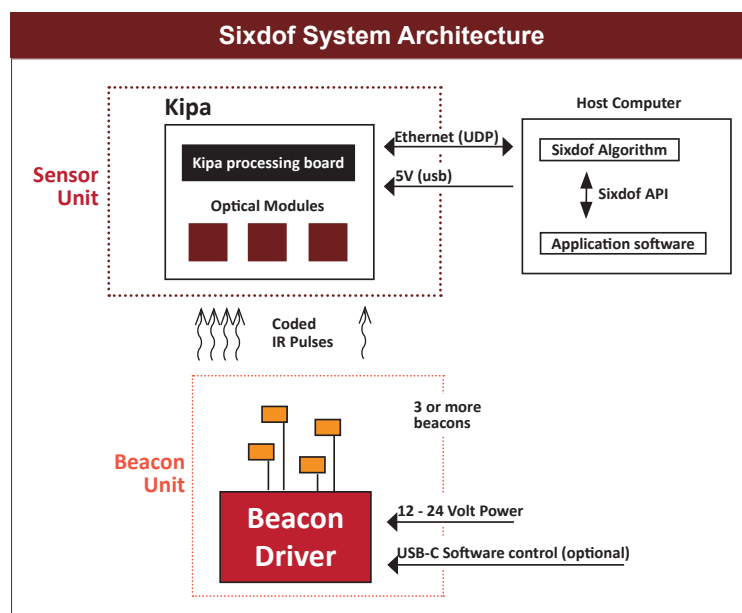


Multiple IR beacons provide spatial reference for the Sixdof tracking system. Each beacon is identified by a unique ID, transmitted optically at high speed. One or more beacons are attached to a beacon driver to receive power and their unique ID. Sixdof offers multiple types of beacon drivers to enable a wide variety of use cases, from indoor use cases with restricted power consumption and payload, to outdoor use cases at far distances. Some beacon driver boards are runtime programmable.

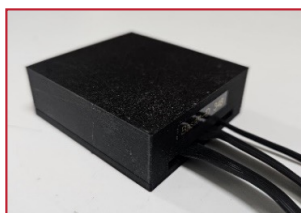


Below is a comparison of the different beacon driver boards available:

Type	Number Beacons	Power level	Runtime Programmable	Dimensions	Weight	Min Dist.	Max Dist. **
Basalt L	6	1.5A	No	55x50x10 mm	22g	0.01 m	4 m
Basalt D	6	3A	No	55x50x10 mm	22g	0.1 m	8 m
Shale	8	2A, 4A, 6A*	Yes	170x60x14 mm	76g	0.3 m	30 m
Zircon	3	20A	Yes	90x60x20 mm	60g	5.0 m	100 m

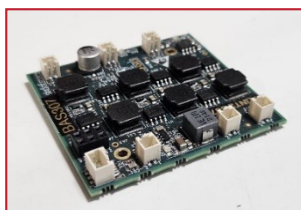
\* Shale is configurable at manufacturing time \*\* Effective distance also depends on the type of beacons used

## BASALT



### Housing

Size:  
70x56x24 mm  
Weight:  
14g



### Driver Board

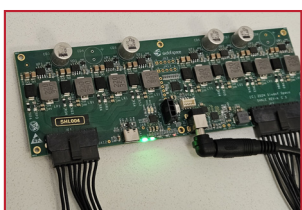
Size:  
55x50x10 mm  
Weight: 22g  
Power: 12-24V, 1A

## SHALE



### Housing

Size:  
178x68x29 mm  
Weight:  
133g



### Driver Board

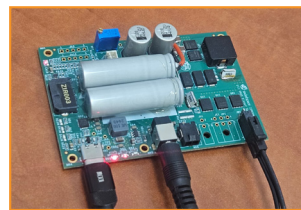
Size:  
170x60x14 mm  
Weight:  
76g

## ZIRCON



### Housing

Size:  
95x65x30 mm  
Weight:  
120g

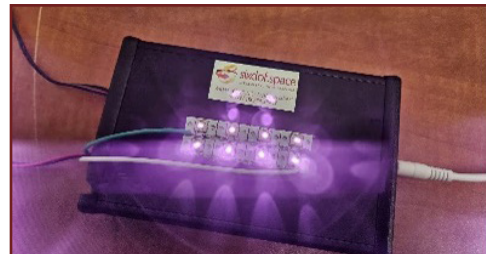
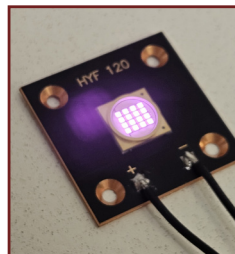
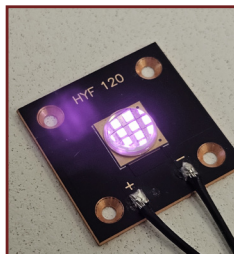
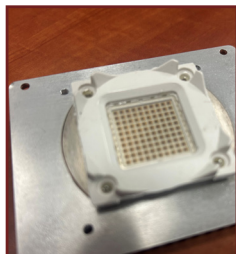


### Driver Board

Size:  
90x60x20 mm  
Weight:  
60g

Sixdof's Beacon driver boards are compatible with multiple types of IR beacons. The different types of beacons vary in their minimum and maximum ranges, field of view, and size. Before purchasing a beacon driver and beacons, consult with the Sixdof team to identify the combination that best fits your use case. All beacons operate in the 850nm wavelength, and the maximum ranges listed below were tested in full sunlight.

## Beacon Options



### Low-Power Beacon

Recommended for up to 7m, 2A

### High-Power 100W LED Beacon

Recommended for up to 25m, with cone tested to 40m

### LED HYF120 with Lens

High Power 40W LED Beacon with lens, 6A

### LED HYF120 with no Lens

High Power 40W LED Beacon, 6A

### VCSEL High-Power Beacon

The VCSEL (vertical-cavity surface-emitting laser) is a type of laser that can reach up to a 100m with a 20-degree field of view. Please be aware of eye safety requirements.

## Software Control Options



Sixdof Spider is the software that controls our smart family of beacon driver boards. This includes the Sixdof Zircon and Shale boards.

The Sixdof Spider SDK enables the runtime control with the following features:

- Toggle individual beacons ON and OFF at runtime
- Configure beacons with custom, unique IDs
- Send short, 8-character optical "Dynamic Messages" from the beacons to the sensor

Sixdof Spider SDK comes with full documentation, standalone examples, GUI tools, and runtime libraries, available on the following platforms:

- Windows
- Linux Ubuntu
- Linux Raspberry Pi OS (32 bit)
- Linux Raspberry Pi OS (64 bit)

Elevate your robotics and automation capabilities with Sixdof's unmatched optical tracking precision—accelerate your operations today.

For more details, visit us at [www.sixdofspace.com](http://www.sixdofspace.com)