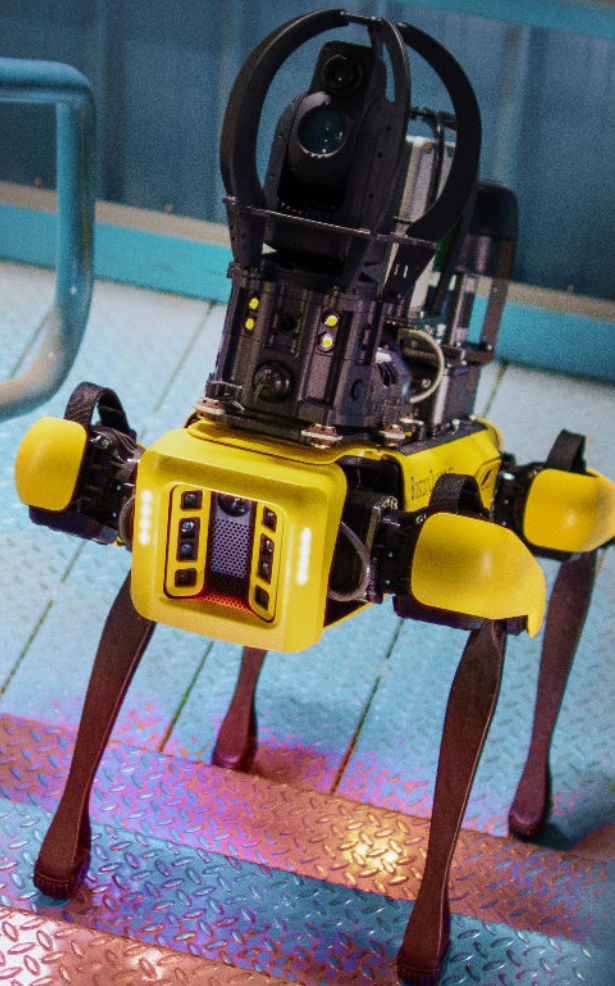


# Spot<sup>®</sup>

ooo

## Enterprise Asset Management Kit



Génération  
ROBOTS

BostonDynamics



# ENTERPRISE ASSET MANAGEMENT

Accelerate your digital transformation with agile mobile robots. Spot helps increase your uptime by enabling your team to collect high quality data more frequently and efficiently with automated robotic inspection.

## Automated

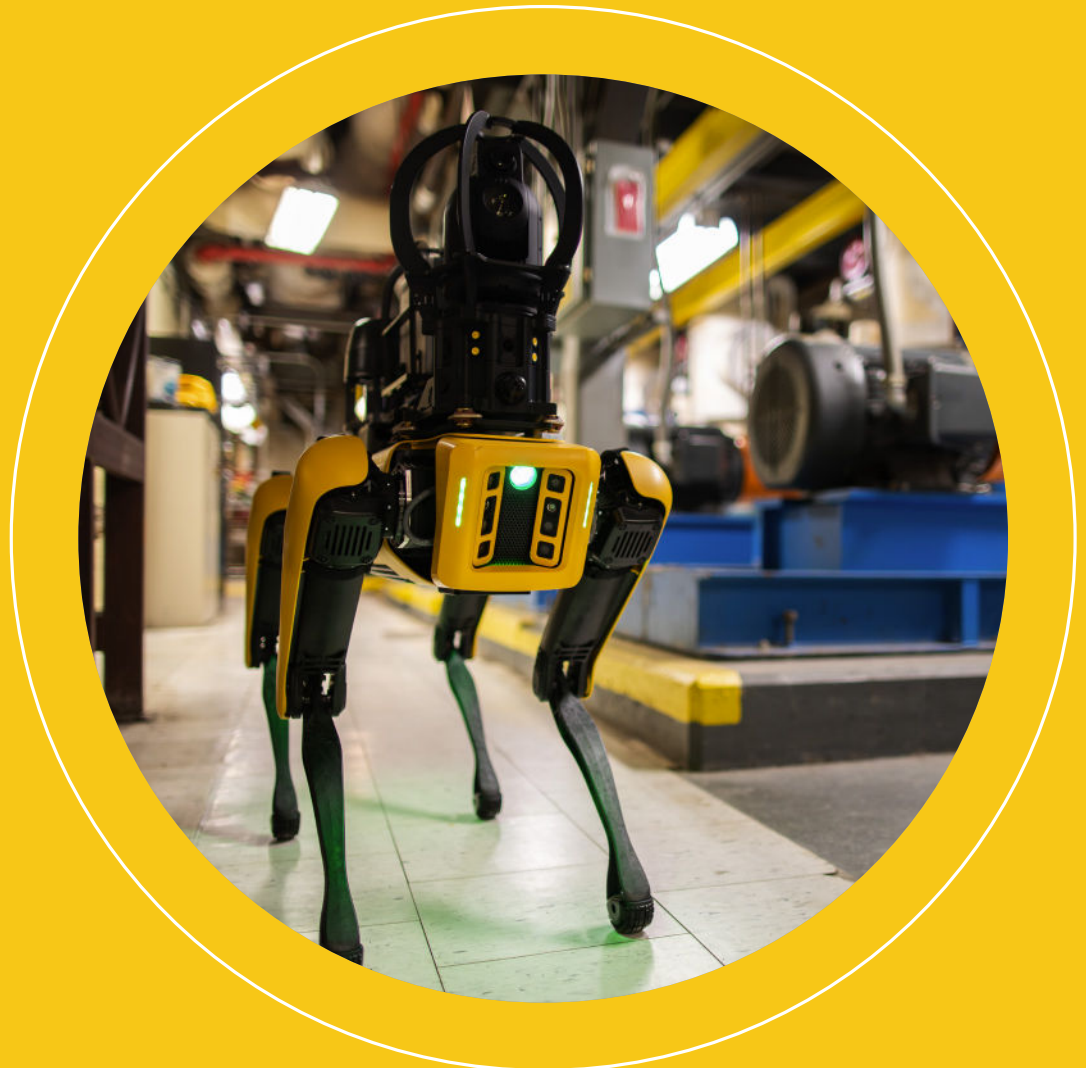
Spot allows you to automate the dull, dirty, and dangerous inspection tasks in your facility. Easily programmed to move through human purposed environments, Spot brings IoT sensors to your assets frequently and consistently, creating a digital twin of the health of your operation.

## Scalable

Whether you are operating one Spot or an entire fleet, from six feet or six hundred miles away, we offer the tools needed for an enterprise deployment. Our software helps you manage your fleet and makes your data accessible in one place, with flexible communication options to keep you connected and informed.

## Reliable

Extensive testing in the lab and field has created a robot that you can trust to work day-in and day-out. Spot can operate without interventions, autonomously charging, dynamically replanning around new obstacles, and self-righting if it falls. With over 1,000 robots in customer hands today, you can rest assured that Spot is a dependable coworker that delivers consistent results.

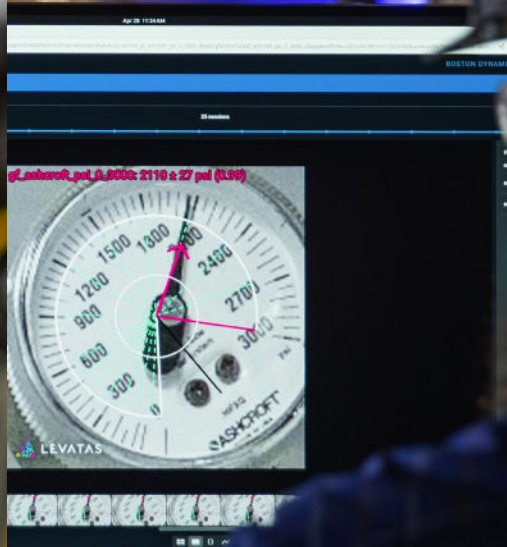


## DATA AT YOUR FINGERTIPS



### Thermal Inspection

Equipped with a thermal imager, Spot allows for frequent inspection of critical equipment such as pumps and motors. Set up thermal inspection actions to trigger alerts when equipment exceeds a set range or when temperature differences between assets surpass thresholds.



### Gauge Reading

With plug and play partner machine vision models, Spot can read and analyze analog gauges, measuring pressure, flow, and more. Trigger alerts for abnormal readings and track trends in your assets over time.



### Acoustic Inspection

With an optional Fluke SV600 add-on, Spot can perform acoustic imaging inspections to identify costly leaks in compressed air or other gas lines. Record images and video of equipment data for post-analysis inspection, and trigger alerts so your team can respond quickly to data insights.



# KIT INCLUDES:

SPOT ROBOT

SPOT CAM+IR

SCOUT

FLUKE SV600\*

SPOT CARE

SPOT EAP 2

SPOT DOCK



\* optional add-on

## SPOT EAP 2

Spot EAP 2 enhances the autonomy, computation, and communications available on the Spot platform. Configure inputs such as sensors, cameras, and other devices and process data collected into actionable insights.




### Features:

-  Lidar maps up to 100m around Spot
-  Compact CPU and GPU with customizable inputs and outputs
-  5G/LTE modem with CBRS support for private networks

## SPOT CAM+IR

The Spot CAM+IR payload turns Spot into a powerful inspection tool with purpose-built cameras. Use Spot CAM+IR to get eyes on remote or hazardous environments.


### Features:

-  Integrated radiometric thermal camera
-  Spherical camera (360 x 170" view)
-  Pan-tilt-zoom (PTZ) camera with 30x optical zoom

## FLUKE SV600 *(optional add-on)*

The SV600 Acoustic Imager enables users to detect, locate, and visualize air and gas leaks or changes in sound signatures in real-time.




### Features:

-  64-Digital MEMs microphones
-  Programmable alarms for sound level (dB) and frequency (kHz)
-  Video and photo capture

## SCOUT

Control your Spot fleet from a virtual control room with our web-based application Scout. Run pre-programmed autonomous missions and integrate Scout data into your existing enterprise asset management (EAM) system.

### Features:

-  Autonomous site coverage
-  Real-time visibility
-  Remote site access

## SPOT DOCK

The Spot Dock is a self-charging station that transforms Spot into a truly autonomous remote inspection tool. Increase predictability and improve safety on your sites with enhanced remote and autonomous operations.

### Features:

-  Autonomous self-charging
-  Gigabit Ethernet passthrough to robot
-  2-3 hour recharge time

## SPOT CARE

One year of premium service and support to keep your robot up and running at peak performance.

\*Improper use of Spot is not covered under Spot Care. See our [Spot Care Terms and Conditions](#) to see what constitutes improper use.

### Features:

-  Free damage protection\*
-  Part replacement
-  Quick repair turnaround

# SPOT SPECIFICATIONS

## Enterprise Asset Management Kit

### DIMENSIONS WITH PAYLOADS

<b>Length</b> 1100 mm (43.3 in)	<b>Min Height (Walking)</b> 877 mm (34.5 in)
<b>Width</b> 500 mm (19.7 in)	<b>Net Mass/Weight</b> (Including battery and Fluke SV600) 47.5 kg (104.7 lbs)
<b>Height (Sitting)</b> 548 mm (21.6 in)	<b>Net Mass/Weight</b> (Including battery, not including Fluke SV600) 43.8 kg (96.6 lbs)
<b>Default Height (Walking)</b> 967 mm (38.1 in)	
<b>Max Height (Walking)</b> 1057 mm (41.6 in)	

### LOCOMOTION

<b>Max Speed</b> 1.6 m/s
<b>Max Slope</b> ±30°
<b>Max Step Height</b> 300 mm (11.8 in)

### AUDIO & VISUAL SIGNALS

Pre-configured behaviors for manual and autonomous operations

**LED Brightness**  
Adjustable up to 1010 Lux

**Max Projection Distance**  
1.8 m in front of robot

**Buzzer Volume**  
Adjustable up to 110 dB at 1 m distance from robot

### TERRAIN SENSING

**Horizontal Field of View**  
360°

**Range** 4 m (13 ft)

**Lighting** > 2 Lux

**Collision avoidance**  
maintains set distance from stationary obstacles

### CONNECTIVITY

**WiFi**  
2.4GHz / 5GHz b/g/n  
Ethernet

**Environment**  
**Ingress Protection** IP54

**Operating Temp.**  
-20°C to 45°C

### BATTERY

**Battery Capacity**  
564 Wh

**Average Runtime**  
90 mins

**Standby Time**  
180 mins

**Recharge Time**  
60 mins

**Length**  
324 mm (12.8 in)

**Width**  
168 mm (6.6 in)

**Height**  
93 mm (3.7 in)

**Mass/Weight**  
5.2 kg (11.5 lbs)

### CHARGER

**Input Voltage**  
100-240VAC,  
50/60Hz 8A Max

**Output**  
35-58.2 VDC,  
12A Max

**Mass/Weight**  
7.5 kg (16.5 lbs)

**Operating Temp.**  
0°C to 45°C

### TABLET

**Height** 127 mm (5.0 in)

**Width** 214 mm (8.4 in)

**Depth** 10 mm (0.4 in)

**Weight** 426 g (0.9 lbs)

**Touch Screen Size**  
8" diagonal

**Resolution** 1920x1200

**Average Battery Life**  
8 hours

**Ingress Protection** IP65

### SAFETY AND COMPLIANCE, UNITED STATES

Designed according to ISO 12100 for risk assessment and reduction methodology and IEC 60204-1 for electrical safety. See [Information for Use](#) for further details on intended uses.

Emergency Stop meets ISO 13850

**EMC: FCC Part 15B Radio equipment:** Incorporates a FCC Part 68 Certified radio system

**Laser product**  
Class 1 eye-safe per IEC 60825-1:2007 & 2014



## SPOT CAM+IR

### 360° CAMERA

**Field of View (FoV)**  
360 x 170°

**Video Frame Rate**  
Variable\*

**Video Storage**  
No

**Video Streaming**  
Yes

**Resolution**  
10 MP

**File Size**  
31.1 MB

**Still Image Format**  
PPM (Portable  
Pixel Map)

### PTZ CAMERA

**Resolution**  
2MP, 1080p video

**Optical Zoom**  
30x

**Pointing Accuracy**  
2 degrees

**Range of Motion**  
170°/sec

**Tilt Range**  
-30 to 270°

### IR CAMERA

**Scene Temp. Range**  
(High Gain)  
-40°C to +160°C  
(Low Gain)  
-40°C to +550°C

**Video Speed**  
7.5 Hz

**FoV**  
69 x 56°

**Image Resolution**  
640 x 512

**Accuracy**  
Radiometric ±5°C

## FLUKE SV600

### CAMERA

**Integrated Visible Light**  
Included with fixed lens

**Resolution Video**  
640 x 480

**Camera Field of View**  
65° ±3°

**Camera Resolution**  
720 p at 30 fps

### MICROPHONES

**Type**  
MEMS, Digital  
Bottom Port

**SNR** (A-weighted,  
at 1 kHz)  
64 dB for 94 dB  
SPL @ 1kHz

**Sensitivity**  
-26 dB FS ± 1.5 dB  
at 1 kHz, 94 dB SPL

**Acoustic Overload Point**  
120 dB SPL at 1 kHz,  
<10 % THD

### DATA FORMATS

**Audio**  
.wav (audio verification)

**Pictures**  
.jpg, .png

**Video** (V/V+ models)  
.mjpeg, .mp4

**Data messages**  
.json

## SPOT EAP 2

### PROCESSING (JETSON XAVIER NX)

**CPU**  
6-core NVIDIA  
Carmel ARM V8.2  
64-bit CPU with 6MB  
Lw + 4MB L3 cache

**GPU**  
384-core NVIDIA  
Volta GPU with 48 Tensor  
cores

**Memory**  
16GB 128-bit  
LPDDR4x at 51.2 GB/s

### LIDAR

**Model**  
Velodyne VLP-16

**Sensor**  
16 Channels

**Measurement Range**  
100 m

**Range Accuracy**  
Up to ±3 cm

**Field of View**  
(vertical)  
+15.0° to -15.0° (30°)

**Angular Resolution**  
(vertical)  
2.0°

**Field of View**  
(horizontal)  
360°

**Angular resolution**  
(horizontal/azimuth)  
0.1° – 0.4°

**Rotation Rate**  
5 Hz – 20 Hz

**Laser Product**  
Class 1 eye-safe  
per IEC 60825-  
1:2007 & 2014

**Laser Wavelength**  
903 nm

**Power**  
8 W

## SPOT DOCK

### DIMENSIONS

**Length**  
1140 mm (44.9 in)

**Width**  
414 mm (16.3 in)

**Height**  
403 mm (15.9 in)

**Mass/Weight**  
22.9 kg (50.5 lbs)

**Voltage**  
9-18 V

**Other**  
Integrated web server for  
monitoring and configuration

### CONNECTIVITY AND STORAGE

**5G/LTE**  
User-installable SIM card. AT&T  
is the supported 5G provider  
in the United States; however,  
customers also have the option  
of utilizing their own private  
5G network. For international  
customers, users must obtain  
their own SIM from a local  
carrier for which there may be  
additional network restrictions.

**Ethernet**  
GbE interface, unmanaged  
2 port Ethernet switch for  
additional connectivity

**Storage**  
512GB SSD\*

**USB 3.1**  
2x USB 3.1 ports with support  
for 4.5W

**USB-C**  
1x USB-C port with support  
for 50W power delivery and  
video out

**SD Card**  
1x SD card slot

**Other Connections**  
E-Stop interface PPS output  
GPIO (Configurable to PWM  
output) I2C Ports

**Power Outputs**  
48V or robot battery voltage  
for Spot Explorer models  
24V, 50W  
12V, 50W  
5V, 30W

\*Actual storage available will  
be less due to operating  
system.

### POWER

**Input** 90-277 VAC

**Output** 58V at 12A

**Charge time** 2-3.5 hours\*  
\*Charge time varies  
based on table below

Ambient Temp.	80% Charge	100% Charge
25°C	50 min	2 hrs
35°C	2.5 hrs	3.5 hrs

### ENVIRONMENT

**Operating Temp** -20°C to  
35°C, Shelter and ambient  
light required

**Mounting**  
Bolt/tie down  
locations provided

### CONNECTIVITY

Gigabit Ethernet  
passthrough to robot



# Génération ROBOTS

DISTRIBUTEUR OFFICIEL

[sales@generationrobots.com](mailto:sales@generationrobots.com)

+33 5 56 39 37 05

[www.generationrobots.com](http://www.generationrobots.com)

BostonDynamics

