SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

Radiopharm Theranostics Limited

(Name of Issuer)

Ordinary Shares, no par value per share

(Title of Class of Securities)

(CUSIP Number)

07/28/2026

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

☐ Rule 13d-1(b)
☑ Rule 13d-1(c)
☐ Rule 13d-1(d)

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons Lantheus Omega, LLC		
2	Check the appropriate box if a member of a Group (see instructions) ☐ (a) ☐ (b)		
3	Sec Use Only		
4	Citizenship or Place of Organization DELAWARE		
Number of Shares Beneficially	5	Sole Voting Power 0.00	

Owned by Each Reporting Person With:	6	Shared Voting Power 792,958,513.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power 792,958,513.00

9	Aggregate Amount Beneficially Owned by Each Reporting Person 792,958,513.00
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐
11	Percent of class represented by amount in row (9) 17.3 %
12	Type of Reporting Person (See Instructions) OO

Comment for Type of Reporting Person: Aggregate amount beneficially owned consists of (i) 149,625,180 ordinary shares, no par value ("Ordinary Shares"), of the Issuer (as defined below) issued to Lantheus Omega, LLC on August 23, 2024, (ii) 133,333,333 Ordinary Shares issued to Lantheus Omega, LLC on January 20, 2025, (iii) 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 (the "December Issuance") and (iv) options to purchase 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 in connection with the December Issuance, with an exercise price of AUD$0.039 per share and expiring on October 31, 2027 (the "Options"). Lantheus Medical Imaging, Inc. is the sole member of Lantheus Omega, LLC and a wholly-owned subsidiary of Lantheus Holdings, Inc. Lantheus Holdings, Inc., Lantheus Medical Imaging, Inc. and Lantheus Omega, LLC may each be deemed to have shared voting and dispositive power over all of the shares of Common Stock held by Lantheus Omega, LLC. Percent of class represented by amount in Row (11) is based on 3,928,709,960 Ordinary Shares of the Issuer reported to be outstanding by the Issuer as of July 28, 2026 in the Issuer's prospectus filed pursuant to Rule 424(b)(5) on July 27, 2026, 408,839,531 additional Ordinary Shares reported to be outstanding by the Issuer as of August 3, 2026 in the Issuer's Notice of Extraordinary General Meeting and Proxy Form filed with the Issuer's 6-K on August 13, 2026, and the 255,000,000 Ordinary Shares issuable upon conversion of the Options.

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons Lantheus Medical Imaging, Inc.
2	Check the appropriate box if a member of a Group (see instructions) ☐ (a) ☐ (b)
3	Sec Use Only
4	Citizenship or Place of Organization DELAWARE

Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 0.00
	6	Shared Voting Power 792,958,513.00
	7	Sole Dispositive Power 0.00

	8	Shared Dispositive Power 792,958,513.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person 792,958,513.00	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐	
11	Percent of class represented by amount in row (9) 17.3 %	
12	Type of Reporting Person (See Instructions) CO	

Comment for Type of Reporting Person: Aggregate amount beneficially owned consists of (i) 149,625,180 Ordinary Shares issued to Lantheus Omega, LLC on August 23, 2024, (ii) 133,333,333 Ordinary Shares issued to Lantheus Omega, LLC on January 20, 2025, (iii) 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 and (iv) options to purchase 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 in connection with the December Issuance, with an exercise price of AUD$0.039 per share and expiring on October 31, 2027. Lantheus Medical Imaging, Inc. is the sole member of Lantheus Omega, LLC and a wholly-owned subsidiary of Lantheus Holdings, Inc. Lantheus Holdings, Inc., Lantheus Medical Imaging, Inc. and Lantheus Omega, LLC may each be deemed to have shared voting and dispositive power over all of the shares of Common Stock held by Lantheus Omega, LLC. Percent of class represented by amount in Row (11) is based on 3,928,709,960 Ordinary Shares of the Issuer reported to be outstanding by the Issuer as of July 28, 2026 in the Issuer's prospectus filed pursuant to Rule 424(b)(5) on July 27, 2026, 408,839,531 additional Ordinary Shares reported to be outstanding by the Issuer as of August 3, 2026 in the Issuer's Notice of Extraordinary General Meeting and Proxy Form filed with the Issuer's 6-K on August 13, 2026, and the 255,000,000 Ordinary Shares issuable upon conversion of the Options.

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons Lantheus Holdings, Inc.	
2	Check the appropriate box if a member of a Group (see instructions) ☐ (a) ☐ (b)	
3	Sec Use Only	
4	Citizenship or Place of Organization DELAWARE	
Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 0.00
	6	Shared Voting Power 792,958,513.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power 792,958,513.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person 792,958,513.00	

10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐
11	Percent of class represented by amount in row (9) 17.3 %
12	Type of Reporting Person (See Instructions) CO

Comment for Type of Reporting Person: Aggregate amount beneficially owned consists of (i) 149,625,180 Ordinary Shares issued to Lantheus Omega, LLC on August 23, 2024, (ii) 133,333,333 Ordinary Shares issued to Lantheus Omega, LLC on January 20, 2025, (iii) 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 and (iv) options to purchase 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 in connection with the December Issuance, with an exercise price of AUD$0.039 per share and expiring on October 31, 2027. Lantheus Medical Imaging, Inc. is the sole member of Lantheus Omega, LLC and a wholly-owned subsidiary of Lantheus Holdings, Inc. Lantheus Holdings, Inc., Lantheus Medical Imaging, Inc. and Lantheus Omega, LLC may each be deemed to have shared voting and dispositive power over all of the shares of Common Stock held by Lantheus Omega, LLC. Percent of class represented by amount in Row (11) is based on 3,928,709,960 Ordinary Shares of the Issuer reported to be outstanding by the Issuer as of July 28, 2026 in the Issuer's prospectus filed pursuant to Rule 424(b)(5) on July 27, 2026, 408,839,531 additional Ordinary Shares reported to be outstanding by the Issuer as of August 3, 2026 in the Issuer's Notice of Extraordinary General Meeting and Proxy Form filed with the Issuer's 6-K on August 13, 2026, and the 255,000,000 Ordinary Shares issuable upon conversion of the Options.

SCHEDULE 13G

Item 1.	
(a)	Name of issuer: Radiopharm Theranostics Limited
(b)	Address of issuer's principal executive offices: Level 3, 62 Lygon Street, Carlton South, Victoria, Australia, 3053
Item 2.	
(a)	Name of person filing: This Statement on Schedule 13G (this "Statement") is being jointly filed by (i) Lantheus Omega, LLC, (ii) Lantheus Medical Imaging, Inc. and (iii) Lantheus Holdings, Inc. (collectively, the "Reporting Persons") pursuant to Rule 13d-1(k) promulgated by the Securities and Exchange Commission (the "SEC") pursuant to Section 13 of the Securities Exchange Act of 1934, as amended. The Reporting Persons have entered into a Joint Filing Agreement, dated September 4, 2026, a copy of which is attached as Exhibit 99.1 to this Statement, pursuant to which the Reporting Persons have agreed to file this Statement jointly in accordance with the provisions of Rule 13d-1(k)(1) under the Act. The Reporting Persons previously filed a Schedule 13D (the "Schedule 13D") with the SEC on September 4, 2026 related to the Ordinary Shares held by Lantheus Omega, LLC. The Reporting Persons no longer beneficially own more than 20% of the outstanding Ordinary Shares. As of the date of filing of this Schedule 13G, the Reporting Persons do not hold the securities with the purpose or effect of changing or influencing control of the Issuer. As such, this Schedule 13G is deemed to amend the Schedule 13D.
(b)	Address or principal business office or, if none, residence: The address of each of the Reporting Persons is 201 Burlington Road, South Building, Bedford, MA 01730.
(c)	Citizenship: The citizenship of each of the Reporting Persons is Delaware, United States.
(d)	Title of class of securities: Ordinary Shares, no par value per share
(e)	CUSIP No.:
Item 3.	If this statement is filed pursuant to §§ 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:
(a)	☐ Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o);
(b)	☐ Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c);
(c)	☐ Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c);
(d)	☐ Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);

(e) ☐ An investment adviser in accordance with § 240.13d-1(b)(1)(ii)(E);
(f) ☐ An employee benefit plan or endowment fund in accordance with § 240.13d-1(b)(1)(ii)(F);
(g) ☐ A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);
(h) ☐ A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
(i) ☐ A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
(j) ☐ A non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J). If filing as a non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J),
please specify the type of institution:
(k) ☐ Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K).

Item 4. Ownership

Amount beneficially owned:

(a) 792,958,513 ordinary shares, no par value, of the Issuer ("Ordinary Shares"), consisting of (i) 149,625,180 Ordinary Shares issued to Lantheus Omega, LLC on August 23, 2024, (ii) 133,333,333 Ordinary Shares issued to Lantheus Omega, LLC on January 20, 2025, (iii) 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 (the "December Issuance") and (iv) options to purchase 255,000,000 Ordinary Shares issued to Lantheus Omega, LLC on December 9, 2025 in connection with the December Issuance, with an exercise price of AUD$0.039 per share and expiring on October 31, 2027 (the "Options").

Percent of class:

(b) 17.3% The percentage of beneficial ownership stated herein and on each Reporting Person's cover page to this Schedule 13G is based on 3,928,709,960 Ordinary Shares of the Issuer reported to be outstanding by the Issuer as of July 28, 2026 in the Issuer's prospectus filed pursuant to Rule 424(b)(5) on July 27, 2026, 408,839,531 additional Ordinary Shares reported to be outstanding by the Issuer as of August 3, 2026 in the Issuer's Notice of Extraordinary General Meeting and Proxy Form filed with the Issuer's 6-K on August 13, 2026, and the 255,000,000 Ordinary Shares issuable upon conversion of the Options. %

(c) Number of shares as to which the person has:

(i) Sole power to vote or to direct the vote:

0

(ii) Shared power to vote or to direct the vote:

Each Reporting Person may be deemed to share voting power with respect to 792,958,513 Ordinary Shares, which are held of record by Lantheus Omega, LLC. Lantheus Medical Imaging, Inc. is the sole member of Lantheus Omega, LLC and a wholly-owned subsidiary of Lantheus Holdings, Inc.

(iii) Sole power to dispose or to direct the disposition of:

0

(iv) Shared power to dispose or to direct the disposition of:

Each Reporting Person may be deemed to share dispositive power with respect to 792,958,513 Ordinary Shares, which are held of record by Lantheus Omega, LLC. Lantheus Medical Imaging, Inc. is the sole member of Lantheus Omega, LLC and a wholly-owned subsidiary of Lantheus Holdings, Inc.

Item 5. Ownership of 5 Percent or Less of a Class.

Item 6. Ownership of more than 5 Percent on Behalf of Another Person.

Not Applicable

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company or Control Person.

Not Applicable

Item 8. Identification and Classification of Members of the Group.

Not Applicable

Item 9. Notice of Dissolution of Group.

Not Applicable

Item 10. Certifications:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect, other than activities solely in connection with a nomination under § 240.14a-11.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Lantheus Omega, LLC

Signature:	/s/ Eric M. Green
Name/Title:	Eric M. Green, Assistant Corporate Secretary of Lantheus Medical Imaging, Inc., its sole member
Date:	09/04/2026

Lantheus Medical Imaging, Inc.

Signature:	/s/ Eric M. Green
Name/Title:	Eric M. Green, Assistant Corporate Secretary
Date:	09/04/2026

Lantheus Holdings, Inc.

Signature:	/s/ Eric M. Green
Name/Title:	Eric M. Green, Assistant Corporate Secretary
Date:	09/04/2026

Exhibit Information

Exhibit Index Exhibit 99.1 Joint Filing Agreement by and among the Reporting Persons as required by Rule 13d-1(k)(1).