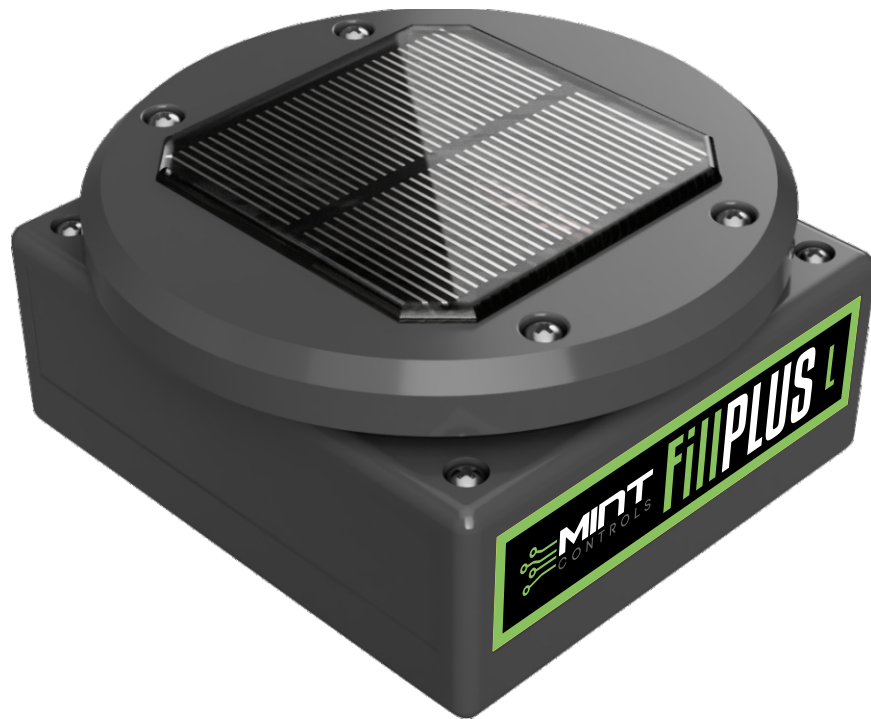# SMART WASTE SOLUTIONS
EARN MONEY, DON'T WASTE IT.

FILL PLUS - LASER MODEL

- Laser-Based System
- Solar-Powered
- Monitors Fill Level
- Monitors Tilt Status (Open Lid/Tipped Over)
- Detects Fires
- GPS Technology
- 10-Year Battery Life With Solar
- Optional WiFi, LTE-M1, and 2G/3G
- Communicates Status 24 Times or More Per Day (Fire Detection Every Minute)
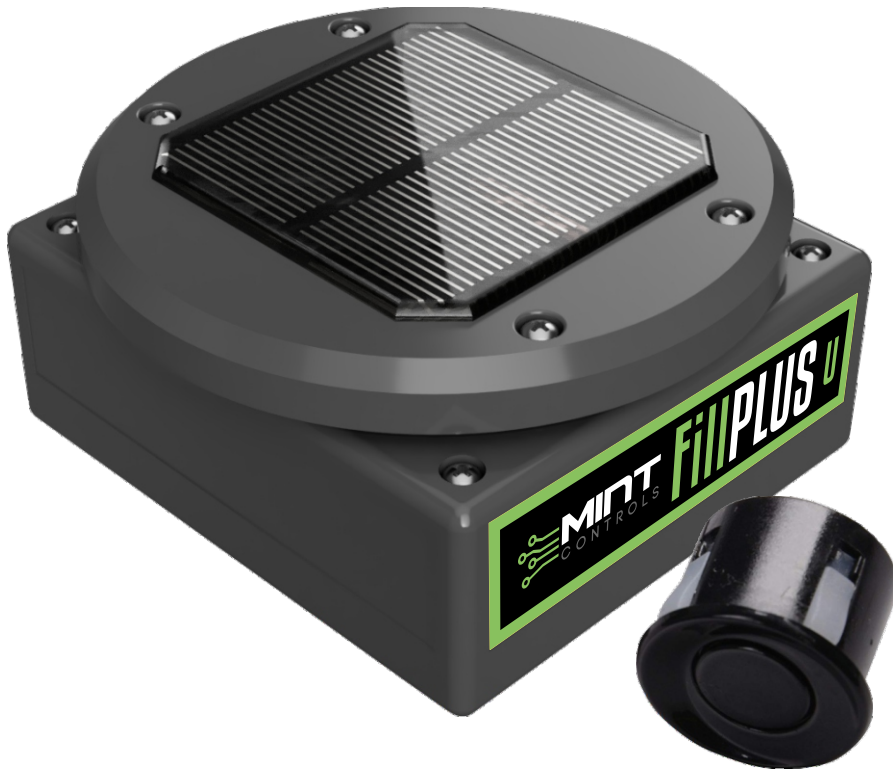
PRODUCT SPECIFICATIONS

Length	3.776" (95.90mm)	SENSORS	940 nm IR Laser TOF (Class 1)
Width	3.376" (85.74mm)	Distance Sensor	2" ~ 47" (50mm ~ 1200mm)
Depth	1.406" (35.72mm)	Range	Resolution: 1 cm / Repeatability: ± 2 cm
Solar Panel Dimensions	Diameter - 4" (101.6mm) Height - 0.415"	Accuracy	NTC Themistor with Configurable Rules (Immediate send upon trigger)
Microcontroller	(10.5mm)	Fire Detection	Defaults to Once Per minute (Configurable from every 15 sec. to every 10 min.)
Wifi Coprocessor	Nordic Semiconductor nRF52840	Fire Detection Interval	6-DOF Accelerometer/Gyro + Temperature
Battery	Espressif ESP32-D0WD	Tilt Sensor	u-blox M8 GNSS GPS Module 72-Channel GNSS (GPS, Galileo, GLONASS)
Expected Battery Life		GPS Sensor	Embedded Wide-Band Patch Antenna

COMMUNICATION OPTIONS

WiFi		LTE-M1		2G/3G	
Cellular	2.4G WiFi b/g/n	Cellular	u-blox SARA-R410-02B LTE modem, 3GPP Release 13 LTE Cat M1, Cat M1 bands: 2, 3, 4, 5, 8, 12, 13, 20, 28	Cellular	u-blox SARA U201 2G/3G modem, HSPA/GSMqq with global hardware and SIM support, Bands 800/850/900/1900/2100 MHz, 3GPP Release 7
Check-In Interval	Defaults to every 2 hrs (Configurable from once per min. to Once per day)	Check-In Interval	Defaults to Every 2 Hours (Configurable From Once Per Minute to Once Per Day)		
Initial Configuration	Via Soft Access-Point and Web Page or via TTL Serial Link - Preconfiguration at Factory possible.	SIM Card	MFF2 Embedded SIM Card (Default) or Nano SIM Card if Required	Check-In Interval	Defaults to Every 2 Hours (Configurable From Once Per Hour to Once Per Day)
		Default Carrier	The Embedded MFF2 SIM Card Only Supports AT&T, and Only in the USA It May Be Possible to Use With a 3rd-Party SIM Card in Other Locations, But This is Not currently Supported and May or May Not Work	SIM Card	MFF2 embedded SIM card (the default) or a nano SIM card if required
		Initial Configuration	Via iPhone or Android App Over Bluetooth	Default Carrier	The Embedded MFF2 SIM Card Only Supports AT&T, and Only in the USA It May Be Possible to Use With a 3rd-Party SIM Card in Other Locations, But This is Not currently Supported and May or May Not Work
				Initial Configuration	PLUS

All specifications subject to change without notice. For more information please visit our website.

FILL PLUS - ULTRASONIC MODEL

- Ultrasonic System
- Solar-Powered
- Monitors Fill Level
- Monitors Tilt Status (Open Lid/Tipped Over)
- Detects Fires
- GPS Technology
- 10-Year Battery Life With Solar
- Optional WiFi, LTE-M1, and 2G/3G
- Communicates Status 24 Times or More Per Day (Fire Detection Every Minute)

PRODUCT SPECIFICATIONS

Length	3.776" (95.90mm)	SENSORS	40khz Ultrasonic
Width	3.376" (85.74mm)	Distance Sensor	0.75"~120" (2mm~3,050mm) @ Effective Angle: <15
Depth	Including Extended 3/4" NPT Sensor 2.25" (57.17mm)	Range	Resolution: 1 cm / Repeatability: ± 2 cm
	Not Including Sensor 1.808" (45.93mm)	Accuracy	NTC Themistor with Configurable Rules (Immediate send upon trigger)
Solar Panel Dimensions	Diameter - 4" (101.6mm) Height - 0.415" (10.5mm)	Fire Detection	Defaults to Once Per minute (Configurable from every 15 sec. to every 10 min.)
Microcontroller	Nordic Semiconductor nRF52840	Fire Detection Interval	6-DOF Accelerometer/Gyro + Temperature
Wifi Coprocessor	Espressif ESP32-D0WD	Tilt Sensor	u-blox M8 GNSS GPS Module 72-Channel GNSS (GPS, Galileo, GLONASS)
Battery	18650 Li-ion Rechargeable/Replaceable	GPS Sensor	
Expected Battery Life	10 Years with Solar		

COMMUNICATION OPTIONS

WiFi		LTE-M1		2G/3G	
Cellular	2.4G WiFi b/g/n	Cellular	u-blox SARA-R410-02B LTE modem, 3GPP Release 13 LTE Cat M1, Cat M1 bands: 2, 3, 4, 5, 8, 12, 13, 20, 28	Cellular	u-blox SARA U201 2G/3G modem, HSPA/GSMqq with global hardware and SIM support, Bands 800/850/900/1900/2100 MHz, 3GPP Release 7
Check-In Interval	Defaults to every 2 hrs (Configurable from once per min. to Once per day)	Check-In Interval	Defaults to Every 2 Hours (Configurable From Once Per Minute to Once Per Day)	Check-In Interval	Defaults to Every 2 Hours (Configurable From Once Per Minute to Once Per Day)
Initial Configuration	Via Soft Access-Point and Web Page or via TTL Serial Link - Preconfiguration at Factory possible.	SIM Card	MFF2 Embedded SIM Card (Default) or Nano SIM Card if Required	SIM Card	MFF2 embedded SIM card (the default) or a nano SIM card if required
		Default Carrier	The Embedded MFF2 SIM Card Only Supports AT&T, and Only in the USA It May Be Possible to Use With a 3rd-Party SIM Card in Other Locations, But This is Not currently Supported and May or May Not Work	Default Carrier	The Embedded MFF2 SIM Card Only Supports AT&T, and Only in the USA It May Be Possible to Use With a 3rd-Party SIM Card in Other Locations, But This is Not currently Supported and May or May Not Work
		Initial Configuration	Via iPhone or Android App Over Bluetooth	Initial Configuration	PLUS