

ABSTRACT**SOLAR SYSTEMS COMPRISING SELF SUSTAINABLE CONDENSATION, WATER COLLECTION, AND CLEANING SUBASSEMBLIES**

A solar system (100) is provided comprising a light receiving surface (10), a condensation subassembly (20), a water collection subassembly (30), and a cleaning subassembly (40). The expansion chamber (24) of the condensation subassembly is thermally coupled to the light receiving surface and thermally insulated from the ambient such that expansion of compressed air in the expansion chamber, as controlled by the compressed air expansion valve (22), encourages humidity condensation on the light receiving surface by reducing the temperature of the light receiving surface. The water collection subassembly comprises a water collection vessel and water direction hardware (34) positioned to direct condensed water on the light receiving surface to the water collection vessel. The cleaning subassembly comprises a water dispensing unit (42) positioned to dispense water from the water collection vessel over the light receiving surface of the solar system (100).

Fig. 1A