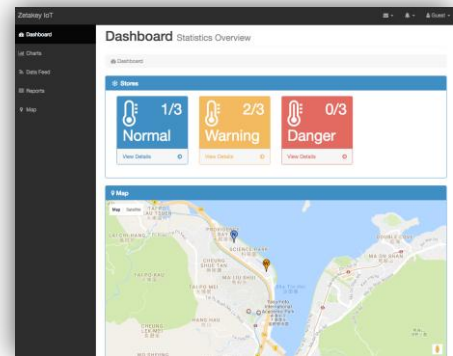
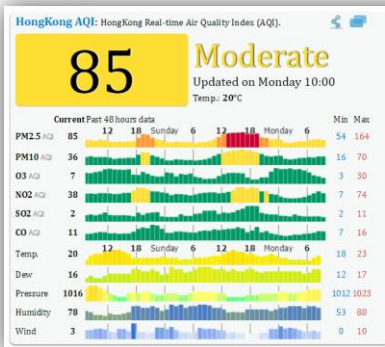


# Microclimate Monitoring Station

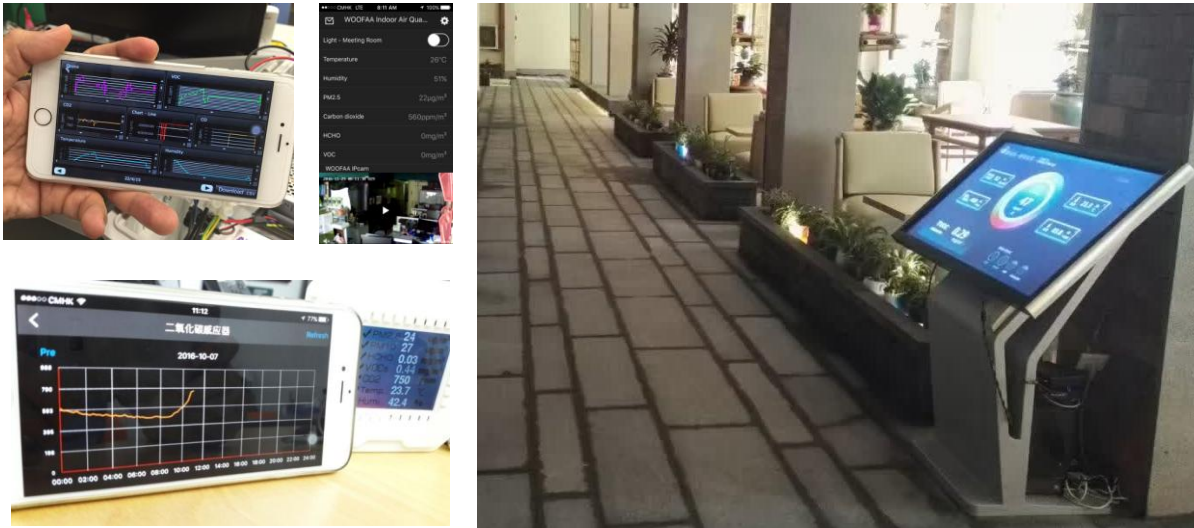
Many of us did not seek nor did we provoke an assault to our Mother Earth and our way of life. Many of us did not expect nor did we invite a confrontation with our living environment. Yet the true measure of your microclimate is a way to start mastering and to living in harmony in our ambient environment.

WOOFAA digital **Microclimate Monitoring Station** is an apparatus to measure and to display real time ambient environmental qualities. We have different configurations for indoor and outdoor deployment in compliance to any national and international standards. Our stations are enabled with internet-of-things technology, which allows data accessibility in anywhere and on any visualization devices be them mobile phone or building facade LED display.

## Bespoke User Interface:



### IoT Visualization Device:



### Measuring Instrument and Station:



## Technical Specifications:

Available gas transmitter option:	CO2, CO, O2, O3, NO, NO2, SO2, H2S, CH4, H2, NH3, C2H4, HCHO, HCN, CL2, HCL, TVOC, PM0.3, PM1, PM2.5, PM10, combustible gas, air temperature and relative humidity
Other environmental transmitter option:	Wind speed, wind direction, air pressure, light level, noise level, flood, water level, smoke, motion, electric power, chiller plant COP, CCTV
Typical tolerance:	±3-10% FS
Data storage option:	Local 8 GB SD Card (>5 years), unlimited cloud storage
Typical working condition:	0-50°C, 0-95% RH (non-condensing)
Power supply provision:	220 VAC or 24 VDC, 5W per monitoring parameter
Local network protocol option:	RS232, RS485, Wifi, Zigbee Mesh, LoRa, Bluetooth, BLE
Output control signal option:	On/off, 0-10 VDC, 4-20mA, PWM, infra-red
Telecommunication protocol option:	GPRS, TCP/IP, MQTT

## International Standards (Outdoor Air Quality Management Matrix):

woofaa Cleaner Air • 總發空氣淨化			WHO AQG / WHO IAQ: dampness & mould	ASHRAE Standards 62.1 / 55	WELL building standard	Hong Kong IAQ Excellent / Good (8 hrs average)	China GB18883-2002 卫生部标准 (1 hour average)	China GB50325-2010 国家建设部标准 一类 / 二类	China GB3095-2012 《环境空气质量标准》 一类区 / 二类区	Taiwan (8 hrs)	Indian Air Quality Index (AQI) Good / Satisfactory	
Physical	Air Temperature	Max	°C	24-27	-	20-25.5	16-28	-	-	15-28	-	
	Relative Humidity	Range	%	< 65%	30-50%	40-70	30-80	-	-	-	-	
	Air Velocity	Max	m/s	0.2-0.8	-	0.2 / 0.3	0.2 / 0.3	-	-	-	-	
	Fresh Air Rate	Max	m <sup>3</sup> /h	-	-	-	30	-	-	-	-	
Chemical	PM2.5	24 h	µg/m <sup>3</sup>	25, 10 (yr) / 50	15	15	-	-	35 / 75	35	30 / 60	
	PM10	24 h	µg/m <sup>3</sup>	50, 20 (yr) / 100	50	50	20 / 180	150	50 / 150	75	50 / 100	
	SO2	24 h	µg/m <sup>3</sup>	20, 500 (10-min) / 50	80	-	-	500	-	50 / 150	-	40 / 80
	SO2	24 h	ppm	0.007, 0.177 (10-min) / 0.018	0.028	-	-	0.177	-	0.018 / 0.053	-	0.014 / 0.028
	NO2	24 h	µg/m <sup>3</sup>	200 (1-h), 40 (yr) / 200 (1-h), 40 (yr)	470	100	40 / 150	240	-	80 / 80	-	40 / 80
	NO2	24 h	ppm	0.1 (1-h), 0.02 (yr) / 0.1 (1-h), 0.02 (yr)	0.232	0.05	0.02 / 0.074	0.118	-	0.04 / 0.04	-	0.02 / 0.04
	CO	8 h	mg/m <sup>3</sup>	NA / 10, 100 (15-min)	9	9	2 / 10	10	-	4 / 4	9	1 / 2
	CO	8 h	ppm	NA / 8, 80 (15-min)	7.3	7.3	1.7 / 8.7	8.7	-	3.2 / 3.2	7.3	0.8 / 1.6
	O3	8 h	µg/m <sup>3</sup>	100 / 160	100	100	50 / 120	160	-	100 / 160	127	50 / 100
	O3	8 h	ppm	0.047 / 0.071	0.047	0.047	0.024 / 0.057	0.076	-	0.047 / 0.076	0.06	0.024 / 0.047
	CO2	Max	ppm	-	ambient + 700	800	800 / 1000	1000	-	-	1000	-
	NH3	24 h	µg/m <sup>3</sup>	-	-	-	-	200	200 / 200	-	-	200
	HCHO Formaldehyde	Max	µg/m <sup>3</sup>	NA / 100 (30-min)	100	32	30 / 100	100	80 / 100	-	100	-
	C6H6 Benzene	Max	µg/m <sup>3</sup>	-	-	-	-	110	-	-	-	-
	C7H8	Max	µg/m <sup>3</sup>	-	-	-	-	200	-	-	-	-
	C8H10 Ethylbenzene	Max	µg/m <sup>3</sup>	-	-	-	-	200	-	-	-	-
	C10H8 Naphthalene	Max	µg/m <sup>3</sup>	NA / 10 (yr)	-	-	-	-	-	-	-	-
	C2Cl4 Tetrachloroethylene	Max	µg/m <sup>3</sup>	NA / 250 (yr)	-	-	-	-	-	-	-	-
C6H3Cl3 Trichloroethylene	Max	µg/m <sup>3</sup>	NA / 4.3 x 10E-7	-	-	-	-	-	-	-	-	
B(a)P Benzo(a)pyrene (PAHs, POM)	Max	µg/m <sup>3</sup>	NA / 200 (1-hr), 40 (yr)	-	-	-	0.001	-	0.0025 / 0.0025	-	-	
TVOC	Max	µg/m <sup>3</sup>	-	-	500	200 / 600	600	500 / 600	-	1300	-	
Pb	24 h	µg/m <sup>3</sup>	-	1.5	-	-	-	-	1 / 1	-	0.5 / 1	
Bio	Total Bacteria Count	Max	CFU/m <sup>3</sup>	50/150/500	-	-	500 / 1000	2500	-	1500	-	
	Total Fungal Count	Max	CFU/m <sup>3</sup>	50/150/500	-	-	-	-	-	1000	-	
Radio	Radon	Max	pCi/L	NA / 4.5	4	4	4 / 5.4	11	5.4 / 11	-	0.5 / 1	