

# SIPLACE Compare Checklist



## Making the right investment decision:

How do you reduce your costs most effectively?  
→ **With a good investment.**

How do you select the right investment?  
→ **With an objective and comprehensive analysis.**

Your investment decisions determine the future success of your company. Making these decisions is not easy: The spectrum of placement equipment is broad, and at first glance the differences between the individual machines seem to be small.

**We encourage you to evaluate the market with the 'Compare' Checklist**

The SIPLACE team supports you in your investment decision with its comprehensive and detailed evaluation list – the **Compare Checklist**. It simplifies the initial comparison of various offerings and takes all aspects of the investment decision into account. It lets you make a detailed comparison of solutions and manufacturers.

With the electronic version of the **Compare Checklist**, you can furthermore adapt the list to your individual needs.

**As the trailblazer in transparency and comparability, SIPLACE clears a path through the product jungle and supports you with non-proprietary decision-making aids.**

Make the comparison – with objective specifications instead of the sugar-coated values increasingly used by many vendors. Because the difference between what's advertised on paper and what the machine actually delivers on the factory floor is often shocking.

**You cannot put your investment decision on a more solid footing.  
Take us at our word and compare!**

That's not the case with SIPLACE. The SIPLACE team publishes non-proprietary and therefore informative ratings for all its equipment. In addition to the maximum theoretical performance of its placement machines and the well-established SIPLACE benchmarks, SIPLACE lists performance ratings in accordance with the internationally accepted and non-proprietary IPC standard.

We provide you with a much more reliable basis for your investment decision than our competitors.

**Only at SIPLACE:  
Objective value analyses with the SIPLACE Value Calculator**

Enhanced consulting services including complete value analyses supplement the **Compare Checklist**.

Would you like to make the best possible investment decision? Your SIPLACE partner will show you the real value of individual solutions with the SIPLACE Value Calculator. Neutral, software-based and on the basis of your specific production data. The Value Calculator is fully transparent: You can view and check all formulas and their parameters.

**Ask your SIPLACE sales partner for an objective value analysis with the SIPLACE Value Calculator.**

**Compare  
SIPLACE**



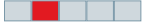
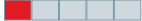










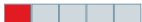

**The SIPLACE team is confident:  
Systematically comparing SIPLACE will show you what sets us apart.**













# Compare Checklist:

Compare in peace and quiet for the right decision.

Influence on cost-of-ownership	Value	SIPLACE X-series	SIPLACE D-series	Alternative Vendor .....	Alternative Vendor .....	Alternative Vendor .....	Calculation base, Comments, Background
high ----- low							
Price/Performance							
	IPC-output**	102,000 cph*	57,000 cph				* For SIPLACE X4i in i-placement mode ** Output measurement according to IPC 9850, placement with 0603 components. A high IPC placement performance usually indicates a high level of real performance.
	IPC-output with 01005 components**	102,000 cph*	57,000 cph				* For SIPLACE X4i in i-placement mode ** Output measurement according to IPC 9850, placement with 01005 components, placement performance valid for the full component range of the head. A high IPC placement performance usually indicates a high level of real performance.
	SIPLACE benchmark performance*	120,000 cph	66,000 cph				* According to SIPLACE conditions described in the Scope of Service and Delivery. A high SIPLACE benchmark rating usually indicates a high level of real performance.
	Theoretical performance*	135,500 cph	81,500 cph				* Theoretical maximum placement performance under ideal conditions for each machine type. This value equals the theoretical customary values.
	Average derating of vendor benchmark and IPC-performance	9%*	13%*				* Ratio between SIPLACE benchmark performance and IPC-performance shown with IPC 9850 board. A low derating is an indicator of an equipment maker's credibility.
	Average derating of vendor benchmark and real performance	20%*	22%*				* Average value over more than 2,500 different customer boards from different industries. Predictable output supports proper planning.
	Optimization accuracy	±5%	±5%				The SIPLACE Pro Optimizer computes line balancing, feeder setups and placement line sequence. The real cycle time deviates from the computed cycle time by ±5%. (For detailed terms and conditions, please contact your SIPLACE partner). The high accuracy of the SIPLACE optimization routine provides realistic production planning and a high level of capacity utilization through optimized balancing.
	Support with detailed cost-of-ownership calculations available?	Yes	Yes				Based on customers key value drivers and experiences within Siemens' detailed cost-of-ownership can be calculated. Long term effects of today's decisions can be shown.
	Hardware, software and service available from a single source?	Yes	Yes				Placement machines and supporting software are available from a single source. This ensures an optimum match of all machine operations and customer requirements as well as optimum equipment utilization.
	Integrated software solution for electronics manufacturing management available?	Yes	Yes				SIPLACE Facts provides functionalities for material tracking, warehouse management, inventory management, order status management, process control and other workflows in electronics production. This integration across multiple lines provides the customer with maximum productivity, low inventory levels and optimized process control.
	Monitoring of production progress possible?	Yes	Yes				SIPLACE Explorer provides real-time notification of variations from the planned cycle time and information about the entire production progress. Since SIPLACE Explorer is Internet-enabled, the information can be viewed from anywhere in the world for more production transparency and reliability across multiple locations.
	Trade-in for Pre-Owned Equipment possible?	Yes	Yes				Used SIPLACE machines can be repurchased by the supplier. Smooth transition from old equipment to updated technology.
Quality							
	01005 capability available?	Yes, full 01005 capability is standard	Yes, full 01005 capability is optional				01005 components can be placed with SIPLACE X-series and D-series machines. High placement quality for all machines qualified for 01005 placement.
	Force control, individual software setting per component possible?	Standard in all heads	Standard in all heads				For each component placement forces can be programmed individually and will be checked during placement. Highest possible placement reliability.

Influence on cost-of-ownership	Value	SIPLACE X-series	SIPLACE D-series	Alternative Vendor .....	Alternative Vendor .....	Alternative Vendor .....	Calculation base, Comments, Background
high ----- low							
Quality							
	Placement force range	1.0 to 30 N	1.0 to 30 N				For each component placement forces can be programmed individually and will be checked during placement. Maximum range of components, from Bare Dies to THT connectors can be processed.
	PCB warpage control and compensation available?	Standard in all heads	Standard in all heads				Closed loop control of placement position in Z-direction enables safe placement on wrapped boards.
	Full vision system with individual image per component available?	Standard in all heads	Standard in all heads				If vision systems can check each component with individual settings best results in component recognition and component centering can be achieved.
	Vision system: number of different lighting levels	20-nozzle C&P head: 5 12-nozzle C&P head: 5 6-nozzle C&P head: 5 TwinHead: 6 Pick&Place head: 6					Adjustable lighting levels of vision systems enable the optimized recognition of a maximum component range.
	Vision system: number of different lighting level settings	20-nozzle C&P head: 256 <sup>5</sup> = ~ 1 trillion 12- and 6-nozzle C&P head: 256 <sup>5</sup> = ~ 1 trillion Pick&Place head: 256 <sup>6</sup> = ~ 280 trillion					Easy adjustable lighting levels of vision systems (self teaching) enable the optimized recognition of a maximum component range.
	Storage light of images of defect components possible for analysis reasons?	Yes	Yes				Storage of images of defect package forms. Helps to control component quality. Base for discussion with component manufacturers.
	Vacuum sensor available?	Standard in all heads	Standard in all heads				During the placement process the presence of component is verified at each significant placement step. Maximum placement safety can be achieved.
	Pick up rate	> 99.95%*	> 99.95%*				* According to average results from evaluation projects. Please ask your SIPLACE contact for detailed evaluation criteria and conditions.
	DPM value	3 dpm*	5 dpm*				* According to average results from evaluation projects. Please ask your SIPLACE contact for detailed evaluation criteria and conditions. Low DPM values reduce cost for quality.
	Max. placement accuracy @ 3 sigma according to IPC accuracy methods	22 µm	22 µm				Best pin to pad coverage caused by high accuracy placement, is an important factor for low defect production.
	Accuracy: cpk values for delivered machines	cpk 1.67 is reached by 100%* of all machines cpk 2.00 is reached by 99.64%* of all machines cpk 2.33 is reached by 96.79%* of all machines cpk 2.67 is reached by 88.21%* of all machines cpk 3.00 is reached by 77.68%* of all machines					* Average values over all delivered SIPLACE machines for X-Y-deviation of 20-nozzle C&P head. To show the specified accuracy a cpk = 1.33 is sufficient. All SIPLACE machines are more accurate than specified.
	Lifetime-specified machine accuracy?	Yes	Yes				Machine is maintained according to the SIPLACE maintenance schedule. Due to machine design SIPLACE equipment can keep specified accuracy values over the whole life cycle. This leads to a high long-term stability.
	Measuring time of components using the 3-D coplanarity module	Examples: QFP 164: 310ms BGA 1226 balls: 725ms					Time needed to recognize coplanarity of component balls and leads. Short times enable higher throughput.
	Possibility to create placement programs (PCB data) independent from machine model?	Yes	Yes				SIPLACE Engineering Data Manager (EDM) provides efficient, multi-machine management of production data and easy data downloading to any SIPLACE machine.
	Quick analysis of production process errors possible?	Yes, with analytical tool					The SIPLACE Recipe Analyzer helps you to diagnose and quickly locate process errors.
	What traceability functions are available?	Level 1: Location /date based data recording Level 2: Manufacturing lot based data recording Level 3: PCB based data recording Level 4: Placement position based data recording					Traceability can be implemented flexibly in various expansion stages and detail depths to perfectly match any customer- or industry-specific requirements.
















Influence on cost-of-ownership	Value	SIPLACE X-series	SIPLACE D-series	Alternative Vendor .....	Alternative Vendor .....	Alternative Vendor .....	Calculation base, Comments, Background
high ----- low							
<b>Capability</b>							
	Can special requests be considered for the standard product?	Yes	Yes				With its solutions for special customer requirements, Siemens provides valuable help, for example for alternative feeder methods or special PCB sizes. Currently, SIPLACE implements about 100 special solutions per year.
	Standard delivery time for complex customer adaptations	6–8 weeks*					* The systematic customer adaptations process provides very short delivery times. In 80% of cases, the equipment can be delivered within 6–8 weeks so that customers can take advantage of new machine capabilities as soon as possible.
	What quality standards apply to customer adaptations?	ISO 9001					Even with custom solutions, customers benefit from quality-improving process standards.
	Gripper portfolio	> 120					A wide range of grippers ensures the efficient and reliable placement of exotic components. Even unusual production requirements can be fulfilled quickly and flexibly – a significant benefit for contract manufacturers.
	Number of nozzles for C&PHead / P&PHead / TwinHead	> 490					A wide range of standard and special nozzles ensures efficient and accurate component placements. Even unusual production requirements can be fulfilled quickly and flexibly – a significant benefit for contract manufacturers.
	Standard delivery time for specially developed nozzles	0–4 weeks					In many cases, Siemens can fill customer requests for special nozzles immediately because another customer asked for the same or a similar part in the past.
	Number of stick magazines for vibration feeders	>130					A wide range of magazines for vibration feeders ensures the efficient placement of exotic nozzles for stick magazines.
	Number of package forms available	> 2,500					To place all types of components safely it is an advantage to select out of a huge component library. Unexpected production demands can be fulfilled fast and flexible.
	Nozzle and package forms online available for download / ordering?	Yes	Yes				Nozzles and package forms can be ordered/downloaded from SIPLACE web pages. Fast reaction on changing production requirements is possible.
	Component coverage per head in % of all SMT components*	95% 20-nozzle C&P head 98% 12-nozzle C&P head 99.5% 6-nozzle C&P head 100% Pick&Place head/ TwinHead					* Average values with over more than 2,500 different customer boards from different industries. Maximum efficiency fitting to each component range.
	Min. board size	50 mm x 50 mm					Smallest board size which can be processed. Easy adaptation to changing demands.
	Max. board size	685 mm x 610 mm*	610 mm x 508 mm*				* Optional. Largest board size which can be processed. Easy adaptation of a line to extreme demands.
	Board thickness	0.3 mm to 4.5 mm					Wide range of board types can be processed. From thin, flexible boards to thick server boards. Other sizes on request.
	Max. board weight	3 kg					Wide range of board types can be processed, as well as heavy carriers.
	Max. component size	200 mm x 125 mm	200 mm x 125 mm				Placement of very large components is especially important e.g. for efficient notebook production.
	Max. component weight	100 g	100 g				Heavy components i.e. heat sinks or sub modules can be processed automatically.

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<b>Capability</b>							
	Component feeding capability	Tape feeders tray feeders stick magazines bulk case feeders					Components delivered in all types of packagings can be processed. A large range of suppliers can be selected.
	Amount of available 8 mm feeder tracks	160 / 180	180				A large number of feeder tracks enables a wide number of different products to be produced without changeover of set-up.
	Processing time* of digital vision system for various components	O1005: 9 ms PLCC 44: 17 ms BGA 225 balls: 18 ms					* Time including flash, image and vision processing time. Shortest placement cycles for all components.
	Automatic electrical width adjustment available?	Standard for all machines	Standard for all machines				Automatic PCB width adjustment enables shorter changeover times to adapt lines to changing board sizes.
	Ink spot / bad mark recognition possible?	Standard for all machines	Standard for all machines				Defective single circuits can be excluded from placement, if they are indicated by an marked ink spot. Standard for all SIPLACE machines. Placement of expensive components on defective single circuits can be excluded.
	Productivity enhancers available	Productivity lane or Productivity lift or Combined PCB	Productivity lift				Existing equipment can achieve highest output volume due to parallel operation of machines.
	Available transport lane modes	Asynchronous mode Synchronous mode Single lane mode Flexible dual lane mode					Using dual lane mode, customers can achieve best performance for boards with low number of components or can produce top and bottom side of a product simultaneously.
	Minimum time required to optimize line balancing in SIPLACE Pro	< 1 min*					* Time to optimize one SIPLACE line including line balancing that takes feeder, nozzle, table and PCB data into account. Optimization speed makes quick response to changing product mix possible.
	What functions support the software's integration into the customer environment?	→ Open programming interfaces SPI.NET and OIB → Database interfaces					Open interfaces let you integrate SIPLACE software products into any software environment. For example, you can integrate processes such as new product introductions (NPIs) directly into higher-level systems.
	Number of PCBs that can be optimized for a single setup cluster	500					The powerful SIPLACE Pro Optimizer is able to process even large data volumes with excellent performance.
	Can the placement machine be fully integrated into the IT environment?	Yes					SIPLACE machines can be integrated transparently into the IT environment. All data for traceability, performance analysis, Overall Equipment Efficiency and material management can be transmitted directly to higher-level systems.
	Can complete, customer-specific manufacturing solutions be designed, procured and installed?	Yes					SIPLACE delivers complete manufacturing solutions, including design, procurement, installation, production ramp-up and training services. Customers benefit from the competency and the expertise of a well-oiled team with professional project management. During the entire project, the customer deals with a single contact person at Siemens. An ideal solution for customers who want to minimize the costs and risks of installing a new line by working with a competent partner.

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high ----- low							
<b>Investment Protection</b>							
	Resale value after 492 million* placements	Up to 60% of original invest**					* Calculated with an IPC performance of 82,000 cph (SIPLACE X4) for a production with 20 hours per day and 300 working days per year. ** Resell value calculated on market values of the SIPLACE pre-owned equipment today. High residual value of used equipment facilitates investment in new equipment.
	Compatibility with older machine generations for optimization given?	Full line optimization compatibility with up to 11 years old machine generations					Software and interface compatibility enable efficient use of existing equipment over the full machine lifecycle.
	Feeder compatibility with different SIPLACE platforms?	All SIPLACE feeder generations of last 13 years can be combined					Feeder compatibility enables efficient use of existing equipment over the full machine lifecycle.
<b>Operational Cost</b>							
	Cost-of-ownership class	SIPLACE CoO class A*					* SIPLACE CoO calculation classes based on SIPLACE Value Calculator Cost of Ownership calculation according to IPC details on request. Details on request.
	Cost for one nozzle	< 1 €					* i.e. plastic nozzle type 615. Fair prices for nozzles enable a low cost-of-ownership.
	Air consumption	185 NI/min*	180 NI/min**				* Example SIPLACE X2 with vacuum pump. ** Example SIPLACE D1 with vacuum pump. Low air consumption can positively influence cost-of-ownership.
	Air consumption per placed component	0.2 NI/component					Calculated for a SIPLACE X4 with IPC performance and vacuum pump. Low air consumption can positively influence the cost-of-ownership.
	Effective power consumption	1.83 kW	1.5 kW				For SIPLACE X2 and SIPLACE D1. Low energy costs help to reduce the cost-of-ownership.
	Warranty time calculated per real placements	600 Mio.* equal 1 year	342 Mio.** equal 1 year				* Calculated with an IPC performance of 100,000 cph (SIPLACE X4) for a production with 20 hours per day and 300 working days per year. ** Calculated with an IPC performance of 57,000 cph (SIPLACE D4) for a production with 20 hours per day and 300 working days per year. Warranty times based on performance enable a predictable cost calculation.
<b>Flexibility</b>							
	Time needed for feeder change (according to IPC)	Min. 8 sec.*	Min. 15 sec.**				* For 8 mm type including: log off, remove feeder, place new feeder, log on ** For 12/16 mm type including: open machine cover, disconnect feeder, remove feeder, place new feeder, connect feeder. Fast feeder changeovers enable faster product changes and provide a high degree of flexibility.
	Feeder change without machine stop possible?	Yes*	No				* When using family setups; with multiple job optimization in a single setup; optional use of LES for X-series with X-feeders. Non-stop setup changeovers provide a significant productivity improvement, particularly in high-mix production environments.
	Time needed for changeover table swapping (according to IPC)	Min. 22 sec.*	Min. 36 sec.**				* Time including: open machine cover, unlock tables, remove tables, place new tables, lock new tables, close cover. ** Time including: open machine cover, lift tables, unlock tables, remove tables, place new tables, lock new tables, lower the new tables, close cover. Fast feeder table changeovers enable fast product changes and provide a high degree of flexibility.
	Time needed for product changeover	0 sec.*	0 sec.*				* When using family setups; with multiple job optimization in a single setup; optional use of LES for SIPLACE X-series with X-feeders. Fast feeder changeovers provide fast product changeovers and improve flexibility without reducing productivity.

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high ----- low							
<b>Flexibility</b>							
	Time needed for programming one new package form at the SIPLACE Vision Teaching Station	Min. 20 sec.*	Min. 20 sec.*				* Using teaching wizard at offline SIPLACE Vision Teaching Station. Fastest introduction of new products, especially if new components are used.
	Time required to fully program a new PCB	10 min.*					* Time includes: ASCII data import, PCB description, link to BOM, optimization, line balancing and downloading placement programs to the line. Condition: Use of package shapes in the library. Quick and reliable new product introductions support the efficient utilization of equipment and generate competitive advantages.
	Product clustering for family setup possible?	Yes	Yes				Product clustering lets you produce more products with fewer setups. Having to make significantly fewer setup changes saves time and money.
	Offline setup with setup control with "Virtual Product Build" and setup verification possible?	Yes	Yes				Unlinking many product preparation functions from the production process increases flexibility and lets you use your equipment more efficiently.
	Cycle time required for ink spot verification	0 sec*					* Starting with the second station in a line and on all subsequent stations. The "Whispering-Down-the-Line" feature reads the ink spots in the first station and sends this information to all subsequent stations, thus improving the line's flexibility and performance.
	Automatic solution for extreme, design-related placement requirements?	Yes, for example for: → Stacked components (CSP stacking) → Densely spaced components with large height differences (danger of collision between component and nozzle )					The SIPLACE Precedence Finder recognizes these jobs automatically based on the component geometries. It computes a solution and automatically integrates it into the placement programs. The placement process runs flexibly and reliably even under extreme requirements.
	Solution available for different names of components in CAD, ERP and production data?	Automatic name conversion					The "BOM Merge" function converts component names flexibly and reliably into the appropriate format. This reduces the amount of work required for NPI processes considerably.
	How many different CAD format can be read?	36					SIPLACE CAD converts an exceptionally wide range of CAD formats into SIPLACE production data. This is a particularly important feature for contract manufacturers who must be able to read and convert the product data from current and new customers quickly and error-free.
<b>Ease of Use</b>							
	Number of languages available on the station software	> 20*	> 20*				* Additional languages available on request. Operators are supported in their native language. No extra expenses for operators' language skills necessary.
	Number of clicks to change languages on machine Graphical User Interface (GUI)	3 clicks	3 clicks				Change of language on the fly enables multi-national operators and provides understandable information in different languages.
	"Virtual Product Build" available?	Yes	Yes				Virtual Product Build provides a complete and graphical representation of the entire production process. New product introductions thus require minimal production equipment.
	Paperless setup changeover management?	Yes	No				The SIPLACE Line Execution System (LES) and colored LEDs on the feeders guide the operator through the setup process for more efficient and reliable changeovers that don't require a production stop.
	Training time needed to program, optimize and run a line	30 min.*					* Training contents: handling of existing programs, line balancing, download programs, data structure. Software designed for best usability.

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high ----- low							
<b>Ease of Use</b>							
	„Train the trainer“ classes available?	Yes	Yes				Minimizing the training efforts by „train the trainer“ concepts helps to reduce costs in cases of staff fluctuation.
	Onsite training with mobile classroom available?	Yes	Yes				A mobile classroom is installed at the customer site. This saves travel times and expenses of employees.
	How does the company assure the quality of its trainers worldwide?	Through certifications					SIPLACE trainers are regularly assessed to optimize the transfer of knowledge to the customer.
	How does the company assure that the training contents are always up-to-date worldwide?	With a global training development team					The SIPLACE Training Development Team defines curricula that are mandatory worldwide. Any product innovations are instantly reflected in the seminar documentations. Customers benefit from first-class instruction and high-quality training materials.
	Number of training languages	> 15					Training in the student's local language makes the student's job easier. The customer's production in turn benefits from the quick implementation of the new materials.
	Overview of training offerings and contents; seminar reservations	Online					With non-bureaucratic online bookings you simplify your own training management and save money.
	Max. noise emissions according to IEC 651A	74 dB (A)	74 dB (A)				Low noise levels ensure better communication and a healthy production environment.
<b>Availability</b>							
	MTBF value (Meantime between failure)	4,500 hrs.*					* Depending on machine type and configuration. High technical availability is the key for optimized utilization.
	Time needed for head change incl. calibration	30 min.*	30 min.*				* Needed time to replace a Collect&Place head. Leads to lower mean time to repair (MTTR)
	Maintenance time for machine per year (incl. head)	26 hrs.*	32 hrs.**				* Based on SIPLACE X4 with four 20-nozzle C&P heads and X-feeder tables. Maintenance times depend strongly on head configuration. Times may vary due to different heads in use and utilization rate. ** Based on SIPLACE D4 with four 12-nozzle C&P heads. Less maintenance time means more production time and less personnel hours
	Hours needed for maintenance during 492 mio.* real placements	26 hrs.*	52 hrs.**				* Calculated with an IPC performance of 82,000 cph (SIPLACE X4 with four 20-nozzle C&P heads) for a production with 20 hours per day and 300 working days per year. ** Computed accordingly with an IPC rating of 57,000 cph (SIPLACE D4).
	Documentation languages	> 20					Documentation in the native language speeds up training and makes the equipment's operation easier.
	Service hotline staffed by experts available? (no call center)	Yes					Talking with experts directly speeds up responses and problem resolutions.
	Global hotline hours	24 hours / day 365 days / year					The SIPLACE hotline is manned around the clock by experienced service technicians to ensure that problems are resolved as quickly as possible.
	Number of languages the service hotline can handle	Europe: 17 Americas: 3 Asia South: 2 Asia North: 2					Describing problems in the customer's native language are more detailed and speed up the analysis. Problems are resolved faster, and downtime is reduced.
	Average waiting time to a hotline attendant	7 seconds					A quick hotline response is the basis for a quick troubleshooting process.
	Percentage of customer inquiries that can be answered on the hotline	> 70 %					By far the largest percentage of customer inquiries can be answered on the telephone. This high rating proves the competency and experience of the service technicians manning the hotline.

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high ----- low							
<b>Availability</b>							
	Centrally organized dispatch of service technicians	Yes					The dispatch of service technicians is organized centrally by the main regions. If one region has no expert available, it can request experts from other regions. That way we make sure that an expert will be on site as quickly as possible.
	Response time to service requests	4 hrs.*					* Data source: ERM-System. In more than 80 percent of incidents, the service technicians arrive on-site within four hours. In cases covered by service contracts, this quota reached 100 percent.
	Onsite service: First-time success rate	> 98.5%					With almost all service calls, the problem is resolved on the spot. Only in very rare cases will a second visit be needed – for example, if a replacement part needs to be ordered.
	Number of service competence centers for second-level support worldwide	4 One each in the Americas, Asia North, Asia South and Europe					If an incident cannot be resolved on-site within a specified period of time, it is escalated to the Second-Level Support (Service Competence Center). The on-site technician will receive expert support to make sure that all solutions are delivered quickly and competently.
	Number of technical solutions in the knowledge database for service experts	> 4,500					To analyze and resolve problems, all service experts have around-the-clock access to an extensive and constantly updated knowledge database. This ensures that solutions are made available to the customer quickly and competently.
	Spare part availability after machine phase out	10 years*					* According to scope of service and delivery. SIPLACE machines have a long lifetime in production and a high resale value. That is the reason why most of the SIPLACE machines we ever sold are still in the market.
	Number of spare parts warehouses	70					SIPLACE replacement parts are delivered via the global Siemens Logistics Network. Parts depots near the customer provide improved availability and shorten downtimes.
	Delivery time for spare parts	2 hrs.*					* With express delivery. Rush shipments make sure that downtimes remain short.
	Time required to deliver one machine	< 1day*					* Typical period ranging from the production at Siemens to unpacking, commission and start of production. Quick deliveries ensure short-term responses in case of failures or unexpected production peaks.
	Technical machine availability*	99.65 %	99.65 %				* Criteria according to Scope of Service and Delivery for SIPLACE X4 and SIPLACE D1
	Full splice capability of all feeders given?	Yes	Yes				No machine stop necessary to refill components ensures a high equipment utilization level.
	Number of service employees	> 650					Each local service technician is backed by a chain of experts who provide support, ship the right parts on time, update repair instructions and prepare training seminars. A strong and competent organization leads to quick responses and timely troubleshooting.
	Number of service locations worldwide	Europa: 20 Americas: 50 Asia South: 7 Asia North: 9					Service locations near the customer ensure quick response times and personal service.
	Percentage of service people who are direct employees of machine vendor with full access to HQ resources	99 %					Almost all service engineers are direct Siemens employees. This prevents complex communication paths via outside agents. The direct contact between customer makes for a faster problem resolution and reduced downtime.
	Does the portfolio include proactive services?	> 85 %					Counting our service products, more than 85% of our offerings are proactive services helping customers to ensure long-term high efficiency.

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high ----- low							
<b>Availability</b>							
	Central data storage for multiple lines possible?	Yes					Central data storage is supporting proper data supply and the use of a consistent data base.
	Easy, foolproof system for local backup creation available?	Yes					SIPLACE Engineering Data Manager (EDM) supports the use of existing data, indicates changes and ensures clean data. A reliable data management system optimizes the production flow and prevents production errors.
	Does the company offer instant productivity analyses?	Yes					A Performance Services Team conducts productivity analyses and points out potential improvements. So far we haven't conducted a single productivity analysis that hasn't uncovered potential improvements. In general two days are enough to analyse the situation.
	Number of customer productivity optimization projects performed	> 200					The SIPLACE Performance Services Team conducts productivity optimization projects together with the customer. Potential focus areas include: line productivity, process stability, production quality, line configuration, new product introductions (NPI) as well as fast setup changeovers or setup strategies.
	Average performance improvement after a productivity optimization project	> 10% per line					Significant productivity improvements prove that the SIPLACE Performance Services Team operates very successfully. Customers benefit from a short payback period.
	ROI (return on investment) after the productivity optimization?	80% in less than 6 months 100% in less than 12 months					SIPLACE productivity optimization projects pay for themselves in less than one year, making them a valuable investment that delivers benefits for the long term.
	Individual solutions for equipment maintenance available?	Yes					SIPLACE service modules can be customized and combined to meet any customer situations. The customer can select what he wants to do internally and what he wants to delegate to the SIPLACE Service Team. This provides him with more flexibility and lower costs for maintenance and service.
	"Perpetual inventory" functionality available?	Yes					SIPLACE Explorer determines the exact component consumption for any period and reports this information to the ERP system. The customer benefits from exact inventory management and avoids time-consuming material shortages in his production.
	Monitoring of line downtimes and diagnostics available?	Yes					SIPLACE Explorer automatically records and analyzes all machine downtimes and their causes. Manual record-keeping, which is prone to errors and often incomplete, thus becomes unnecessary. The best database for recognizing and taking advantage of potential improvements.
<b>Image (Soft facts)</b>							
	Customer loyalty	99.99%					Almost all Siemens customers are repeat customers. A value that reflects the high level of satisfaction with our products and services.
	Number of customers globally	> 2,000					A huge installed base is a good measurement for success and experience and proves that excellent support is given to all customers as well.
	Number of awards received	> 85					Nearly all customers and organizations in the SMT-market are convinced that SIPLACE products are worth a distinction.
	Direct sales channels with full access to the Headquarter resources given?	Yes	Yes				Competent consulting by the global SIPLACE sales team guarantees fast reaction on any demands.
	Oldest running machine in the field	older than 21 years					Machine design is contributing to a long-term efficient use of existing equipment.
	Installed base	> 17,000 SIPLACE machines					Huge installed base is a good measurement for success and experience and proves good support given to customers.

Influence on cost-of-ownership	Value	SIPLACE X-series	SIPLACE D-series	Alternative Vendor .....	Alternative Vendor .....	Alternative Vendor .....	Calculation base, Comments, Background
high ----- low							
<b>Image (Soft facts)</b>							
	Systematic customer feedback strategy?	Yes	Yes				Siemens considers customer feedback a valuable contribution to product innovations and improvements. Regular customer surveys and a formal complaint management process ensure that customer feedback is recorded and answered.
	Acknowledgment receipt for customer feedback?	Yes, via e-mail					Each customer feedback is confirmed via e-mail to ensure the customer that his feedback was received and will be handled properly and correctly.
	Can status of customer feedback be checked?	Yes, on the Internet for registered customers (siplace.com)					Customers can check the status of their feedback around the clock on the Internet – for more security and transparency.
	Customer support provided by specially assigned service employees („One face to customer“)	Yes	Yes				If possible, Siemens will always send the same technician to a customers. This level of continuity promotes trust and the transfer of expertise. It also make troubleshooting faster.
	How does the company assure the quality of its service experts?	With annual assessments and certifications of its service experts					Siemens service experts receive continuing advanced training and are assessed according to global standards. The systematic training and qualification of service experts speeds up troubleshooting and problem resolutions.
	Average experience of service technicians	> 10 years					Experienced service engineers provide analyses and problem resolutions quickly and professionally.
	Are the quality standards for service processes being properly maintained?	Yes, with regular quality audits					Siemens has its service process audited according to globally uniform standards. This ensures that all our customers receive a consistently high level of service, no matter in which region they may be located.
	CE conformity	Yes	Yes				The CE marking is a mandatory European Marking for certain product groups to indicate conformity with the essential health and safety requirements set out in European directives. It is providing a save production environment for the operating staff.
<b>Values that require detailed knowledge about customer product and preconditions at customer site</b>							
	Utilization rate	These values strongly depend on configuration, products and preconditions at the customer site. Please ask your SIPLACE contact person for details.					Utilization rate is mainly depending on technical availability, time for product changes, new product introduction and logistic line support. A good mix of software support and hardware design can help customers to maximize utilization.
	Price						The final price is not the only criteria for buying decisions. Financing models and the resulting cost-of-ownership also need to be considered.