
- 316/316L SS process contact components
- 25 Ra  $\mu$ m (0.64  $\mu$ m) standard process contact surfaces
- Premium valves and instruments
- Stainless steel hardware
- Mirror finish stainless steel cladding



MODEL	DISTILLATE CAPACITY IN GPH [LPH]	PURE STEAM CAPACITY IN LBS/HR [KG/HR]
3ME5	72-77 [273-291]	220-260 [100-118]
4ME5	91-93 [344-352]	220-260 [100-118]
5ME5	109-111 [413-420]	220-260 [100-118]
3ME10	115-128 [435-485]	350-430 [159-195]
4ME10	151-156 [572-591]	350-430 [159-195]
5ME10	182-189 [689-715]	350-430 [159-195]
4ME25	289-294 [1094-1113]	670-800 [304-363]
5ME25	346-353 [1310-1336]	670-800 [304-363]
6ME25	341-382 [1291-1446]	670-800 [304-363]
4ME40	542-558 [2052-2112]	1000-1200 [454-544]
5ME40	537-598 [2033-2264]	1000-1200 [454-544]
6ME40	530-593 [2006-2245]	1000-1200 [454-544]
4ME60	795-818 [3009-3096]	1500-1800 [680-816]
5ME60	788-878 [2983-3324]	1500-1800 [680-816]
6ME60	777-871 [2941-3297]	1500-1800 [680-816]
5ME80	1082-1137 [4096-4304]	2100-2600 [953-1179]
6ME80	1102-1237 [4172-4683]	2100-2600 [953-1179]
7ME80	1089-1204 [4122-4558]	2100-2600 [953-1179]
5ME120	1563-1645 [5917-6227]	3000-3800 [1367-1724]
6ME120	1594-1788 [6034-6768]	3000-3800 [1367-1724]
7ME120	1574-1741 [5958-6590]	3000-3800 [1367-1724]
8ME120	1537-1734 [5818-6564]	3000-3800 [1367-1724]
5ME150	1912-2013 [7238-7620]	3700-4600 [1678-2087]
6ME150	1950-2187 [7382-8279]	3700-4600 [1678-2087]
7ME150	1926-2130 [7291-8063]	3700-4600 [1678-2087]
8ME150	1882-2121 [7124-8029]	3700-4600 [1678-2087]
6ME300	3647-4089 [13,805-15,789]	7000-8700 [3175-3946]
7ME300	3601-3982 [13,631-15,074]	7000-8700 [3175-3946]
8ME300	3517-3966 [13,313-15,013]	7000-8700 [3175-3946]

*Notes: All distillate capacities are based on plant steam pressures between 110 and 125 PSIG (7.6 and 8.6 BARG). All pure steam capacities are based on the first effect being used exclusively to produce pure steam at 60 PSIG (4.1 BARG).*

WHERE TOMORROW GETS ITS WATER.™

