UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 OF THE SECURITIES EXCHANGE ACT OF 1934

May 26, 2009

Commission File No.: 000-30688

NOVA MEASURING INSTRUMENTS LTD.

(Translation of registrant s name into English)

Building 22 Weizmann Science Park, Rehovot P.O.B 266 Israel

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F x Form 40-F o

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): _____

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): ____

Indicate by check mark whether by furnishing the information contained in this Form, the registrant is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes o No x

Attached hereto and incorporated by reference are the following documents:

- 1. The Registrant s Notice of Annual General Meeting of Shareholders and Proxy Statement for its 2009 Annual General Meeting of Shareholders.
- 2. Proxy card for use in connection with the Registrant s 2009 Annual General Meeting of Shareholders.

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This report on Form 6-K is hereby incorporated by reference into Nova Measuring Instruments Ltd. s registration statements on Form S-8, filed with the Securities and Exchange Commission on the following dates: September 13, 2000 (File No. 333-12546); March 5, 2002 (File No. 333-83734); December 24, 2002 (File No. 333-102193, as amended by Amendment No. 1, filed on January 5, 2006); March 24, 2003 (File No. 333-103981); May 17, 2004 (three files, File Nos. 333-115554, 333-115555, and 333-115556, as amended by Amendment No. 1, filed on January 5, 2006); March 7, 2005 (File No. 333-123158); December 29, 2005 (File No. 333-130745); September 21, 2006 (File No. 333-137491); and November 5, 2007 (File No. 333-147140) and into Nova Measuring Instruments Ltd. s registration statement on Form F-3, filed with the Securities and Exchange Commission on May 11, 2007 (File No. 333-142834).

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Nova Measuring Instruments Ltd. (the Registrant)

Date: May 26, 2009

By: /s/ Dror David

Dror David Chief Financial Officer

Exhibit Index

99.1 Notice of Annual General Meeting of Shareholders and Proxy Statement

99.2 Proxy Card

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