

# **HAMAMATSU**

## **Hamamatsu Second Quarter Report (Summary)**

**Fiscal Year ending September 30, 2018**

**May 2018**

**Hamamatsu Photonics K.K.  
Tokyo Stock Exchange: 6965  
[www.hamamatsu.com](http://www.hamamatsu.com)**

# Notes

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- This material is not intended to be a solicitation to buy or sell any securities of Hamamatsu Photonics K.K.
- The information contained in this material is based on data available as of making it. No guarantees, promises are made as to its accuracy or completeness.

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- 1. Financial results summary**
  2. Annual forecast/business development
  3. Topics

# Semi-annual consolidated performance financial highlights

in million yen

	FY 2017			FY2018				
	1 <sup>st</sup> Half	2 <sup>nd</sup> Half	Year	1 <sup>st</sup> Half	compared with prev. year	2 <sup>nd</sup> Half (Revised plan)	Year (Revised plan)	compared with prev. year(Plan)
Net Sales	64,953	65,542	130,495	73,074	112.5%	71,226	144,300	110.5%
Operating Income	11,161	11,688	22,849	14,995	134.3%	11,605	26,600	116.4%
Ordinary Income	11,978	12,059	24,037	15,217	127.0%	11,683	26,900	111.9%
Net Income	8,917	8,860	17,777	10,429	116.9%	8,771	19,200	108.0%
Net Income per share (yen)	56.69	41.21	90.23	66.79	-	57.24	124.03	-
Dividends (yen)	17	17	34	17	-	17	34	-
Exchange Rates	actual rate			actual rate		assumption rate		
1 US dollar(yen)	111.51	-	111.27	110.66	-	105.00	107.50	-
1 euro(yen)	119.45	-	122.91	133.08	-	130.00	131.50	-
1 RMB(yen)	15.66	-	16.03	16.86		16.50	16.50	

# Consolidated income statements

in million yen

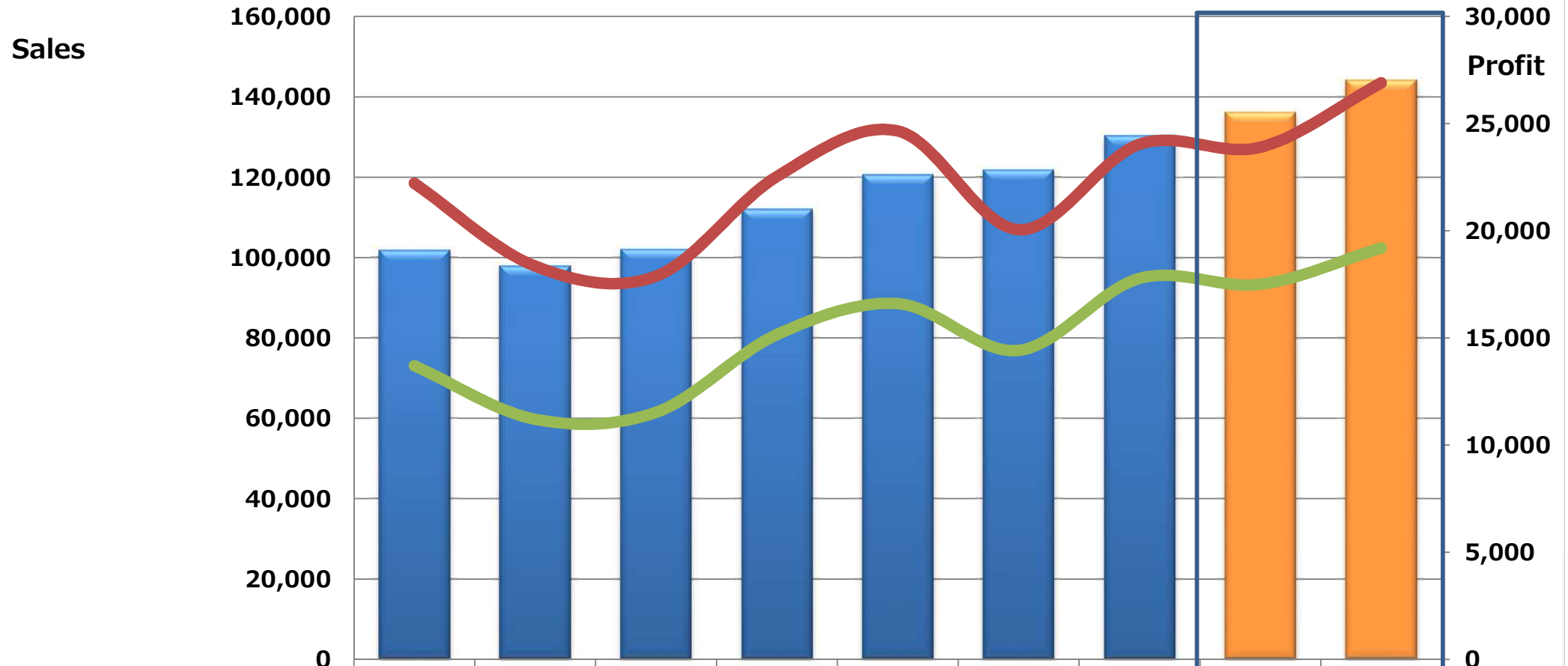
	FY2016		FY2017				FY2018			
	Year	%	1 <sup>st</sup> half	2 <sup>nd</sup> half	Year	%	1 <sup>st</sup> half	2 <sup>nd</sup> half (Plan)	Year (Plan)	%
Net Sales	121,852	100.0	64,953	65,542	130,495	100.0	73,074	71,226	144,300	100.0
Cost of Sales	60,807	49.9	32,915	32,755	65,670	50.3	35,383	35,717	71,100	49.3
Gross Profit	61,044	50.1	32,038	32,787	64,825	49.7	37,690	35,510	73,200	50.7
Selling, G & A Expenses	28,627	23.5	15,052	15,147	30,199	23.1	16,638	16,562	33,200	23.0
R & D Expense	11,873	9.7	5,824	5,952	11,776	9.0	6,057	7,343	13,400	9.3
Operating Income	20,544	16.9	11,161	11,688	22,849	17.5	14,995	11,605	26,600	18.4
Non-Operating Income	821	0.7	943	464	1,407	1.1	486	214	700	0.5
Non-Operating Expense	1,314	1.1	125	94	219	0.2	264	136	400	0.3
Ordinary Income	20,050	16.5	11,978	12,059	24,037	18.4	15,217	11,683	26,900	18.6
Extraordinary Income	813	0.7	11	223	234	0.2	11	-11	0	0.0
Extraordinary Expense	783	0.6	35	666	701	0.5	800	0	800	0.6
Pre-Tax Profit	20,080	16.5	11,954	11,616	23,570	18.1	14,428	11,672	26,100	18.1
Income taxes etc.	5,660	4.6	3,036	2,757	5,793	4.4	3,999	2,901	6,900	4.7
Net Profit	14,419	11.8	8,917	8,860	17,777	13.6	10,429	8,771	19,200	13.3

\* rounded down to the nearest million yen 5

# Sales & Profit (consolidated)

Fiscal Years ending September 30

in million yen



	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018 (Original plan)	FY2018 (Revised plan)
Net Sales(Left)	101,858	98,067	102,156	112,092	120,691	121,852	130,495	136,300	144,300
Ordinary Income(Right)	22,216	18,350	17,883	22,531	24,658	20,050	24,037	23,900	26,900
Net Income(Right)	13,702	11,206	11,529	15,155	16,598	14,419	17,777	17,500	19,200

# Sales by region (consolidated)

Fiscal Years ending September 30

in million yen

Region	FY2017				FY2018		
	1st Half	2nd Half	Year	Share (Year)	1st Half	Inc./Dec.	Share
Japan	19,677	18,701	38,378	29.4%	21,265	108.0%	29.1%
North America	16,817	16,497	33,314	25.5%	16,556	98.4%	22.7%
Europe	15,766	17,195	32,961	25.3%	19,061	120.8%	26.1%
Asia and China	12,555	12,992	25,546	19.6%	16,033	127.7%	21.9%
Other	136	157	293	0.2%	159	116.9%	0.2%
<b>Total</b>	<b>64,953</b>	<b>65,542</b>	<b>130,495</b>	<b>100.0%</b>	<b>73,074</b>	<b>112.5%</b>	<b>100.0%</b>

## Major countries on each region

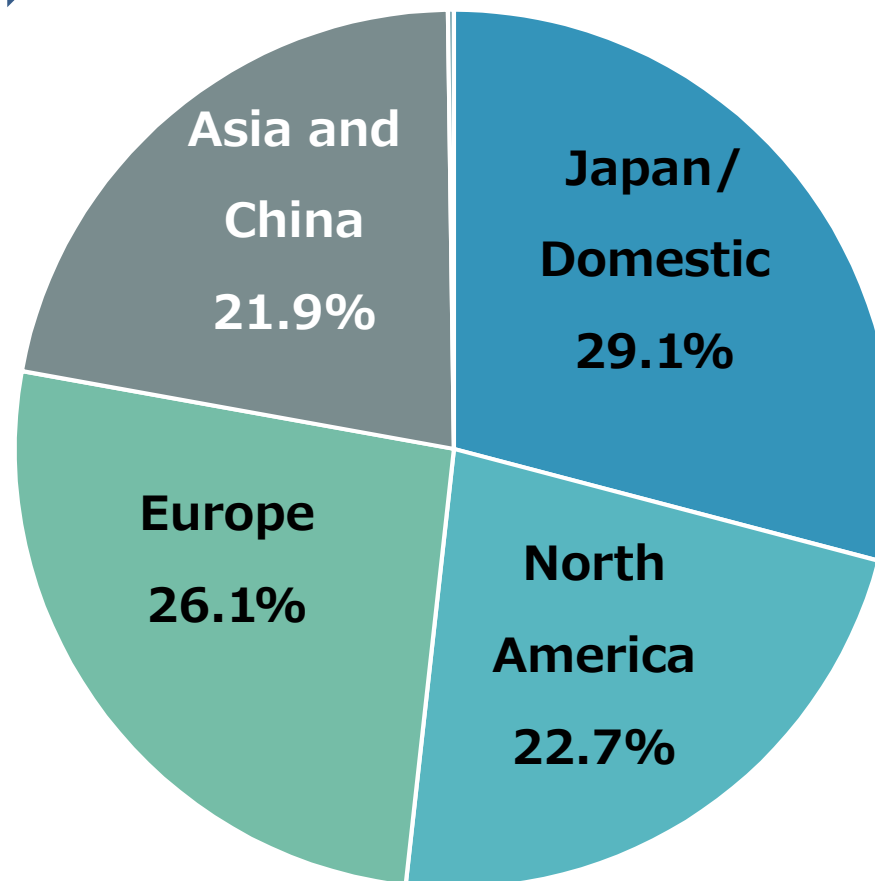
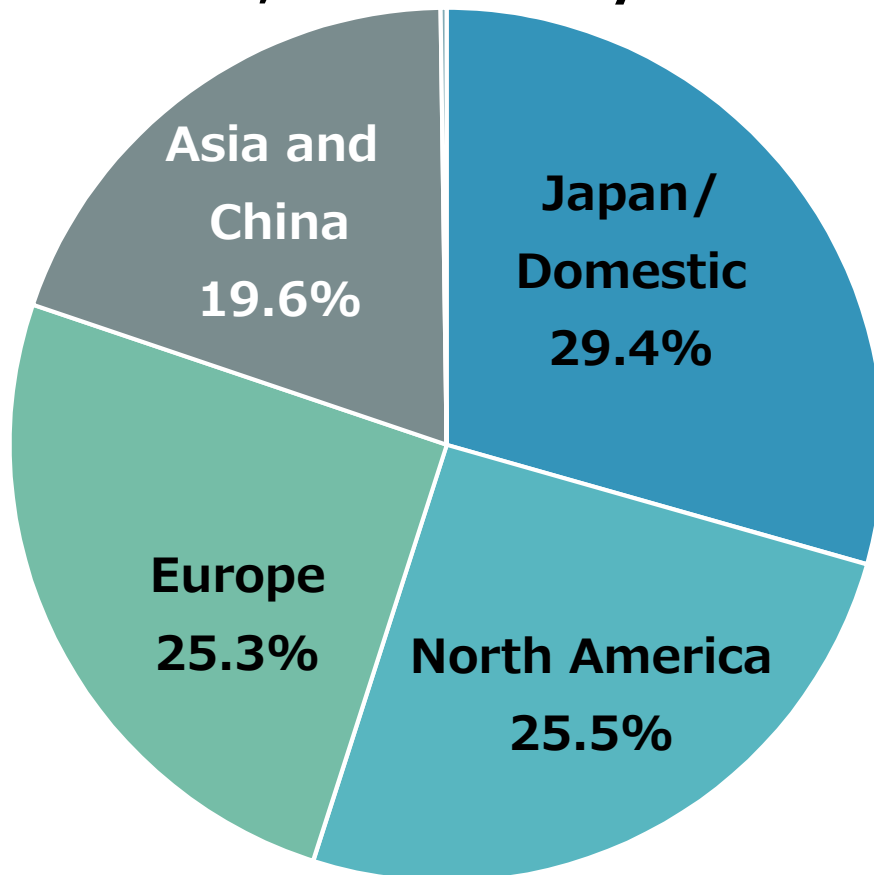
- North America: United States of America
- Europe: Germany, France, U.K., Sweden, Italy
- Asia and China: China, South Korea, Taiwan, India, Israel
- Other: Australia

# Sales by region (consolidated)

**FY2017 (Year)**  
**130,495 million yen**



**FY2018 (1<sup>st</sup> half)**  
**73,074 million yen**



**actual rates**  
**1 US dollar : 111.77 yen**  
**1 Euro : 122.91 yen**  
**1 RMB : 16.03 yen**

**1 US dollar : 110.66 yen**  
**1 Euro : 133.08 yen**  
**1 RMB : 16.86 yen**



# Capital investment (payment based) & depreciation

in million yen

Capital Inv.

9,261

Capital Inv.

7,939

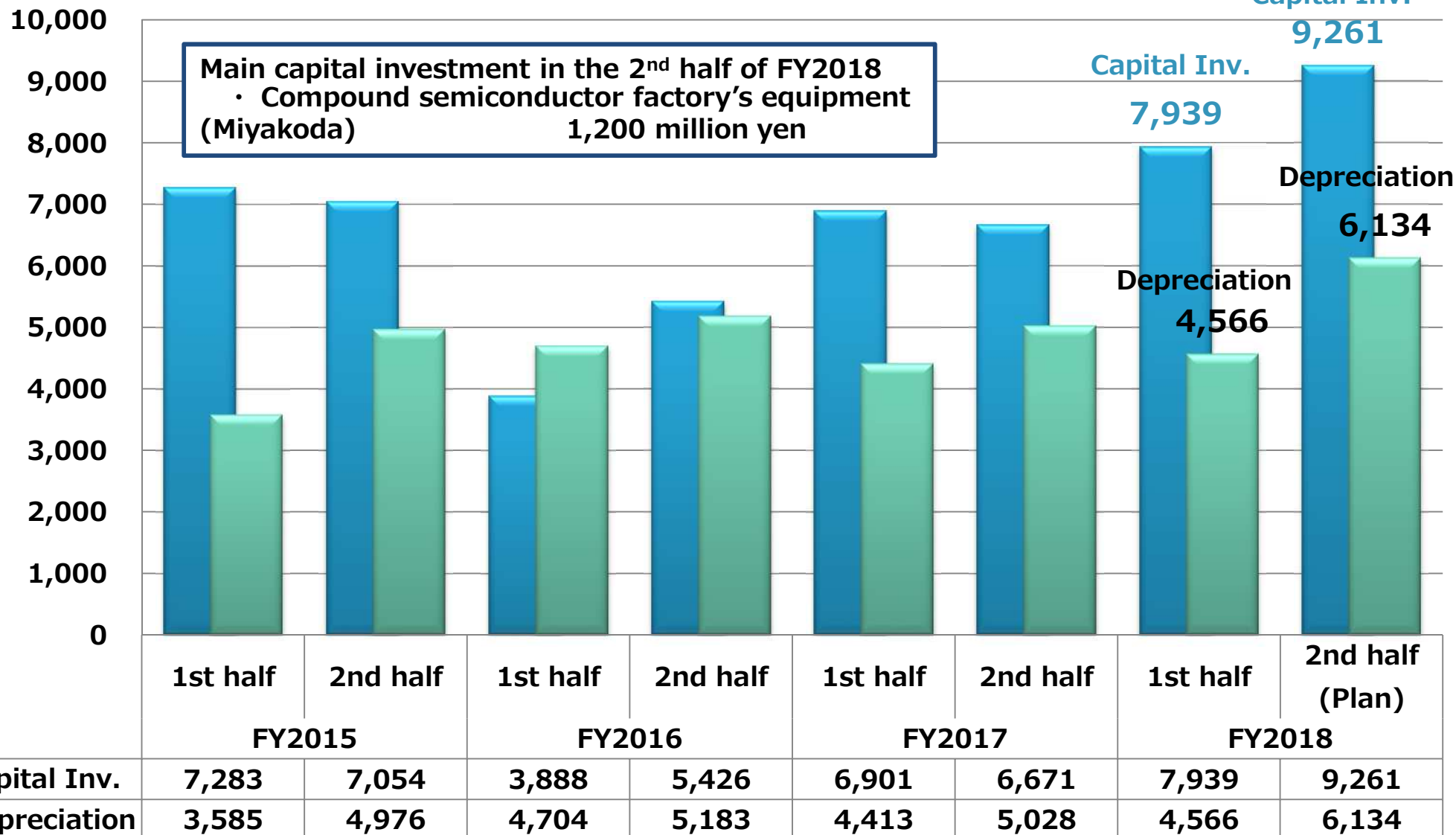
Depreciation

6,134

Depreciation

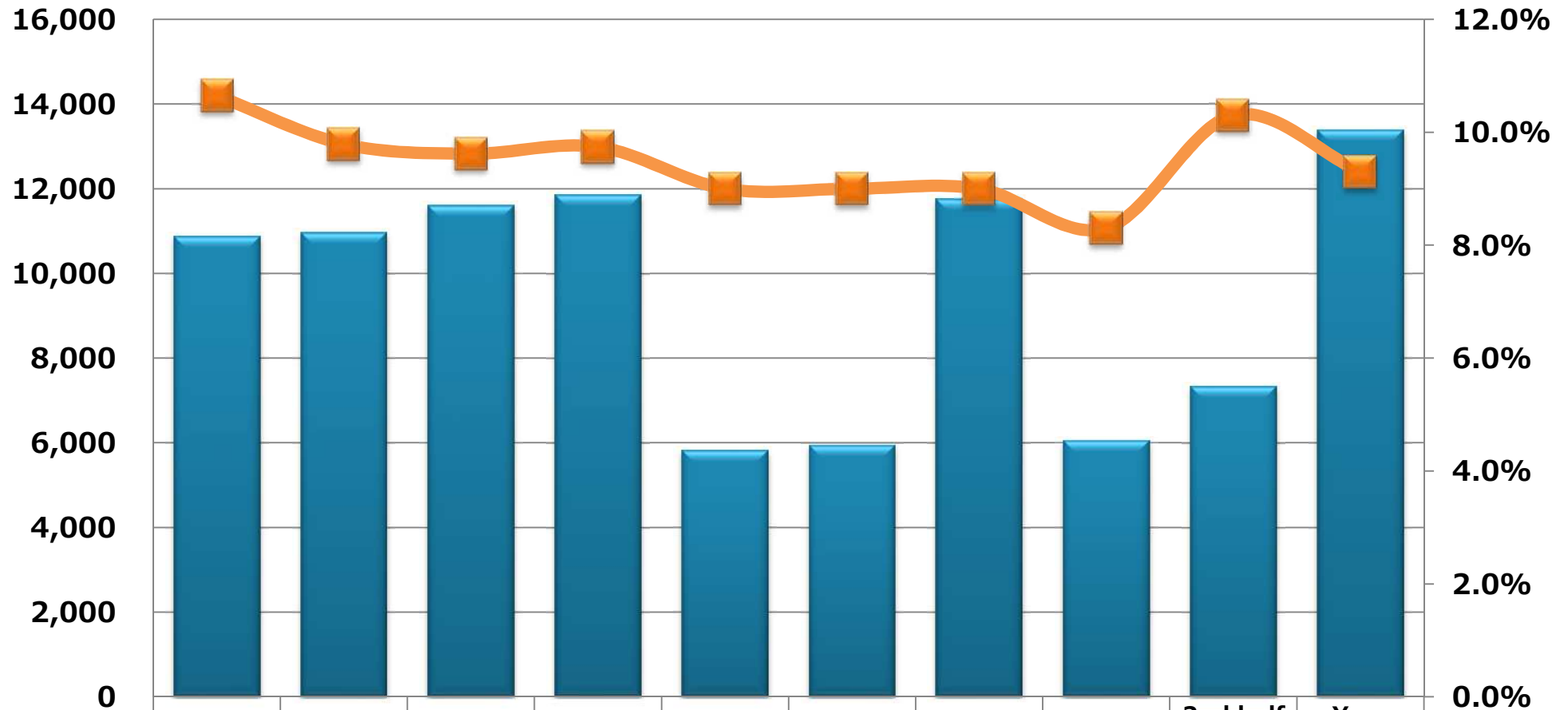
4,566

Main capital investment in the 2<sup>nd</sup> half of FY2018  
 · Compound semiconductor factory's equipment (Miyakoda)  
 1,200 million yen



# R & D expense (consolidated)

in million yen



■ R & D  
— R & D to sales ratio

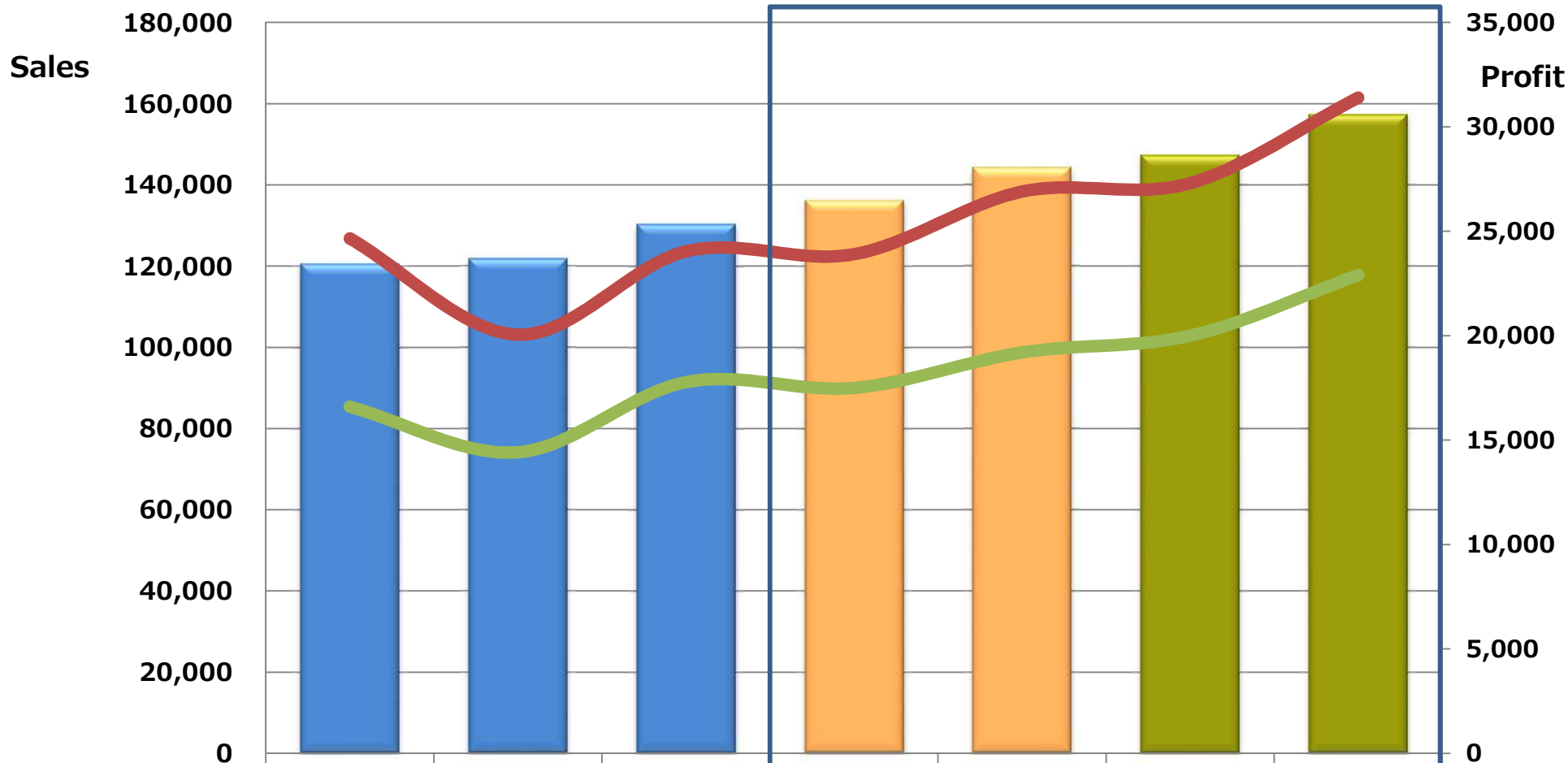
Year	Year	Year	Year	1st half	2nd half	Year	1st half	2nd half	Year
FY2013	FY2014	FY2015	FY2016	FY2017		FY2018			
10,885	10,977	11,615	11,872	5,824	5,952	11,776	6,057	7,343	13,400
10.7%	9.8%	9.6%	9.7%	9.0%	9.0%	9.0%	8.3%	10.3%	9.3%

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1. Financial results summary
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# Sales & profit (consolidated)

## from FY2015 to FY2020

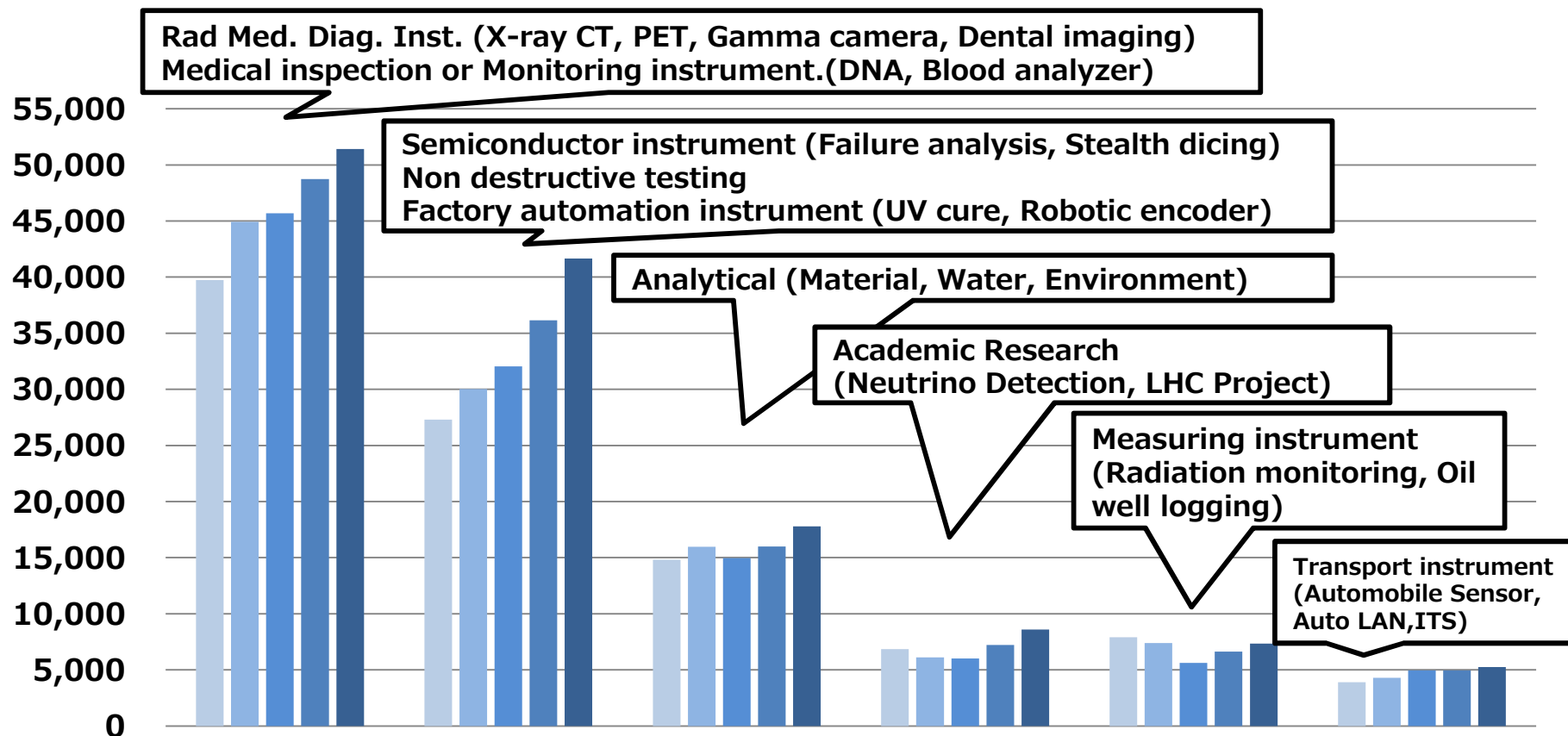
in million yen



Net Sales(Left)	120,691	121,852	130,495	136,300	144,300	147,400	157,400
Ordinary Income(Right)	24,658	20,050	24,037	23,900	26,900	27,300	31,400
Net Income(Right)	16,598	14,419	17,777	17,500	19,200	20,000	22,900

# Sales by industry & application (consolidated)

in million yen



	Medical instrument	Industrial instrument	Analytical instrument	Academic research	Measuring instrument	Transport instrument
<b>FY2018 (Revised plan)</b>	<b>51,423</b>	<b>41,666</b>	<b>17,784</b>	<b>8,603</b>	<b>7,340</b>	<b>5,262</b>
<b>FY2017</b>	<b>48,773</b>	<b>36,115</b>	<b>15,986</b>	<b>7,210</b>	<b>6,635</b>	<b>4,968</b>
<b>FY2016</b>	<b>45,686</b>	<b>32,037</b>	<b>14,967</b>	<b>6,027</b>	<b>5,627</b>	<b>4,961</b>
<b>FY2015</b>	<b>44,916</b>	<b>30,017</b>	<b>15,980</b>	<b>6,125</b>	<b>7,386</b>	<b>4,288</b>
<b>FY2014</b>	<b>39,729</b>	<b>27,293</b>	<b>14,803</b>	<b>6,840</b>	<b>7,908</b>	<b>3,892</b>

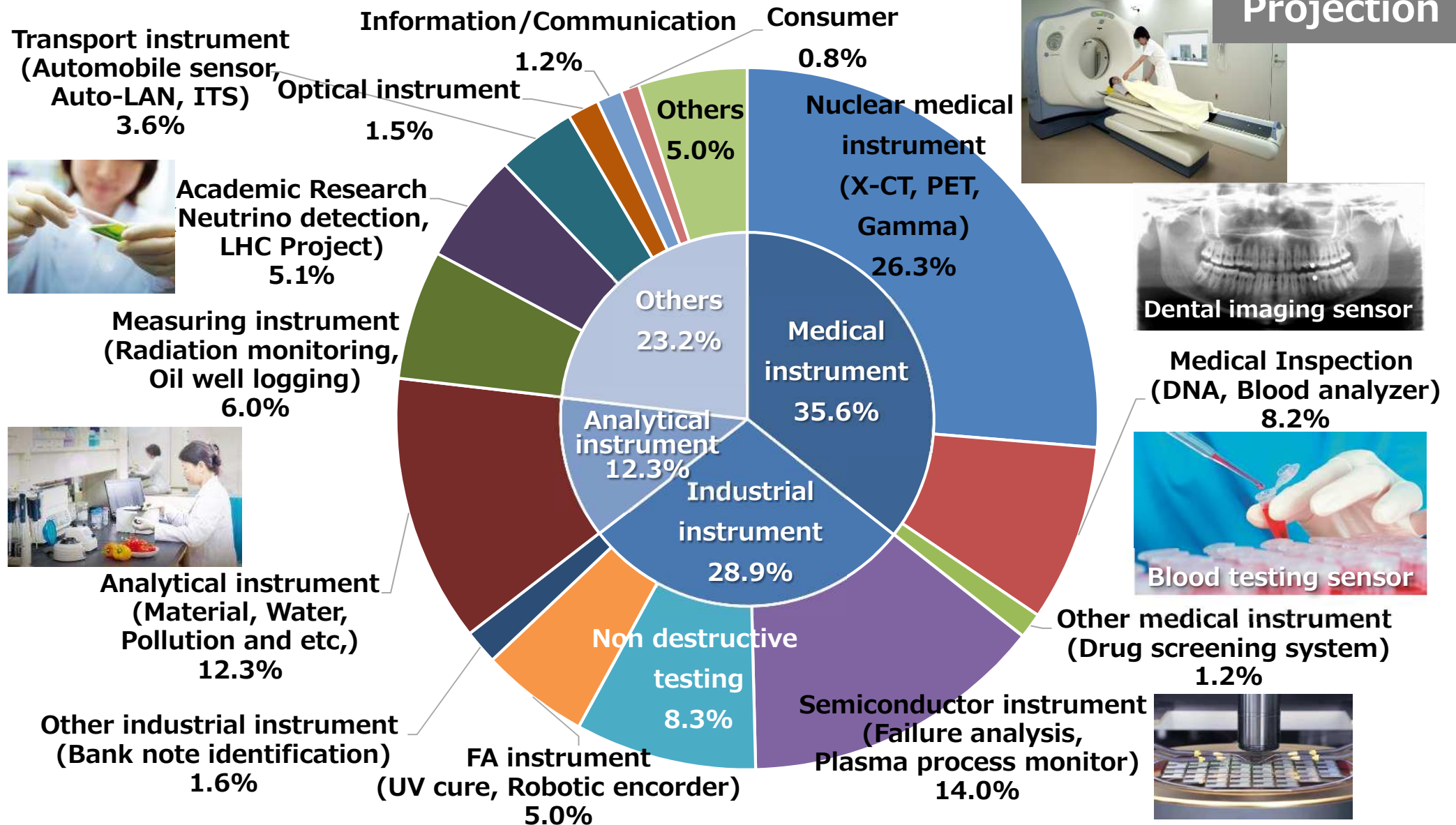
# Sales by industry & application (consolidated) in million yen

Industry / Application		FY2016				FY2017				FY2018			
		Mar.2016	Sep.2016			Mar.2017	Sep.2017			Mar.2018	Sep.2018		
		1 <sup>st</sup> half	2 <sup>nd</sup> half	Year	%	1 <sup>st</sup> half	2 <sup>nd</sup> half	Year	%	1 <sup>st</sup> half	2 <sup>nd</sup> half plan	Year plan	%
Medical instrument	Rad med. diag. inst. (X-CT, PET, Dental)	18,094	17,562	35,656	29.3	19,133	18,405	37,538	28.8	18,909	19,054	37,963	26.3
	Med inspection or monit. inst. (DNA, Blood analyzer)	4,400	4,185	8,585	7.0	4,838	5,056	9,894	7.6	5,881	5,886	11,767	8.2
	Other Med. Inst.	776	669	1,445	1.2	670	669	1,339	1.0	941	751	1,692	1.2
	<b>Sub total</b>	<b>23,272</b>	<b>22,414</b>	<b>45,686</b>	<b>37.5</b>	<b>24,641</b>	<b>24,132</b>	<b>48,773</b>	<b>37.4</b>	<b>25,731</b>	<b>25,692</b>	<b>51,423</b>	<b>35.6</b>
Industrial instrument	Semicon. inst. (Failure analysis, Stealth dicing)	7,724	7,746	15,470	12.7	8,176	9,062	17,238	13.2	9,914	10,254	20,168	14.0
	Non destructive testing	4,923	5,115	10,038	8.2	5,350	5,240	10,590	8.1	5,951	6,087	12,038	8.3
	Factory auto. inst. (UV cure, Rotary encorder)	2,104	2,433	4,537	3.7	2,787	3,391	6,178	4.7	3,388	3,792	7,180	5.0
	Other industrial inst. (Bank note identification)	1,072	920	1,992	1.6	1,009	1,139	2,148	1.6	1,078	1,201	2,279	1.6
	<b>Sub Total</b>	<b>15,824</b>	<b>16,213</b>	<b>32,037</b>	<b>26.3</b>	<b>17,324</b>	<b>18,831</b>	<b>36,155</b>	<b>27.7</b>	<b>20,334</b>	<b>21,332</b>	<b>41,666</b>	<b>28.9</b>
Analytical	Material, Water, Environment & etc.	8,168	6,799	14,967	12.3	7,886	8,100	15,986	12.3	9,402	8,382	17,784	12.3
Academic research	Neutrino/ Dark matter detection	3,576	2,451	6,027	4.9	3,850	3,360	7,210	5.5	4,965	3,638	8,603	6.0
Measuring instrument	Radiation monitoring, Oil well logging	3,025	2,602	5,627	4.6	3,174	3,461	6,635	5.1	3,927	3,413	7,340	5.1
Transport instrument	Automobile sensor, Auto-LAN, ITS	2,513	2,448	4,961	4.1	2,467	2,501	4,968	3.8	2,638	2,624	5,262	3.6
Information/Communication	Optical communication, printer & etc.	829	955	1,784	1.5	1,004	796	1,800	1.4	922	765	1,687	1.2
Optical/Photographic inst.	Laser scan microscope, Auto focus	1,121	1,117	2,238	1.8	1,082	973	2,055	1.6	1,069	1,025	2,094	1.5
Consumer instrument	Audio link, Auto-dimming	264	329	593	0.5	425	494	919	0.7	667	556	1,223	0.8
Others/Not classified		4,247	3,685	7,932	6.5	3,093	2,897	5,990	4.6	3,415	3,799	7,214	5.0
<b>TOTAL</b>		<b>62,843</b>	<b>59,009</b>	<b>121,852</b>	<b>100.0</b>	<b>64,953</b>	<b>65,542</b>	<b>130,495</b>	<b>100.0</b>	<b>73,074</b>	<b>71,226</b>	<b>144,300</b>	<b>100.0</b>
<b>Exchange rate</b>		<b>actual</b>		<b>actual</b>		<b>actual</b>		<b>actual</b>		<b>actual</b>	<b>assumed</b>	<b>assumed</b>	
US \$ in yen		118.39	—	111.77		111.51	—	111.27		110.66	105.00	107.50	
Euro € in yen		130.05	—	124.02		119.45	—	122.91		133.08	130.00	131.50	
RMB in yen		19.12	—	18.09		15.66	—	16.03		16.86	16.50	16.50	

\* rounded down to the nearest million yen

# Sales by industry & application (consolidated)

**FY 2018  
Projection**



# Sales by the segment (consolidated)

in million yen

	FY2016	FY2017		FY2018			
	Year	1 <sup>st</sup> half	2 <sup>nd</sup> half	Year	1 <sup>st</sup> half	2 <sup>nd</sup> half (Plan)	Year (Plan)
Electron tube	46,890	25,031	25,418	50,449	28,725	28,175	56,900
Opto-semiconductor	56,432	30,324	31,202	61,526	34,560	33,340	67,900
Imaging and measurement instruments	16,366	8,834	8,408	17,242	8,686	8,514	17,200
Other (including laser and except internal sales)	2,163	763	513	1,277	1,101	1,199	2,300
<b>Total</b>	<b>121,852</b>	<b>64,953</b>	<b>65,542</b>	<b>130,495</b>	<b>73,074</b>	<b>71,226</b>	<b>144,300</b>

\*including intersegment sales

\*rounded down to the nearest millions



# Electron tube segment (Electron tube division)



Toyooka factory at Iwata-city, Shizuoka-pref.

# Electron tube(consolidated)

in million yen

Fiscal Years ended September 30

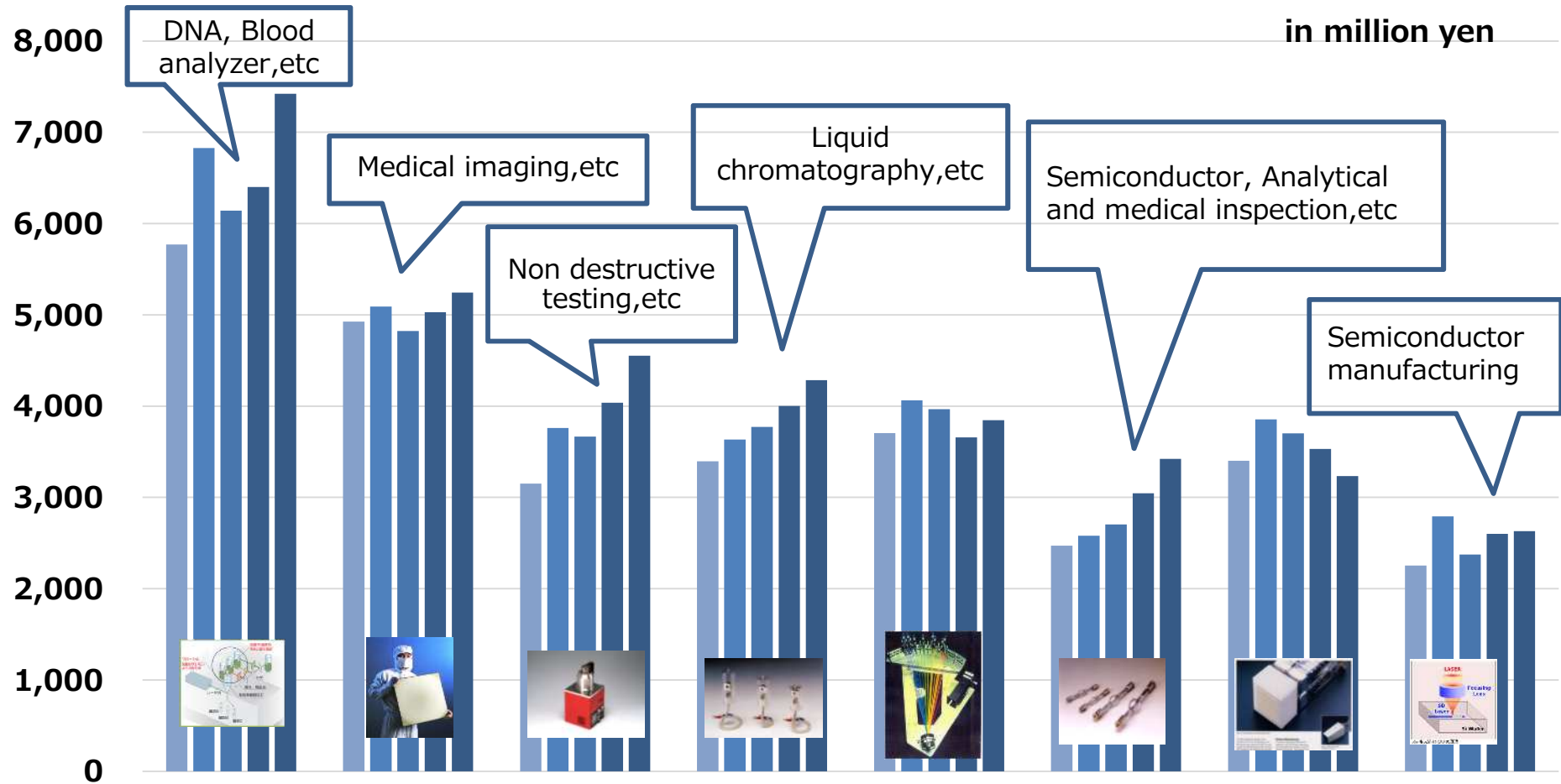
	FY2016		FY2017				FY2018							
	Year	%	1 <sup>st</sup> half	%	2 <sup>nd</sup> half	%	Year	%	1 <sup>st</sup> half	%	2 <sup>nd</sup> half (Plan)	%	Year (Plan)	%
Net Sales	46,890	100.0	25,031	100.0	25,418	100.0	50,449	100.0	28,725	100.0	28,175	100.0	56,900	100.0
Cost of Sales	21,109	45.0	11,354	45.4	11,408	44.8	22,762	45.1	12,560	43.7	12,490	44.3	25,050	44.0
Gross Profit	25,780	55.0	13,677	54.6	14,010	55.1	27,687	54.9	16,164	56.2	15,686	55.6	31,850	56.0
Selling, G & A Expense	8,249	17.6	4,134	16.5	4,279	16.8	8,413	16.7	4,841	16.8	4,909	17.4	9,750	17.1
R & D Expense	2,188	4.7	1,175	4.7	1,105	4.3	2,280	4.5	1,320	4.5	1,530	5.4	2,850	5.0
Segment's Profit	15,342	32.7	8,367	33.4	8,625	33.9	16,992	33.7	10,003	34.8	9,247	32.8	19,250	33.8

\*including intersegment sales

\*rounded down to the nearest millions



# Sales of core electron tube by application (consolidated)



	PMT for medical inspection	Scintillator	Microfocus X-ray source	Deuterium lamp	PMT for analytical instrument	Xe lamp	PMT for PET	Stealth dicing
<b>FY2018(plan)</b>	<b>7,422</b>	<b>5,243</b>	<b>4,554</b>	<b>4,285</b>	<b>3,845</b>	<b>3,422</b>	<b>3,234</b>	<b>2,631</b>
FY2017	6,401	5,030	4,037	4,002	3,658	3,046	3,532	2,602
FY2016	6,142	4,823	3,668	3,772	3,968	2,703	3,702	2,375
FY2015	6,829	5,092	3,761	3,635	4,064	2,581	3,855	2,791
FY2014	5,771	4,925	3,151	3,395	3,706	2,471	3,402	2,253



# Opto-semiconductor segment (Solid state division)



**Ichino main factory at Hamamatsu-city,  
Shizuoka-pref.**



# Opto-semiconductor(consolidated)

in million yen

Fiscal Years ended September 30

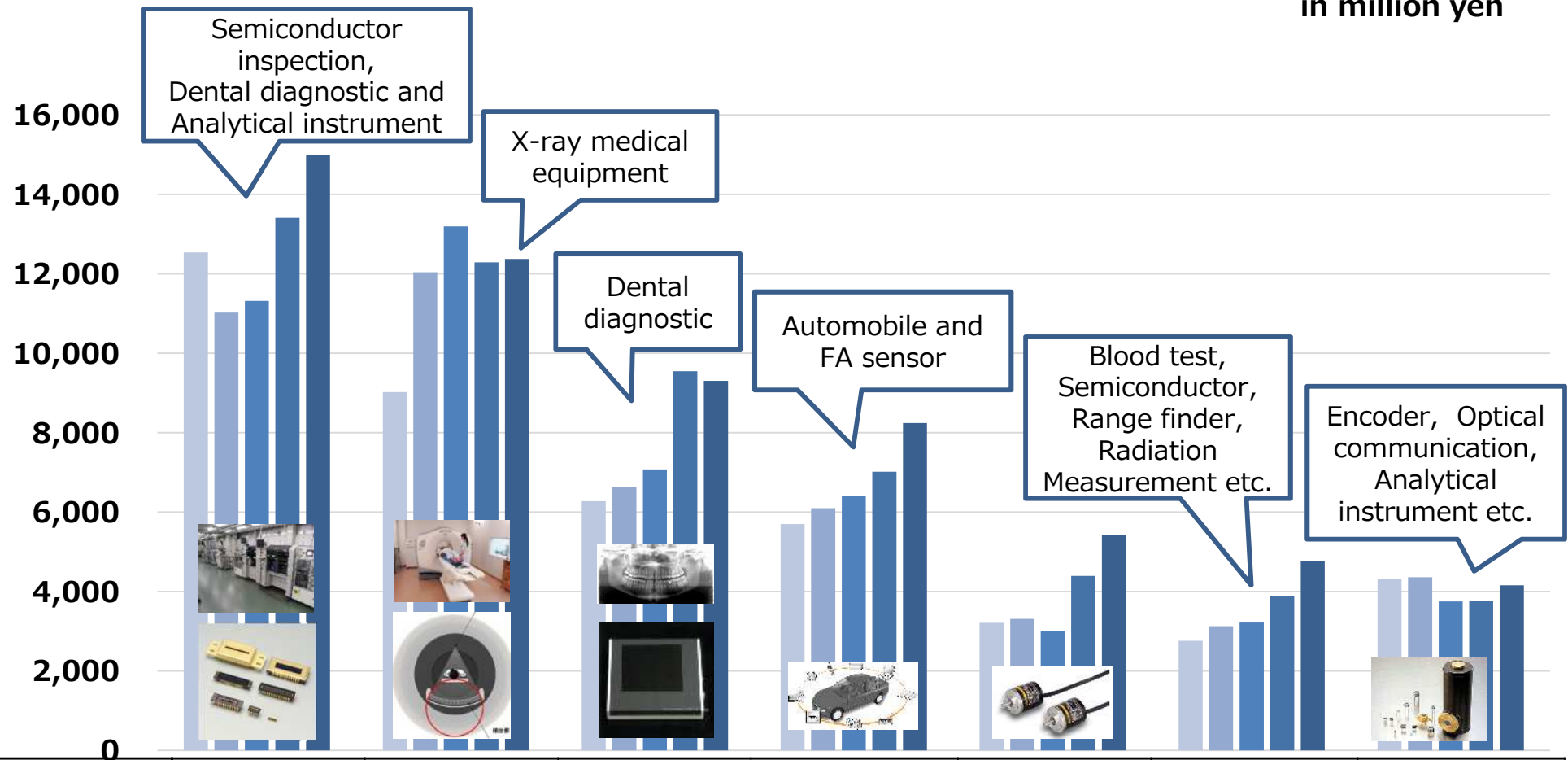
	FY2016		FY2017				FY2018							
	Year	%	1 <sup>st</sup> half	%	2 <sup>nd</sup> half	%	Year	%	1 <sup>st</sup> half	%	2 <sup>nd</sup> half (Plan)	%	Year (Plan)	%
Net Sales	56,432	100.0	30,324	100.0	31,202	100.0	61,526	100.0	34,560	100.0	33,340	100.0	67,900	100.0
Cost of Sales	30,652	54.3	16,578	54.7	16,686	53.5	33,264	54.1	18,025	52.2	18,175	54.5	36,200	53.3
Gross Profit	25,779	45.7	13,245	45.3	14,517	46.5	28,262	45.9	16,535	47.8	15,165	45.5	31,700	46.7
Selling, G & A Expense	6,191	11.0	3,419	11.3	3,486	11.2	6,905	11.2	3,860	11.2	3,590	10.8	7,450	11.0
R & D Expense	3,446	6.1	1,602	5.3	1,599	5.1	3,201	5.2	1,392	4.0	1,808	5.4	3,200	4.7
Segment's Profit	16,141	28.6	8,723	28.8	9,432	30.2	18,155	29.5	11,282	32.6	9,768	29.3	21,050	31.0

\*including intersegment sales

\*rounded down to the nearest millions

# Sales of core opto-semiconductor (consolidated)

in million yen



	Linear/Area image sensor	Si photodiode for medical instrument	Flat panel sensor	Photo IC	Si photodiode for FA	Applied products and module	Compound semiconductor
<b>FY2018(Plan)</b>	<b>14,997</b>	<b>12,375</b>	<b>9,307</b>	<b>8,246</b>	<b>5,419</b>	<b>4,775</b>	<b>4,162</b>
<b>FY2017</b>	<b>13,409</b>	<b>12,286</b>	<b>9,548</b>	<b>7,021</b>	<b>4,397</b>	<b>3,885</b>	<b>3,766</b>
<b>FY2016</b>	<b>11,322</b>	<b>13,195</b>	<b>7,077</b>	<b>6,417</b>	<b>2,998</b>	<b>3,223</b>	<b>3,752</b>
<b>FY2015</b>	<b>11,023</b>	<b>12,037</b>	<b>6,628</b>	<b>6,103</b>	<b>3,313</b>	<b>3,130</b>	<b>4,360</b>
<b>FY2014</b>	<b>12,537</b>	<b>9,022</b>	<b>6,279</b>	<b>5,698</b>	<b>3,216</b>	<b>2,762</b>	<b>4,321</b>



# Imaging and measurement instruments segment (System division)



Joko factory at Hamamatsu-city,  
Shizuoka-pref.

# Imaging and measurement instruments (consolidated)

in million yen

Fiscal Years ended September 30

	FY2016		FY2017				FY2018							
	Year	%	1 <sup>st</sup> half	%	2 <sup>nd</sup> half	%	Year	%	1 <sup>st</sup> half	%	2 <sup>nd</sup> half (Plan)	%	Year (Plan)	%
Net Sales	16,366	100.0	8,834	100.0	8,408	100.0	17,242	100.0	8,686	100.0	8,514	100.0	17,200	100.0
Cost of Sales	8,070	49.3	4,459	50.5	4,305	51.2	8,764	50.8	4,175	48.1	4,275	50.2	8,450	49.1
Gross Profit	8,296	50.7	4,375	49.5	4,102	48.8	8,477	49.2	4,511	51.9	4,239	49.8	8,750	50.9
Selling, G & A Expense	4,157	25.4	2,105	23.8	2,163	25.7	4,268	24.8	2,190	25.2	2,110	24.8	4,300	25.0
R & D Expense	599	3.7	350	4.0	314	3.7	664	3.9	439	5.1	411	4.8	850	4.9
Segment's Profit	3,538	21.6	1,919	21.7	1,625	19.3	3,544	20.6	1,880	21.6	1,720	20.2	3,600	20.9

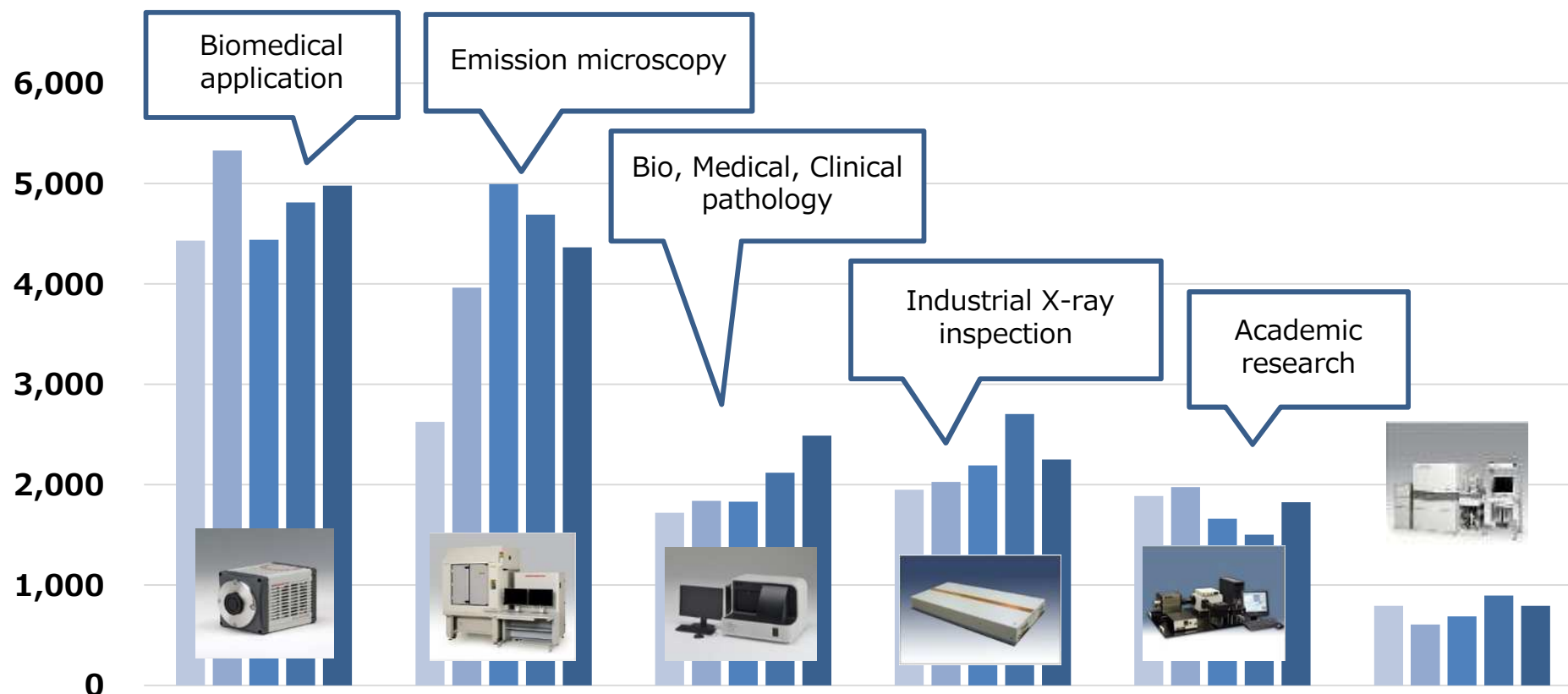
\*including intersegment sales

\*rounded down to the nearest millions



# Sales of core Imaging & Measurement Instruments (consolidated)

in million yen



	Digital camera device	Semiconductor failure analysis	System for life science	Measurement for FA	Spectroscopy measurement	Medical system
<b>FY2018(Plan)</b>	<b>4,979</b>	<b>4,365</b>	<b>2,487</b>	<b>2,250</b>	<b>1,824</b>	<b>792</b>
<b>FY2017</b>	<b>4,812</b>	<b>4,692</b>	<b>2,119</b>	<b>2,703</b>	<b>1,502</b>	<b>895</b>
<b>FY2016</b>	<b>4,440</b>	<b>4,996</b>	<b>1,831</b>	<b>2,192</b>	<b>1,660</b>	<b>687</b>
<b>FY2015</b>	<b>5,330</b>	<b>3,962</b>	<b>1,838</b>	<b>2,027</b>	<b>1,976</b>	<b>606</b>
<b>FY2014</b>	<b>4,431</b>	<b>2,627</b>	<b>1,720</b>	<b>1,948</b>	<b>1,887</b>	<b>793</b>

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1. Financial results summary
  2. Annual forecast/business development
  - 3. Topics**

# Experiments for High-Energy Physics

## Using Photomultiplier Tubes(PMT)

Type	Name of experiment	Purpose of experiment	Place of exp.	Start year of production	Number of detectors
Underground	Hyper-Kamiokande	Neutrino, Proton Decay	Japan	2019	82,000 14,000
	LZ7/DUSEL	Dark Matter	USA	Complete	460 100 135
	JUNO(Daya Bay II)	Neutrino	China	2016	5,000
Deep-sea	KM3NeT	Neutrino	Europe	2018	175,000
	Baikal-GVD	Neutrino	Russia	2015	10,000
Ice experiment	IceCube-PINGU	Neutrino	Antarctic	2019	60,000 ~ 78,000
	IceCube-HEX			2021	282,000 ~ 300,000
Ground-surface	CTA	Gamma-ray space telescope	Southern and northern hemisphere	2015	96,000
Satellite	K-EUSO	Extreme energy	I S S	2020	2,000
Accelerator experiment	RICH/LHC-B /CERN	cosmic ray particle	Europe	Complete	3,550
	RICH/CBM/GSI	Collision experiments(Higgs)	Europe	Complete	1,100

# General Exhibition, Photon Fair 2018 to be held

Thema : What we can do using photonics technology



HAMAMATSU  
PHOTON IS OUR BUSINESS

浜松から未来へ。

## PHOTON FAIR 2018

### 浜松ホトニクス総合展示会

「光で何ができるか」

PHOTON FAIR(フォトンフェア)は、  
当社の社会・事業や将来ビジョンを、多くの方々に届けるために開催されます。  
光技術とその多岐に及ぶ可能性をご紹介します。

2018.11.1(木) 2(金) 3(土) 会場：アクトシティ浜松 展示イベントホール

● 事前登録は9月より受付開始 [www.photonfair.jp](http://www.photonfair.jp)  
● 開催会場にて講演会・セミナーを同時開催 [詳しくはWebへ](#)

入場無料(事前登録制) ※3日(土)は登録不要です。自由にご来場ください。

浜松ホトニクス株式会社 [www.hamamatsu.com](http://www.hamamatsu.com)

Nov. 1st(Thurs) – 3rd(Sat), 2018  
at Act City, Hamamatsu City, Shizuoka



Previous exhibition (Photon Fair 2013)

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[www.hamamatsu.com](http://www.hamamatsu.com)

## Asia

HAMAMATSU PHOTONICS K.K.

Headquarters

HAMAMATSU PHOTONICS (CHINA) Co., Ltd.

Head Office / Shanghai Branch  
/ Shenzhen Branch

BEIJING HAMAMATSU PHOTON TECHNIQUES INC.

Head Office / Langfang Factory

HAMAMATSU PHOTONICS TAIWAN Co., Ltd.

Hsinchu Office / Kaohsiung Office

## America

HAMAMATSU CORPORATION

Main Office / California Office / Chicago Office  
/ Boston Office

PHOTONICS MANAGEMENT CORP.

ENERGETIQ TECHNOLOGY, Inc.

## Europe

HAMAMATSU PHOTONICS EUROPE GmbH

HAMAMATSU PHOTONICS DEUTSCHLAND GmbH

Main Office / Netherlands Office  
/ Poland Office / Danish Office

HAMAMATSU PHOTONICS FRANCE S.A.R.L.

Main Office / Swiss Office / Belgian Office  
/ Spanish Office

HAMAMATSU PHOTONICS NORDEN AB

Main Office / Russian Office

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