

PROSPECTUS



Up to 50,770,667 Shares of Common Stock

This prospectus relates to the offer and sale from time to time, by the selling securityholders identified in this prospectus, of up to 50,770,667 shares of common stock, par value \$0.0001 per share (the “Common Stock”), of Hyperion DeFi, Inc., formerly known as Eyenovia, Inc. (“Hyperion DeFi” or the “Company”) which includes (i) up to 15,384,615 shares of Common Stock issuable upon the conversion of 5,128,205 shares of the Company’s Series A Non-Voting Preferred Stock, par value \$0.0001 per share (the “Series A Preferred Stock”), that were issued pursuant to the Securities Purchase Agreement, dated June 17, 2025, by and among the Company and certain institutional accredited investors (the “Securities Purchase Agreement”); (ii) up to 30,769,230 shares of Common Stock issuable upon the exercise of warrants (the “Purchaser Warrants”) at an exercise price of \$3.25 per share, which Purchaser Warrants were issued pursuant to the Securities Purchase Agreement; (iii) up to 923,076 shares of Common Stock issuable upon the conversion of 307,692 shares of Series A Preferred Stock that were issued pursuant to the Engagement Letter, dated June 17, 2025, by and between the Company and Chardan Capital Markets, LLC (the “Engagement Letter”); (iv) up to 1,846,153 shares of Common Stock issuable upon the exercise of warrants (the “Placement Agent Warrants”) at an exercise price of \$3.25 per share, which Placement Agent Warrants were issued pursuant to the Engagement Letter; (v) up to 1,497,593 shares of Common Stock issuable as in-kind dividends on the Series A Preferred Stock; and (vi) up to 350,000 shares of Common Stock issuable upon the exercise of warrants (the “Lender Warrants” and, together with the Purchaser Warrants and the Placement Agent Warrants, the “Warrants”) at an exercise price of \$4.00 per share, which Lender Warrants were issued in connection with the Fourth Amendment (the “Fourth Amendment”) to the Supplement (the “Supplement”) to that certain Loan and Security Agreement, dated November 22, 2022 (the “Loan and Security Agreement”) with Avenue Capital Management II, L.P., as administrative agent and collateral agent, Avenue Venture Opportunities Fund, L.P., as a lender (“Avenue I”) and Avenue Venture Opportunities Fund II, L.P., as a lender (“Avenue II” and, together with Avenue I, the “Lenders”).

The Common Stock may be offered and sold from time to time by the entities or individuals listed in the section titled “Selling Securityholders” beginning on page 14 (the “Selling Securityholders”). We are registering these securities for sale by the Selling Securityholders to satisfy certain registration rights that we have granted to the Selling Securityholders. We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of securities by the Selling Securityholders. We will pay the expenses incurred in registering the Common Stock covered by the prospectus, including legal and accounting fees. The Selling Securityholders will bear all commissions and discounts, if any, attributable to its respective sales of Common Stock under this prospectus.

The Selling Securityholders may sell the Common Stock described in this prospectus in a number of different ways and at varying prices. We provide more information about how a Selling Securityholder may sell its Common Stock in the section titled “Plan of Distribution” on page 17.

Our Common Stock is listed on The Nasdaq Capital Market under the symbol “HYPD.” On January 8, 2026, the last reported sale price of our Common Stock was \$3.45 per share.

We are a “smaller reporting company” under applicable Securities and Exchange Commission rules and are subject to reduced public company reporting requirements for this prospectus and future filings.

Investing in our securities involves a high degree of risk. Before buying our securities, you should carefully consider the risks described under the caption “Risk Factors” beginning on page 9 of this prospectus and in the documents incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is January 9, 2026.

TABLE OF CONTENTS

<u>ABOUT THIS PROSPECTUS</u>	<u>4</u>
<u>PROSPECTUS SUMMARY</u>	<u>5</u>
<u>THE OFFERING</u>	<u>8</u>
<u>RISK FACTORS</u>	<u>9</u>
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	<u>12</u>
<u>USE OF PROCEEDS</u>	<u>13</u>
<u>SELLING SECURITYHOLDERS</u>	<u>14</u>
<u>PLAN OF DISTRIBUTION</u>	<u>17</u>
<u>LEGAL MATTERS</u>	<u>19</u>
<u>EXPERTS</u>	<u>19</u>
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	<u>19</u>
<u>INCORPORATION BY REFERENCE</u>	<u>19</u>

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission (the “SEC”), under which the Selling Securityholders may, from time to time, sell the securities described in this prospectus in one or more offerings.

Neither we nor the Selling Securityholders have authorized anyone to provide you with information that is different from or in addition to the information contained or incorporated by reference in this prospectus. Accordingly, neither we nor any Selling Securityholder takes any responsibility for, or can provide any assurance as to the reliability of, any information that others may give. The Selling Securityholders are offering to sell, and seeking offers to buy, our securities only in jurisdictions where it is lawful to do so. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any securities other than where offers and sales of these securities are permitted or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus is accurate only as of the date of this prospectus and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

In making your investment decision it is important for you to read and consider all information contained in this prospectus. You should also read and consider the information in the documents to which we have referred you in the section titled “Incorporation by Reference” in this prospectus. To the extent the information contained in this prospectus differs or varies from the information contained in documents previously filed with the SEC that are incorporated by reference herein, the information in this prospectus will supersede such information.

All brand names or trademarks appearing in this prospectus are the property of their respective holders. Use or display by us of other parties’ trademarks, trade dress, or products in this prospectus is not intended to, and does not, imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owners.

All references in this prospectus to “Hyperion DeFi,” “HYPD,” “the Company,” “we,” “us,” “our,” or similar references, refer to Hyperion DeFi, Inc., except where the context otherwise requires or as otherwise indicated.

PROSPECTUS SUMMARY

This summary highlights selected information included or incorporated by reference in this prospectus and does not contain all of the information that may be important to you. You should carefully review this entire prospectus, including the risk factors and financial statements and related notes thereto included or incorporated by reference herein, before making a decision to purchase our securities.

Overview

Hyperion DeFi, Inc. is the first U.S. publicly listed company building a long-term strategic treasury of Hyperliquid's native token, HYPE, in addition to being a pioneering digital ophthalmic technology company. Hyperion DeFi is working to provide its shareholders with simplified exposure to the Hyperliquid ecosystem, which we believe to be one of the highest revenue-generating blockchains in the world, according to information provided by various blockchain data tracking sources, including Artemis Analytics and DefiLlama. At the same time, we continue to execute on our planned completion of development and registration of our Optejet ophthalmic liquid delivery device.

HYPE Treasury

Hyperliquid is a layer one (L1) blockchain engineered for transparent high-frequency finance. The blockchain hosts fully on-chain perpetual futures and spot order books, with every order, cancel, trade and liquidation occurring within 70 millisecond block times and offering up to 200,000 transactions per second, resulting in near-instant trade settlement. The Hyperliquid blockchain also hosts the HyperEVM, a general-purpose smart contract platform that, like Ethereum, supports permissionless decentralized financial applications.

Hyperliquid supports non-custodial trading via its performant HyperCore order books, with perpetual futures trading for a range of digital assets with Bitcoin (BTC), Ether (ETH), Ripple (XRP), Solana (SOL) and Sui (SUI) driving its utilization.

Perpetual futures are a type of cryptocurrency derivative contract that allows traders to speculate on the price of an asset without owning the underlying asset itself. Unlike traditional futures contracts, perpetual futures have no expiration date, allowing traders to hold positions indefinitely, as long as they meet margin requirements. Hyperliquid utilizes a traditional order book system. This approach allows traders to place bids and asks for various assets, more akin to a centralized cryptocurrency exchange than other decentralized exchanges that rely on automated market makers to fulfill orders. The Hyperliquid blockchain is available to any potential user with a compatible cryptocurrency wallet such as MetaMask, Phantom, and Coinbase Wallet. However, Hyperliquid interface operators can choose to block persons in certain jurisdictions or sanctioned wallets as required via solutions such as geoblocking and address screening.

HYPE is the native token of Hyperliquid. The total supply of HYPE is 1 billion, with 31% of the supply issued in November 2024. 38.88% of the total supply is reserved for future community emissions. HYPE serves multiple purposes: users can stake HYPE to reduce their trading fees, use it to conduct transactions on the HyperEVM, and use it as collateral on various DeFi applications. In addition, Hyperliquid has a unique network mechanism that autonomously purchases and removes HYPE tokens from circulation. This is done by using the trading fees generated on the network's order books to buy back available HYPE: approximately 99% of daily fees are allocated to this mechanism, which serves as a consistent "marginal buyer" for the token. As of November 2025, more than 35 million HYPE have been removed from circulation.

The Hyperliquid L1 is a proof-of-stake blockchain, in which validators that have staked the threshold number of HYPE tokens are selected to produce blocks, and will receive rewards when they successfully validate blocks. Holders of HYPE can delegate to validators who then are able to vote on certain decisions regarding the platform, such as the listing and de-listing of new markets. Any holder of HYPE can delegate HYPE to a validator to earn staking rewards, should the validator successfully participate in network consensus. Staked HYPE is locked until un-staked, and subject to a seven-day un-staking queue before HYPE is released back to the user. Staking also provides revenues to the Company in the form of staking yields; however, the required seven-day unlocking period may limit the Company's liquidity while its HYPE remains staked. The Company anticipates operating with sufficient cash and cash equivalents to cover its expenses and any debt obligations during these periods. In addition, all HiHYPE owned by the Company (as described further below), and other future liquid staking HYPE which may potentially be owned by the Company, will be subject to the same seven-day unlocking period. The Company initialized the staking process on July 1, 2025, and as of September 30, 2025, it had approximately 834,050.16 HYPE staked directly to the Kinetiq x Hyperion validator, described further below. The Company intends for staking to become a primary revenue generation strategy in the coming fiscal year.

Key Metrics of Hyperliquid and HYPE as of October 31, 2025

- One of the highest revenue generating blockchain cryptocurrencies; ranked #11 market cap (excluding stablecoins)
- Hyperliquid generates annual revenue of approximately \$1.3 billion, based on an October 2025 observed run-rate of \$3-\$3.5 million per day. In addition, platforms built on Hyperliquid earn approximately \$2 million in fees per day, bringing the total to \$5 million per day across the blockchain and platforms
- Approximately 99% of Hyperliquid revenues are used by the Hyperliquid Assistance Fund, which has cumulatively purchased and owns 34.25 million HYPE tokens with a market value of \$1.45 billion
- There have been over 800,000 cumulative Hyperliquid marketplace users since inception
- The Hyperliquid Token's maximum supply is 1 billion, of which the circulating supply is 337 million, corresponding to a market capitalization outstanding of approximately \$14.3 billion
- Daily trading volume on Hyperliquid exceeds \$12 billion
- Cumulative Hyperliquid fees have exceeded \$700 million since inception
- Cumulative cryptocurrency perpetuals trading volume on Hyperliquid has exceeded \$3 trillion since inception

Digital Assets Business Activities

Since the Company first pivoted to its Hyperliquid DeFi strategy, we have continued to emphasize that our business is “more than just HYPE”. The accumulation of HYPE is the first step in a broader DeFi monetization roadmap that continues to accelerate.

As part of its broader onchain engagement strategy, the Company announced a co-branded Hyperliquid validator, referred to as “Kinetiq x Hyperion”, with Kinetiq Research Pte. Ltd. (“Kinetiq Group”), which is a liquid staking protocol built natively for the Hyperliquid ecosystem. Validator operations are further supported by infrastructure provided by Pier Two Pty Ltd (“Pier Two”), an institutional staking services provider. Under our Joint Validator Operators’ Agreement with Kinetiq Group and Pier Two, staking commissions and other validator-level rewards are allocated among Hyperion (50%), Kinetiq Group (25%) and Pier Two (25%), with specific overrides for referred delegations. By running our own validator, the Company can directly access HYPE staking yield in addition to supporting Hyperliquid’s network stability and security. With the rapid growth of our Kinetiq x Hyperion validator, which has over 13 million in delegated HYPE as of October 31, 2025, we play a meaningful role in stewarding the future growth of the Hyperliquid ecosystem, given that HYPE holdings are required to participate in ecosystem governance.

The Company currently stakes a majority of its HYPE tokens as part of its broader participation in the Hyperliquid ecosystem. Under its operational policy, the Company utilizes staked HYPE to serve as the foundation for certain revenue-generating strategies, including the Company’s proprietary HYPE Asset Use Service (HAUS) product. These strategies are made possible through technical infrastructure unique to Hyperliquid, which can deploy staked HYPE across various utilities in the Hyperliquid ecosystem, such as significantly reduced trading fees and the ability to support new non-crypto markets on the Hyperliquid platform, both of which the Company has productized and offered to clients as services.

More recently, the Hyperliquid network implemented the HIP-3 (Hyperliquid Improvement Proposal 3) upgrade, which enables any user with 500,000 HYPE staked at a deployer address to launch a custom on-chain perpetual futures market for non-crypto assets such as equities, commodities and indices. These network upgrades expand both Hyperliquid’s product suite and its potential user base, further establishing it as a premier on-chain destination for financial activity. To support HIP-3, the Company provided Felix, one of the earliest HyperEVM protocols, with the HYPE required to launch a perpetual futures market and will earn a share of the fees earned from trading activity. This perpetual futures market is operated and maintained by Felix and is accessible only to non-U.S. persons. Because the perpetual futures market is not currently subject to regulation by the U.S. Commodity Futures Trading Commission and perpetual futures are not permitted for unrestricted trading in the United States, this perpetual futures market is operated outside the United States and is not made available to or marketed to U.S. persons. Beyond engaging with Hyperliquid’s flagship exchange product, users can also deploy HYPE into the HyperEVM for various strategies such as lending and liquidity provisioning. The Company is the first public company on HyperEVM, staking a significant portion of its native HYPE into Kinetiq Group’s uniquely designed iHYPE (institutional HYPE) product. This enabled the Company to earn staking yield on its HYPE while also gaining access to a unique liquid receipt token, HiHYPE (Hyperion iHYPE), which is used for various on-chain and off-chain strategies. The Company has also earned kPoints, a participation-based incentive that qualified the Company to receive a portion of the airdrop of Kinetiq Group’s KNTQ token. This reflects yet another DeFi strategy that translates into additional yield from and ownership of key products built on Hyperliquid.

Anchorage Digital Bank National Association (“Anchorage Digital”), which recently rolled out full support asset custody on HyperEVM, provides custody and trade execution services for HYPE. Anchorage Digital is the only federally chartered cryptocurrency bank in the United States, serves as a custodian for digital assets, and is licensed and regulated by the Office of the Comptroller of the Currency. Anchorage Digital has institutional-grade security required by institutional investors and employs HSM (Hardware Security Module) for a unique security model for secure digital assets. We believe that Anchorage Digital’s public support for Hyperliquid by prioritizing development of infrastructure uniquely for Hyperliquid is a testament to the future prospect of the Hyperliquid ecosystem. Currently, Anchorage Digital provides only custodial services to the Company and does not use a sub-custodian.

Because Anchorage Digital does not currently support the HyperCore infrastructure required for the Company’s strategy to stake HYPE and operate on-chain, HYPE used for those purposes must be held in self-custodied wallets. The Company holds its HYPE in self-custodied cold wallet addresses using infrastructure provided by regulated custodians, including Porto by Anchorage Digital, and hardware wallet providers such as Ledger. These arrangements provide the Company flexibility to reallocate HYPE among its wallet addresses, and holdings may be concentrated with a single infrastructure provider from time to time. To support security of its self-custodied cold wallets, the Company utilizes the Porto security infrastructure as well as additional protections such as a HyperCore-native multi-signature configuration that requires multiple Company-owned addresses as additional signers. The Company will periodically evaluate additional custody infrastructure providers to support operational flexibility as its HYPE strategy evolves.

In addition to security infrastructure, Anchorage Digital, through which the Company maintains an account, provides certain enterprise-level insurance policies that apply to assets held in its custodial accounts, including crime insurance with a \$100 million limit, general liability coverage with a \$4 million limit, cyber and technology errors and omissions coverage with a \$1 million limit, and other standard liability coverages. Digital assets that the Company self-custodies are not covered by these insurance policies.

By prudently building and deploying a treasury of HYPE, the Company believes that it can rapidly accelerate the growth of the Hyperliquid ecosystem and further its adoption, potentially creating a powerful flywheel effect that may drive platform usage, increase protocol value and strengthen the long-term position of both the Hyperliquid ecosystem and the Company.

Overview of the HYPE Token Lifecycle

HYPE Creation

The circulating supply of HYPE is approximately 337 million tokens as of October 31, 2025. The first token generation event occurred on November 29, 2024, with approximately 310 million tokens created and circulated. Approximately 389 million HYPE tokens are reserved for future community rewards and emissions. Approximately 238 million HYPE tokens are reported to be vesting to core contributors of the Hyperliquid blockchain beginning November 29, 2025 and continuing over a multi-year vesting schedule. The total maximum supply of HYPE that can ever be created is fixed at 1 billion tokens.

HYPE Acquisition and Sale Process

Our management team continually reviews the Company’s short-term obligations and the excess cash available for dedication to our HYPE treasury strategy. When we determine that the Company has excess capital available to deploy, we work with institutional digital asset trading venues and counterparties to acquire HYPE from institutional sellers. Our HYPE acquisition process is designed to maximize the quantity of HYPE that we acquire with the capital that we have, while minimizing market impact and execution risk. While we have never resold any of our HYPE tokens as of October 31, 2025, we would anticipate only selling our HYPE tokens to institutional counterparties and trading venues.

HYPE Token Custody

We hold our HYPE in self-custodied cold wallet addresses, using infrastructure provided by regulated custodians, including Porto by Anchorage Digital Bank, as well as hardware wallet providers such as Ledger. In light of the significant amount of HYPE that we hold, we continually engage with additional custody infrastructure providers (such as BitGo and Fireblocks) to achieve a greater degree of diversification in the custody of our HYPE, as the extent of potential risk of loss depends, in part, on the degree of diversification.

HYPE Native Staking & Validating

On the Hyperliquid Network, staking rewards are determined by the protocol and are distributed to validators and their associated stakers based on the proportion of their stake relative to the total active HYPE staked in the network. The rewards come from Hyperliquid's future emissions reserve. The staking reward rate formula is inspired by Ethereum's model, where the reward rate is inversely proportional to the square root of total HYPE staked. As of October 31, 2025, the annual reward rate is approximately 2.2% per year (net rate after validator commission, which varies among individual validators). Rewards are accrued continuously (every minute) and are automatically distributed and compounded daily with automatic redelegation to the staked validator. This means that Hyperion DeFi's staking balance grows automatically, without requiring manual intervention or claiming transactions.

Hyperion DeFi operates a dedicated validator node on Hyperliquid in partnership with Kinetiq and Pier Two, under its Kinetiq x Hyperion Joint Validator Agreement. Through the Kinetiq x Hyperion validator, Hyperion DeFi participates directly in Hyperliquid's consensus and block production. The validator receives validator rewards proportional to its total delegated stake, earns transaction fees from blocks it proposes, generates validator commission income from HYPE stakers who delegate to it, and contributes to Hyperliquid Network decentralization by operating a professional validator node.

As noted above, the Company currently stakes a majority of its HYPE tokens. Staking provides revenues to the Company in the form of staking yields, but creates liquidity risks given that staked tokens are not sellable until a seven-day un-staking queue is completed. The Company anticipates operating with enough cash and cash equivalents to cover its expenses and any debt payments.

HYPE Liquid Staking

Liquid staking allows Hyperion DeFi to earn staking rewards while maintaining liquidity and accessing additional yield opportunities. Through liquid staking, we deposit HYPE to a non-custodial liquid staking protocol and receive liquid staking tokens in return that represent our staked position and accrued rewards. These liquid staking tokens may be used throughout the HyperEVM ecosystem in decentralized finance applications, while the underlying HYPE remains staked and earning consensus-layer rewards. Hyperion DeFi participates in liquid staking through Kinetiq, a non-custodial liquid staking protocol built on Hyperliquid.

When Hyperion DeFi deposits HYPE to Kinetiq for staking, we receive liquid staking tokens such as “HiHYPE” or “kHYPE”, which represent a proportional claim on the underlying staked HYPE and accrued staking rewards, remains liquid and tradeable on HyperEVM's decentralized exchanges, automatically accrues staking rewards with the token balance increasing daily, can be redeemed for HYPE at any time (subject to liquidity and redemption queue conditions), and can be held, traded, or deployed in DeFi strategies without unstaking the underlying HYPE. The Kinetiq protocol operates non-custodially, meaning Kinetiq does not take possession or control of user HYPE; instead, users retain cryptographic control and can verify that their HYPE is staked to designated validators on HyperCore at all times.

HYPE Asset Use Service (HAUS) and Protocol Partnerships

Beyond core staking, Hyperion DeFi supplies HYPE inventory to third-party DeFi protocols in structured arrangements known as HYPE Asset Use Services (HAUS). For example, Hyperion DeFi has entered into arrangements with Felix, a HIP-3-powered perpetual futures protocol, to supply HYPE inventory to support custom markets and derivative trading strategies. Under HAUS arrangements, the Company's partners use the HYPE inventory to enable unique on-chain utility, and the Company receives compensation in the form of fees on transaction volume, revenue share from protocol earnings, additional HYPE or other tokens as incentive payments, and potentially equity or governance tokens in the protocol. These arrangements are contractually documented and operate within specified risk parameters managed by Hyperion DeFi's treasury and risk policies.

Hyperliquid Governance

Governance of the Hyperliquid protocol is conducted through a decentralized, token-based voting system. Holders of HYPE tokens can propose and vote on protocol upgrades, parameter changes, and treasury allocations. Governance decisions are executed on-chain via smart contracts, ensuring transparency and immutability. The governance framework is designed to align incentives among stakeholders and promote long-term protocol sustainability.

The Optejet

Hyperion DeFi is also developing the proprietary Optejet User Filled Device (the “Optejet UFD”) that is designed to work with a variety of topical ophthalmic liquids, including artificial tears and lens rewetting products. The Optejet UFD is especially useful in chronic front-of-the-eye diseases due to its ease of use, enhanced safety and tolerability, and potential for superior compliance versus standard eye drops. Together, these benefits may result in higher treatment compliance and better outcomes for patients and providers.

The ergonomic and functional design of the Optejet UFD allows for horizontal drug delivery and eliminates the need to tilt the head back or the manual dexterity to squeeze a bottle to administer medications. Drug is delivered in a microscopic array of droplets that is comfortable and matches the amount of fluid that the front of the eye can hold. The precise delivery of a low-volume columnar spray by the Optejet UFD helps ensure instillation success while minimizing contamination risk with a non-protruding nozzle and self-closing shutter. In clinical trials, the Optejet UFD has demonstrated that its targeted delivery achieves a high rate of successful administration, with 98% of sprays being accurately delivered upon first attempt compared to the established rate reported with traditional eye drops of approximately 50%.

A more physiologically appropriate volume of medication in the range of seven to ten microliters is delivered by the Optejet UFD, which is approximately one-fifth of the 35 to 50 microliter dose typically delivered in a single eye drop. Lower volume of medication exposes the ocular surface to less active ingredients and preservatives, potentially reducing ocular stress and surface damage and improving tolerability. The lower volume also minimizes the potential for drug to enter systemic circulation, with the goal of avoiding some common side effects that are related to overdosing of the eye.

We anticipate registering the second generation of the Optejet UFD as a liquid drug delivery device, based on our experience with MydCombi®. MydCombi was the only Food and Drug Administration-approved fixed combination of the two leading mydriatic agents, tropicamide and phenylephrine, in the United States delivered with technology that is nearly identical to the first generation of the Optejet UFD.

The Private Placement and Capital Raising

On June 20, 2025, we received approximately \$50 million in gross proceeds, or \$45 million after deducting placement agent fees and offering expenses, in connection with the closing of a private placement (the “Private Placement”). Pursuant to the Securities Purchase Agreement, in the Private Placement, the Purchasers

purchased an aggregate of 5,128,205 shares of Series A Preferred Stock (convertible into up to 15,384,615 shares of Common Stock) and Purchaser Warrants to purchase up to 30,769,230 shares of Common Stock at an exercise price of \$3.25 per share. The Company used all of the proceeds from the Private Placement to make purchases of and build a reserve of HYPE. As part of its new cryptocurrency treasury strategy, the Company has begun implementing a HYPE staking program. Following the completion of the Private Placement, the Company has purchased an additional \$10.5 million of HYPE, for a total of \$55.5 million used for HYPE purchases to date. Going forward, subject to market conditions, the Company intends to raise additional proceeds through equity financings to purchase additional HYPE for our treasury, although we cannot currently estimate how much we will raise or when such purchases will occur. The Company intends to use a portion of the proceeds from the exercise of the Warrants, if any, which could be up to a maximum of approximately \$100 million, to purchase additional HYPE. The Company's other plans to raise capital include the use of our at-the-market offering sales agreement with Cantor Fitzgerald & Co. and Chardan Capital Markets, LLC ("Chardan") and other future equity offerings.

Chardan acted as placement agent to the Company in connection with the Private Placement. Pursuant to the Engagement Letter, as compensation for its services, the Company issued to Chardan 307,692 shares of Series A Preferred Stock (convertible into up to 923,076 shares of Common Stock) and Placement Agent Warrants to purchase up to 1,846,153 shares of Common Stock at an exercise price of \$3.25 per share.

Fourth Amendment

On June 17, 2025, the Company and the Lenders entered into the Fourth Amendment. The Fourth Amendment, among other things, extends the maturity date of the loans under the Loan and Security Agreement to July 1, 2028; provides for an interest-only period from July 1, 2025 until January 31, 2027; reduces the interest rate on the loans from 12.0% to 8.0%, payable half in cash and half in kind; eliminates the option of the Lenders to convert an aggregate amount of up to \$10.0 million of the loans outstanding into shares of Common Stock; and provides the Company with the option to prepay debt owed under the Loan and Security Agreement in part, subject to certain limitations. In connection with the Fourth Amendment, the Company issued to the Lenders Warrants to purchase an aggregate of 350,000 shares of Common Stock at an exercise price of \$4.00 per share.

Corporate Information

We were organized as a corporation under the laws of the State of Florida on March 12, 2014 under the name “PGP Holdings V, Inc.” On May 5, 2014, we changed our name to Eyenovia, Inc. On October 6, 2014, we reincorporated in the State of Delaware by merging into Eyenovia, Inc., a Delaware corporation. On July 1, 2025, we changed our name to Hyperion DeFi, Inc. Our principal executive office is located at 23461 S. Pointe Drive, Suite 390, Laguna Hills, CA 92653, and our telephone number is (833) 393-6684. We maintain a website at www.hyperiondefi.com, to which we regularly post copies of our press releases as well as additional information about us. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” as defined under the Exchange Act. We may take advantage of certain of the scaled disclosures available to smaller reporting companies until the last day of the fiscal year in which (i) the market value of our Common Stock held by non-affiliates exceeds \$250 million as of the end of that year’s second fiscal quarter and our annual revenue exceeds \$100 million during such completed fiscal year, or (ii) the market value of our Common Stock held by non-affiliates exceeds \$700 million, regardless of our annual revenue, as of the end of that year’s second fiscal quarter.

THE OFFERING

Common Stock offered by the Selling Securityholders	Up to 50,770,667 shares of Common Stock, which includes up to 16,307,691 shares of Common Stock issuable upon the conversion of the 5,435,897 outstanding shares of Series A Preferred Stock, up to 1,497,593 shares of Common Stock issuable as in-kind dividends on such Series A Preferred Stock and up to 32,965,383 shares of Common Stock issuable upon the exercise of the Warrants.
Terms of the offering	The Selling Securityholders may, from time to time, sell, at prevailing market prices, privately negotiated prices or such other prices as the Selling Securityholders may determine, any or all of their securities covered hereby. See “Plan of Distribution.”
Common Stock to be outstanding after this offering, assuming cash exercise of the Warrants	58,943,326 shares, assuming the conversion of the outstanding shares of Series A Preferred Stock, issuance of 1,497,593 shares of Common Stock as in-kind dividends on the Series A Preferred Stock and exercise of the Warrants in full.
Use of Proceeds	We will not receive any of the proceeds from the sale of our securities by the Selling Securityholders. See “Use of Proceeds.” If the Warrants were to be exercised in full for cash, as to which no assurance can be given, we would receive an aggregate of approximately \$107.4 million in proceeds. Any such proceeds would be used for working capital and general corporate purposes (including to build the Company’s reserve of the HYPE token).
Risk Factors	Investing in our securities involves a high degree of risk. See “Risk Factors” on page 9 of this prospectus to read about factors that you should consider carefully before buying our securities.
Trading Market and Ticker Symbol	Our Common Stock is listed on The Nasdaq Capital Market under the symbol “HYPD.”

The number of shares of common stock outstanding immediately after this offering is based on 8,172,659 shares of Common Stock outstanding as of December 1, 2025.

This number excludes:

- 93,577 shares of our Common Stock underlying outstanding options to purchase Common Stock under our 2014 Equity Incentive Plan, as amended (the “2014 Plan”) and our Amended and Restated 2018 Omnibus Stock Incentive Plan (the “2018 Plan”) with a weighted average exercise price of \$86.32 per share as of December 1, 2025;
- 1,578,151 shares of our Common Stock issuable in connection with restricted stock units under the 2014 Plan and the 2018 Plan as of December 1, 2025;
- 3,769,052 shares of our Common Stock reserved for future issuance under the 2014 Plan and the 2018 Plan as of December 1, 2025;
- warrants to purchase 855,401 shares of our Common Stock, with a weighted average exercise price of \$14.24 per share as of December 1, 2025;
- 600,000 shares of our Common Stock issuable in connection with restricted stock units to be granted as an inducement award in accordance with Nasdaq Listing Rule 5635(c)(4); and
- 11,954 shares of our Common Stock issuable as compensation in connection with vendor contracts.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should consider carefully the risks and uncertainties, as well as other information, in this prospectus, including the risks described under “Risk Factors” in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q, and all other information contained or incorporated by reference into this prospectus. The risks set forth in this prospectus and incorporated herein by reference are those which we believe are the material risks that we face. These risks are not the only ones facing us and there may be additional matters that we are unaware of or that we currently consider immaterial. The occurrence of any of such risks may materially and adversely affect our business, financial condition, results of operations and future prospects. In such an event, the market price of our Common Stock could decline, and you could lose part or all of your investment.

We may need to raise additional capital in the future, which may not be available on reasonable terms, or at all.

We require significant capital resources in order to continue to operate our business. As of September 30, 2025, we had cash and cash equivalents of \$8.2 million and an accumulated deficit of approximately \$200.9 million. Also as of September 30, 2025, we owed \$8.3 million in principal and accrued interest under the Loan and Security Agreement. We expect to continue to incur cash outflows from operations for the near future. Implementation of our plans will depend on many factors, including our ability to successfully commercialize our products and services, competing technological and market developments, and the need to enter into collaborations with other companies.

Also, it is very difficult to project our current monthly cash burn rate, and we may expend our resources sooner than we anticipate. Although we have the ability to liquidate HYPE tokens to fund our operations, any required additional capital may not be available on reasonable terms, if at all, due to a variety of factors, including volatile conditions in the economy and capital markets, due to inflation, questions about bank stability and other factors. If we are unsuccessful in our operations to secure additional financing, or if any such incremental financing is not sufficient to fund our operations, we may be required to take additional measures to reduce costs in order to conserve our cash.

We may not be able to obtain financing on favorable terms, if at all. If we raise additional funds by issuing equity securities, the percentage ownership of our then current stockholders will be reduced, and the holders of the new equity securities may have rights superior to those of our then existing securityholders, which could adversely affect the market price of our Common Stock and the voting power of shares of our Common Stock. If we raise additional funds by issuing debt securities or preferred stock, the holders of such securities may have rights that are senior to those of our then existing securityholders, and the terms of those securities could impose restrictions on operations and create a significant interest expense for us, which could have a materially adverse effect on our business.

Delisting of our Common Stock from Nasdaq could prevent us from maintaining an active, liquid and orderly trading market for our Common Stock.

Our ability to publicly or privately sell equity securities and the liquidity of our Common Stock would be adversely affected if we are delisted from The Nasdaq Capital Market or if we are unable to transfer our listing to another stock market. On September 18, 2024, we were notified by The Nasdaq Stock Market LLC, or Nasdaq, that we were in breach of Listing Rule 5550(a)(2) (the “Minimum Bid Price Rule”), for continued listing on the Nasdaq Capital Market because the minimum bid price of our listed securities for 30 consecutive business days had been less than \$1 per share. On December 12, 2024, we received a letter from Nasdaq notifying us that, because the closing bid price for our Common Stock was below \$0.10 per share for 10 consecutive trading days, we were in breach of Listing Rule 5810(c)(3)(A)(iii). On January 31, 2025, we executed an 80-for-1 reverse stock split, following which we were notified by Nasdaq that we had regained compliance with the Minimum Bid Price Rule. Nasdaq Listing Rule 5810(c)(3)(A)(iv) states that any listed company that fails to meet the Minimum Bid Price Rule and has effected a reverse stock split over the prior one-year period, or has effected one or more reverse stock splits over the prior two-year period with a cumulative ratio of 250 shares or more to one, will not be eligible for an automatic 180-day grace compliance period and the Nasdaq Listing Qualifications Department is obligated to immediately issue a delisting determination. Therefore, if we were to fall out of compliance with the Minimum Bid Price requirement prior to January 31, 2026, we would not be able to effect a reverse stock split and would immediately be issued a delisting determination.

On April 29, 2025, we received a notice from the staff of the Nasdaq stating that the Company's stockholders' equity as reported in the Company's Annual Report on Form 10-K for the year ended December 31, 2024 was below the Minimum Equity Requirement. On September 2, 2025, we received a notice from the staff indicating that the Company has regained compliance with the Minimum Equity Requirement.

If our Common Stock is delisted by Nasdaq, it could lead to a number of negative implications, including an adverse effect on the price of our Common Stock, deterring broker-dealers from making a market in or otherwise seeking or generating interest in our Common Stock, increased volatility in our Common Stock, reduced liquidity in our Common Stock, the loss of federal preemption of state securities laws and greater difficulty in obtaining financing. Delisting could also cause a loss of confidence of our customers, collaborators, vendors, suppliers and employees, which could harm our business and future prospects.

If our Common Stock is delisted by Nasdaq, the price of our Common Stock may decline, and although our Common Stock may be eligible to trade on the OTC Bulletin Board, another over-the-counter quotation system, or on the pink sheets, an investor may find it more difficult to dispose of their Common Stock or obtain accurate quotations as to the market value of our Common Stock. If our Common Stock is delisted from Nasdaq, trading in our securities may be subject to the SEC's "penny stock" rules. These "penny stock" rules will require brokers trading in our Common Stock to adhere to more stringent rules and possibly result in a reduced level of trading activity in the secondary trading market for our Common Stock. The additional burdens imposed upon broker-dealers by these requirements may discourage broker-dealers from recommending transactions in our securities, which could severely limit the liquidity of our securities and consequently adversely affect the market price for our securities.

Further, if our Common Stock is delisted, we would incur additional costs under state blue sky laws in connection with any sales of our securities. These requirements could severely limit the market liquidity of our Common Stock and the ability of our stockholders to sell our Common Stock in the secondary market.

HYPE is a highly volatile asset, and fluctuations in the price of HYPE may influence our financial results and the market price of our listed securities.

Our financial results and the market price of our listed securities would be adversely affected, and our business and financial condition would be negatively impacted, if the price of HYPE decreased substantially, including as a result of:

- decreased user and investor confidence in HYPE, including due to the various factors described herein;
- investment and trading activities such as (i) trading activities of highly active retail and institutional users, speculators and investors or (ii) actual or expected significant dispositions of HYPE by large holders, including the expected liquidation of digital assets seized by governments or associated with entities that have filed for bankruptcy protection, or associated with tokens vested by the Hyperliquid core team;
- negative publicity, media or social media coverage, or sentiment due to events in or relating to, or perception of, HYPE, Hyperliquid or the broader digital assets industry;

- changes in consumer preferences and the perceived value or prospects of HYPE or the utility of Hyperliquid;
- competition from other decentralized exchanges or digital assets that exhibit comparable or better speed, security, scalability or energy efficiency, that feature other more favored characteristics, that are backed by governments, including the U.S. government, or reserves of fiat currencies, or that represent ownership or security interests in physical assets;
- a decrease in the price of other digital assets, to the extent the decrease in the price of such other digital assets may cause a decrease in the price of HYPE or adversely affect investor confidence in digital assets generally;
- developments relating to the Hyperliquid blockchain, including (i) changes to the Hyperliquid blockchain that impact its security, speed, scalability, usability or value, such as changes to the cryptographic security protocol underpinning the Hyperliquid blockchain, changes to the maximum number of HYPE outstanding, changes to the mutability of transactions, changes relating to the size of blockchain blocks, and similar changes; (ii) failures to make upgrades to the Hyperliquid blockchain and the Hyperliquid interface to adapt to security, technological, legal or other challenges; and (iii) changes to the Hyperliquid blockchain that introduce software bugs, security risks or other elements that adversely affect HYPE;
- disruptions, failures, unavailability, or interruptions in services of trading venues for HYPE;
- the filing for bankruptcy protection by, liquidation of, or market concerns about the financial viability of digital asset custodians, trading venues, lending platforms, investment funds, or other digital asset industry participants;
- regulatory, legislative, enforcement and judicial actions that adversely affect access to, functionality of or performance of Hyperliquid and its associated products such as cryptocurrency perpetual futures, the price, ownership, transferability, trading volumes, legality or public perception of, HYPE or other L1 blockchains, or that adversely affect the operations of or otherwise prevent digital asset custodians, trading venues, lending platforms or other digital assets industry participants from accessing the Hyperliquid decentralized exchange and its associated products or operating in a manner that allows them to continue to deliver services to the digital assets industry;
- transaction congestion and fees associated with processing transactions on the Hyperliquid network;
- macroeconomic changes, such as changes in the level of interest rates and inflation, fiscal and monetary policies of governments, trade restrictions and fiat currency devaluations;
- developments in mathematics or technology, including in digital computing, algebraic geometry and quantum computing, that could result in the cryptography used by the Hyperliquid blockchain becoming insecure or ineffective; and
- changes in national and international economic and political conditions, including, without limitation, federal government policies, trade tariffs and trade disputes, and the adverse impacts attributable to global conflicts, including those between Russia and Ukraine and in the Middle East.

The price of our listed securities has been and is likely to continue to be volatile, and with the adoption of our new cryptocurrency treasury strategy, we expect to see additional volatility in our stock price. In addition, if investors view the value of our listed securities as dependent upon or linked to the value or change in the value of our HYPE holdings, the price of HYPE may significantly influence the market price of our listed securities. The price of HYPE has historically been, and is likely to continue to be, volatile.

HYPE is subject to extreme price volatility, and any sustained decline in the market price of HYPE could lead to substantial losses on our digital asset holdings and could adversely affect the market price of our Common Stock.

The price of HYPE has exhibited sudden and significant fluctuations due to shifts in market sentiment, speculative trading, macroeconomic trends, technology-related disruptions, and regulatory announcements. Because digital asset trading markets are relatively new, largely unregulated, and, at times, subject to limited liquidity, HYPE may experience larger or more frequent price swings than traditional asset classes. A rapid decrease in the price of HYPE -whether the result of negative perception, a lack of stability on the digital asset trading platforms on which HYPE trades, market manipulation of cryptocurrency trading platforms by customers, a cyber-security incident, regulatory action, or other factors-could materially reduce the value of any HYPE we hold, force us to recognize impairment charges, and depress the market price of our securities.

Additionally, large portions of HYPE, potentially 238 million HYPE tokens or more, have been reported to be held by the Hyperliquid core contributors. As a result, trading activity by these parties could have a material impact on the price and trading volume of HYPE. Further, to our knowledge, the core contributors and other large holders of HYPE began to “unlock” their tokens on November 29, 2025, meaning that they became able to sell some of their HYPE starting on such date and at periodic unlock dates over a multi-year vesting schedule. The large influx of HYPE increases the circulating supply, which can lead to a price drop if demand does not increase proportionally to absorb the new tokens. If all HYPE tokens that were unlocked on that day and are unlocked on future unlock dates are immediately sold, this could have significant impacts on the price of HYPE on or around such unlock dates and depress the price of our Common Stock.

If we are unable to raise sufficient additional capital on acceptable terms, we may be unable to expand or maintain our HYPE reserve, which could adversely affect our liquidity, financial condition and growth prospects.

We completed the Private Placement on June 20, 2025 pursuant to the securities Purchase Agreement, the net proceeds of which have been used for our HYPE treasury strategy. To the extent holders exercise the Warrants, we may acquire additional HYPE at market prices, which could magnify our exposure to HYPE price volatility. If we are unable to raise sufficient additional capital through warrant exercises, our at-the-market facility or other equity financings on acceptable terms, we may be unable to expand or maintain our HYPE reserve, which could adversely affect our liquidity, financial condition and growth prospects.

We face risks relating to the custody of our HYPE, including the loss or destruction of private keys required to access our HYPE and cyberattacks or other data loss relating to our HYPE, including smart contract related losses and vulnerabilities.

We hold our HYPE in self-custodied wallet addresses, using infrastructure provided by regulated custodians, including Anchorage Digital Bank, as well as hardware wallet providers. Our custodial services contracts do not restrict our ability to reallocate our HYPE among our wallet addresses, and our HYPE holdings may be concentrated with a single custodian from time to time. In light of the significant amount of HYPE that we hold, we expect to continually seek to engage additional custody infrastructure providers to achieve a greater degree of diversification in the custody of our HYPE as the extent of potential risk of loss is dependent, in part, on the degree of diversification. However, multiple custody infrastructure providers may utilize similar wallet infrastructure, cloud service providers or software systems, which could increase systemic technology risk. While we will conduct due diligence on our custody infrastructure providers and any smart contract platforms we may use, there can be no assurance that such diligence will uncover all risks, including operational deficiencies, hidden vulnerabilities or legal noncompliance.

The digital assets held by us are not insured. The market for such insurance is in the early stages. Further, banking institutions will not accept our digital assets and they are therefore not insured by the Federal Deposit Insurance Corporation (“FDIC”) or the Securities Investor Protection Corporation (“SIPC”). Therefore, a loss may be suffered with respect to our digital assets which is not covered by insurance and we may not be able to recover any of our carried value in these digital assets if they are lost or stolen or suffer significant and sustained reduction in conversion spot price. If we are not otherwise able to recover damages from a malicious actor in connection with these losses, our business and results of operations may suffer, which may have a material negative impact on our share price. The limited rights of legal recourse available to us and our lack of insurance protection for risk of loss of our digital assets exposes us and our shareholders to the risk of loss of our digital assets for which no person may ultimately be held liable and we may not be able to recover our losses. Any uninsured losses may have an adverse effect on our results of operations and/or financial condition.

To the extent that we obtain insurance to cover losses of our HYPE holdings in the future, such insurance may cover none or only a small fraction of the value of the entirety of our HYPE holdings. Any loss associated with any insolvency proceedings is unlikely to be covered by any insurance coverage we may obtain in the future related to our HYPE. The legal framework governing digital asset ownership and rights in custodial or insolvency contexts remains uncertain and continues to evolve, which could result in unexpected losses, protracted recovery processes or adverse treatment in insolvency proceedings. HYPE is controllable only by the possessor of both the unique public key and private key(s) relating to the local or online digital wallet in which the HYPE is held. While the L1 blockchain ledger requires a public key relating to a digital wallet to be published when used in a transaction, private keys must be safeguarded and kept private in order to prevent a third party from accessing the HYPE held in such wallet. To the extent the private key(s) for a digital wallet are lost, destroyed, or otherwise compromised and no backup of the private key(s) is accessible, neither we nor our custody infrastructure providers will be able to access the HYPE held in the related digital wallet. Furthermore, we cannot provide assurance that our digital wallets, nor the digital wallets of our custody infrastructure providers, will not be compromised as a result of a cyberattack. The HYPE and blockchain ledger, as well as other digital assets and blockchain technologies, have been, and may in the future be, subject to security breaches, cyberattacks or other malicious activities.

As part of our treasury management strategy, we may engage in staking, restaking, or other permitted activities that involve the use of “smart contracts” or decentralized applications. The use of smart contracts or decentralized applications entails certain risks including risks stemming from the existence of an “admin key” or coding flaws that could be exploited, potentially allowing a bad actor to issue or otherwise compromise the smart contract or decentralized application, potentially leading to a loss of our HYPE. Like all software code, smart contracts are exposed to risk that the code contains a bug or other security vulnerability, which can lead to loss of assets that are held on or transacted through the contract or decentralized application. Smart contracts and decentralized applications may contain bugs, security vulnerabilities or poorly designed permission structures that could result in the irreversible loss of HYPE or other digital assets. Exploits, including those stemming from admin key misuse, admin key compromise, or protocol flaws, have occurred in the past and may occur in the future.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents we have filed with the SEC that are incorporated by reference herein contain “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to, statements about:

- our estimates regarding expenses, future revenue, timing of any future revenue, capital requirements and needs for additional financing;
- the viability of, and risks associated with, our cryptocurrency treasury strategy;
- our ability to make payments on our debt;
- our expectations related to the use of proceeds from our financings;
- our intellectual property position;
- our ability to attract and retain key personnel;
- the impact of government laws and regulations;
- our competitive position;
- developments relating to our competitors and our industry;
- our ability to maintain and establish collaborations;
- general or regional economic conditions;
- changes in U.S. GAAP; and
- changes in the legal, regulatory and legislative environments in the markets in which we operate, and the impact of these changes on our ability to obtain regulatory approval for our products.

In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believe,” “can,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “potential,” “project,” “seek,” “should,” “target,” “will,” “would” and similar expressions or variations intended to identify forward-looking statements. These statements reflect our current views with respect to future events, are based on assumptions and are subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. More information on factors that could cause actual results to differ materially from those anticipated is included from time to time in our reports filed with the SEC, including, but not limited to, those described in the section titled “Risk Factors” in our Annual Report on Form 10-K for our most recent fiscal year, as updated by our subsequent filings under the Exchange Act, which are incorporated herein by reference, and as may be updated or superseded by the risks and uncertainties described under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement.

You should read this prospectus and the documents we have filed with the SEC that are incorporated by reference herein completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of Common Stock by the Selling Securityholders named in this prospectus. If the Warrants were to be exercised in full for cash, as to which no assurance can be given, we would receive an aggregate of approximately \$107.4 million in proceeds. Any such proceeds would be used for working capital and general corporate purposes (including to build the Company's reserve of the HYPE token).

SELLING SECURITYHOLDERS

This prospectus relates to the offer and sale from time to time by the Selling Securityholders listed below of (i) up to 15,384,615 shares of Common Stock issuable upon the conversion of 5,128,205 shares of Series A Preferred Stock that were issued pursuant to the Securities Purchase Agreement; (ii) up to 30,769,230 shares of Common Stock issuable upon the exercise of the Purchaser Warrants; (iii) up to 923,076 shares of Common Stock issuable upon the conversion of 307,692 shares of Series A Preferred Stock that were issued pursuant to the Engagement Letter; (iv) up to 1,846,153 shares of Common Stock issuable upon the exercise of the Placement Agent Warrants; (v) up to 1,497,593 shares of Common Stock issuable as in-kind dividends on the Series A Preferred Stock; and (vi) up to 350,000 shares of Common Stock issuable upon the exercise of the Lender Warrants. We are registering these securities for sale by the Selling Securityholders to satisfy certain registration rights that we have granted to the Selling Securityholders.

The Selling Securityholders may from time to time offer and sell any or all of the Common Stock set forth below pursuant to this prospectus. As used in this prospectus, the term “Selling Securityholders” includes the persons listed in the table below, together with any additional selling securityholders listed in a subsequent amendment to this prospectus, and their pledgees, donees, transferees, assignees, successors, designees and others who later come to hold any of the Selling Securityholders’ interests in the Common Stock, other than through a public sale.

Except as set forth below, the following table sets forth certain information as of December 1, 2025 regarding the beneficial ownership of the Common Stock being offered by the Selling Securityholders. The applicable percentage ownership of Common Stock is based on 8,172,659 shares of Common Stock outstanding as of December 1, 2025. Information with respect to Common Stock owned beneficially after the offering assumes the sale of all of the Common Stock registered hereby and assumes no further acquisitions or dispositions of securities by the Selling Securityholders. The Selling Securityholders may offer and sell some, all or none of their Common Stock pursuant to this prospectus.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC. A person is a “beneficial owner” of a security if that person has or shares “voting power,” which includes the power to vote or to direct the voting of the security, or “investment power,” which includes the power to dispose of or to direct the disposition of the security, or has the right to acquire such powers within 60 days.

Unless otherwise noted in the footnotes to the following table, and subject to applicable community property laws, the persons and entities named in the table have sole voting and investment power with respect to their beneficially owned Common Stock.

Please see the section titled “Plan of Distribution” in this prospectus for further information regarding the Selling Securityholders’ method of distributing these securities.

Name of Selling Securityholder	Shares Beneficially Owned Before the Offering (#)	Shares Being Offered (#)	Shares Beneficially Owned After the Offering(*)	
			(#)	(%)
HLIP Holdings, LLC ⁽¹⁾	42,334,340	42,334,340	-	-
Chardan Investments LP ⁽²⁾	3,948,034	3,948,034	-	-
Ask Venture LLC ⁽³⁾	951,330	951,330	-	-
Michael Bucella ⁽⁴⁾	237,834	237,834	-	-
VA Consulting & Advisory Inc. ⁽⁵⁾	95,132	95,132	-	-
Chardan Capital Markets, LLC ⁽⁶⁾	2,853,997	2,853,997	-	-
Avenue Venture Opportunities Fund, L.P. ^{(7) (8)}	236,049	140,000	96,049	1.2%
Avenue Venture Opportunities Fund II, L.P. ^{(7) (9)}	354,075	210,000	144,075	1.8%

* Assumes the sale of all of the Common Stock offered in this prospectus.

This table and the information in this note are based upon information supplied by the Selling Securityholders:

- (1) Consists of 13,692,309 shares of Common Stock issuable upon conversion of Series A Preferred Stock held by HLIP Holdings, LLC (“HLIP”) (formerly Hyperion DeFi Holdings, LLC), 27,384,618 shares of Common Stock issuable upon the exercise of Purchase Warrants held by HLIP, and 1,257,413 shares of Common Stock issuable through the fourth quarter of 2026 as in-kind dividends on the Series A Preferred Stock held by HLIP at the 6% annual dividend rate, assuming all dividends are paid in-kind, in each case without giving effect to the beneficial ownership limitations set forth in the Securities Purchase Agreement, the Certificate of Designations with respect to the Series A Preferred Stock, or the Warrants, as applicable (the “Beneficial Ownership Limitation”). Pursuant to the Beneficial Ownership Limitation, HLIP is restricted from effecting any conversion of the Series A Preferred Stock or any exercise of the Purchaser Warrants which would result in ownership in excess of 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon such conversion or exercise. Justin Russell is the sole manager of HLIP. However, the amended and restated operating agreement of HLIP provides that certain disposition of the Series A Preferred Stock, the Purchaser Warrants, and the underlying shares of Common Stock require majority approval of Mr. Russell, Kenneth Blatt, and Mateo Levy, who share voting and dispositive power over the securities of the Company held by HLIP. The address of HLIP is 401 E. Jackson Street, Suite 1500, Tampa, FL 33602.
- (2) Consists of 1,276,923 shares of Common Stock issuable upon conversion of Series A Preferred Stock held by ChIP Investments LP (“ChIP”), 2,553,846 shares of Common Stock issuable upon the exercise of Purchase Warrants held by ChIP, and 117,265 shares of Common Stock issuable through the fourth quarter of 2026 as in-kind dividends on the Series A Preferred Stock held by ChIP at the 6% annual dividend rate, assuming all dividends are paid in-kind, in each case without giving effect to the Beneficial Ownership Limitation. Pursuant to the Beneficial Ownership Limitation, ChIP is restricted from effecting any conversion of the Series A Preferred Stock or any exercise of the Purchaser Warrants which would result in ownership in excess of 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon such conversion or exercise. The business address of ChIP is 1 Pennsylvania Plaza, Suite 4800, New York, New York 10119. ChIP is a Delaware Limited Partnership. Its general partner is Chardan Investments Management LLC, a Delaware limited liability company. Mr. Jonas Grossman is the sole manager and member of Chardan Investments Management, LLC and has sole voting and dispositive power over the securities of the Company held by ChIP.
- (3) Consists of 307,692 shares of Common Stock issuable upon conversion of Series A Preferred Stock held by ASK Venture LLC (“ASK Venture”), 615,384 shares of Common Stock issuable upon the exercise of Purchase Warrants held by ASK Venture, and 28,254 shares of Common Stock issuable through the fourth quarter of 2026 as in-kind dividends on the Series A Preferred Stock held by ASK Venture at the 6% annual dividend rate, assuming all dividends are paid in-kind, in each case without giving effect to the Beneficial Ownership Limitation. Pursuant to the Beneficial Ownership Limitation, ASK Venture and its affiliates are restricted from effecting any conversion of the Series A Preferred Stock or any exercise of the Purchaser Warrants which would result in ownership in excess of 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon such conversion or exercise. The business address of ASK Venture is 21 Law Drive, Fairfield, NJ 07004.

- (4) Consists of 76,923 shares of Common Stock issuable upon conversion of Series A Preferred Stock held by Michael Bucella, 153,846 shares of Common Stock issuable upon the exercise of Purchase Warrants held by Mr. Bucella, and 7,065 shares of Common Stock issuable through the fourth quarter of 2026 as in-kind dividends on the Series A Preferred Stock held by Mr. Bucella at the 6% annual dividend rate, assuming all dividends are paid in-kind. Mr. Bucella's business address is 360 NW 27th Street, 8th Floor, Miami, FL, 33127.
- (5) Consists of 30,768 shares of Common Stock issuable upon conversion of Series A Preferred Stock held by VA Consulting & Advisory Inc. ("VA Consulting"), 61,536 shares of Common Stock issuable upon the exercise of Purchase Warrants held by VA Consulting, and 2,828 shares of Common Stock issuable through the fourth quarter of 2026 as in-kind dividends on the Series A Preferred Stock held by VA Consulting at the 6% annual dividend rate, assuming all dividends are paid in-kind. Varun Anand has sole voting and dispositive power over all securities of the Company held by VA Consulting. The business address of VA Consulting is 223 Bayview Fairways Drive, Thornhill, Ontario, Canada, L3T-2Z1.
- (6) Consists of 923,076 shares of Common Stock issuable upon conversion of Series A Preferred Stock held by Chardan Capital Markets, LLC ("Chardan"), 1,846,153 shares of Common Stock issuable upon the exercise of Placement Agent Warrants held by Chardan, and 84,768 shares of Common Stock issuable through the fourth quarter of 2026 as in-kind dividends on the Series A Preferred Stock held by Chardan at the 6% annual dividend rate, assuming all dividends are paid in-kind, in each case without giving effect to the Beneficial Ownership Limitation. Pursuant to the Beneficial Ownership Limitation, Chardan is restricted from effecting any conversion of the Series A Preferred Stock or any exercise of the Placement Agent Warrants which would result in ownership in excess of 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon such conversion or exercise. The business address of Chardan is 1 Pennsylvania Plaza, Suite 4800, New York, New York 10119. Chardan is a broker-dealer and a member of the Financial Industry Regulatory Authority, Inc. Mr. Kerry Propper, Mr. Steven Urbach and Mr. Jonas Grossman, are Chardan's Chairman, Chief Executive Officer and President, respectively, and are each Members and Managers of Chardan Securities LLC, which holds a controlling interest in Chardan. The foregoing should not be construed in and of itself as an admission by any of Mr. Propper, Mr. Urbach or Mr. Grossman as to beneficial ownership of the securities beneficially owned by Chardan.
- (7) Avenue Venture Opportunities Fund, L.P. ("Avenue I") and Avenue Venture Opportunities Fund II, L.P. ("Avenue II" and, together with Avenue I, the "Lenders"), are each Delaware limited partnerships. Avenue Capital Management II, L.P. ("Avenue Capital") is a registered investment adviser and the manager of the Lenders. Avenue Capital has sole voting and dispositive power over all securities of the Company held by the Lenders. The address of Avenue I and Avenue II, and each of its affiliates, is 11 West 42nd Street, 9th Floor, New York, New York 10036.
- (8) Includes 96,049 shares of Common Stock and 140,000 shares of Common Stock issuable upon the exercise of the Lender Warrants. Pursuant to the beneficial ownership limitation set forth in the Lender Warrants, Avenue I is restricted from effecting any exercise of the Lender Warrants which would result in an excess of 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon such exercise.
- (9) Includes 144,075 shares of Common Stock and 210,000 shares of Common Stock issuable upon the exercise of the Lender Warrants. Pursuant to the beneficial ownership limitation set forth in the Lender Warrants, Avenue II is restricted from effecting any exercise of the Lender Warrants which would result in an excess of 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon such exercise.

PLAN OF DISTRIBUTION

The Selling Securityholders and their permitted pledgees, donees, transferees, distributees, beneficiaries or other successors in interest, may from time to time offer some or all of the Common Stock covered by this prospectus. We will not receive any of the proceeds from such sales by the Selling Securityholders. We will bear all fees and expenses incident to our obligation to register such securities.

The Selling Securityholders may, from time to time, sell any or all of their Common Stock covered hereby on the Nasdaq or any other stock exchange, market or trading facility on which the Common Stock is traded or in private transactions. These sales may be at fixed or negotiated prices. If the Common Stock is sold through underwriters or broker-dealers, each Selling Securityholder will be responsible for underwriting discounts or commissions or agent's commissions in connection with the Common Stock held by such Selling Securityholder. A Selling Securityholder may use any one or more of the following methods when selling Common Stock:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the Common Stock as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an over-the-counter distribution;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the effective date of the registration statement of which this prospectus is a part;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- in "at the market" offerings, as defined in Rule 415 under the Securities Act, at negotiated prices, at prices prevailing at the time of sale or prices related to such prevailing market prices, including sales made directly on a national securities exchange or sales made through a market maker other than on an exchange or other similar offerings through sales agents;
- through trading plans entered into by the Selling Securityholders pursuant to Rule 10b5-1 under the Exchange Act, that are in place at the time of an offering pursuant to this prospectus that provide for periodic sales of their securities on the basis of parameters described in such trading plans;
- through firm-commitment underwritten public offerings;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The Selling Securityholders may, from time to time, pledge or grant a security interest in some or all of the Common Stock owned by it and, if a Selling Securityholder defaults in the performance of its secured obligations, the pledgees or secured parties may offer and sell the Common Stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of the Selling Securityholders to include the pledgee, transferee, or other successors in interest as the Selling Securityholders under this prospectus. The Selling Securityholders also may transfer the Common Stock owned by them in other circumstances, in which case the transferees, pledgees or other successors in interest will be the beneficial owners for purposes of this prospectus.

In connection with the sale of the Common Stock, or interests therein, the Selling Securityholders may enter into hedging transactions with broker-dealers or affiliates thereof or other financial institutions, which may in turn engage in short sales of our Common Stock in the course of hedging the positions it assumes. The Selling Securityholders may also sell Common Stock short and deliver the Common Stock to close out their short positions, or loan or pledge the Common Stock to broker-dealers that in turn may sell these shares. The Selling Securityholders may also enter into option or other transactions with broker-dealers or affiliates thereof or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or affiliates thereof or other financial institution of Common Stock offered by this prospectus, which Common Stock such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

In addition, the Selling Securityholders may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell the applicable securities covered by and pursuant to this prospectus and an applicable prospectus supplement or pricing supplement, as the case may be. If so, the third party may use securities borrowed from Selling Securityholders or others to settle such sales and may use securities received from Selling Securityholders to close out any related short positions. The Selling Securityholders may also loan or pledge Common Stock covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned Common Stock or, in an event of default in the case of a pledge, sell the pledged Common Stock pursuant to this prospectus and the applicable prospectus supplement or pricing supplement, as the case may be.

In effecting sales, broker-dealers or agents engaged by the Selling Securityholders may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the Selling Securityholders in amounts to be negotiated immediately prior to the sale.

In offering the Common Stock covered by this prospectus, the Selling Securityholders and any broker-dealers who execute sales for them may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. Any profits realized by Selling Stockholders who are “underwriters,” and the compensation of any broker-dealer who executes sales for them, may be deemed to be underwriting discounts and commissions.

In order to comply with the securities laws of certain states, if applicable, the Common Stock must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the Common Stock may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

We have advised the Selling Securityholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of Common Stock in the market and to the activities of the Selling Securityholders and their affiliates. In addition, we will make copies of this prospectus available to the Selling Securityholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The Selling Securityholders may indemnify any broker-dealer that participates in transactions involving the sale of the Common Stock against certain liabilities, including liabilities arising under the Securities Act.

At the time a particular offer of Common Stock is made, if required, a prospectus supplement will be distributed that will set forth the number of shares of Common Stock being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the purchase price paid by any underwriter, any discount, commission and other item constituting compensation, any discount, commission or concession allowed or reallocated or paid to any dealer, and the proposed selling price to the public.

LEGAL MATTERS

The validity of the securities registered hereunder has been passed upon for us by Covington & Burling LLP, Boston, Massachusetts. If legal matters are passed upon by counsel for the underwriters, dealers or agents, if any, such counsel will be named in the prospectus supplement relating to such offering.

EXPERTS

The financial statements of Hyperion DeFi, Inc. (formerly known as Eyenovia, Inc.) as of December 31, 2024 and 2023 and for each of the two years in the period ended December 31, 2024, have been audited by Marcum LLP, independent registered public accounting firm, as stated in their report, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, which is incorporated herein by reference. Such financial statements of Hyperion DeFi, Inc. (formerly known as Eyenovia, Inc.) are incorporated in this prospectus by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Exchange Act, and file annual, quarterly and current reports, proxy statements and other information with the SEC. SEC filings are available at the SEC's website at www.sec.gov. This prospectus is only part of a registration statement on Form S-3 that we have filed with the SEC under the Securities Act and therefore omits certain information contained in the registration statement. We have also filed exhibits and schedules with the registration statement that are excluded from this prospectus, and you should refer to the applicable exhibit or schedule for a complete description of any statement referring to any contract or other document.

We also maintain a website at www.hyperiondefi.com, through which you can access our SEC filings. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website in this prospectus solely as an inactive textual reference.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" information that we file with them. Incorporation by reference allows us to disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We filed a registration statement on Form S-3 under the Securities Act, with the SEC with respect to the securities we may offer pursuant to this prospectus. This prospectus omits certain information contained in the registration statement, as permitted by the SEC. You should refer to the registration statement, including the exhibits, for further information about us and the securities we may offer pursuant to this prospectus. Statements in this prospectus regarding the provisions of certain documents filed with, or incorporated by reference in, the registration statement are not necessarily complete and each statement is qualified in all respects by that reference. Copies of all or any part of the registration statement, including the documents incorporated by reference or the exhibits, may be accessed on the SEC website as noted above in "Where You Can Find More Information." The documents we are incorporating by reference are:

- [our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 that we filed with the SEC on April 15, 2025](#), as [amended on April 30, 2025](#);
- [our Quarterly Report on Form 10-Q for the three months ended March 31, 2025 that we filed with the SEC on May 19, 2025](#);
- [our Quarterly Report on Form 10-Q for the three months ended June 30, 2025 that we filed with the SEC on August 13, 2025](#);
- [our Quarterly Report on Form 10-Q for the three months ended September 30, 2025 that we filed with the SEC on November 14, 2025](#);
- our Current Reports on Form 8-K that we filed with the SEC on [January 16, 2025](#), [January 24, 2025](#), [January 28, 2025](#), [January 31, 2025](#), [February 24, 2025](#), [February 25, 2025](#), [March 20, 2025](#), [May 2, 2025](#), [May 2, 2025](#), [June 5, 2025](#), [June 24, 2025](#), [June 27, 2025](#), [July 2, 2025](#), [August 21, 2025](#), [September 8, 2025](#), [September 24, 2025](#), [September 29, 2025](#), [October 2, 2025](#), [October 31, 2025](#), [November 17, 2025](#), [December 10, 2025](#) and [January 5, 2026](#) (in all cases, except for the information furnished under Items 2.02 or 7.01 and the exhibits furnished thereto);

- the description of our common stock contained in [Exhibit 4.1](#) of our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 that we filed with the SEC on April 15, 2025; and
- all reports and other documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this prospectus and prior to the termination or completion of the offering of securities under this prospectus shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing such reports and other documents.

The SEC file number for each of the documents listed above is 001-38365.

In addition, all reports and other documents filed by us pursuant to the Exchange Act after the date of the initial registration statement and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus.

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference. These documents will be provided to you at no cost, by contacting:

Hyperion DeFi, Inc.
23461 S. Pointe Drive, Suite 390
Laguna Hills, CA 92653
Attn: Corporate Secretary
(833) 393-6684

You may also access these documents on our website, www.hyperiondefi.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Up to 50,770,667 Shares of Common Stock



PROSPECTUS

January 9, 2026