

Injection Molded Shroud

Aesthetic and lightweight shroud guarantees ingress protection

Encoder Assembly

Ensures precise positional control when adjusting height

5 Start Lead Screw

High displacement to revolution ratio allows for quick travel

Sleeve Bearing

Dry running sleeve bearings ensure minimal maintenance

Universal Strap

Flexible strap and ratchet provide rigid attachment method to most desks

Flexible Bellows

Bellows provide protection from pinch hazards

Floating Hex Coupler

Ensures lead screw is tensioned and motor is not thrust loaded

Worm Gear Motor

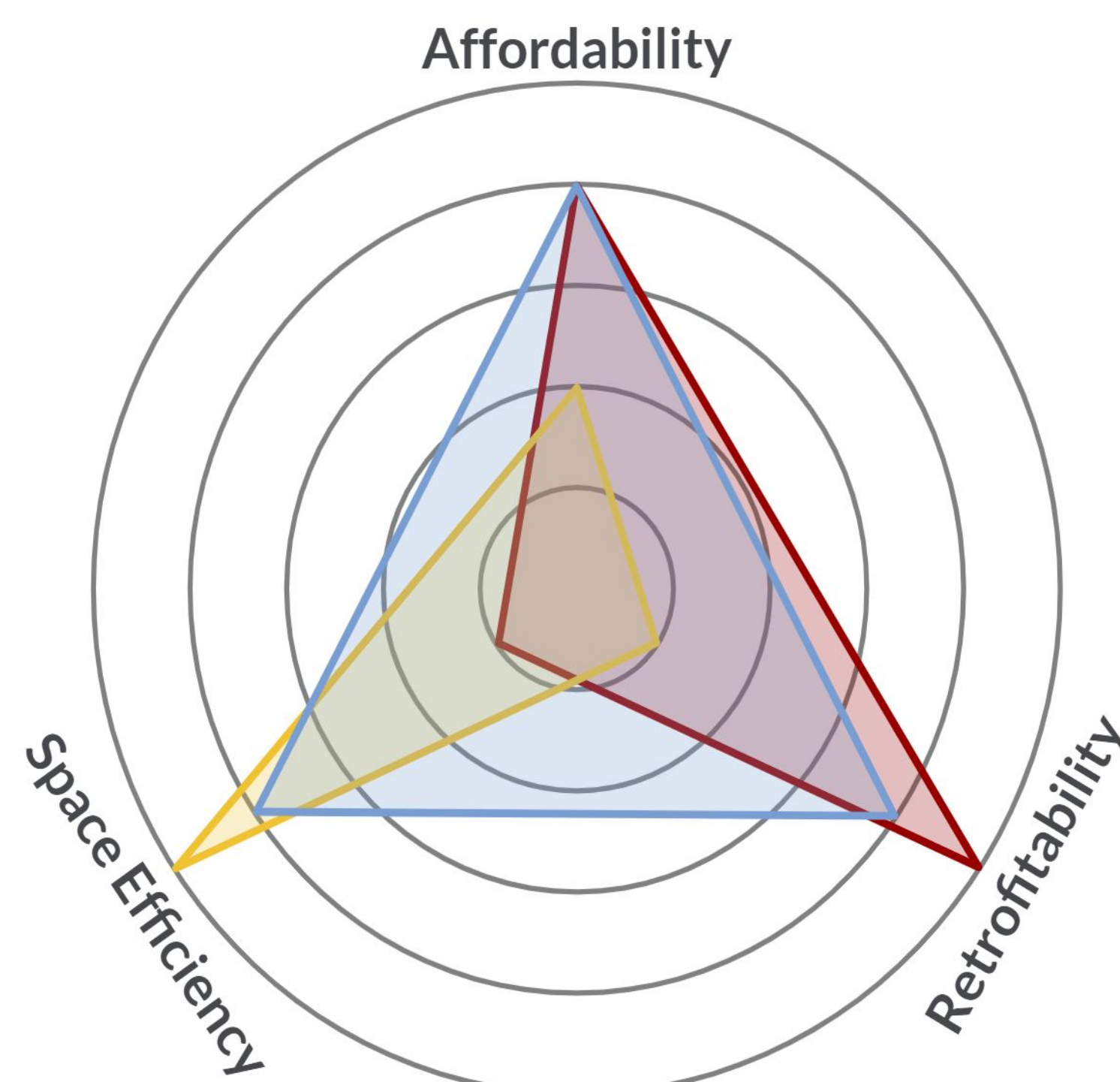
Motor cannot be back-driven by the weight of the desk

Aluminum Frame

Precision machined aluminum frame provides stiff and strong structure

Half of shroud hidden to display internal components

ELEVATE



ELEVATE

Retrofittable Standing Desk Converter

Griffin Addison

Darrion Chen

Jonathan Lee

User's Original Desk

ELEVATE attaches to the user's original desk using our universal strap system, bypassing the expensive and importable hassle of buying a new standing desk configuration

Slim Control Panel

Two tactile buttons provide up/down control

Identical Units

Four identical and synchronized units lift the desk at the user's demand

Wide Support Base

Wide feet ensures the desk's stability even at the tallest height setting

Lift Speed:
0.5"/s

Product Weight:
30lbs

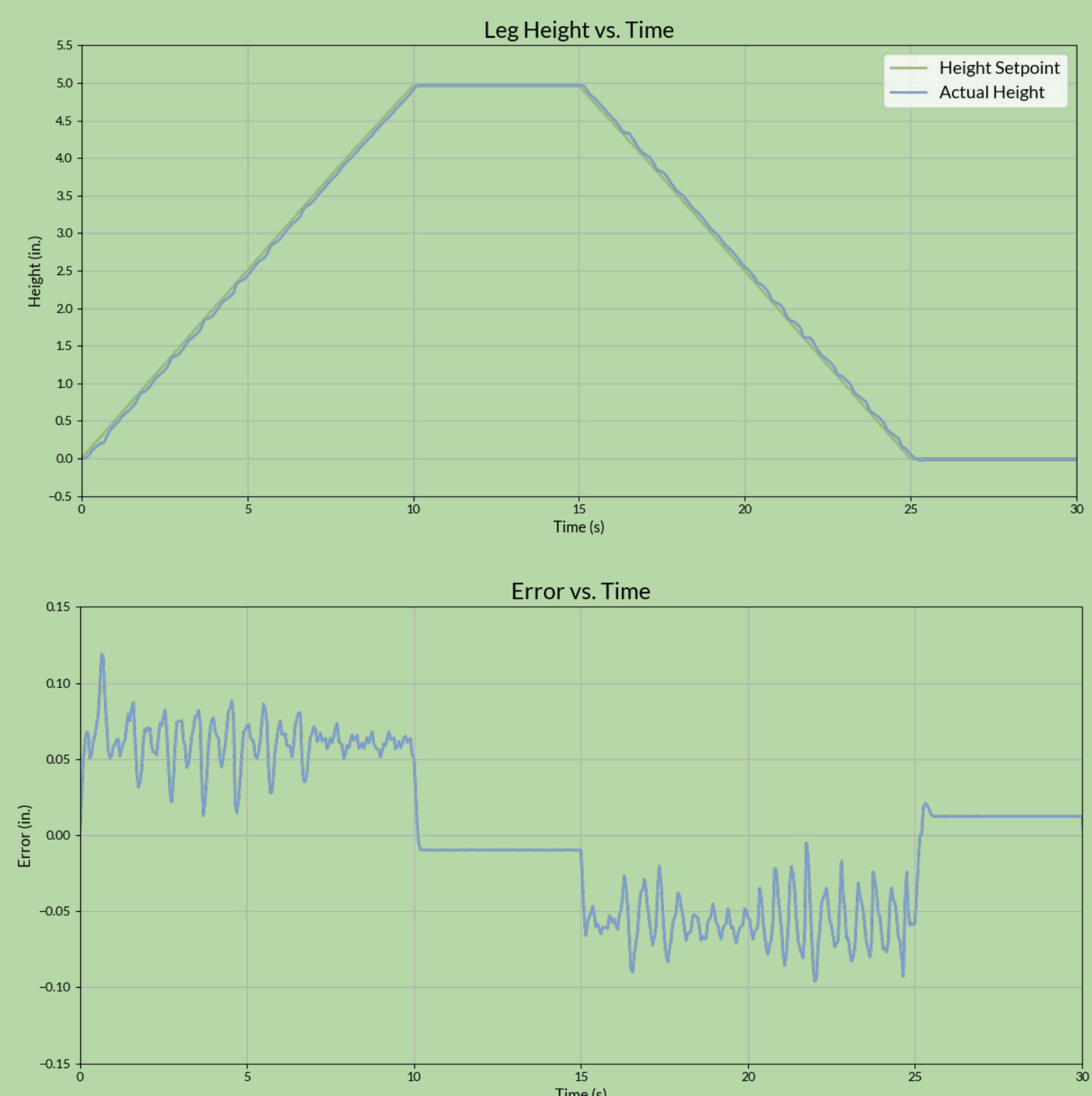
Compatible with 75% of desks*

Weight Capacity:
300lbs

Continuous Adjustability
1.5'

PD Controller

ELEVATE uses an advanced PD control system to sync the heights of all four leg risers. While the leg risers are in motion, a linearly-varying height setpoint is tracked to match both the speed and height of all four leg risers. The control system maintains an average error of less than 0.1 inches when moving.

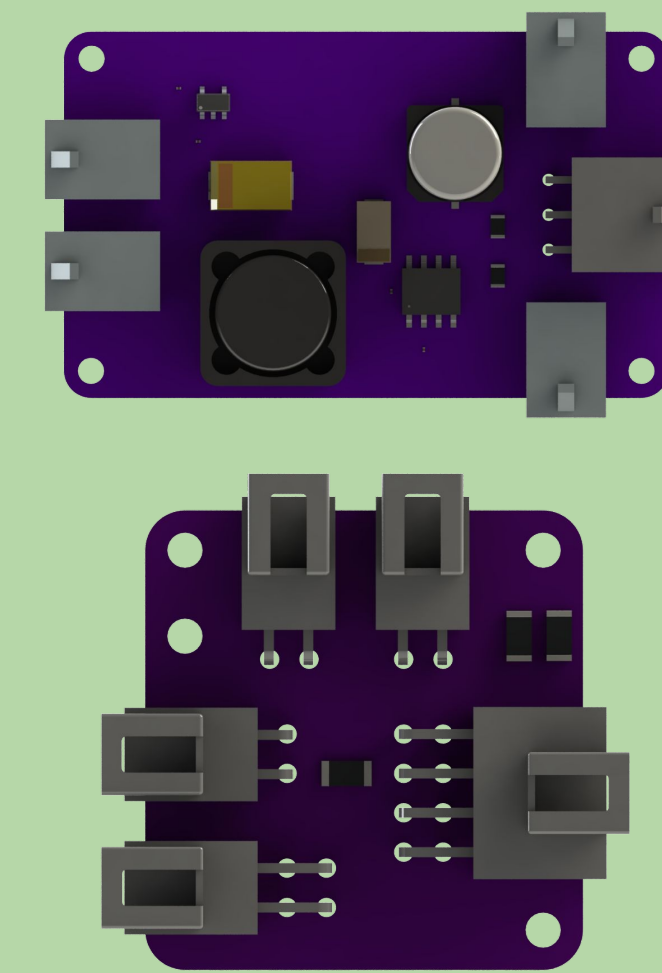


Motivation

Standing desks offer better posture and overall health for users. However, traditional standing desks can be expensive, large, and heavy, making standing desks inaccessible to many potential users.

ELEVATE is a new product that offers a more affordable and versatile alternative to traditional standing desks. It is a retrofittable converter that can be easily installed on most desks. ELEVATE consists of four leg risers and a control panel. At the touch of a button, users can adjust the height of their desk, within a range of 1.5', by varying four synchronized electronic risers.

ELEVATE is a great option for people who are looking for a standing desk but are on a budget, move frequently, or who want to continue using their existing desk.

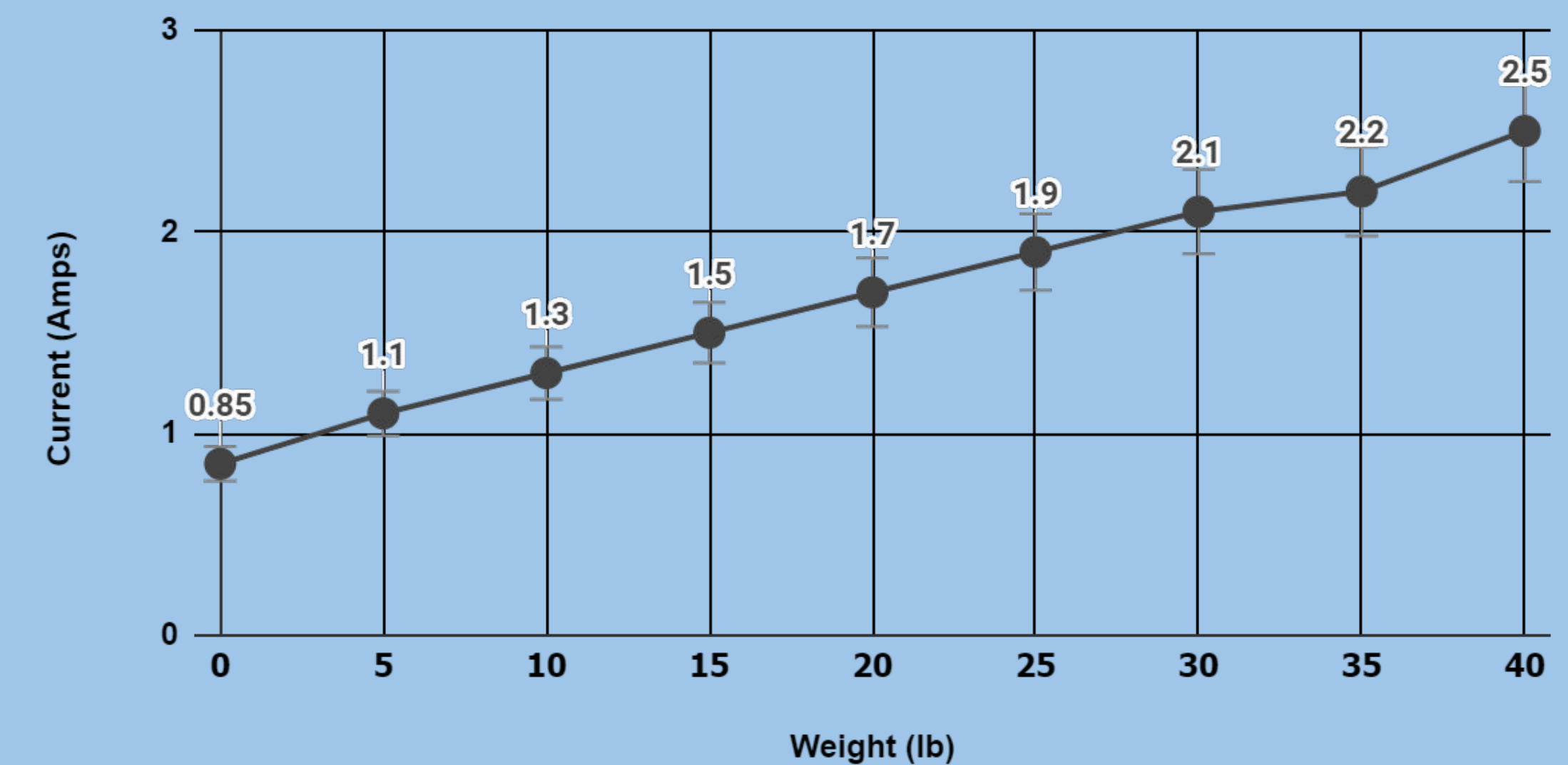


Custom PCBs

ELEVATE features custom PCBs, such as a purpose-built power distribution board (top), designed to accept 15V and efficiently deliver high current 15V power to the motors and low current 3.3V power to the microcontrollers. Each leg riser also includes a custom splitter board (bottom) that accumulates all digital signals and directs them to the main processor.

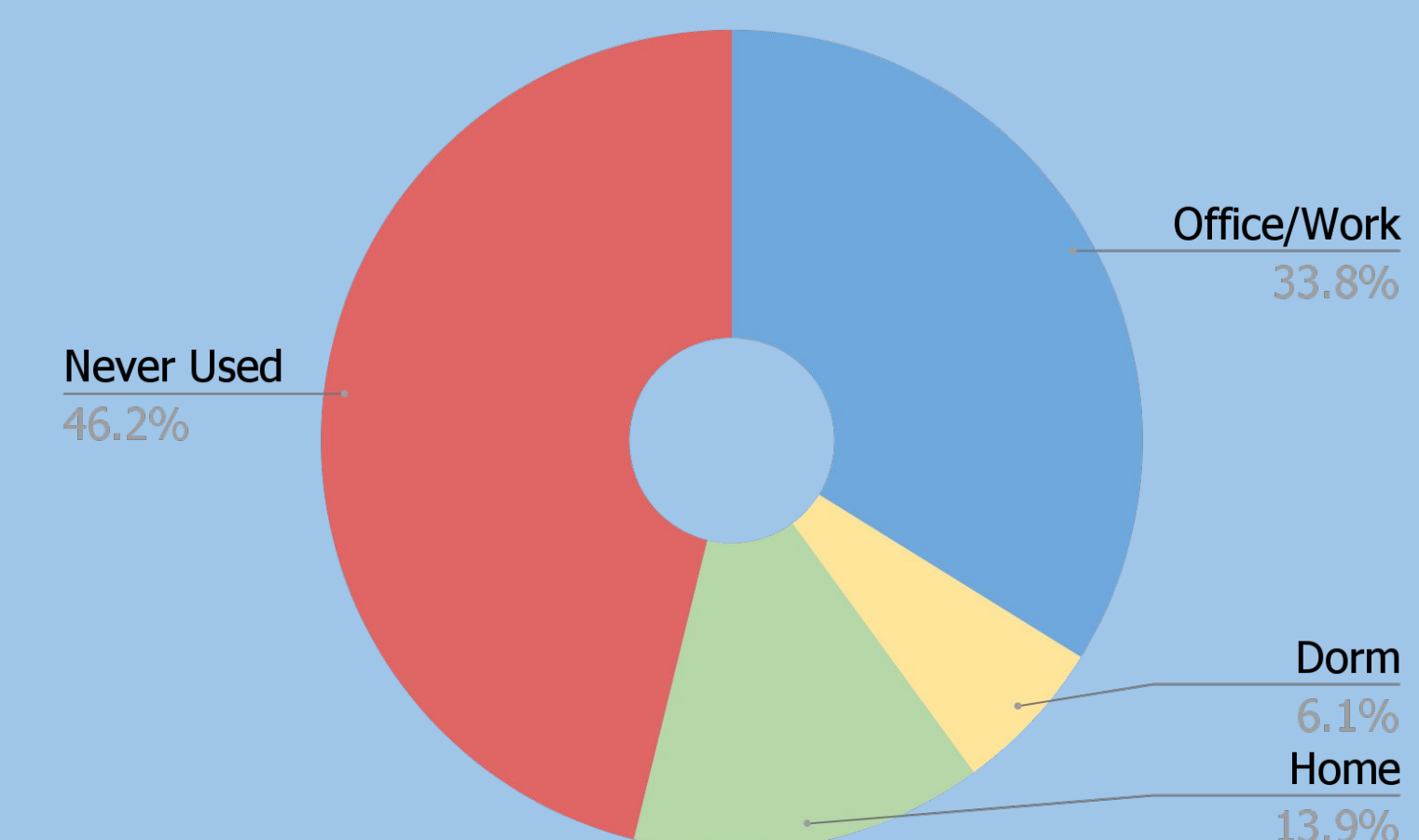
Current vs Load

Unit 3, Effect of Vertical Load on Motor Current Draw



A single unit is able to lift 40 lbs without exceeding 3 amps.

Where College Students Have Used Standing Desks



Of American college students surveyed, 60% cite cost, space, or transportability as inhibitive to purchasing a standing desk solution. This presents a great opportunity for our market disrupting solution.

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