

UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

October 30, 2020

Kevin J. Knopp Chief Executive Officer 908 Devices Inc. 645 Summer Street Boston, MA 02210

Re: 908 Devices Inc.

Draft Registration Statement on Form S-1 Submitted October 2, 2020

CIK No. 0001555279

Dear Mr. Knopp:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Draft Registration Statement on Form S-1

Prospectus Summary

Overview, page 1

- 1. Your Summary should provide a balanced and factual presentation of your business. Please revise to discuss your competitive position and the challenges you face in implementing your business strategy. As a non-exhaustive list of examples only, please revise to discuss:
 - The significance to your revenues of contracting with government agencies through the contract procurement process, as discussed on pages 26 and 62;
 - Considerable time and expense necessary to commit to sales efforts, as discussed on page 20, and your strategy to develop devices for a specific purpose rather than for a

wide scope of needs, as discussed on pages 3 and 91; and

 Competition from established market participants and new entrants, as discussed on page 18.

Additionally, where you discuss your estimated total addressable market on page 5 and in the Business section, revise to disclose assumptions underlying such estimates and risks related to these assumptions.

Risk Factors, page 6

2. Please add a bullet point highlighting the risks related to concentration of ownership of your common shares, as discussed on page 44.

Risk Factors

We have limited experience in marketing and sales and are in the early stages of building our sales channels...., page 16

3. On page 16 you disclose that 28% of total revenue was attributable to two distributors, and that you "exert limited control over existing distributors under [y]our agreements with them." Please revise to disclose the material terms of your distribution agreements in the relevant section of your prospectus and file the agreements as exhibits or tell us why you believe such filing is not required. Refer to Item 601(b)(10) of Regulation S-K.

Use of Proceeds, page 51

4. Revise to quantify the approximate amount of proceeds to be used for the purposes identified, and further explain your intentions regarding research and development. We note the disclosure on page 23 regarding future expansion of your handheld products and desktop products. Refer to Item 504 of Regulation S-K.

Management's Discussion and Analysis of Financial Condition and Results of Operation Critical Accounting Policies and Significant Judgments and Estimates

Stock Based Compensation - Determination of Fair Value of Common Stock, page 79

5. Once you have an estimated offering price or range, please explain to us how you determined the fair value of the awards underlying your incentive units and the reasons for any differences between the recent valuations of your units leading up to the IPO and the estimated offering price. Please clarify how you considered issuances of preferred stock at significantly higher prices in your valuation. This information will help facilitate our review of your accounting for equity issuances including unit-based compensation. Please discuss with the staff how to submit your response.

Business

Overview, page 84

6. Please revise to disclose the basis for claiming industry-leading expertise in applying

software automation and machine learning techniques to control your device hardware and interpret the data streaming off your devices.

Devices, page 102

7. It appears from the disclosure here and in the risk factor on page 22 that you are substantially dependent on your supply agreement with Spark Holland B.V., the sole supplier of your autosampler subassembly. Please revise to disclose the material terms of your contract with Spark Holland. Additionally, please revise to summarize the material terms of the agreements with the supplier of sampling swabs for MX908 and with Micronit Microtechnologies B.V. Please file these agreements as exhibits or tell us why you believe such filing is not required. Refer to Item 601(b)(10) of Regulation S-K.

Intellectual Property, page 105

8. We note your disclosure providing the expected expiry of your patent portfolio grouped by owned patents and in-licensed patents. Please revise to disclose the scope of the patents discussed in this section, whether such patents are owned or licensed and the related expiry. Additionally, we note your disclosure that certain in-licensed patents are expected to expire in 2020. Please revise to discuss whether such expiry is expected to have a material effect on your business, including any impact on future operations and the financial position of the company.

Licenses, page 106

9. You disclose that the UT-Battelle licenses apply to UTB-owned technology related to Mass Spec technology "covered by such patent rights" in certain defined fields of use. You state the UNC Agreements relate to "products, services and methods, covered by certain patent rights owned by UNC." You state both expire when the last patent expires or last patent application is abandoned, unless terminated earlier. Revise to more specifically describe the subject of the licenses, any milestone payments, and the expected expiry of the last to expire patent licensed under the agreement.

Executive Compensation, page 117

10. Revise to disclose the material terms of any compensation agreement with any member of management or director that will be in effect at the time of this offering.

Certain Relationships and Related Party Transactions, page 127

11. On page 129, you disclose that Dr. Ramsey receives a percentage of the royalties you pay to the University of North Carolina pursuant to your licensing agreement. Disclose the percentage of those proceeds he receives and any other material terms of his interest in that agreement or tell us why disclosure is not required. Refer to Item 404 of Regulation S-K.

Principal Stockholders, page 131

12. Please identify the natural person or persons who directly or indirectly exercise sole or shared voting and/or dispositive power with respect to the common stock held by UTEC 2 L.P. Refer to Item 403 of Regulation S-K.

Choice of Forum, page 137

13. We note your disclosure here and in the risk factor on page 48 that your forum selection provision identifies the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation, including any "derivative action," and that a plaintiff is required to first bring suit in that court and the action dismissed for lack of subject matter jurisdiction before such claims may be brought in another state or federal court in Delaware. Please disclose whether this provision applies to actions arising under the Exchange Act. In this regard, we note that Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder. In addition, your forum selection provision designates the federal district courts of the United States as the exclusive forum for claims arising under the Securities Act. We note that Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. Please expand your disclosure to highlight the risk of uncertainty that a court would enforce such provision and to state that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

Item 15. Recent Sales of Unregistered Securities, page II-2

14. We note your disclosure concerning aggregate shares sold or options granted on multiple dates. Please revise to more specifically disclose the date of sale and amount of securities sold or granted and the aggregate consideration for those particular dates. Refer to Rule 701(a) and (c) of Regulation S-K.

General

15. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

You may contact Christine Torney at 202-551-3652 or Brian Cascio at 202-551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Abby Adams at 202-551-6902 or Christine Westbrook at 202-551-5019 with any other questions.

Sincerely,

Division of Corporation Finance Office of Life Sciences

cc: Michael J. Minihan, Esq.