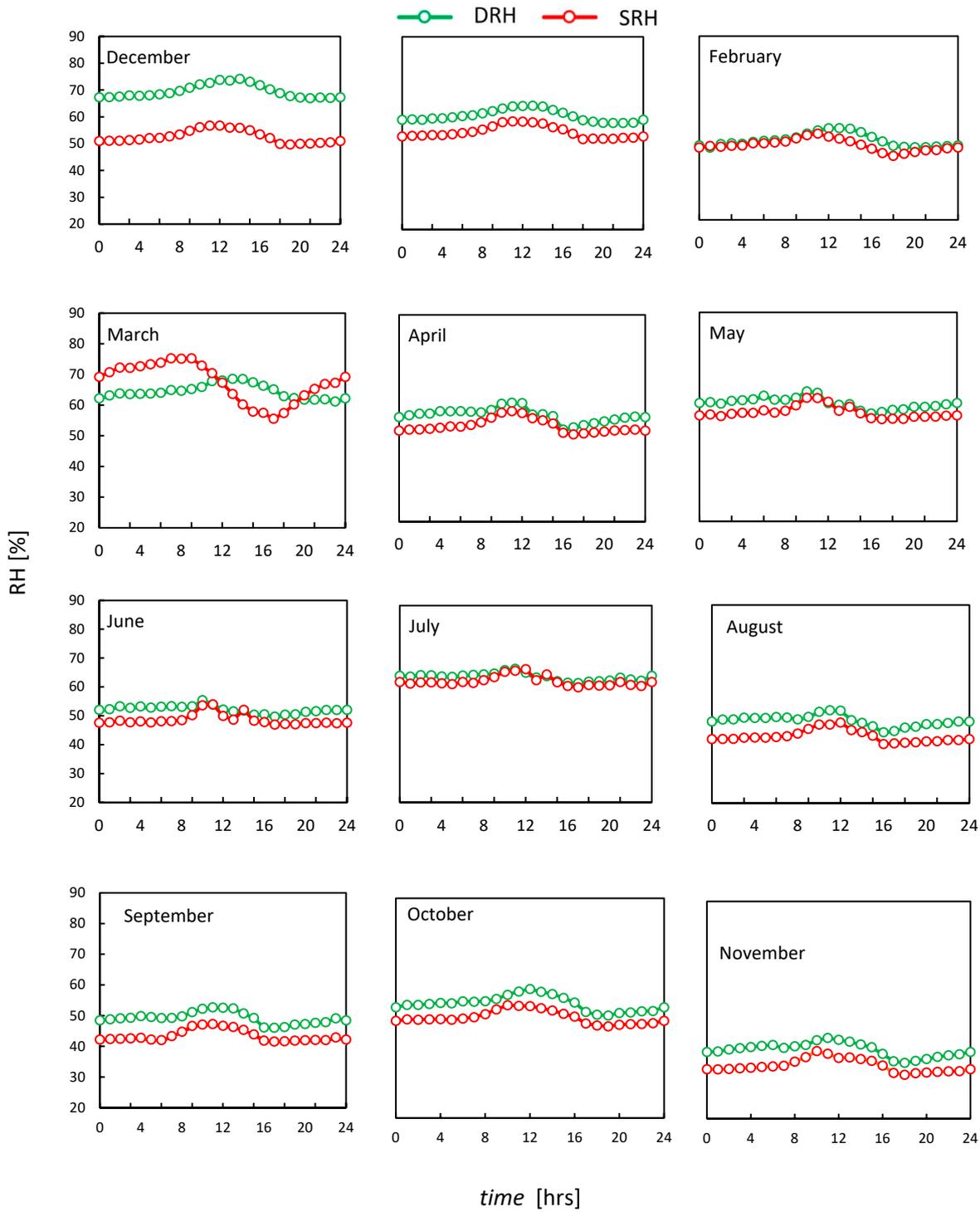
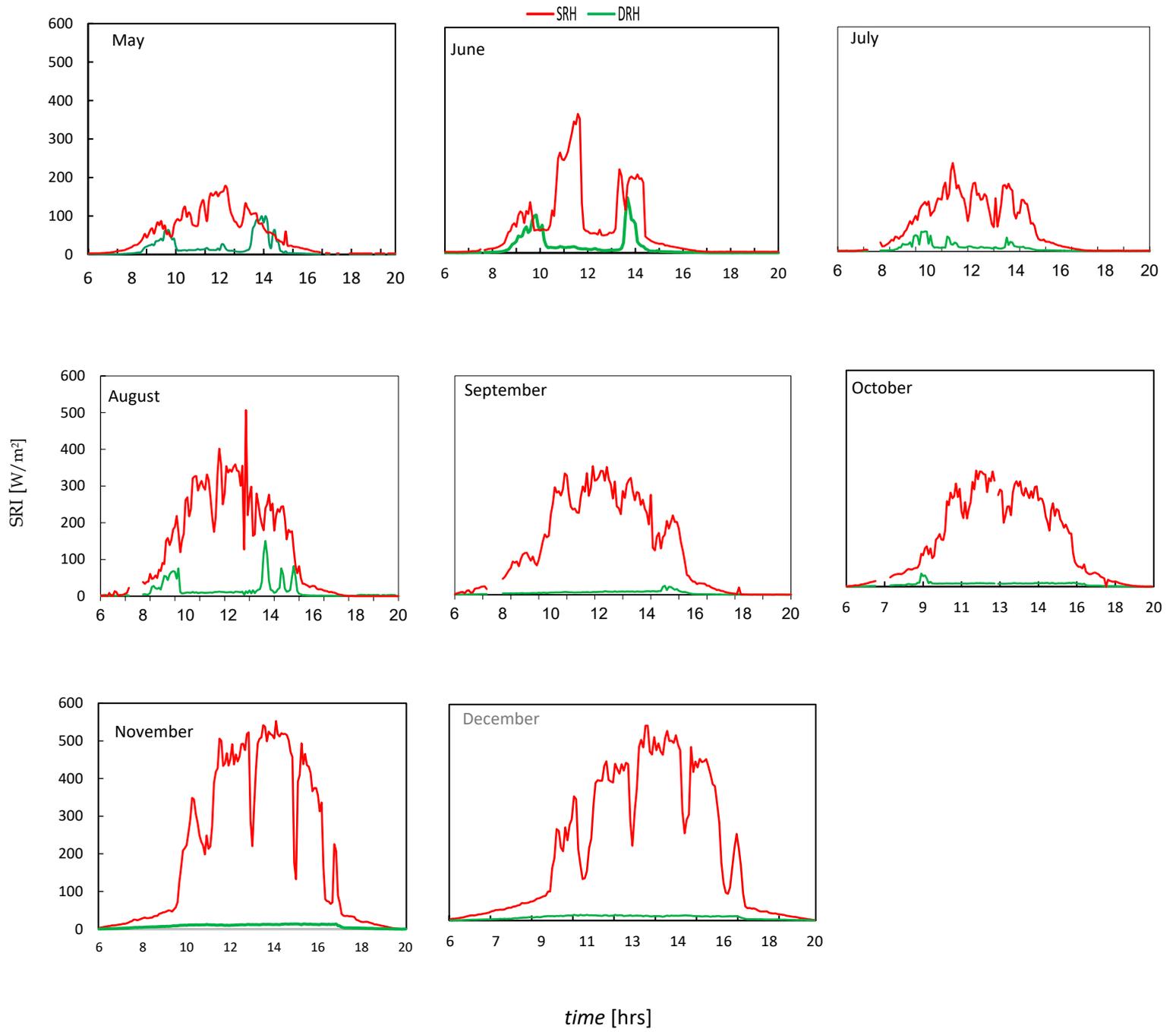


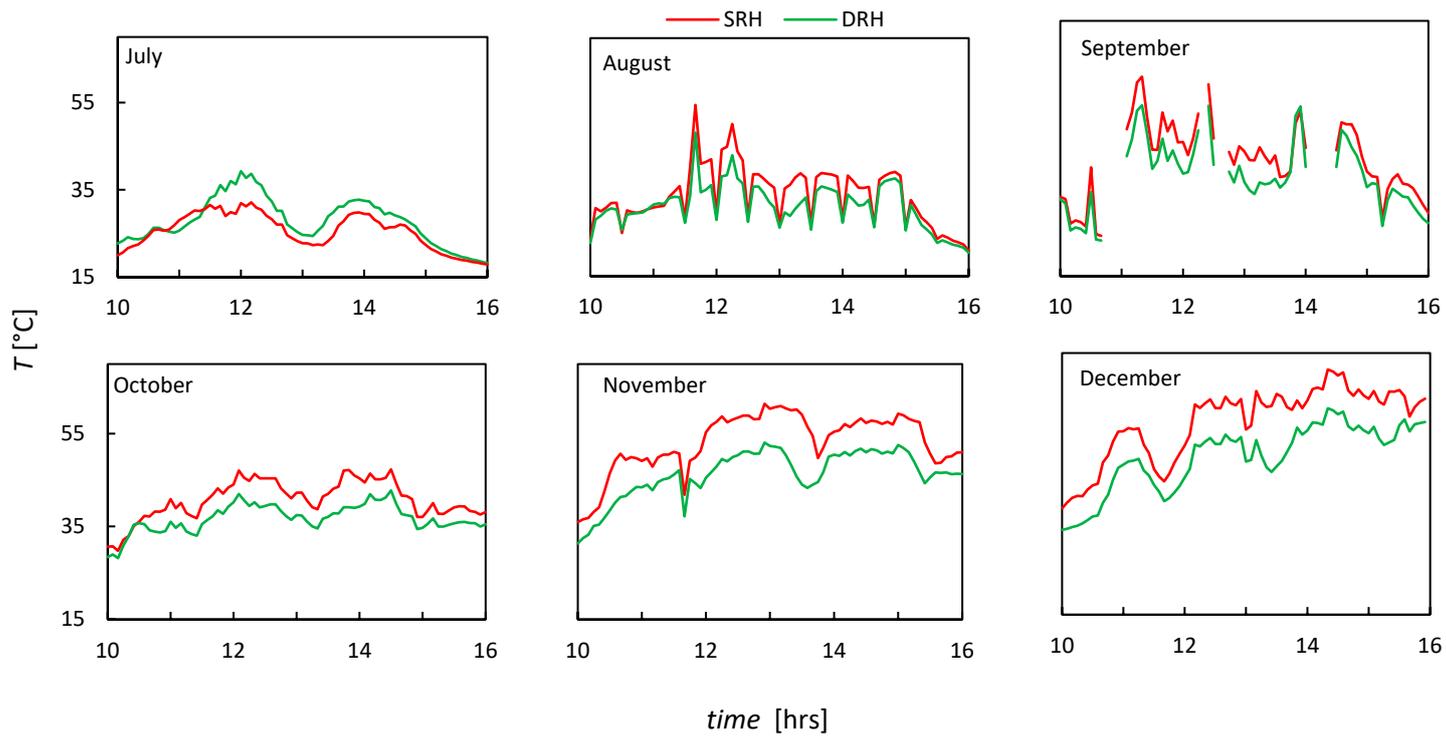
**Figure S1.** Mean hourly Feel-like temperature for every month inside SRH and DRH.



**Figure S2.** Mean hourly Relative humidity for every month inside SRH and DRH.



**Figure S3.** Mean hourly solar radiation intensity received on the green roof of DRH and the rooftop of SRH from May to December.



**Figure S4.** Mean hourly rear side surface temperature of PV panel from July to December.

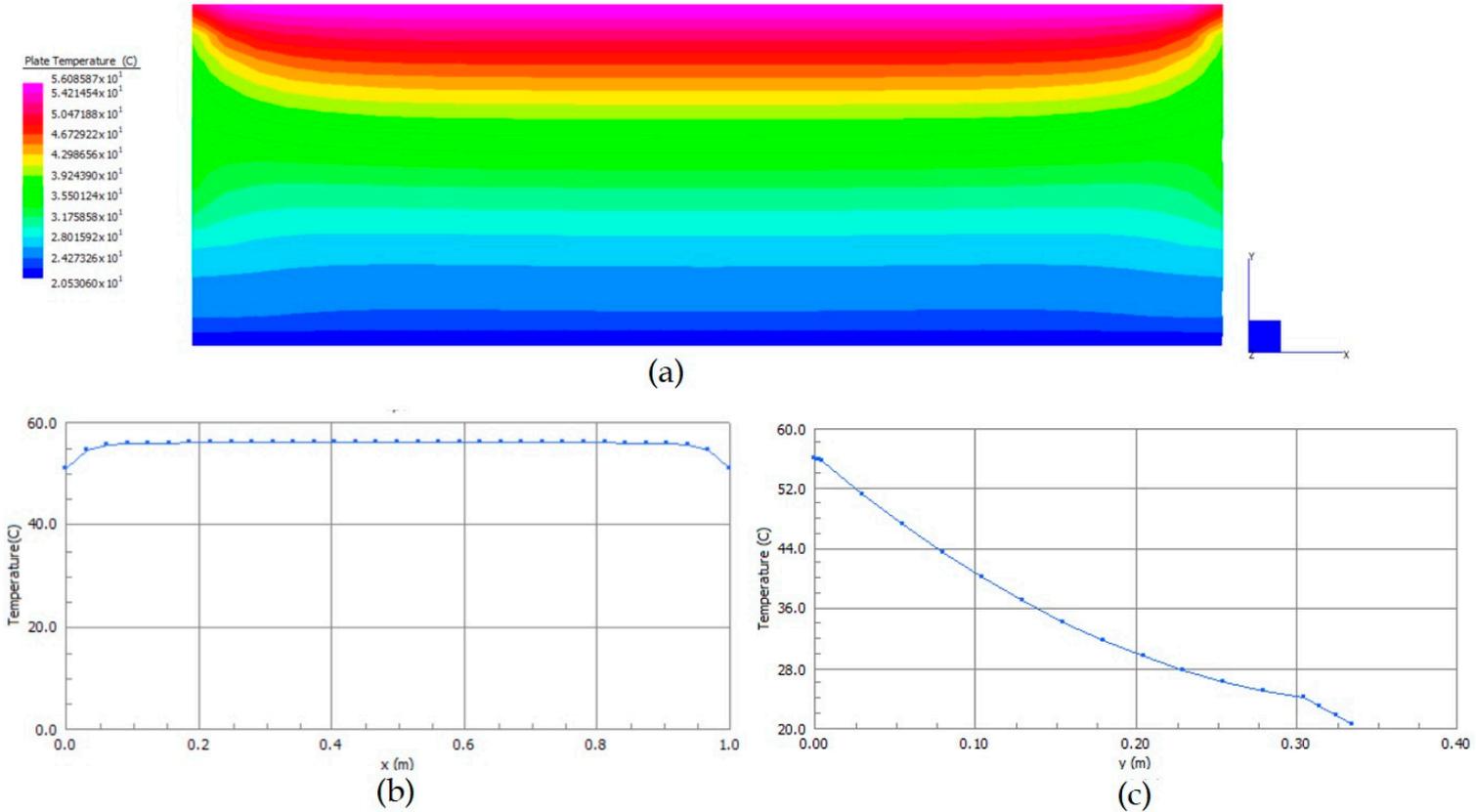
**Table S1:** Detailed specifications of the equipment used in the experiment.

Equipment	Specifications
<p>Monocrystalline solar panel</p> 	<p>Max Peak Power: 50W to 100W            Weight: 6.5000 kg            Dimensions: 510 x 1080 x 30mm            Maximum power current: 5.04A            Maximum power voltage: 19.86V            Open Circuit Voltage: 23.7V            Short Circuit Current: 5.34A</p>
<p>Ambient Weather WS-2000 Smart Weather Station</p> 	<p>Outdoor temperature range: -40°C to 60°C            Monitors temperature and humidity in up to 8 remote locations            Transmission range: up to 300 feet line of sight            Frequency: 915 MHz            Sensor Dimensions (LxHxW): 4.75 x 1.5 x 0.6 in</p>
<p>Solar Charge Controller</p> 	<p>Weight: 50 Grams            Product dimensions: 1 x 1 x 1 cm            Material: Gel            Current: 30A Solar Charge Controller            Item Weight: 50 g</p>
<p>Smart Solar Charge Controllers MPPT 100/30 &amp; 100/50</p> 	<p>Weight: 1.3 kg            Dimensions (h x w x d): 130 x 186 x 70 mm            Operating temperature: -30 to +60 °C            Humidity: 95 %, non-condensing            Battery voltage: 12/24 V Auto Select            Rated charge current: 30 A 50 A            Nominal PV power, 12 V: 440 W 700 W            Nominal PV power, 24 V: 880 W 1400 W            Maximum PV open circuit voltage: 100 V 100 V            Max. PV: 35 A 60 A            Maximum efficiency: 98 %            Charge voltage: 14,4 V / 28,8 V (adjustable)            Temperature compensation: -16 mV / °C resp. -32 mV / °C</p>
<p>Solarjiniies for measuring PV rear side temperature</p> 	<p>Operating temperature: -20°C to +100 °C            Accuracy: +/- 0.5°C, 0.065°C repeatability with a 0.25°C resolution.</p>

Solarjinie for measuring solar radiation intensity



Resolution of the irradiance jinie:  $1\text{W}/\text{m}^2$   
 Range:  $0\text{-}1200\text{W}/\text{m}^2$  range.  
 Accuracy is  $\pm 20\text{W}/\text{m}^2$ .



**Figure S5.** (a) Temperature contour in the DR obtained from two-dimensional steady-state finite element analysis. The chosen material properties are in Table 2. The boundary conditions are outdoor/indoor temperature of  $35\text{ C}/20\text{C}$ ; convective convection at the top of  $20\text{ W}/\text{m}^2\text{C}$ , and convective convection of  $11\text{ W}/\text{m}^2\text{C}$  at the bottom and the sides. (b) the temperature profile of the PV panels showed minor boundary effects. (c) the temperature profile of the green roof.