Oxford Instruments plc

Announcement of half-year results for the six months to 30 September 2023

Leading positions in structural growth markets drove revenue, profit and order book increases

Oxford Instruments plc, a leading provider of high technology products and systems for industry and research, today (14 November 2023) announces its interim results for the six months to 30 September 2023.

Adjusted[1]	**Half year to 30 September 2023**	Half year to 30 September 2022	% change reported	constant currency[4]
Revenue	**£209.7m**	£200.5m	+4.6%	+7.5%
Adjusted operating profit	**£36.5m**	£36.8m	(0.8%)	+6.5%
Adjusted operating profit margin	**17.4%**	18.4%	(100bps)	(20bps)
Adjusted profit before taxation	**£37.5m**	£37.3m	+0.5%	
Adjusted basic earnings per share	**49.4p**	50.8p	(2.8%)	
Normalised cash conversion[2]	**41%**	65%		
Net cash[3]	**£79.1m**	£97.1m		

Statutory	**Half year to 30 September 2023**	Half year to 30 September 2022	% change reported
Revenue	**£209.7m**	£200.5m	+4.6%
Operating profit	**£28.6m**	£26.3m	+8.7%
Operating profit margin	**13.6%**	13.1%	+50bps
Profit before taxation	**£29.6m**	£26.6m	+11.3%
Basic earnings per share	**38.6p**	35.9p	+7.5%
Dividend per share for the year	**4.9p**	4.6p	+6.5%

Financial highlights

- Revenue growth of 7.5% at constant currency driven by particularly good growth in Research & Discovery.
- Constant currency growth in order book of 10% to £332m following positive book-to-bill of 1.07.
- Orders slightly down (2.3%) at constant currency against strong comparator period (2022: up 18.7%).
- Adjusted operating profit of £36.5m (2022: £36.8m), growth of 6.5% at constant currency.
- Constant currency adjusted operating profit margin of 18.2% was broadly in line with last year (2022: 18.4%), reflecting a slightly increased gross margin offset by investments in the period; reported margin at 17.4% after currency headwind.
- Normalised cash conversion of 41% reflects an adjustment for capital expenditure on capacity expansion and inventory build-up ahead of transfer of operations to new facility and is expected to return to historic rates in the second half.
- Growth in interim dividend of 6.5% to 4.9p.

Strategic and operational highlights

- Leading positions in key markets in Healthcare & Life Science, Semiconductor (with a high proportion to compound semiconductor) and Advanced Materials driving good book-to-bill and 7.5% constant currency revenue growth.
- Strong revenue growth in Healthcare & Life Science (+22% at constant currency) and Advanced Materials (+12%); our robust performance in Semiconductor & Communications (+2%) demonstrates our resilience within the cyclical semiconductor market.
- Revenue growth primarily driven by Europe and Asia. Strong constant currency revenue growth of 18% in China, where we have begun to pivot to a broader customer base, as demonstrated by order growth of 4% at constant currency.
- Strong customer demand for our leading product portfolio which supports Advanced Materials research and our latest optical microscopy systems and imaging software for the Healthcare & Life Science market.
- Strong double-digit growth to academic customers across our markets, offsetting slower phasing of orders from semiconductor and quantum commercial customers.
- Investment in infrastructure to support future growth: new £75m state-of-the-art facility for compound semiconductor systems in Bristol; beginning £15m extension of production capacity in Belfast to meet growing Life Science demand. Continued investment (£2m in H1) in operational and IT capabilities to drive process and cost efficiencies.

Summary and outlook

Richard Tyson, Chief Executive Officer of Oxford Instruments plc, said:

"This is a very robust set of results for Oxford Instruments. Our focus on specialist niches within structural growth markets has supported strong revenue and adjusted operating profit growth at constant currency (7.5% and 6.5% respectively), and our positive book-to-bill of 1.07 and order book growth of 10% demonstrates continued strong global demand for our leading products and services.

"We enter the second half with a strong order book and a good pipeline, remaining mindful of the current macroeconomic and political climate. Our operational improvement programme is expected to support an increase in production, underpinning our confidence in an improvement in second half trading, with our normal seasonal second half weighting. Our expectations for the full year trading performance are unchanged.

“Having joined Oxford Instruments six weeks ago, I have been busy getting to know the business. I have already spent a considerable amount of time meeting our people and customers, and immersing myself in the business. These early meetings have reinforced my reasons for joining and the key strengths which drive Oxford Instruments’ leading position in the marketplace. These include differentiated, innovative and value-add technologies, outstanding colleagues with deep expertise, and leading positions in structural growth markets.

“Oxford Instruments has made progress over recent years in becoming more commercial, with increased customer intimacy and end-market focus. This remains an important strategic focus, with further opportunity to enhance the Group’s customer interface and new product development.

“I believe there is a substantial opportunity to pair this with enhanced operational performance and effectiveness to deliver even better outcomes for customers, together with margin expansion and attractive, sustainable growth. Our strong financial position also supports the current elevated levels of organic investment for future growth and our ability to selectively make acquisitions to augment that growth.

“The Group is in a strong position with exciting prospects. We will continue to build on Oxford Instruments’ excellent reputation amongst the world’s leading companies and scientific research communities. I look forward to working with the team to build on these strong foundations”

Notes

1. Adjusted items exclude the amortisation and impairment of acquired intangible assets, acquisition items, other significant non-recurring items, and the mark-to-market movement of financial derivatives. A full definition of adjusted numbers can be found in the finance review and Note 2.
2. Normalised cash conversion measures the percentage of adjusted cash from operations to adjusted operating profit, as set out in the finance review.
3. Net cash includes total borrowings, cash at bank and bank overdrafts but excludes IFRS 16 lease liabilities.
4. Constant currency numbers are prepared on a month-by-month basis using the translational and transactional exchange rates which prevailed in the previous year rather than the actual exchange rates which prevailed in the year. Transactional exchange rates include the effect of our hedging programme.

The financial information in this preliminary announcement has been prepared in accordance with UK adopted international accounting standards and IAS 34 *interim financial reporting*. The Group has applied all accounting standards and interpretations issued relevant to its operations and effective for accounting periods beginning on 1 April 2023. The IFRS accounting policies have been applied consistently to all periods.

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Oxford Instruments management will present its interim results in a webcast available for on-demand viewing from 08.00 UK today (Tuesday 14 November 2023) at www.oxinst.com/investors-content/financial-reports-and-presentations.

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Notes to Editors

About Oxford Instruments plc

Oxford Instruments designs, supplies and supports high-technology products and systems which allow the world's leading companies and scientific research communities to image, analyse and manipulate materials down to the atomic and molecular level. The Group's products and services help its customers to accelerate R&D, increase manufacturing productivity and make ground-breaking discoveries across its key market segments: Semiconductor & Communications, Advanced Materials, Healthcare & Life Science, Energy & Environment and Quantum Technology.

Innovation is the driving force behind Oxford Instruments' growth and success, supporting its core purpose to enable a greener, healthier, more connected advanced society. Founded in 1959 as the first technology business to be spun out from Oxford University, Oxford Instruments is now a global company listed on the FTSE250 index of the London Stock Exchange (OXIG). Its customer-centric, market-focused strategy creates competitive advantage through understanding the technical and commercial challenges in markets with long-term structural growth drivers.

For more information, visit www.oxinst.com

Chief Executive Officer’s Review

As I write for the first time as Chief Executive Officer, having joined Oxford Instruments at the start of October, I am pleased to report on the Group's robust performance in the half year to 30 September 2023.

The company's strategic focus on structural growth markets, together with the strength and differentiation of the product portfolio, has driven growth in revenue and adjusted operating profit in a challenging macroeconomic landscape and provides a strong platform for future growth. Demand is strong across each of our end markets and geographies despite these macro headwinds, with revenue growth across our three sectors, and a positive book-to-bill giving good visibility to the year end and beyond.

The Group's adjusted operating margin has remained broadly flat on a constant currency basis, despite our ongoing elevated levels of investment in people, infrastructure and operations as we position the business to capitalise on future demand for our products and services. There continues to be a range of opportunities for organic investment in operating infrastructure and systems that can deliver enhanced future performance for the Group, our customers, and shareholders.

Value-added products for diversified markets underpinning resilience

Our leading positions in six structural growth end markets, combined with the breadth of our offer, global footprint and reach into both academic and commercial markets, provide Oxford Instruments with the ability to adapt and grow through varying economic cycles within markets and geographies. Our differentiated, value-adding products accelerate our customers' progress across the technology development and production cycle from fundamental research to commercial R&D and high-volume production, providing further resilience to macroeconomic uncertainty.

These strengths are evident in the performance in the half, where Group revenue growth at constant currency was driven by particularly strong performances in Healthcare & Life Science (+22%), Advanced Materials (+12%) and Research & Fundamental Science (+12%). Semiconductor & Communications performance was robust (+2%), reflecting its resilient positioning within the broader, more cyclical market. Energy & Environment was slightly down (-4%) as was Quantum Technology (-8%), with the quantum market typically subject to lumpiness due to the value of systems and phasing of orders.

In the first half we achieved notable growth in revenue from academic customers across all key segments, reflecting increased global investment in our markets, as these are closely aligned with national scientific priorities. This investment aims to drive progress in a range of areas from life sciences to greener technologies and advanced materials, as well as enhanced semiconductor capabilities. This has mitigated a lengthening of commercial order cycles in some markets, particularly semiconductor, which has resulted in first half orders slightly lower than last year. Overall, a positive book-to-bill ratio in the first half resulted in a 10% increase in our order book.

Robust financial performance

Group	**Half year to 30 September 2023**	Reported growth vs half year to 30 September 2022	Constant currency growth vs half year to 30 September 2022
Orders	**£224.3m**	(4.7%)	(2.3%)
Revenue	**£209.7m**	+4.6%	+7.5%
Adjusted operating profit	**£36.5m**	(0.8%)	+6.5%
Adjusted operating margin	**17.4%**	(100bps)	(20bps)

Reported revenue for the period was £209.7m (2022: £200.5m), representing growth of 7.5% on a constant currency basis.

Strong revenue growth from academic customers resulted in a shift in the relative proportion of sales between academic and commercial customers, with a 55%/45% split in favour of academic customers versus 49%/51% in the comparative period in 2022.

On a constant currency basis growth was primarily driven by Research & Discovery, up 17.7% to £66.6m (H1 2022: £58.1m). Materials & Characterisation revenue grew by 3% to £109.3m (H1 2022: £108.7m). Service & Healthcare revenue was up 4.2% to £33.8m (2022: £33.7m).

Asia, our largest geographic market, representing 48% of Group revenue, has performed strongly, with 9% constant currency revenue growth. This is largely due to 18% constant currency revenue growth in China, where we are entering new and adjacent markets, and where the Chinese government is increasing investment in green technologies, semiconductor and healthcare. We have begun to pivot towards markets within China which are less impacted by UK export licence restrictions, generating order growth and a healthy order book and ongoing pipeline. Revenue growth in Europe and Asia more than offset a decline in North American revenues due to delays in the conversion of pipeline opportunities into orders.

Structurally growing and resilient end markets

Our resilience has been further borne out by our positive performance in the Semiconductor & Communications market (27% of revenue), where constant currency revenue is up 2% on last year, reflecting strong growth in compound semiconductor applications (which represent more than 60% of our activity in the semiconductor market) and commercial R&D. We are seeing strong revenue growth across a range of advanced compound semiconductor applications, including power semiconductors, augmented and virtual reality applications, as well as strong academic sales into central facilities and R&D clean rooms as universities invest in the latest technology to enable them to explore new applications. Our strengths in the advanced compound semiconductor market more than offset the widely noted softening in mainstream silicon semiconductor production markets.

Our biggest growth areas in the half year have been in Healthcare & Life Science (21% of revenue) and Advanced Materials (33% of revenue). In Healthcare & Life Science we have delivered strong direct sales of our microscopy portfolio (notably our new flagship benchtop microscope BC43, which has made high quality, affordable imaging capabilities accessible to a range of new audiences). We have also made significant sales of our key technologies, including BC43, into original equipment manufacturing (OEM) partners, and have seen continued demand for our Imaris imaging software, which has now added a dedicated neuroscience edition. Revenue for Healthcare & Life Science is up 22% at constant currency.

In Advanced Materials, growing numbers of customers are using our technology to understand how materials perform in both academic and commercial settings. The breadth of techniques we offer enables customers to characterise and precisely measure the properties and behaviour of materials and devices.

Customers choose our products to accelerate their progress in optimising and improving existing materials such as steel and aluminium, as well as to help them develop the new advanced materials needed to deliver a sustainable future. This has resulted in continuing strong demand for our imaging and analytical products, and 12% revenue growth for this segment.

Energy and Environment (10% of revenue) provides a significant market opportunity as our products have a key role to play in delivering a greener future, from helping scientists understand the impacts of pollution to helping manufacturers to design more efficient energy storage. Revenue for this sector was behind a strong comparator period, but demand remains strong, with order growth of 8.8% at constant currency.

In Quantum Technology (6% of revenue), we are playing an important role in supporting the transition from fundamental research to the commercialisation of quantum computing. Key developments in the half include the installation of our equipment to support commercial quantum computers in datacentres in Japan and the UK, with related service contracts to support 24/7 uptime. Phasing of installations has resulted in lower revenue in the half, but with a strong pipeline we anticipate a stronger second half.

Research & Fundamental Science, our smallest segment (4% of Group revenue), has performed strongly in the half, with 11.7% constant currency growth versus the corresponding period in 2022.

Adjusted operating profit grew by 6.5% at constant currency. Despite our significant investment in infrastructure, operations and people, we have delivered margin broadly in line with the corresponding period in 2022 at 18.2% (-20bps).

Demand for our products and services remains strong across each of our end markets and geographies, and a positive book-to-bill of 1.07 in the first half resulted in a closing order book of £332m (constant currency growth of 10%).

Orders were slightly down (2.3%) on a strong comparator period at constant currency, largely due to lengthening order cycles in commercial markets and other external factors, including extended lead times for the third-party electron microscopes for which we provide key analytical equipment.

Investing for sustainable growth

We continue to invest significantly in infrastructure and systems, together with reinforcing key teams to support the ongoing growth of our business. This is in addition to our longstanding prioritisation of investment in R&D, set out below.

Our focus in this area is on enhancing productivity, continuing to shorten lead times and boosting capacity, to put us in the best possible position to support demand and enhance our returns.

Our most significant current infrastructure investments are in our UK manufacturing hubs, with the creation of a £75m purpose-built compound semiconductor fabrication facility, outside Bristol, and an additional facility for Andor Belfast (at a cost of £15m), both designed to ensure we can meet the growing global demand for our products.

The Bristol facility, on track to be fully operational in Q1 2024, will double our production capacity in the growing compound semiconductor market, with state-of-the-art manufacturing facilities including increased cleanroom space and advanced laboratories. The facility has been designed to the ‘very good’ environmental specification through BREEAM, the leading certification system for sustainable buildings, with heat source pumps and a solar array.

In Belfast, the purchase of a building adjacent to our current site will unlock substantial growth in production capacity and facilitate improved production workflows for our scientific cameras, microscopy and optical spectrometer products to meet heightened demand. As with the Bristol site, sustainable principles will drive the choices made for the fit out, which is underway, and is expected to take 24 months, with completion in autumn 2025.

A further development in the half was the consolidation of two Tokyo sites to a new, highly sustainable, certified 4-star DBJ (Development Bank of Japan) green building.

Ongoing investment in systems and operations (£2m in this half year) includes the rollout of our new customer relationship management platform, which is supporting market intimacy and the delivery of our nurture, land and expand approach by enhancing our ability to leverage synergies across sales, marketing and service teams. Parallel investments in IT and financial systems are designed to unlock efficiencies and enhance our productivity. We are also focusing on delivering operational improvements to ensure our production processes are seamless and efficient, and strengthening and consolidating our supply chain.

Headcount developments in the half include the recruitment of additional service engineers and within our customer contact centres to ensure customers have ready access to in-person support in regions where we have a geographically disparate installation base, such as China.

Continuous market-led innovation

Innovation remains central to Oxford Instruments’ priorities. In order to maintain a strong product pipeline and retain our leading edge in our chosen markets, we make significant investment in our own research and development. We have invested £19.7m in R&D over the half, representing 9.4% (2022: 8.7%) of revenue.

New product launches have included a new materials analysis instrument with the ability to collect and analyse data in a matter of minutes which would previously take hours; a compact dilution refrigerator with a price point and small footprint which make it accessible to a wide range of laboratories, and an extension to our compound semiconductor atomic layer deposition range for advanced quantum, photonics and electronics applications.

Each new product has its own drivers, but all have been developed based on our intimate understanding of our markets and built to address the challenges faced by our customers.

A talented and engaged team

Having joined Oxford Instruments six weeks ago, I have been busy getting to know the business. I have already spent a considerable amount of time meeting our people and customers. These meetings have reinforced my reasons for joining and the key strengths which drive Oxford Instruments' leading position in the marketplace. These include differentiated, innovative and value-add technologies, outstanding colleagues with deep expertise, and leading positions in structural growth markets.

I have been extremely impressed by the talent, passion and commitment demonstrated by my new colleagues, and I am grateful for the warm welcome they have given me. Oxford Instruments' people are highly motivated and very able, and I am very confident in our ability to drive the business forward together. I am delighted to record that our recent annual engagement survey, completed in September, recorded a positive engagement score of 78%, and that well over three quarters of employees shared their views, which we are now taking on board.

This year has seen the expansion of our network of employee impact groups, to include a focus on neurodiversity. We are also making positive progress on our push to increase the number of women in leadership roles and, on a related note, have now met the recommendations of the FTSE Women Leaders review, with women now holding three of the seven positions on our Board.

I look forward to continuing to build on the excellent progress made to date. Driving a positive company culture, in which engaged employees understand how they contribute to our strategy and purpose, and feel able to deliver their best, is one of my central priorities. I am delighted to have such strong foundations from which to build.

Dividend

As a result of the Group's robust trading performance, the Board is declaring an interim dividend of 4.9p per share, up 6.5% (2022: 4.6p per share).

Outlook

We enter the second half with a strong order book and a robust pipeline, remaining mindful of the current macro environment. Our operational improvement programme is expected to support an increase in production, supporting our confidence in an improvement in second half trading, with our normal seasonal second half weighting. Our expectations for the full year trading performance are unchanged.

Having joined Oxford Instruments six weeks ago, I have been busy getting to know the business. I have already spent a considerable amount of time meeting our people and customers.

Oxford Instruments has made significant progress over recent years in becoming more commercial, with increased customer intimacy and end-market focus. This remains an important strategic focus. I believe there is a substantial opportunity to pair this with enhanced operational effectiveness to deliver even better outcomes for customers, together with margin expansion and attractive, sustainable growth for shareholders. Our strong financial position also supports continued investment for organic growth and to make selective acquisitions to augment that growth.

I believe the Group is in a strong position with exciting prospects. We will continue to build on Oxford Instruments' excellent reputation amongst the world's leading companies and scientific research communities. I look forward to working with the team to build on these strong foundations.

Richard Tyson
Chief Executive Officer

13 November 2023

Operations review

Materials & Characterisation

The Materials & Characterisation sector has a broad customer base across a wide range of applications for:

- **Imaging and analysis of materials down to the atomic level (across our Asylum Research, NanoAnalysis, Magnetic Resonance and WITec businesses), where our leading product performance, ease of use and advanced analytics enhance our customers' capabilities, provide actionable insights and increase their productivity. Our portfolio of materials analysis solutions (including X-ray, electron and magnetic resonance analysis systems and atomic force and Raman microscopes) enable the measurement of the structures, composition and critical properties that define the modern world.**
- **The manufacture of semiconductor devices and structures, where our Plasma Technology business' portfolio of advanced etch and deposition process systems enables our customers to create and manipulate materials with atomic scale accuracy to manufacture advanced compound semiconductor devices.**

With a strong focus on accelerating our customers' applied R&D, our products and services in this sector enable the development of new devices and next generation higher performing materials, as well as enhancing productivity in advanced manufacturing, quality assurance (QA) and quality control (QC).

Key highlights

	Half year to 30 September 2023	Half year to 30 September 2022	% reported growth	% constant currency[1] growth
Orders	**£117.0m**	£135.4m	(13.6%)	(11.4%)
Revenue	**£109.3m**	£108.7m	+0.6%	+3.1%
Adjusted[2] operating profit	**£17.4m**	£18.9m	(7.9%)	+0.5%
Adjusted[2] operating margin	**15.9%**	17.4%		
Statutory operating profit	**£15.9m**	£17.2m		
Statutory operating margin	**14.5%**	15.8%		

1. For definition refer to note on page 2.
2. Details of adjusting items can be found in Note 2 to the half- year financial statements.

Operational, strategic and regional progress

The Materials & Characterisation sector has performed robustly in the half year to September, with revenue and order book growth demonstrating our resilience in a challenging macroeconomic backdrop. Revenue grew by 3% at constant currency, with strong growth in Advanced Materials markets, and with Semiconductor & Communications broadly in line with last year. Together these customer segments account for more than three quarters of the sector's revenue.

Regionally, Asia has performed particularly strongly, with double digit revenue growth at constant currency, including 23% growth in China, where the easing of Covid restrictions and a reduction of supply chain shortages have further contributed to our growth. Revenue in Europe is broadly in line with last year, while in North America, phasing held back first half revenue.

Orders for the sector remain ahead of revenue, with a book-to-bill of 1.07 including strong double-digit growth to academic customers across all our markets. We have seen a lengthening in the purchasing cycle from commercial customers, leading to a softening in industrial orders in Semiconductor and Advanced Materials despite a healthy pipeline. Long lead times for electron microscopes, which are manufactured by third parties, have also impacted the phasing of orders for our electron microscope analytical solutions which are bought as accessories for these devices. This resulted in orders for the sector being 11.4% behind a strong comparator period at constant currency (2022: £135.4m).

Adjusted operating profit was £17.4m (2022: £18.9m) after the investment in our new Bristol facility, and significant investment to support increased productivity. This, together with a currency headwind, was reflected in the margin of 15.9% (2022: 17.4%), which was 50bps lower at constant currency.

The growth of revenue from academic customers reflects increased government spending into our markets, as institutes and universities seek to advance progress on greener technologies and advanced materials R&D, as well as increased semiconductor capabilities.

Key strategic developments in the half include continued expansion of our compound semiconductor solutions to commercial customers and some notable wins to new tier 1 key accounts. The ongoing fit out of our new purpose-built compound semiconductor facility outside Bristol, UK, is proceeding as expected. The site comprises a state-of-the-art manufacturing area, with increased clean-room space and advanced laboratories, and will enable a significant ramping up in the development of leading-edge technologies. We have moved a first cohort of office-based staff to the new building, and production trials are now taking place. We anticipate completing the full transition to the new facility in Q1 2024, which will double production capacity.

We continue to derive significant benefit from the successful integration of our WITec Raman microscopy business (acquired in August 2021), and from increased collaboration across our materials analysis portfolio, expanding customer and regional reach and deepening our market intimacy. Together, these positive developments are driving double digit order and revenue growth for WITec, and supporting the wider Materials & Characterisation sector.

Semiconductor & Communications *(41% of revenue)*

Semiconductor & Communications applications continue to represent the largest proportion of revenue in the Materials & Characterisation sector. This is due to our broad reach across both the rapidly growing compound semiconductor market and the mainstream silicon chip market and consumer electronics markets, and our ability to support customers at every stage from early academic research and development to high volume commercial production.

Revenue from compound semiconductor applications and applied R&D in the silicon market has been strong in the first half, more than offsetting the ongoing softness in silicon chip markets we indicated at full year 2022/23. This resulted in a slight increase in revenue on the prior year overall. The breadth of our offering across the compound and silicon markets, and through the R&D, production and quality control cycle, provides us with additional resilience in the cyclical semiconductor market.

Our Plasma Technology compound semiconductor business, which accounts for over 60% of the Group’s semiconductor revenue, develops and supplies the equipment and processes used to make the semiconductor wafers and devices which support today’s high technology applications, and the development of next generation technology. These applications include power devices, 5G connectivity, truly wireless charging, augmented reality and the energy-efficient chips used in data centres, which are vital to support the rapid growth in communications and projected increases by data-hungry AI applications.

Our role ranges from early-stage academic R&D to volume manufacturing, yield and quality control, enabling the production of high quality, high yield wafers. A particular area of strength, and source of pricing power, is our ability to improve outcomes for the layers within structures and devices which have the biggest impact on performance and yield.

Elsewhere in the sector, customers across academia and industry continue to choose our analysis tools to image and analyse the properties and performance of both silicon and compound devices at the atomic scale, supporting R&D, quality control and defect analysis. This accounts for the remaining proportion of our semiconductor revenue. Here, demand has been softer into metrology and defect review, but remains strong in applied R&D, further demonstrating the resilience provided by the breadth of our offering.

We continue to expect sustained demand, with a strong pipeline for commercial customers, and with orders from academic customers growing, as higher levels of government funding enable investment in central clean room facilities and the latest analytical equipment.

Advanced Materials *(36% of revenue)*

We are capitalising on the widespread appetite to understand and improve the properties of materials across a multitude of markets, to develop new materials to address the challenges of today and tomorrow through our advanced materials analysis tools. Our ability to image and analyse down to the nanoscale enables manufacturers to control the quality of today’s advanced materials, and scientists to gain unparalleled insights into the materials they study, from long-standing but ever-evolving materials such as steel and concrete to newer materials such as graphene.

Our revenue growth of 10% at constant currency, reflects the breadth of use for our leading product ranges. Growth in the half has come primarily from academic customers, as university research departments invest in the latest high-end analytical equipment for their service labs and core facilities to study the properties of new and existing materials. The ease of use and range of capabilities of our equipment and software lend themselves particularly well to these settings.

Sustainability drivers remain strong in this segment, with an increase in research and development into structural materials such as steel and concrete, which together account for some 15% of global carbon emissions. Customer are using our equipment to develop and deploy greener alternatives, such as lighter, stronger and lower carbon steels, superalloys and concrete, without compromising performance.

We have seen strong revenue growth related to so-called two-dimensional (2D) materials, such as graphene, which can be just one atom deep. Many times stronger than steel, electrically conductive and incredibly lightweight and flexible, graphene has the potential to be deployed in a multitude of areas from drug delivery and implants to next generation electronics, composites and energy storage. Other 2D materials are also being explored for their abilities as insulators and transistors.

Our products also play a crucial role in understanding the properties of polymers, used in a multitude of products from tyres to fabrics and medical implants. Our analytical tools – in particular our atomic force microscopes – help scientists in commercial and academic settings to measure and tune the fundamental properties of strength, viscosity, adhesion and hardness to optimise performance for specific applications.

Energy & Environment *(15% of revenue)*

Our ability to help customers understand the impacts of pollution and climate change and to develop effective solutions for a greener future is a key driver of growth. Customers use our analytical tools to support their work in a range of areas, from renewable energy generation and storage to pollution prevention, as well as the sourcing of the minerals needed across a range of applications.

As an example, our tailored support at every stage of the battery life cycle from raw materials and R&D to quality control and failure analysis is a key contributor to revenue in this sector. With a broad range of techniques across our imaging and analysis portfolio we accelerate customers’ understanding of the fundamental chemistry and mechanisms affecting battery capacity, charging rate and lifetime, as well as supporting quality control and defect review.

We are also seeing strong demand in environmental applications for our analysis tools and software, as customers seek to understand and address airborne causes of pollution, and pollutants of water such as microplastics, fats, oils and greases.

Revenue for the segment was down 2% at constant currency.

Healthcare & Life Science *(5% revenue),* ***Research and Fundamental Science*** *(2% revenue) and* ***Quantum Technology*** *(1% of revenue)*

While these segments contribute a relatively small percentage of overall revenue, the Materials & Characterisation sector is active in all three, and benefits from synergies with the Research & Discovery sector. We continue to drive order and revenue growth into Life Science applications as we build our market intimacy and increasingly tailor our solutions to address this market. Our portfolio of atomic force microscopes and Raman imaging systems can provide unique insights into real time biological functions, the health of cells and tissue as well as the efficacy of new medicines.

We have seen double digit revenue growth In Research & Fundamental Science as universities deploy our equipment to accelerate their research.

In Quantum Technology, customers are using our compound semiconductor processing systems to manufacture and characterise the quantum chips (known as qubits) which are the units which store information in quantum computers. Our analytical tools are also deployed to optimise the performance of these devices.

Research & Discovery

The sector comprises our Andor Technology, NanoScience and X-Ray Technology businesses. It provides advanced solutions and unique environments that enable imaging and analytical measurements down to the atomic and molecular level, as well as ultra-low temperature and high magnetic field environments. These are used across scientific research and applied R&D, and commercial applications. Our leading-edge technologies play a key role across a range of fields, from accelerating developments in medicine and material science to facilitating the growing commercialisation of quantum technology.

Key highlights

	Half year to 30 September 2023	Half year to 30 September 2022	% reported growth	% constant currency[1] growth
Orders	**£67.8m**	£62.8m	+8.0%	+10.0%
Revenue	**£66.6m**	£58.1m	+14.6%	+17.7%
Adjusted[2] operating profit	**£9.6m**	£7.0m	+37.1%	+44.3%
Adjusted[2] operating margin	**14.4%**	12.0%		
Statutory operating profit	**£5.6m**	£3.9m		
Statutory operating margin	**8.4%**	6.7%		

1. For definition refer to note on page 2.
2. Details of adjusting items can be found in Note 2 to the full year financial statements.

Operational, strategic and regional progress

The Research & Discovery segment delivered an excellent performance in the half, with strong constant currency growth in orders (up 10%), revenue (up 17.7%), adjusted operating profit (up 44.3%) and margin (up 240bps). Growth has primarily been driven by strong sales and demand for our optical microscopy, scientific camera, and optical spectroscopy products. The Healthcare & Life Science sector has seen particularly strong growth, with revenue up 27% due to strong sales of our microscopy portfolio, as well as sales of our key technologies into original equipment manufacturing (OEM) partners, driving reach into wider life science markets. We have also seen strong double digit revenue growth into Advanced Materials applications as customers use our analytical and imaging equipment to investigate the properties of a wide range of materials.

Orders and revenue have grown at constant currency across all key regions and territories, including China. Our focus on attractive markets and the success of recently launched products have supported strong constant currency revenue growth in Europe (35%), the US (14%) and Japan (75%). Within China our focus has been on growing our revenue in Healthcare, Advanced Materials and Energy & Environment applications. This, together with the end of Covid-related lockdowns, has supported our strong performance. Within China, our pivoted focus into Healthcare & Life Science and Advanced Material applications has more than offset the previously reported, ongoing headwinds of export licence restrictions, particularly for Quantum and Astronomy markets.

Adjusted constant currency operating profit and margin have grown by 44% and 280bps respectively. Growth has been driven by increased demand for our leading products, partially offset by increased investment in operational capacity in our Belfast facility.

In common with Materials & Characterisation, we have seen strong growth to academic customers across the segment, as governments and universities invest in our systems to equip central imaging facilities. However, OEM orders and significant investments by commercial customers for our optical microscopy and X-ray products have also seen strong single digit growth to industrial accounts.

As revenue is only recognised for our large cryogenics and high-field magnet systems once they have been installed, we expect a stronger performance in the second half of the year than the first, given our strong pipeline and several key anticipated orders to Tier 1 commercial customers.

Continued strong operational performance across our X-Ray tube business has driven strong order, revenue and profit growth in the half. The performance is supported by increasing end market demand across a range of end applications and with the market-leading performance, quality, and operational lifetime of our X-ray sources, cementing a strong performance for the half and ongoing positive momentum.

We are making significant investment in people and processes, boosting production capacity and operational effectiveness across the sector, to support the growing demand for our products and services. In particular, as demand grows for our optical microscopes and scientific cameras, we are investing £15m in the purchase and fit out of an additional building, adjacent to our existing Andor Belfast site, to boost our operational capacity. The site expansion will significantly enhance our production and R&D capacity, allowing us to meet demand from our growing customer base once operational in autumn 2025. Further developments in the half include the launch of our compact, fast turnaround ProteoxS dilution refrigerator for physics applications including Quantum. The unit has a smaller footprint and lower cost than other refrigerators in the market, while offering reliable low temperatures, making it accessible to a wider range of research laboratories and budgets.

We are pleased to note that all three Nobel Prize winners for science in 2023 (Medicine, Chemistry and Physics) used our equipment in their groundbreaking research.

Healthcare & Life Science *(44% of revenue)*

Our equipment and software play a key role in accelerating progress towards a healthier society, as academic researchers, scientists and pharmaceutical companies seek to better understand fundamental disease mechanisms at a molecular and cellular level in order to design more effective treatments.

We are seeing continued growth in the Healthcare & Life Science segment, the largest contributor to revenue in the Research & Discovery sector. Revenue is up more than 25% in the half year, with strong sales of our BC43 benchtop microscope and growth in sales of our dedicated analytical and visualisation Imaris software solutions. Good order growth and a strong pipeline give confidence for a continuing strong performance.

Positive momentum has continued for our advanced microscopy solutions and dedicated analytical software, with the first integrations of our BC43 benchtop microscope into OEMs' equipment, which is used to access a broader range of life science applications. We have launched a new dedicated Neuroscience edition of our Imaris software with AI-powered neuron visualisation capabilities, which is enabling the acceleration of research into dementia and depression, by supporting understanding of brain structure and functions.

Advanced Materials *(28% of revenue)*

We have a dedicated focus on building market share for advanced materials applications across our portfolio of spectrographs, scientific cameras, X-ray sources and specialised cryogenic and high magnetic field systems, with the benefit of synergies with Materials & Characterisation. This has resulted in strong double-digit order and revenue growth for this segment. Customers use our equipment to support their understanding of the fundamental properties of new materials, to enhance the capabilities of existing materials, and in quality assurance and quality control applications.

Quantum Technology *(16% of revenue)*

Revenue in the Quantum Technology segment has grown by 6% in the half, as we collaborate with universities, quantum computing start-ups and major tier 1 communication companies. Strong sales into Europe, Japan and the US have more than offset the expected revenue reductions from China due to export licence restrictions.

Oxford Instruments has a key role to play in this rapidly growing sector, which continues to evolve from the research laboratory to drive practical applications. Quantum computers are already used in commercial applications from chemistry to logistics and finance. The future impact of quantum is expected to be even more significant, with the potential to help tackle climate change and transform our ability to develop revolutionary medicines. We are particularly well placed to benefit from the shift from pure science to mainstream applications, given our ability to support a number of areas, including cryogenics, quantum laser applications and (in our Materials & Characterisation sector) the fabrication of qubits.

With a strong opportunity pipeline, we anticipate orders strengthening following a slower start in the first half.

Research & Fundamental Science *(7% of revenue)*

We have seen strong order and revenue growth into this sector, particularly in the fields of fluid and plasma dynamics, where customers are deploying our highly specialised high speed scientific cameras to capture the evolving dynamics of physical processes, such as fusion reactions at sub nanosecond intervals. In astronomy, we are building market share in Europe and North America through optimised solutions for large sky surveys, including exoplanet detection and near-earth asteroid detection, and atmospheric research.

Semiconductor & Communications *(3% of revenue) and* ***Energy & Environment*** *(2% of revenue)*

We continue to see good demand for our technologies in these markets. This is primarily from researchers looking at the fundamental properties and disruptive use of new materials in these markets.

Service & Healthcare

The Service & Healthcare sector comprises the Group's servicing and support offering related to Oxford Instruments' own products, and the support and service of third-party MRI scanners in Japan. We offer tailored support packages for all our products, delivered by a global network of product experts, application experts and service engineers, both in person and via digital channels, including online training, webinars and remote service support.

Key highlights

	Half year to 30 September 2023	Half year to 30 September 2022	% reported growth	% constant currency[1] growth
Orders	**£39.5m**	£37.1m	+6.5%	+10.5%
Revenue	**£33.8m**	£33.7m	+0.3%	+4.2%
Adjusted[2] operating profit	**£9.5m**	£10.9m	(12.8%)	(7.3%)
Adjusted[2] operating margin	**28.1%**	32.3%		
Statutory operating profit	**£9.5m**	£11.3m		
Statutory operating margin	**28.1%**	33.5%		

1. For definition refer to note on page 2.

2. Details of adjusting items can be found in Note 2 to the full year financial statements.

Operational and strategic progress

The Service & Healthcare sector has made steady progress in the period. Revenue grew by 4% at constant currency, with 11% order growth and a 35% year-on-year increase in the order book demonstrating growing demand for our services products, including subscriptions. Operating profit and margin were down in the half due to investment in capabilities and infrastructure to support further growth, as well as some elevated costs in the period for liquid helium required to support our MRI customers in Japan. Specific areas of increased investment include additional service engineers and customer care centre staff, and costs associated with our new Group-wide CRM and field management platform, which is already generating more opportunities and an improved customer experience.

We have seen strong revenue growth to academic customers in Service & Healthcare, as increasing numbers of customers take out point-of-sale service contracts for our benchtop systems, and as sales of our tailored life science packages for our Imaris imaging software continue to grow. Sales to academic customers accounted for 49% of revenue in the half, with the share of academic sales up six percentage points versus the prior year. Commercial sales were broadly in line with the prior year.

We continue to deliver double digit order growth for service related to our own products through the provision of a wider range of tailored and digital offerings. Our servicing of third-party MRI imaging equipment in Japan continues to deliver excellent support to our customer base, with growth in both orders and revenue.

Regionally, constant currency revenue was slightly up across all three key markets (North America, Asia and Europe), with growth strongest in Asia, up 5%. We have seen significant growth in orders in Europe and Asia, largely driven by growth in Japan and China.

Our service and support strategy is focused on three key pillars:

- increased tailoring of our service offerings to specific end applications and customer types;
- the delivery of seamless customer service at every stage of the product life cycle;
- the development of global processes which can be delivered via a hybrid service approach, both in region and digitally.

As we increase our portfolio and the scope of our services, our range of support packages has expanded to meet the needs and budgets of our customers. This allows customers to maximise their capabilities, enhance their productivity and receive immediate help and support when needed throughout the lifetime of our systems. Our depth of sector knowledge is a key differentiator, with our market intimacy and deep scientific expertise enabling us to develop products appropriate to each end application and customer type.

We have continued to invest in extending our regional teams and spares capacity to provide shorter lead times for in-person support and training visits, as well as continuing to develop our digital and remote support offerings. We are focusing on increasing our customers' productivity by diagnosing and resolving issues in hours, through our virtual reality and digital toolkit. This reduces the need for engineer visits, improving efficiency and reducing our carbon footprint. We continue to design more advanced capabilities into our products, including increased data analytics which have unlocked new revenue streams for remote health checks and system calibration.

We have also continued to focus on the third element of our strategy, developing standard infrastructure and processes globally which are implemented by our regional services teams. This includes cross-training service engineers to service multiple products. The benefits of this approach include cost efficiencies from best-practice procedures, deeper local customer intimacy and improved response times.

In parallel with our investment in people, we are implementing a project to complete our business systems customer suite, with the implementation of the new Group-wide CRM for marketing, sales and service referenced above. The sales element of the CRM, which is already live, is improving lead follow up, while the full system, once complete, will support the effective running of our Services function through standardisation and simplification.

Overall, the Service & Healthcare sector remains on a strong upward trajectory, with significant ongoing opportunities to support revenue growth and margin expansion.

Finance review

Oxford Instruments uses certain alternative performance measures to help it effectively monitor the performance of the Group as management believes that these represent a more consistent measure of underlying performance. Adjusted items exclude the amortisation of acquired intangible assets; acquisition items; profit or loss on disposal of operations; other significant non-recurring items; and the mark-to--market movement of financial derivatives. All of these are included in the statutory figures. Note 2 provides- further analysis of the adjusting items in reaching adjusted profit measures. Definitions of the Group's material alternative performance measures, along with reconciliation to their equivalent IFRS measure, are included within the finance review.

The Group trades in many currencies and makes reference to constant currency numbers to remove the impact of currency effects in the year. These are prepared on a month-by-month basis using the translational and transactional exchange rates which prevailed in the previous year rather than the actual exchange rates which prevailed in the year. Transactional exchange rates include the effect of our hedging programme.

Summary

Reported orders in the period decreased by 4.7% to £224.3m (2022: £235.3m), a decrease of 2.3% at constant currency, against a strong comparator period. At the end of the period, the Group's order book stood at £331.7m (30 September 2022: £315.7m). The order book increased by 5.1% on a reported basis and 10.1% at constant currency with a book-to-bill in the period of 1.07 times (2022: 1.17 times).

Revenue increased by 4.6% to £209.7m (2022: £200.5m). Revenue, excluding currency effects, increased by 7.5%, with the movement in average currency exchange rates over the year reducing reported revenue by £5.9m. We would expect the second half of the financial year to benefit from the normal seasonal bias.

Adjusted operating profit excluding currency effects, increased by 6.5%. However, due to a currency headwind of £2.7m, adjusted operating profit decreased by 0.8% to £36.5m (2022: £36.8m). Excluding currency impacts, the adjusted operating margin decreased by 20 basis points to 18.2% reflecting a slightly increased gross margin offset by investment in ERP systems and operational capability to support future growth and deliver process efficiencies. Including currency, the adjusted operating margin decreased by 100 basis points to 17.4% (2022: 18.4%).

Statutory operating profit of £28.6m (2022: £26.3m) increased by 8.7%. This includes amortisation of acquired intangibles of £4.6m (2022: £4.3m) and a charge of £2.4m (2022: £6.1m) relating to the movement in the mark-to-market valuation of uncrystallised currency hedges for future years. We also recognised non-recurring costs of £0.9m (2022: £0.1m).

Adjusted profit before tax grew by 0.5% to £37.5m (2022: £37.3m), representing a margin of 17.9% (2022: 18.6%). Statutory profit before tax grew by 11.3% to £29.6m (2022: £26.6m). This represents a margin of 14.1% (2022: 13.3%).

The adjusted effective tax rate increased to 24.0% (2022: 21.4%), following the increase in the UK corporation tax rate in April 2023. As a result, adjusted basic earnings per share fell by 2.8% to 49.4p (2022: 50.8p). Basic earnings per share were 38.6p (2022: 35.9p), an increase of 7.5%.

As expected, cash generated from operations was lower at £7.4m (2022: £26.6m). This represents negative cash conversion of 21% (2022: +47%). As we prepare for the move of operations to the new compound semiconductor facility in Bristol in the third quarter, we have built inventory to enable us to supply customers, as well as continuing to incur ongoing capital expenditure related to the new site. In addition, the previously reported significant increase in export licence delays and refusals have also led to higher inventories, as well as a need to refund previously received customer deposits.

Excluding these items, cash conversion on a normalised basis was 41% (2022: 65%). We expect an improvement in cash conversion in the second half and anticipate it to be more in line with historic conversion rates. Net cash after borrowings fell from £100.2m as at 31 March 2023 to £79.1m on 30 September 2023.

Our revolving credit facility remains undrawn, leaving approximately £109m of committed facilities. This represents total headroom of just under £190m, including net cash on the balance sheet.

Income statement

The Group's income statement is summarised below.

	Half year to 30 September 2023 £m	Half year to 30 September 2022 £m	Change
Revenue	**209.7**	200.5	+4.6%
Adjusted operating profit	**36.5**	36.8	(0.8%)

Amortisation of acquired intangible assets	**(4.6)**	(4.3)	
Non-recurring items	**(0.9)**	(0.1)	
Mark-to-market of currency hedges	**(2.4)**	(6.1)	
Statutory operating profit	**28.6**	26.3	+8.7%
Net finance income	**1.0**	0.3	
Adjusted profit before taxation	**37.5**	37.3	+0.5%
Statutory profit before taxation	**29.6**	26.6	+11.3%
Adjusted effective tax rate	**24.0%**	21.4%	
Effective tax rate	**24.7%**	22.2%	
Adjusted earnings per share – basic	**49.4p**	50.8p	(2.8%)
Earnings per share – basic	**38.6p**	35.9p	+7.5%
Dividend per share (total)	**4.9p**	4.6p	+6.5%

1. Net finance costs for 2022 include a non-recurring charge of £0.2m against the unwind of discount on WITec contingent consideration.

Revenue and orders

Total reported orders fell by 4.7% (-2.3% at constant currency) to £224.3m. In Materials & Characterisation, reported orders were lower by 13.6% (-11.4% at constant currency). This was against a comparator period of very strong growth of just under 26% at constant currency. In the period we saw macroeconomic concerns leading to a delay in placing orders across industrial markets and we are in the process of pivoting our pipelines towards customers who are less susceptible to export licence concerns. In Research & Discovery, we saw good growth in orders for our optical imaging and microscopy products, and some large OEM framework orders for X-Ray Technology. As a result, reported orders grew by 8.0% (+10.0% at constant currency) for the segment. Service & Healthcare orders increased by 6.5% (+10.5% at constant currency).

Reported revenue of £209.7m (2022: £200.5m) increased by 4.6% (+7.5% at constant currency). For Materials & Characterisation, reported revenue grew by 0.6% (+3.1% at constant currency) as shipments of our electron microscope analysers fell marginally against a strong comparator period and we saw a significant rise in export licence delays for these products, which has led to the build-up of a large amount of finished goods awaiting export approval. Despite an increase in UK export licence rejections to China, we have seen a good increase in shipments of semiconductor processing systems.

Good demand for our Life Science products, alongside an improvement in operational execution, has driven reported revenue growth in Research & Discovery of 14.6% (+17.7% at constant currency). We have also had good demand from OEMs for our X-Ray tubes. Revenue growth from the service of our products supported reported growth of 0.3% (+4.2% at constant currency) for Service & Healthcare.

The book-to-bill ratio (orders received to goods and services billed in the period) for the year was 1.07 times (2022: 1.17 times).

Geographic revenue growth

£m	**Half year to 30 September 2023 £m**	**Half year to 30 September 2023 % of total**	Half year to 30 September 2022 £m	Half year to 30 September 2022 % of total	**Change £m**	**% growth**	**% growth at constant currency**
Europe	**48.9**	**24%**	43.4	22%	**+5.5**	**12.7%**	**12.2%**
North America	**54.6**	**26%**	58.3	29%	**(3.7)**	**(6.3%)**	**(2.9%)**
Asia	**101.6**	**48%**	97.2	48%	**+4.4**	**4.5%**	**8.7%**
Rest of World	**4.6**	**2%**	1.6	1%	**+3.0**	**+188%**	**+188%**
	209.7	**100%**	200.5	100%	**+9.2**	**4.6%**	**7.5%**

On a geographical basis, revenue grew by 12.7% in Europe (+12.2% at constant currency), supported by additional deliveries of semiconductor process systems and optical and microscopy products. Orders grew by 9.9% at constant currency, supported by good demand for our semiconductor processing systems and some large OEM orders for our X-Ray tubes.

Revenue for North America was lower by 6.3% on a reported basis and down 2.9% at constant currency. We experienced a lengthening of commercial order cycles. In addition, unfavourable phasing of academic budgets for our semiconductor processing tools contributed to a weaker first half for the region. These issues also contributed to a decline in constant currency orders of 8.1%, although pipelines remain strong across our end markets.

Asia remains our largest region by revenue, with China constituting 64% of regional revenue and 31% of total Group revenue, following strong order intake in the previous financial year. Asia delivered revenue growth of 4.5% (+8.7% at constant currency) with strong demand for our atomic force microscopes, optical and microscopy products, and semiconductor processing tools. Orders for the region fell by 5.3% at constant currency, due to a lower number of orders from Japan and Korea, partially offset by a small amount of growth in China. Orders for China constituted 26% of Group orders in the half year.

The total reported order book grew by 5.1% (10.1% at constant currency) to £331.7m compared to 30 September 2022. The order book, at constant currency, compared to 30 September 2022, increased by 6.8% for Materials & Characterisation, with strong growth across all constituent businesses. Research & Discovery grew by 5.4% at constant currency, with good demand for our imaging and microscopy products and X-Ray tubes. The Service & Healthcare order book grew by 35.1% at constant currency as we continue to focus on the service of our own products.

£m	Materials & Characterisation	Research & Discovery	Service & Healthcare	Total
Revenue: HY 2022/23	108.7	58.1	33.7	200.5
Constant currency growth	3.4	10.3	1.4	15.1
Revenue at constant currency: 2023/24	112.1	68.4	35.1	215.6
Currency	(2.8)	(1.8)	(1.3)	(5.9)
Revenue: HY 2023/24	**109.3**	**66.6**	**33.8**	**209.7**
Revenue growth: reported	0.6%	14.5%	0.3%	4.6%
Revenue growth: constant currency	3.1%	17.7%	4.2%	7.5%

Gross profit

Gross profit grew by 6.6% to £111.0m (2022: £104.1m), representing a gross profit margin of 52.9%, an increase of 100 basis points over last year.

Adjusted operating profit and margin

Adjusted operating profit excluding currency effects, increased by 6.5%. However, due to a currency headwind of £2.7m, reported adjusted operating profit decreased by 0.8% to £36.5m (2022: £36.8m). Excluding currency impacts, the adjusted operating margin decreased by 20 basis points to 18.2% as we continue to invest in ERP systems and operational capability to support future growth and deliver process efficiencies. Including currency impacts, the adjusted operating margin decreased by 100 basis points to 17.4% (2022: 18.4%).

Reported Materials & Characterisation adjusted operating profit decreased by 7.9% (+0.5% at constant currency) with reported margin falling 150 basis points to 15.9% (2022: 17.4%). Fewer shipments of our electron microscope analysers against a strong comparative period were offset by higher revenue from our semiconductor processing tools.

Within Research & Discovery our imaging and microscopy business has grown well, supported by good demand, an improvement in operational execution and an alleviation of prior year supply chain disruption. Profit growth in our imaging and microscopy business was partially offset by a slower than expected improvement in operational output of our standard cryogenic and magnet systems, due in part to a diversion of resources to completing the last of the more complex bespoke systems. The segment recorded growth in reported profit of 37.1% (+44.3% at constant currency) and an improvement in margin to 14.4%, representing growth of 240 basis points.

Service & Healthcare reported adjusted operating profit fell by 12.8% (7.3% at constant currency); primarily due to an increase in helium and parts prices within our Japan MRI business.

Currency effects for the Group (including the impact of transactional currency hedging) depressed reported adjusted operating profit by £2.7m, primarily due to a depreciation of the Japanese Yen against Sterling.

£m	Materials & Characterisation	Research & Discovery	Service & Healthcare	Total
Adjusted operating profit: 2022/23	18.9	7.0	10.9	36.8
Constant currency growth	0.1	3.1	(0.8)	2.4
Adjusted operating profit at constant currency: 2023/24	19.0	10.1	10.1	39.2
Currency	(1.6)	(0.5)	(0.6)	(2.7)
Adjusted operating profit: 2023/24	**17.4**	**9.6**	**9.5**	**36.5**

Adjusted operating margin[1]: 2022/23	17.4%	12.0%	32.3%	18.4%
Adjusted operating margin[1]: 2023/24	15.9%	14.4%	28.1%	17.4%
Adjusted operating margin[1] (constant currency): 2023/24	16.9%	14.8%	28.8%	18.2%

1. Adjusted operating margin is calculated as adjusted operating profit divided by revenue. Adjusted operating margin at constant currency is defined as adjusted operating profit at constant currency divided by revenue at constant currency.

Statutory operating profit and margin

Statutory operating profit grew by 8.7% to £28.6m (2022: £26.3m), representing an operating profit margin of 13.6%. Growth in statutory operating profit is supported by a lower mark-to-market charge on financial derivatives.

Adjusting items

Amortisation of acquired intangibles of £4.6m (2022: £4.3m) relates to intangible assets recognised on acquisitions, being the value of technology, customer relationships and brands. Non-recurring items within operating profit were £0.9m in the period.

The Group uses derivative products to hedge its short-term exposure to fluctuations in foreign exchange rates. Our hedging policy allows for forward contracts to be entered into up to 24 months forward from the end of the next reporting period. The Group's policy is to have in place at the beginning of the financial year hedging instruments to cover up to 80% of its forecast transactional exposure for the following twelve months and, subject to pricing, up to 20% of exposures for the next six months. The Group has decided that the additional costs of meeting the extensive documentation requirements of IFRS 9 to apply hedge accounting to these foreign exchange hedges cannot be justified. Accordingly, the Group does not use hedge accounting for these derivatives.

Net movements on mark-to-market derivatives in respect of transactional currency exposures of the Group in future periods are disclosed in the income statement as foreign exchange and excluded from our calculation of adjusted profit before tax. In the half year this amounted to a charge of £2.4m (2022: £6.1m charge). The small increase in the net asset for derivative financial instruments from 31 March 2023 reflects: (i) the crystallisation of forward contracts that were hedging the first half of this financial year, which are recognised in adjusted operating profit, and; (ii) an uncrystallised movement in the mark-to-market valuation of forward contracts at the balance sheet date on forward contracts that will mature over the next 18 months.

Net finance costs

The Group's recorded net interest income was higher at £1.0m (2022: £0.5m), due to an increase in interest rates earned on our cash balances.

Adjusted profit before tax and margin

Adjusted profit before tax increased by 0.5% to £37.5m (2022: £37.3m). The adjusted profit before tax margin of 17.9% (2022: 18.6%) was lower than last year largely due to currency effects.

Reconciliation of statutory profit before tax to adjusted profit before tax	**Half year to 30 September 2023 £m**	Half year to 30 September 2022 £m
Statutory profit before tax	**29.6**	26.6
Add back:		
Amortisation of acquired intangible assets	**4.6**	4.3
Non-recurring items (Note 2)	**0.9**	0.3
Mark-to-market of currency hedges	**2.4**	6.1
Adjusted profit before tax	**37.5**	37.3

Statutory profit before tax and margin

Statutory profit before tax increased by 11.3% to £29.6m (2022: £26.6m). The statutory profit before tax margin of 14.1% (2022: 13.3%) was above last year, principally due to the lower charge from the mark-to-market valuation movement on financial derivatives.

Taxation

The adjusted tax charge of £9.0m (2022: £8.0m) represents an effective tax rate of 24.0% (2022: 21.4%); the increase being primarily due to the increase in the UK corporation tax rate from 1 April 2023. The tax charge of £7.3m (2022: £5.9m) represents an effective tax rate of 24.7% (2022: 22.2%). The increase is due to the rise in the UK corporation tax rate and a small increase in non-deductible costs.

The half-year tax rate has been calculated based on the expected effective tax rate for the year of 24.2% (having made certain assumptions about where profits will arise).

Earnings per share

Adjusted basic earnings per share decreased by 2.8% to 49.4p (2022: 50.8p) primarily due to the higher effective tax rate; adjusted diluted earnings per share fell by 3.0% to 48.7p (2022: 50.2p). Basic and diluted earnings per share increased by 7.5% to 38.6p (2022:

35.9p) and 38.1p (2022: 35.4p) respectively, with the mark-to-market movement on financial derivatives offsetting the rise in the effective tax rate.

The number of basic weighted average shares remained at 57.7m (2022: 57.7m). Issuance of new shares to satisfy share option exercises will result in an increase in the number of shares in the second half of the year.

Currency

The Group faces transactional and translational currency exposure, most notably against the US Dollar, Euro and Japanese Yen. For the half year, approximately 17% of Group revenue was denominated in Sterling, 55% in US Dollars, 19% in Euros, 7% in Japanese Yen and 2% in other currencies. Translational exposures arise on the consolidation of overseas company results into Sterling. Transactional exposures arise where the currency of sale or purchase transactions differs from the functional currency in which each company prepares its local accounts.

The Group's foreign currency exposure for the half year is summarised below.

£m (equivalent)	Revenue	Adjusted operating profit
Sterling	36.5	(49.4)
US Dollar	114.3	57.9
Euro	40.7	14.7
Japanese Yen	15.1	12.4
Chinese Renminbi	2.4	0.8
Other	0.7	0.1
	209.7	**36.5**

The Group maintains a hedging programme against its net transactional exposure using internal projections of currency trading transactions expected to arise over a period extending from 12 to 24 months. As at 30 September 2023, the Group had currency hedges in place extending up to 18 months forward.

For the full year 2023/24, our assessment of the currency impact is, based on hedges currently in place and forecast currency rates, a headwind of £11.8m to revenue, and £3.1m to profit. The currency headwind is in part due to a higher than anticipated exposure to the Japanese Yen. Forecast currency rates for the year on unhedged positions are: GBP:USD 1.23; GBP:EUR 1.15; GBP:JPY 185.

Looking further ahead to the financial year 2024/25, based on the above currency assumptions, we would expect currency effects to have a small tailwind of £2.2m to revenue and a £2.8m headwind to operating profit. Uncertain volume and timing of shipments and acceptances, currency mix and FX rate volatility, may significantly affect forecast currency outcomes.

Dividend

The Group's policy on the dividend takes into account changes to underlying earnings, dividend cover, movements in currency and demands on our cash. The Board remains confident in the long term performance of the business and has declared an interim dividend of 4.9p per share (2022: 4.6p per share), growth of 6.5%. The interim dividend will be paid on 12 January 2024 to shareholders on the register as at 1 December 2023.

Cash flow

The Group's cash flow is summarised below.

	Half year to 30 September 2023 £m	Half year to 30 September 2022 £m
Adjusted operating profit	**36.5**	36.8
Depreciation and amortisation	**5.4**	5.1
Adjusted[1] EBITDA	**41.9**	41.9
Working capital movement	**(31.6)**	(12.6)

Equity settled share schemes	**1.1**	1.2
Pension scheme payments above charge to operating profit	**(4.0)**	(3.9)
Cash from operations	**7.4**	26.6
Interest	**1.2**	0.1
Tax	**(7.9)**	(2.6)
Capitalised development expenditure	**(0.3)**	(0.1)
Expenditure on tangible and intangible assets	**(16.7)**	(11.5)
Dividends paid	**-**	(7.9)
Proceeds from issue of share capital and exercise of share options	**0.1**	-
Payments made in respect of lease liabilities	**(2.6)**	(1.5)
Decrease in borrowings	**(0.1)**	(0.1)
Net (decrease)/increase in cash and cash equivalents	**(18.9)**	**3.0**

1. Adjusted EBITDA is defined as adjusted operating profit before depreciation and amortisation of capitalised development costs. The consolidated statement of cash flows provides further analysis of the definition of adjusted EBITDA.

Cash from operations

Cash from operations of £7.4m (2022: £26.6m) represents negative cash conversion of 21% (2022: +47%). During the first half we incurred expenditure of £12.2m on the new semiconductor facility in Bristol, including new metrology tools. This amount also included £3.0m relating to the build-up of inventory ahead of the move of operations in the third quarter. Expenditure of £4.1m was incurred on the purchase and strip-out of a new facility in Belfast for our optical imaging and microscopy business, and the fit-out of a new office and customer demonstration centre in Tokyo. In addition, the business suffered from exceptional cash outflows of £6.3m in relation to export licence rejections and delays, covering the refund of customer deposits and a high level of finished goods awaiting export licence clearance. On a normalised basis, which excludes these items, cash conversion was 41% (2022: 65%). Cash conversion is defined as cash from operations before transaction costs and pension scheme payments above charge to operating profit, less capitalised development expenditure, capital expenditure and payments made in respect of lease liabilities divided by adjusted operating profit.

Reconciliation of cash generated from operations to adjusted operating cash flow	**Half year to 30 September 2023 £m**	Half year to 30 September 2022 £m
Cash from operations	**7.4**	26.6
Add back:		
Transaction costs	**0.7**	-
Pension scheme payments above charge to operating profit	**4.0**	3.9
Capitalised development expenditure	**(0.3)**	(0.1)
Expenditure on tangible and intangible assets	**(16.7)**	(11.5)
Payments made in respect of lease liabilities	**(2.6)**	(1.5)
Adjusted cash from operations	**(7.5)**	17.4
Cash conversion % (adjusted cash from operations/adjusted operating profit)	**(21%)**	47%
Cash conversion % (normalised[1])	**41%**	65%

1. Cash conversion calculated on a normalised basis excludes expenditure in the half year of £16.3m on capacity expansion and £6.3m relating to export licence refusals and delays.

Inventory levels have increased due to build costs incurred on long lead time new cryogenic platforms and accelerated raw material purchases ahead of an ERP implementation. In addition, we have made some strategic inventory purchases to avoid cost inflation.

Pension

Pension recovery payments above charge to operating profit total £4.0m (2022: £3.9m).

Interest

Net interest received was £1.2m (2022: £0.1m), reflecting an increase in interest rate on our cash balances.

Tax

Tax paid was £7.9m (2022: £2.6m); the increase primarily relating to higher payments on account following the increase in the UK corporation tax rate.

Investment in Research and Development (R&D)

Total cash spend on R&D in the half year was £19.7m, equivalent to 9.4% of sales (2022: £17.5m, 8.7% of sales). A reconciliation between the adjusted amounts charged to the consolidated statement of income and the cash spent is given below:

	Half year to 30 September 2023 £m	Half year to 30 September 2022 £m
R&D expense charged to the consolidated statement of income	**19.7**	18.2
Depreciation of R&D-related fixed assets	**-**	(0.2)
Amounts capitalised as fixed assets	**-**	-
Amortisation and impairment of R&D costs capitalised as intangibles	**(0.3)**	(0.6)
Amounts capitalised as intangible assets	**0.3**	0.1
Total cash spent on R&D during the year	**19.7**	17.5

Net cash and funding

Net cash

Cash from operations in the half year was offset by an increase in capital expenditure, resulting in a decrease in the Group's net cash position from £100.2m at 31 March 2023 to £79.1m on 30 September 2023.

To date we have incurred costs of £38.0m on the new semiconductor facility, which is expected to be complete by the end of the fiscal year. We expect further payments of approximately £5.3m in the second half of this year and £1.9m in Q1 25 to complete the project (including move and hook-up costs). We are in the early stages of a process to sell the current facility, with completion planned for H1 25. The estimated cost for the expansion in Belfast is not expected to exceed £15m; of which £2.1m has been incurred in H1 24, with the remainder to be phased over the next 24 months.

Movement in net cash	£m
Net cash after borrowings as at 31 March 2023	100.2
Cash generated from operations	7.4
Interest	1.2
Tax	(7.9)
Capitalised development expenditure	(0.3)
Capital expenditure on tangible and intangible assets	(16.7)
Payments made in respect of lease obligations	(2.6)
Dividend paid	-
Other items/FX	(2.2)
Net cash after borrowings as at 30 September 2023	**79.1**

Net cash including lease liabilities	**Half year to 30 September 2023 £m**	Half year to 30 September 2022 £m
Net cash after borrowings	**79.1**	97.1
Lease liabilities	**(34.8)**	(31.4)
Net cash and lease liabilities after borrowings	**44.3**	65.7

The increase in lease liabilities reflects the lease signed during the period for the new office and customer demonstration centre in Tokyo.

Funding

On 2 July 2018, the Group entered into an unsecured multi-currency revolving facility agreement, which is committed until June 2025. The facility has been entered into with two banks and comprises a Euro-denominated multi-currency facility of €50.0m (£43m) and a US Dollar-denominated multi-currency facility of $80.0m (£66m).

Debt covenants are net debt to EBITDA less than 3.0 times and EBITDA to interest greater than 4.0 times. At 30 September 2023 the business had net cash.

Pensions

The Group has a defined benefit pension scheme in the UK. This has been closed to new entrants since 2001 and closed to future accrual from 2010.

On an IAS 19 basis, the surplus arising from our defined benefit pension Scheme obligations on 30 September 2023 was £11.3m (31 March 2023: £26.4m). The Scheme's assets are hedged against gilt yields, whereas the accounting liabilities are valued based on corporate bond yields. Gilt rates have risen by more than corporate bond yields, which has resulted in the Scheme's assets falling more than the accounting liabilities, resulting in a smaller surplus. The value of scheme assets decreased to £218.5m (31 March 2023: £251.5m) and scheme liabilities decreased to £207.2m (31 March 2023: £225.1m).

The scheme's actuarial valuation review, rather than the accounting basis, determines our cash payments into the scheme. The cash contributions into the scheme are expected to continue until 2025/26, at which point we expect, based on current assumptions, the scheme to achieve self-sufficiency. The scheme rules provide that in the event of a surplus remaining after settling contractual obligations to members, the Group may determine how the surplus is utilised.

Going concern

The Group's business activities, together with the factors likely to affect its future development, performance and position, are set out in the performance highlights, Chief Executive Officer's review and operations review sections of this half year report. The financial position of the Group, its cash flows, liquidity position and borrowing facilities are described in the finance review.

Trading for the Group has been good during the half year. The Group has prepared and reviewed a number of scenarios for the Group based on key risks noted for the business and the potential impact on orders, trading and cash flow performance. In addition, the Group has overlaid the risk of long-term adverse movements in currency rates to our cash flow forecasts. The Board is satisfied, having considered the sensitivity analysis, as well as its funding facilities, that the Group has adequate resources to continue in operational existence for at least 12 months from the data of the interim financial statements.

Forward-looking statements

This document contains certain forward-looking statements. The forward-looking statements reflect the knowledge and information available to the company during the preparation and up to the publication of this document. By their very nature, these statements depend upon circumstances and relate to events that may occur in the future, thereby involving a degree of uncertainty. Therefore, nothing in this document should be construed as a profit forecast by the company.

Gavin Hill
Chief Financial Officer

13 November 2023

Condensed consolidated statement of income

Half year ended 30 September 2023

		Half year to 30 September 2023			Half year to 30 September 2022		
		Adjusted	**Adjusting items(1)**	**Total**	Adjusted	Adjusting items(1)	Total
	Note	**£m**	**£m**	**£m**	£m	£m	£m
Revenue	4	**209.7**	**-**	**209.7**	200.5	-	200.5
Cost of sales		**(98.7)**	**-**	**(98.7)**	(96.4)	-	(96.4)

Gross profit		**111.0**	**-**	**111.0**	104.1	-	104.1
Research and development	5	**(19.7)**	**-**	**(19.7)**	(18.2)	-	(18.2)
Selling and marketing		**(34.2)**	**-**	**(34.2)**	(29.2)	-	(29.2)
Administration and shared services		**(28.2)**	**(5.5)**	**(33.7)**	(23.1)	(4.4)	(27.5)
Foreign exchange gain/(loss)		**7.6**	**(2.4)**	**5.2**	3.2	(6.1)	(2.9)
Operating profit		**36.5**	**(7.9)**	**28.6**	36.8	(10.5)	26.3
Financial income		**1.9**	**-**	**1.9**	0.9	-	0.9
Financial expenditure		**(0.9)**	**-**	**(0.9)**	(0.4)	(0.2)	(0.6)
Profit before income tax	4	**37.5**	**(7.9)**	**29.6**	37.3	(10.7)	26.6
Income tax expense		**(9.0)**	**1.7**	**(7.3)**	(8.0)	2.1	(5.9)
Profit for the period attributable to equity Shareholders of the parent		**28.5**	**(6.2)**	**22.3**	29.3	(8.6)	20.7

Earnings per share		**pence**		**pence**	pence		pence
Basic earnings per share	3						
From profit for the period		**49.4**		**38.6**	50.8		35.9
Diluted earnings per share	3						
From profit for the period		**48.7**		**38.1**	50.2		35.4

(1) Adjusted numbers are stated to give a better understanding of the underlying business performance. Details of adjusting items can be found in Note 2.

Condensed consolidated statement of income *(continued)*

Half year ended 30 September 2023

		Year to 31 March 2023		
		Adjusted	*Adjusting items(1)*	*Total*
	Note	*£m*	*£m*	*£m*
Revenue	4	*444.7*	-	*444.7*
Cost of sales		*(214.5)*	-	*(214.5)*
Gross profit		*230.2*	-	*230.2*

Research and development	5	*(35.9)*	*(0.8)*	*(36.7)*
Selling and marketing		*(65.4)*	*-*	*(65.4)*
Administration and shared services		*(52.9)*	*(10.3)*	*(63.2)*
Foreign exchange gain		*4.5*	*3.0*	*7.5*
Operating profit		*80.5*	*(8.1)*	*72.4*
Financial income		*2.7*	*-*	*2.7*
Financial expenditure		*(1.2)*	*(0.4)*	*(1.6)*
Profit before income tax	4	*82.0*	*(8.5)*	*73.5*
Income tax expense		*(17.0)*	*2.1*	*(14.9)*
Profit for the period attributable to equity Shareholders of the parent		*65.0*	*(6.4)*	*58.6*

Earnings per share		*pence*		*pence*
Basic earnings per share	3			
From profit for the period		*112.7*		*101.6*
Diluted earnings per share	3			
From profit for the period		*111.3*		*100.3*

(1) Adjusted numbers are stated to give a better understanding of the underlying business performance. Details of adjusting items can be found in Note 2.

Condensed consolidated statement of comprehensive income

Half year ended 30 September 2023

	Half year to 30 September 2023 £m	Half year to 30 September 2022 £m	*Year to 31 March 2023 £m*
Profit for the period	**22.3**	20.7	*58.6*
Other comprehensive (expense)/income:			
Items that may be reclassified subsequently to condensed consolidated statement of income			

Foreign exchange translation differences	**(0.2)**	9.1	*5.3*
Items that will not be reclassified to condensed consolidated statement of income			
Remeasurement loss in respect of post-retirement benefits	**(19.4)**	(31.8)	*(38.6)*
Tax credit on items that will not be reclassified to condensed consolidated statement of income	**4.8**	7.9	*9.7*
Total other comprehensive expense	**(14.8)**	(14.8)	*(23.6)*
Total comprehensive income for the period attributable to equity Shareholders of the parent	**7.5**	5.9	*35.0*

Condensed consolidated statement of financial position

As at 30 September 2023

	Note	**As at 30 September 2023 £m**	As at 30 September 2022 as restated(1) £m	*As at 31 March 2023 £m*
Assets				
Non-current assets				
Property, plant and equipment		**73.1**	41.0	*59.3*
Right-of-use assets		**34.5**	31.1	*31.4*
Intangible assets		**127.3**	138.4	*132.1*
Long-term receivables		**1.2**	0.1	*0.5*
Derivative financial instruments	8	**-**	0.1	*0.4*
Retirement benefit asset		**11.3**	24.5	*26.4*

Deferred tax assets		**12.6**	14.1	*12.5*
		260.0	249.3	*262.6*
Current assets				
Inventories		**104.1**	79.5	*81.4*
Trade and other receivables		**107.2**	102.7	*113.2*
Current income tax receivable		**0.8**	0.9	*0.5*
Derivative financial instruments	8	**2.3**	0.1	*1.6*
Cash and cash equivalents		**101.7**	118.9	*112.7*
		316.1	302.1	*309.4*
Total assets		**576.1**	551.4	*572.0*
Equity				
Capital and reserves attributable to the company's equity shareholders				
Share capital		**2.9**	2.9	*2.9*
Share premium		**62.6**	62.5	*62.6*
Other reserves		**0.2**	0.2	*0.2*
Translation reserve		**12.7**	16.7	*12.9*
Retained earnings		**273.2**	233.3	*265.4*
		351.6	315.6	*344.0*
Liabilities				
Non-current liabilities				
Bank loans		**0.7**	1.1	*0.9*
Lease payables		**29.8**	27.2	*26.2*
Derivative financial instruments	8	**0.4**	1.2	-
Provisions		**-**	0.1	-
Deferred tax liabilities		**3.9**	7.5	*7.8*
		34.8	37.1	*34.9*
Current liabilities				
Bank loans and overdrafts		**21.9**	20.7	*11.6*
Trade and other payables		**149.0**	152.3	*159.4*
Lease payables		**5.0**	4.2	*5.2*
Current income tax payables		**7.2**	6.7	*8.1*
Derivative financial instruments	8	**0.9**	7.8	*1.2*
Provisions		**5.7**	7.0	*7.6*
		189.7	198.7	*193.1*
Total liabilities		**224.5**	235.8	*228.0*
Total liabilities and equity		**576.1**	551.4	*572.0*

(1) Details of restatement of prior period numbers can be found in note 1.

Condensed consolidated statement of changes in equity

Half year ended 30 September 2023

	Share capital £m	Share premium £m	Other reserves £m	Translation reserve £m	Retained earnings £m	Total £m
As at 1 April 2023	**2.9**	**62.6**	**0.2**	**12.9**	**265.4**	**344.0**
Total comprehensive (expense)/income:						
Profit for the period	**-**	**-**	**-**	**-**	**22.3**	**22.3**
Other comprehensive (expense)/income:						
- Foreign exchange translation differences	**-**	**-**	**-**	**(0.2)**	**-**	**(0.2)**
- Remeasurement loss in respect of post-retirement benefits	**-**	**-**	**-**	**-**	**(19.4)**	**(19.4)**

- Tax credit on items that will not be reclassified to Consolidated Statement of Income	**-**	**-**	**-**	**-**	**4.8**	**4.8**
Total comprehensive(expense)/income attributable to equity Shareholders of the parent	**-**	**-**	**-**	**(0.2)**	**7.7**	**7.5**
Transactions with owners recorded directly in equity:						
- Credit in respect of employee service costs settled by award of share options	**-**	**-**	**-**	**-**	**1.1**	**1.1**
- Tax charge in respect of share options	**-**	**-**	**-**	**-**	**(1.0)**	**(1.0)**
Total transactions with owners recorded directly in equity:	**-**	**-**	**-**	**-**	**0.1**	**0.1**
As at 30 September 2023	**2.9**	**62.6**	**0.2**	**12.7**	**273.2**	**351.6**

As at 1 April 2022	2.9	62.5	0.2	7.6	243.2	316.4
Total comprehensive income/(expense):						
Profit for the period	-	-	-	-	20.7	20.7
Other comprehensive income/(expense):						
- Foreign exchange translation differences	-	-	-	9.1	-	9.1
- Remeasurement loss in respect of post-retirement benefits	-	-	-	-	(31.8)	(31.8)
- Tax credit on items that will not be reclassified to Consolidated Statement of Income	-	-	-	-	7.9	7.9
Total comprehensive income/(expense) attributable to equity Shareholders of the parent	-	-	-	9.1	(3.2)	5.9
Transactions with owners recorded directly in equity:						
- Credit in respect of employee service costs settled by award of share options	-	-	-	-	1.2	1.2
- Dividends	-	-	-	-	(7.9)	(7.9)
Total transactions with owners recorded directly in equity:	-	-	-	-	(6.7)	(6.7)
As at 30 September 2022	2.9	62.5	0.2	16.7	233.3	315.6

Condensed consolidated statement of changes in equity *(continued)*

Half year ended 30 September 2023

	Share capital £m	*Share premium £m*	*Other reserves £m*	*Translation reserve £m*	*Retained earnings £m*	*Total £m*
As at 1 April 2022	*2.9*	*62.5*	*0.2*	*7.6*	*243.2*	*316.4*
Total comprehensive income/(expense):						
Profit for the period	-	-	-	-	*58.6*	*58.6*
Other comprehensive income/(expense):						
- Foreign exchange translation differences	-	-	-	*5.3*	-	*5.3*
- Remeasurement loss in respect of post-retirement benefits	-	-	-	-	*(38.6)*	*(38.6)*

- Tax credit on items that will not be reclassified to Consolidated Statement of Income	-	-	-	-	*9.7*	*9.7*
Total comprehensive income attributable to equity Shareholders of the parent	-	-	-	*5.3*	*29.7*	*35.0*
Transactions with owners recorded directly in equity:						
- Credit in respect of employee service costs settled by award of share options	-	-	-	-	*2.4*	*2.4*
- Tax credit in respect of share options	-	-	-	-	*0.7*	*0.7*
- Proceeds from shares issued	-	*0.1*	-	-	-	*0.1*
- Dividends	-	-	-	-	*(10.6)*	*(10.6)*
Total transactions with owners recorded directly in equity:	-	*0.1*	-	-	*(7.5)*	*(7.4)*
As at 31 March 2023	*2.9*	*62.6*	*0.2*	*12.9*	*265.4*	*344.0*

Other reserves comprise the capital redemption reserve, which represents the nominal value of shares repurchased and then cancelled during the year ended 31 March 1999.

The foreign exchange translation reserve comprises all foreign exchange differences arising since 1 April 2004 from the translation of the Group's net investments in foreign subsidiaries into Sterling.

Condensed consolidated statement of cash flows

Half year ended 30 September 2023

	Half year to 30 September 2023 £m	Half year to 30 September 2022 as restated(1) £m	*Year to 31 March 2023 £m*
Profit for the period	**22.3**	20.7	*58.6*
Adjustments for:			
Income tax expense	**7.3**	5.9	*14.9*
Net financial income	**(1.0)**	(0.3)	*(1.1)*
Fair value movement on financial derivatives	**2.4**	6.1	*(3.0)*
Release of provision on disposal	**-**	(0.4)	*(0.4)*
WITec post-acquisition gross margin adjustment	**-**	0.5	*0.5*
Transaction related costs	**0.7**	-	-
Restructuring costs	**-**	-	*0.4*

Intellectual property litigation costs	**0.2**	-	*0.5*
Impairment of capitalised development costs	**-**	-	*0.8*
Amortisation and impairment of acquired intangibles	**4.6**	4.3	*9.3*
Depreciation of right-of-use assets	**2.7**	1.9	*4.6*
Depreciation of property, plant and equipment	**2.4**	2.6	*4.8*
Amortisation of capitalised development costs	**0.3**	0.6	*1.4*
Adjusted earnings before interest, tax, depreciation and amortisation	**41.9**	41.9	*91.3*
Charge in respect of equity settled employee share schemes	**1.1**	1.2	*2.4*
Cash payments to the pension scheme more than the charge to operating profit	**(4.0)**	(3.9)	*(11.7)*
Operating cash flows before movements in working capital	**39.0**	39.2	*82.0*
Increase in inventories	**(22.9)**	(12.8)	*(15.6)*
Decrease/(increase) in receivables	**3.8**	(8.3)	*(19.6)*
(Decrease)/increase in payables and provisions	**(18.1)**	(5.3)	*16.9*
Increase in customer deposits	**5.6**	13.8	*9.2*
Cash generated from operations	**7.4**	26.6	*72.9*
Interest paid	**(0.5)**	-	*(0.7)*
Income taxes paid	**(7.9)**	(2.6)	*(5.7)*
Net cash (used by)/from operating activities	**(1.0)**	24.0	*66.5*
Cash flows from investing activities			
Proceeds from sale of property, plant and equipment	**0.1**	0.1	*0.2*
Acquisition of property, plant and equipment	**(16.5)**	(11.6)	*(32.3)*
Acquisition of subsidiaries, net of cash acquired	**-**	-	*(4.8)*
Acquisition of intangible assets	**(0.3)**	-	*-*
Capitalised development expenditure	**(0.3)**	(0.1)	*(0.6)*
Interest received	**1.7**	0.1	*1.1*
Net cash used in investing activities	**(15.3)**	**(11.5)**	**(36.4)**
Cash flows from financing activities			
Proceeds from issue of share capital	**0.1**	-	*0.1*
Interest paid on lease payables	**(0.4)**	(0.3)	*(0.5)*
Repayment of lease payables	**(2.2)**	(1.2)	*(5.1)*
Repayment of borrowings	**(0.1)**	(0.1)	*(0.5)*
Dividends paid	**-**	(7.9)	*(10.6)*
Net cash used in financing activities	**(2.6)**	(9.5)	*(16.6)*
Net (decrease)/increase in cash and cash equivalents	**(18.9)**	3.0	*13.5*
Cash and cash equivalents at the beginning of the period	**101.5**	87.7	*87.7*
Effect of exchange rate fluctuations on cash held	**(2.3)**	8.0	*0.3*
Cash and cash equivalents at the end of the period	**80.3**	98.7	*101.5*
Comprised of:			
Cash and cash equivalents as per the consolidated statement of financial position	**101.7**	118.9	*112.7*
Bank overdrafts	**(21.4)**	(20.2)	*(11.2)*
	80.3	98.7	*101.5*

(1) Details of restatement of prior period numbers can be found in note 1.

Notes to the half-year financial statements

Half year ended 30 September 2023

1 Basis of preparation

Reporting entity

Oxford Instruments plc is a company incorporated in England and Wales. The condensed consolidated half-year financial statements consolidate the results of the Company and its subsidiaries (together referred to as the "Group"). They have been prepared and approved by the Directors in accordance with International Financial Reporting Standard ("IFRS") IAS 34 *Interim Financial Reporting* as adopted by the UK. They do not include all of the information required for full annual financial statements and should be read in conjunction with the consolidated Financial Statements of the Group for the year ended 31 March 2023.

The financial information contained herein is unaudited and does not constitute statutory accounts as defined by Section 435 of the Companies Act 2006. The comparative figures for the financial year ended 31 March 2023 are not the Company's statutory accounts for that financial year. Those accounts have been reported on by the Company's auditors and delivered to the registrar of companies. The report of the auditors was (i) unqualified, (ii) did not include a reference to any matters to which the auditors drew attention by way of emphasis without qualifying their report, and (iii) did not contain a statement under Section 498 (2) or (3) of the Companies Act 2006.

The Board of Directors approved the Condensed Consolidated Interim Financial Statements on 13 November 2023.

Significant accounting policies

As required by the Disclosure Guidance and Transparency Rules of the Financial Conduct Authority, the condensed set of Financial Statements has been prepared applying the accounting policies and presentation that were applied in the preparation of the Company's published consolidated financial statements for the year ended 31 March 2023.

Prior period restatement

As reported in the statutory accounts for the year ended 31 March 2023, a restatement has been made for the presentation of receivable and payable balances in the prior year.

The Directors concluded that separate value-added tax (VAT) receivable and payable balances, within the same VAT group, or within individual registrations, of group entities, held on the condensed consolidated statement of financial position at 31 September 2022 should have been netted off with one another, rather than presented gross.

As a result, the condensed consolidated statement of financial position as at 30 September 2022 and condensed consolidated statement of cash flows for the period ended 30 September 2022 has been restated as follows:

	30 September 2022 (as reported) £m	Restatement £m	30 September 2022 (restated) £m
Condensed consolidated statement of financial position			
Current assets			
Trade and other receivables	118.2	(15.5)	102.7
Current liabilities			
Trade and other payables	(167.8)	15.5	(152.3)
Condensed consolidated statement of cash flows			
Increase in receivables	(13.9)	5.6	(8.3)
Increase/(decrease) in payables and provisions	0.3	(5.6)	(5.3)

The restatement did not result in any change to reported profit, earnings per share, net assets or net cash from operating activities reported in the 2022 half-year financial statements.

Changes in accounting standards

IFRS 17 *Insurance Contracts* provides consistent principles for all aspects of accounting for insurance contracts within the scope of the standard. The standard is effective for years beginning on or after 1 January 2023 with a requirement to restate comparatives.

The Group has reviewed whether its arrangements meet the accounting definition of an insurance contract. While some contracts may transfer an element of insurance risk, they relate to warranty and service type agreements that are issued in connection with the Group's sales of its goods or services and therefore will continue to be measured under IFRS 15 *Revenue from Contracts with Customers* and IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*.

Parent company financial guarantees, meet the IFRS 17 definition of insurance contracts. Whilst there could be an impact on individual sets of financial statements of companies within the Group these have not impacted the condensed consolidated interim financial statements for the period to 30 September 2023 and are not expected to have an impact for the full year. The Directors are not aware of any other contracts where IFRS 17 would have an impact on the condensed consolidated interim financial statements.

IAS 12 *Income Taxes* has been amended to incorporate revisions for 'deferred tax related to assets and liabilities arising from a single transaction' and 'international tax reform: pillar two model rules'. There is no material impact on the Group as a result of the amendments.

Estimates

The preparation of half-year financial statements requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities, income and expense. Actual results may differ from these estimates.

In preparing these half-year financial statements, the significant judgements made by management in applying the Group's accounting policies and key sources of estimation uncertainty were the same as those that applied to the consolidated financial statements as at and for the year ended 31 March 2023.

Going concern

The Directors have considered the adoption of the going concern basis of preparation for these half-year financial statements. The Directors have reviewed cash flow forecasts prepared for a period of 18 months from the date of approval of these condensed accounts.

At the end of the reporting period the Group had £188.0m of available liquidity including £79.1m of net cash and £108.9m of the undrawn revolving credit facility ('RCF'). In reviewing the cash flow forecasts the Directors considered the current trading position of the Group and the likely capital expenditure and working capital requirements. Trading for the Group has been good during the first half year, though because of significant capital expenditure and exceptional export licence rejection and delays we have reported a negative cash flow conversion (-21%). On a normalised basis, which excludes these items, cash conversion was 40%. The Group has prepared and reviewed a number of scenarios for the Group based on key risks noted for the business and the potential impact on orders, trading and cash flow performance. In addition, the Group has overlaid the risk of long-term adverse movements in currency rates to our cash flow forecasts. The cashflow forecasts show that the Group expects to comply with the covenants included within the RCF agreement throughout the review period.

Taking into account the current cash level and the committed facilities the Directors are confident that the Group will have sufficient funds to allow it to continue to operate. After reviewing the projections and sensitivity analysis the Directors believe that it is appropriate to prepare the half-year financial statements on a going concern basis.

2 Non-GAAP measures

In the preparation of adjusted numbers, the Directors exclude certain items in order to assist with comparability between peers and to give what they consider to be a better indication of the underlying performance of the business. These adjusting items are excluded in the calculation of adjusted operating profit, adjusted profit before tax, adjusted profit for the period, adjusted EBITDA, adjusted EPS, adjusted cash conversion and adjusted effective tax rate. Details of adjusting items are given below.

Adjusted EBITDA is calculated by adding back depreciation of property, plant and equipment, depreciation of right-of-use assets and amortisation of intangible assets to adjusted operating profit, and can be found in the condensed consolidated statement of cash flows. The calculation of adjusted EPS can be found in Note 3. Adjusted effective tax rate is calculated by dividing the share of tax attributable to adjusted profit before tax by adjusted profit before tax. The definition of cash conversion is set out in the Finance Review.

Reconciliation between operating profit and profit before income tax and adjusted profit

	Half year to 30 September 2023		Half year to 30 September 2022		*Year to 31 March 2023*	
	Operating profit £m	**Profit before income tax £m**	Operating profit £m	Profit before income tax £m	*Operating profit £m*	*Profit before income tax £m*
Statutory measure	**28.6**	**29.6**	26.3	26.6	*72.4*	*73.5*
Release of provision on disposal	**-**	**-**	(0.4)	(0.4)	*(0.4)*	*(0.4)*
Transaction related costs	**0.7**	**0.7**	-	-	-	-
WITec post-acquisition gross margin adjustment	**-**	**-**	0.5	0.5	*0.5*	*0.5*
Restructuring costs	**-**	**-**	-	-	*0.4*	*0.4*
Intellectual property litigation costs	**0.2**	**0.2**	-	-	*0.5*	*0.5*
Impairment of capitalised development costs	**-**	**-**	-	-	*0.8*	*0.8*

Amortisation and impairment of acquired intangibles	**4.6**	**4.6**	4.3	4.3	*9.3*	*9.3*
Fair value movement on financial derivatives	**2.4**	**2.4**	6.1	6.1	*(3.0)*	*(3.0)*
Unwind of discount in respect of contingent consideration		**-**		0.2		*0.4*
Total non-GAAP adjustments	**7.9**	**7.9**	10.5	10.7	*8.1*	*8.5*
Adjusted measure	**36.5**	**37.5**	36.8	37.3	*80.5*	*82.0*
Adjusted income tax expense		**(9.0)**		(8.0)		*(17.0)*
Adjusted profit for the period	**36.5**	**28.5**	36.8	29.3	*80.5*	*65.0*
Adjusted effective tax rates		**24.0%**		21.4%		20.7%

Release of provision on disposal

These represent the release of the provision on disposal of the OI Healthcare business in the US in 2020.

Transaction related costs

These represent the costs of one-off charges incurred at the balance sheet date relating to transactional work.

WITec post-acquisition gross margin adjustment

The finished goods and work in progress inventories were revalued to fair value, based on selling price less costs to sell. The adjustments in the prior periods relate to the gross margin which would have been earned on post-acquisition sales to 31 March 2023, but which has been absorbed into the acquisition date fair value. This will not recur, as all such inventory at the acquisition date had been delivered to customers by 31 March 2023.

Restructuring costs

These represent the costs of one-off restructuring charges within the Materials & Characterisation segment in the prior period.

Intellectual property litigation costs

These represent one-off legal costs in the Research & Discovery segment to defend our intellectual property.

Impairment of capitalised development costs

During the prior year, the Group reviewed the capitalised development costs to ensure they remained directly related to targeted product or software developments. The one-off non-cash impairment relates to delays in market launch of specific development projects within the Materials & Characterisation segment.

Amortisation and impairment of acquired intangibles

Adjusted profit excludes the non-cash amortisation and impairment of acquired intangible assets and goodwill.

Fair value movement on financial derivatives

Under IFRS 9, all derivative financial instruments are recognised initially at fair value. Subsequent to initial recognition, they are also measured at fair value. In respect of instruments used to hedge foreign exchange risk and interest rate risk, the Group does not take advantage of the hedge accounting rules provided for in IFRS 9 since that standard requires certain stringent criteria to be met in order to hedge account, which, in the particular circumstances of the Group, are considered by the Board not to bring any significant economic benefit. Accordingly, the Group accounts for these derivative financial instruments at fair value through profit or loss. To the extent that instruments are hedges of future transactions, adjusted profit for the period is stated before changes in the valuation of these instruments so that the underlying performance of the Group can be more clearly seen.

Unwind of discount in respect of contingent consideration

Adjusted profit in the prior periods exclude the unwind of the discount in respect of the contingent consideration on the acquisition of WITec.

Adjusted income tax expense

Adjusting items include the income tax on each of the items described above.

Reconciliation of changes in cash and cash equivalents to movement in net cash

	Half year to 30 September 2023 £m	Half year to 30 September 2022 £m	*Year to 31 March 2023 £m*
Net (decrease)/increase in cash and cash equivalents	**(18.9)**	3.0	*13.5*
Effect of exchange rate fluctuations on cash held	**(2.3)**	8.0	*0.3*
Movement in net cash in the period	**(21.2)**	11.0	*13.8*

Repayment of borrowings	**0.1**	0.2	*0.5*
Net cash after borrowings at the start of the period	**100.2**	85.9	*85.9*
Net cash after borrowings at the end of the period	**79.1**	97.1	*100.2*

Reconciliation of net cash to Statement of Financial Position

	Half year to 30 September 2023 £m	Half year to 30 September 2022 £m	*Year to 31 March 2023 £m*
Covid-19 loan at WITec	**(1.2)**	(1.6)	*(1.3)*
Overdrafts	**(21.4)**	(20.2)	*(11.2)*
Cash and cash equivalents	**101.7**	118.9	*112.7*
Net cash after borrowings at the end of the period	*79.1*	*97.1*	*100.2*

3 Earnings per share

Basic earnings per ordinary share (EPS) is calculated by dividing the profit attributable to equity shareholders of the parent by the weighted average number of ordinary shares in issue during the period. The weighted average number of shares used in the calculation is as follows:

	Half year to 30 September 2023 Shares million	Half year to 30 September 2022 Shares million	*Year to 31 March 2023 Shares million*
Weighted average number of shares used in calculation of basic earnings per share	**57.7**	57.7	*57.7*

For the purposes of calculating diluted and diluted adjusted EPS, the weighted average number of ordinary shares is adjusted to include the weighted average number of ordinary shares that would be issued on the conversion of all potentially dilutive ordinary shares expected to vest, relating to the company's share-based payment plans. Potential ordinary shares are only treated as dilutive when their conversion to ordinary shares would decrease EPS.

The following table shows the effect of share options on the calculation of diluted earnings per share:

	Half year to 30 September 2023 Shares million	Half year to 30 September 2022 Shares million	*Year to 31 March 2023 Shares million*
Number of ordinary shares per basic earnings per share calculations	**57.7**	57.7	*57.7*
Effect of shares under option	**0.8**	0.7	*0.7*
Number of ordinary shares per diluted earnings per share calculations	**58.5**	58.4	*58.4*

Basic and diluted EPS are based on the profit for the period attributable to equity shareholders of the parent, as reported in the condensed consolidated statement of income. Adjusted and diluted adjusted EPS are based on adjusted profit for the period, as reported in Note 2:

	Half year to 30 September 2023		Half year to 30 September 2022		*Year to 31 March 2023*	
	£m	**Pence**	£m	Pence	*£m*	*Pence*

Underlying profit attributable to equity shareholders of the parent/Underlying EPS	**22.3**	***38.6***	20.7	*35.9*	*58.6*	*101.6*
Total underlying adjustments to profit before tax (Note 2)	**7.9**	**13.7**	10.7	18.5	*8.5*	*14.7*
Related tax effects	**(1.7)**	**(2.9)**	(2.1)	(3.6)	*(2.1)*	*(3.6)*
Adjusted profit attributable to equity shareholders of the parent/adjusted EPS	**28.5**	**49.4**	29.3	50.8	*65.0*	*112.7*
Diluted underlying EPS		**38.1**		35.4		*100.3*
Diluted adjusted EPS		**48.7**		50.2		*111.3*

4 Segment information

The Group has nine operating segments. These operating segments have been combined into three aggregated operating segments to the extent that they have similar economic characteristics, with relevance to products and services, type and class of customer, methods of sale and distribution and the regulatory environment in which they operate. Each of these three aggregated operating segments is a reportable segment. The aggregated operating segments are as follows:

- the Materials & Characterisation segment comprises a group of businesses focusing on applied R&D and commercial customers, enabling the fabrication and characterisation of materials and devices down to the atomic scale,

- the Research & Discovery segment comprises a group of businesses providing advanced solutions that create unique environments and enable measurements down to the molecular and atomic level which are used in fundamental research; and

- the Service & Healthcare segment provides customer service and support for the Group's products and the service of third-party healthcare imaging systems.

The Group's internal management structure and financial reporting systems reflect the three aggregated operating segments based on the economic characteristics discussed above.

Reportable segment results include items directly attributable to a segment as well as those which can be allocated on a reasonable basis. The operating results of each are regularly reviewed by the Chief Operating Decision Maker, which is deemed to be the Board of Directors. Discrete financial information is available for each segment and used by the Board of Directors for decisions on resource allocation and to assess performance. No asset information is presented below as this information is not presented in reporting to the Group's Board of Directors.

Results

Half year to 30 September 2023	**Materials & Characterisation £m**	**Research & Discovery £m**	**Service & Healthcare £m**	**Total £m**
Total segment revenue	**109.3**	**66.6**	**33.8**	**209.7**
Segment adjusted operating profit	**17.4**	**9.6**	**9.5**	**36.5**

Half year to 30 September 2022	Materials & Characterisation £m	Research & Discovery £m	Service & Healthcare £m	Total £m
Total segment revenue	108.7	58.1	33.7	200.5
Segment adjusted operating profit	18.9	7.0	10.9	36.8

Year to 31 March 2023	*Materials & Characterisation £m*	*Research & Discovery £m*	*Service & Healthcare £m*	*Total £m*
Total segment revenue	*234.5*	*139.4*	*70.8*	*444.7*
Segment adjusted operating profit	*40.5*	*18.0*	*22.0*	*80.5*

Revenue in the Materials & Characterisation and Research & Discovery segments relates to the sale of products. Revenue in the Service & Healthcare segment relates to service income.

Reconciliation of reportable segment profit

Half year to 30 September 2023	**Materials & Characterisation £m**	**Research & Discovery £m**	**Service & Healthcare £m**	**Unallocated Group items £m**	**Total £m**
Segment adjusted operating profit	**17.4**	**9.6**	**9.5**	**-**	**36.5**
Transaction related costs	**-**	**(0.7)**	**-**	**-**	**(0.7)**
Intellectual property litigation costs	**-**	**(0.2)**	**-**	**-**	**(0.2)**
Amortisation and impairment of acquired intangibles	**(1.5)**	**(3.1)**	**-**	**-**	**(4.6)**
Fair value movement on financial derivatives	**-**	**-**	**-**	**(2.4)**	**(2.4)**
Financial income	**-**	**-**	**-**	**1.9**	**1.9**
Financial expenditure	**-**	**-**	**-**	**(0.9)**	**(0.9)**
Profit/(loss) before income tax	**15.9**	**5.6**	**9.5**	**(1.4)**	**29.6**

Half year to 30 September 2022	Materials & Characterisation £m	Research & Discovery £m	Service & Healthcare £m	Unallocated Group items £m	Total £m
Segment adjusted operating profit	18.9	7.0	10.9	-	36.8
Release of provision on disposal	-	-	0.4	-	0.4
WITec post-acquisition gross margin adjustment	(0.5)	-	-	-	(0.5)
Amortisation and impairment of acquired intangibles	(1.2)	(3.1)	-	-	(4.3)
Fair value movement on financial derivatives	-	-	-	(6.1)	(6.1)
Financial income	-	-	-	0.9	0.9
Financial expenditure	-	-	-	(0.6)	(0.6)
Profit/(loss) before income tax	17.2	3.9	11.3	(5.8)	26.6

Year to 31 March 2023	*Materials & Characterisation £m*	*Research & Discovery £m*	*Service & Healthcare £m*	*Unallocated Group items £m*	*Total £m*
Segment adjusted operating profit	*40.5*	*18.0*	*22.0*	*-*	*80.5*
Restructuring Costs	*(0.4)*	*-*	*-*	*-*	*(0.4)*
Release of provision on disposal	*-*	*-*	*0.4*	*-*	*0.4*
Intellectual property litigation costs	*-*	*(0.5)*	*-*	*-*	*(0.5)*
Impairment of capitalised development costs	*(0.8)*	*-*	*-*	*-*	*(0.8)*
WITec post-acquisition gross margin adjustment	*(0.5)*	*-*	*-*	*-*	*(0.5)*
Amortisation and impairment of acquired intangibles	*(3.1)*	*(6.2)*	*-*	*-*	*(9.3)*
Fair value movement on financial derivatives	*-*	*-*	*-*	*3.0*	*3.0*
Financial income	*-*	*-*	*-*	*2.7*	*2.7*
Financial expenditure	*-*	*-*	*-*	*(1.6)*	*(1.6)*
Profit before income tax	*35.7*	*11.3*	*22.4*	*4.1*	*73.5*

Revenue	**Half year to 30 September 2023 £m**	Half year to 30 September 2022 £m	Year to 31 March 2023 £m
UK	**12.8**	10.4	29.4
China	**65.1**	56.8	107.4
Japan	**16.0**	16.8	46.7
USA	**51.2**	55.2	121.2
Germany	**15.4**	14.9	32.1
Rest of Europe	**20.7**	18.1	43.4
Rest of Asia	**20.5**	23.6	47.1
Rest of World	**8.0**	4.7	17.4
Total	**209.7**	200.5	444.7

5 Research and development (R&D)

The total research and development spend by the Group is as follows:

	Half year to 30 September 2023 £m	Half year to 30 September 2022 £m	*Year to 31 March 2023 £m*
R&D expense charged to the Consolidated Statement of Income	**19.7**	18.2	*36.7*
Less: depreciation of R&D-related fixed assets	**-**	(0.2)	*(0.3)*
Add: amounts capitalised as fixed assets	**-**	-	-
Less: amortisation of R&D costs previously capitalised as intangibles	**(0.3)**	(0.6)	*(2.2)*
Add: amounts capitalised as intangible assets	**0.3**	0.1	*0.6*
Total cash spent on R&D during the year	**19.7**	17.5	*34.8*

6 Taxation

The total effective tax rate on profits for the half year is 24.7% (2022: 22.2%). The weighted average tax rate in respect of adjusted profit before tax (see Note 2) for the half year is 24.0% (2022: 21.4%).

For the full year the Group expects the tax rate in respect of adjusted profit before tax to be 24.2%.

7 Dividends per share

The following dividends per share were paid by the Group:

	Half year to 30 September 2023 pence	Half year to 30 September 2022 pence	*Year to 31 March 2023 pence*
Previous period final dividend	**-**	13.7	*13.7*
Current period interim dividend	**-**	-	*4.6*
	-	13.7	18.3

The following dividends per share were proposed by the Group in respect of each accounting period presented:

	Half year to 30 September 2023 pence	Half year to 30 September 2022 pence	*Year to 31 March 2023 pence*
Interim dividend	**4.9**	4.6	4.6

Final dividend	**-**	-	14.9
	4.9	4.6	19.5

The interim dividend for the year to 31 March 2023 of 4.6 pence was approved by a sub-committee of the Board on 7 November 2022 and was paid on 13 January 2023. The final dividend for the year to 31 March 2023 of 14.9 pence was approved by Shareholders at the Annual General Meeting on 19 September 2023 and was paid on 12 October 2023.

The interim dividend for the year to 31 March 2024 of 4.9 pence per share was approved by a sub-committee of the Board on 7 November 2023 and has not been included as a liability as at 30 September 2023. The interim dividend is expected to be paid on 12 January 2024 to Shareholders on the register on the record date of 1 December 2023, with an ex-dividend date of 30 November 2023 and with the last date of election for the Dividend Reinvestment Plan (DRIP) being 19 December 2023.

8 Financial instruments

Fair values of financial assets and liabilities

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy. It does not include fair value information for financial assets and financial liabilities not measured at fair value if the carrying amount is a reasonable approximation of fair value.

		As at 30 September 2023		As at 30 September 2022 as restated (1,2)		*As at 31 March 2023 as restated (2)*	
	Fair value hierarchy	**Carrying amount £m**	**Fair value £m**	Carrying amount £m	Fair value £m	*Carrying amount £m*	*Fair value £m*
Assets carried at amortised cost							
Long-term receivables		**1.2**		0.1		*0.5*	
Trade receivables		**82.0**		86.2		*92.4*	
Other receivables and accrued income		**11.1**		6.0		*8.4*	
Cash and cash equivalents		**101.7**		118.9		*112.7*	
Assets carried at fair value							

Derivative financial instruments:							
- Foreign currency contracts	2	**2.3**	**2.3**	0.2	0.2	*2.0*	*2.0*
Liabilities carried at fair value							
Derivative financial instruments:							
- Foreign currency contracts	2	**(1.3)**	**(1.3)**	(9.0)	(9.0)	*(1.2)*	*(1.2)*
Liabilities carried at amortised cost							
Trade and other payables		**(59.9)**		(64.6)		*(79.9)*	
Bank overdrafts		**(21.4)**		(20.2)		*(11.2)*	
Borrowings		**(1.2)**		(1.7)		*(1.3)*	
Lease payables		**(34.8)**		(31.4)		*(31.4)*	

(1) Details of restatement of prior period numbers can be found in note 1.

(2) The other receivables and accrued income and trade and other payables balances in the table above, as at 30 September 2022 and 31 March 2023, have been restated to remove the tax-related balances which do not meet the accounting definition of financial assets and liabilities. As a result, at 30 September 2022, other receivables and accrued income were reduced by £5.2m, while trade and other payables were reduced by £7.1m; at 31 March 2023, other receivables and accrued income were reduced by £5.8m, while trade and other payables were reduced by £6.1m.

The following summarises the major methods and assumptions used in estimating the fair values of financial instruments reflected in the above table.

Derivative financial instruments

Derivative financial instruments are marked-to-market using market prices.

Fixed and floating rate borrowings

The fair value of fixed and floating rate borrowings is estimated by discounting the future contracted principal and interest cash flows using the market rate of interest at the reporting date.

Trade and other receivables/payables

For receivables/payables with a remaining life of less than one year, the carrying amount is deemed to reflect the fair value. All other receivables/payables are discounted to determine their fair value. Advances received are excluded from other payables above as these are not considered to be financial liabilities. Tax related receivables and payables are excluded from the above table as these are not considered to be financial assets and liabilities.

Lease payables

The lease liability is measured at amortised cost using the effective interest method.

Fair value hierarchy

The table above gives details of the valuation method used in arriving at the fair value of financial instruments. The different levels have been identified as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets and liabilities,

- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and

- Level 3: inputs for the asset or liability that are not based on observable market data.

There have been no transfers between levels during the year.

9 Retirement benefit obligations

The Group operates a defined benefit plan in the UK. A full actuarial valuation of the UK plan was carried out as at 31 March 2021 which, for reporting purposes, has been updated to 30 September 2023 by a qualified independent actuary.

At 31 March 2023, the scheme actuary calculated a retirement benefit asset of £26.4m, being the net of £251.5m of assets and a present value of future liabilities of £225.1m.

In the period to 30 September 2023, there has been an increase in the discount rate from 4.8% to 5.5% and significant changes to market conditions have reduced the value of the scheme's obligations. The impact of these changes has decreased the benefit obligation to £207.2m (31 March 2023: £225.1m). There have been no material changes to the demographic assumptions associated with the scheme.

The Group has agreed a basis for deficit recovery payments with the trustees of the UK pension scheme. The deficit recovery payments are payable through to and including 2026 and will rise by approximately 3% per annum. The deficit recovery payment for the period was £4.2m (year to 31 March 2023: £8.2m as well as an additional one-off payment of £4.0m). However, significant changes in market conditions reduced the scheme’s assets during the period. As a result, the fair value of plan assets decreased to £218.5m (31 March 2022: £251.5m).

The overall effect is that for the purposes of IAS 19 the surplus on the scheme decreased from £26.4m to £11.3m.

10 Related parties

There have been no related party transactions in the first 6 months of the current financial year which have materially affected the financial position or performance of the Group.

Related parties are consistent with those disclosed in the Group's annual report for the year ended 31 March 2023.

Principal risks and uncertainties

Information regarding the risk management process in place at the Group is set out on pages 94 to 96 of the 2023 Report and Financial Statements.

The principal risks and uncertainties identified through that process are set out on pages 97 to 101 of the 2023 Report and Financial Statements and can be found on the Group's website at www.oxinst.com.

In keeping with the risk management process, the Group has performed a quarterly update of its risk register as at 30 September 2023. It has evaluated the disclosures made on pages 97 to 101 of the 2023 Report and Financial Statements and has concluded that all of the risks identified continue to be relevant for the remainder of the year ending 31 March 2024.

Further it considers that there are no additional significant risks to be disclosed.

A summary of the risks and uncertainties identified in the 2023 Report and Financial Statements is set out below:

- Geopolitical risk;
- Supply chain risk;
- Routes to market risk;
- New Product Introduction risk
- Market risk: Recession/inflation
- Information Technology risk
- Legal and regulatory compliance risk
- Risk of adverse movements in long-term foreign currency rates
- Risk that a global pandemic/catastrophe causes major disruption
- People and capability risk
- Business interruption: operational risk
- Climate change risk; and
- Pensions risk.

Responsibility statement of the Directors in respect of the half-year financial statements

The Directors confirm that, to the best of their knowledge:

• the condensed consolidated interim financial statements has been prepared in accordance with IAS 34 Interim Financial Reporting as adopted by the UK; and

• the interim management report includes a fair review of the information required by:

a) DTR 4.2.7R of the Disclosure Guidance and Transparency Rules, being an indication of important events that have occurred during the first six months of the financial year and their impact on the condensed consolidated interim financial statements; and a description of the principal risks and uncertainties for the remaining six months of the year; and

(b) DTR 4.2.8R of the Disclosure Guidance and Transparency Rules, being related party transactions that have taken place in the first six months of the current financial year and that have materially affected the financial position or performance of the entity during that period; and any changes in the related party transactions described in the last Annual Report that could do so.

By order of the Board

Richard Tyson	Gavin Hill
Chief Executive Officer	Chief Financial Officer

13 November 2023

Independent review report to Oxford Instruments plc

Conclusion

Based on our review, nothing has come to our attention that causes us to believe that the condensed set of financial statements in the half-yearly financial report for the six months ended 30 September 2023 is not prepared, in all material respects, in accordance with UK adopted International Accounting Standard 34 and the Disclosure Guidance and Transparency Rules of the United Kingdom's Financial Conduct Authority.

We have been engaged by the company to review the condensed set of financial statements in the half-yearly financial report for the six months ended 30 September 2023 which comprises the condensed consolidated statement of income, condensed consolidated statement of comprehensive income, condensed consolidated statement of financial position, condensed consolidated statement of changes in equity, condensed consolidated statement of cash flows, and the related explanatory notes.

Basis for conclusion

We conducted our review in accordance with International Standard on Review Engagements (UK) 2410, "Review of Interim Financial Information Performed by the Independent Auditor of the Entity" ("ISRE (UK) 2410"). A review of interim financial information consists of making enquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with International Standards on Auditing (UK) and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

As disclosed in Note 1, the annual financial statements of the group are prepared in accordance with UK adopted international accounting standards. The condensed set of financial statements included in this half-yearly financial report has been prepared in accordance with UK adopted International Accounting Standard 34, "Interim Financial Reporting".

Conclusions relating to going concern

Based on our review procedures, which are less extensive than those performed in an audit as described in the Basis for conclusion section of this report, nothing has come to our attention to suggest that the directors have inappropriately adopted the going concern basis of accounting or that the directors have identified material uncertainties relating to going concern that are not appropriately disclosed.

This conclusion is based on the review procedures performed in accordance with ISRE (UK) 2410, however future events or conditions may cause the group to cease to continue as a going concern.

Responsibilities of directors

The directors are responsible for preparing the half-yearly financial report in accordance with the Disclosure Guidance and Transparency Rules of the United Kingdom's Financial Conduct Authority.

In preparing the half-yearly financial report, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the review of the financial information

In reviewing the half-yearly report, we are responsible for expressing to the Company a conclusion on the condensed set of financial statements in the half-yearly financial report. Our conclusion, including our Conclusions Relating to Going Concern, are based on procedures that are less extensive than audit procedures, as described in the Basis for Conclusion paragraph of this report.

Use of our report

Our report has been prepared in accordance with the terms of our engagement to assist the Company in meeting the requirements of the Disclosure Guidance and Transparency Rules of the United Kingdom's Financial Conduct Authority and for no other purpose. No person is entitled to rely on this report unless such a person is a person entitled to rely upon this report by virtue of and for the purpose of our terms of engagement or has been expressly authorised to do so by our prior written consent. Save as above, we do not accept responsibility for this report to any other person or for any other purpose and we hereby expressly disclaim any and all such liability.

BDO LLP
Chartered Accountants
Reading, UK
13 November 2023

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