

KULICKE & SOFFA INDUSTRIES INC

Form 424B5

August 05, 2009

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and we are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Filed Pursuant to Rule 424(b)(5)

Registration No. 333-160426

SUBJECT TO COMPLETION, DATED AUGUST 5, 2009

Preliminary Prospectus Supplement

(to Prospectus dated July 23, 2009)

7,000,000 Shares

Common Stock

We are offering 7,000,000 shares of our common stock. Our common stock is listed on the NASDAQ Global Market under the symbol KLIC. On August 4, 2009, the last reported sale price of our common stock, as reported on the NASDAQ Global Market, was \$5.83 per share.

Investing in our common stock involves a high degree of risk. You should carefully consider the discussion under Risk Factors beginning on page S-8 of this prospectus supplement, on page 5 of the accompanying prospectus and in the reports we file with the Securities and Exchange Commission that are incorporated by reference into this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement and the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

PER SHARE	TOTAL
--------------	-------

Public Offering Price	\$	\$
Underwriting Discounts and Commissions	\$	\$
Proceeds to Kulicke and Sofa Industries, Inc. (Before Expenses)	\$	\$

Delivery of the shares of common stock is expected to be made on or about , 2009. We have granted the underwriter an option for a period of 30 days to purchase an additional 1,000,000 shares of our common stock solely to cover over-allotments.

Jefferies & Company

Prospectus Supplement dated , 2009

TABLE OF CONTENTS

Table of Contents
Prospectus Supplement

	Page
<u>About this Prospectus Supplement</u>	ii
<u>Forward-Looking Statements</u>	iii
<u>Prospectus Supplement Summary</u>	S-1
<u>Risk Factors</u>	S-8
<u>Use of Proceeds</u>	S-10
<u>Capitalization</u>	S-11
<u>Price Range of Common Stock and Dividend Policy</u>	S-12
<u>Description of Common Stock</u>	S-13
<u>Certain United States Federal Income Tax Considerations Applicable to Non-U.S. Holders</u>	S-15
<u>Underwriting</u>	S-19
<u>Notice to Investors</u>	S-21
<u>Legal Matters</u>	S-23
<u>Experts</u>	S-23
<u>Where You Can Find More Information</u>	S-23
<u>Information Incorporated by Reference</u>	S-24

Prospectus

<u>Special Note Regarding Forwarding-Looking Statements</u>	3
<u>Summary</u>	4
<u>Risk Factors</u>	5
<u>Use of Proceeds</u>	6
<u>Ratio of Earnings to Fixed Charges and Preferred Stock Dividends</u>	7
<u>General Description of Securities</u>	8
<u>Description of Capital Stock</u>	8
<u>Description of Debt Securities</u>	11
<u>Description of Warrants</u>	27
<u>Description of Units</u>	27
<u>Plan of Distribution</u>	28
<u>Legal Matters</u>	30
<u>Experts</u>	30
<u>Where You Can Find More Information</u>	30
<u>Incorporation of Certain Information by Reference</u>	31

You should rely only on the information contained in, or incorporated by reference into, this prospectus supplement and the accompanying prospectus and any free writing prospectus that we authorize to be distributed to you. You may obtain the information incorporated by reference into this prospectus supplement without charge by following the instructions under Where You Can Find More Information and Information Incorporated by Reference below. We have not, and the underwriter has not, authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not and the underwriter is not making an offer to sell these securities or soliciting

an offer to buy these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement and the accompanying prospectus and any free writing prospectus is accurate only as of the dates on of those documents. Our business, financial condition, results of operations and prospects may have changed since such respective dates.

i

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a registration statement that we have filed with the Securities and Exchange Commission, or the SEC, using a shelf registration. This document contains two parts. The first part is the prospectus supplement, which describes the specific details regarding this offering, including the price, amount of common stock being offered, the risks of investing in our common stock and other items. The second part is the accompanying prospectus, which provides more general information about the securities we may offer from time to time under the shelf registration statement, some of which may not apply to the common stock offered by this prospectus supplement. If there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus, on the other hand, the information in this prospectus supplement will control. You should read both this prospectus supplement and the accompanying prospectus together with the additional information described in [Where You Can Find More Information](#) and [Information Incorporated by Reference](#) before you decide whether to invest in the securities.

This prospectus supplement and the accompanying prospectus summarizes certain documents and other information, and we refer you to them for a more complete understanding of what we discuss in this prospectus supplement and the accompanying prospectus. In making an investment decision, you must rely on your own examination of our Company and the terms of this offering and the common stock, including the merits and risks involved.

We are not making any representation to any purchaser of the common stock regarding the legality of an investment in the common stock by such purchaser. You should not consider any information in this prospectus supplement or the accompanying prospectus to be legal, business or tax advice. You should consult your own attorney, business advisor or tax advisor for legal, business and tax advice regarding an investment in the common stock.

All references in this prospectus supplement and the accompanying prospectus to [Kulicke and Soffa](#), [K&S](#), the [Company](#), [our](#), [us](#) and [we](#) refer to [Kulicke and Soffa Industries, Inc.](#) and its consolidated subsidiaries, except where the context otherwise requires or as otherwise indicated.

TABLE OF CONTENTS

FORWARD-LOOKING STATEMENTS

In addition to historical information, this prospectus supplement and the accompanying prospectus, including the information incorporated by reference into this prospectus supplement and the accompanying prospectus, contain statements relating to future events or our future results. These statements are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and are subject to the safe harbor provisions created by statute. Such forward-looking statements include, but are not limited to, statements that relate to our future revenue, product development, demand forecasts, competitiveness, operating expenses, cash flows and liquidity, profitability, gross margins, product prices, and benefits expected as a result of (among other factors):

projected demand in the overall semiconductor industry, the semiconductor assembly equipment market, and the market for semiconductor expendable tools; and

projected demand for ball, wedge and die bonder equipment.

Generally, words such as may, will, should, could, anticipate, expect, intend, estimate, plan, believe, or the negative of or other variations on these and other similar expressions, identify forward-looking statements. These forward-looking statements are made only as of the date of this prospectus supplement. We do not undertake to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise.

Forward-looking statements are based on current expectations and involve risks and uncertainties. Our future results could differ significantly from those expressed or implied by our forward-looking statements. These risks and uncertainties include, without limitation, those described in this prospectus supplement and the accompanying prospectus and those incorporated by reference into this prospectus supplement and under the heading Risk Factors within our reports and registration statements filed from time to time with the SEC, which are incorporated by reference into this prospectus supplement. This discussion should be read in conjunction with our consolidated financial statements and the accompanying notes incorporated by reference into this prospectus supplement.

We operate in a rapidly changing and competitive environment. New risks emerge from time to time and it is not possible for us to predict all risks that may affect us. Future events and actual results, performance and achievements could differ materially from those set forth in, contemplated by or underlying the forward-looking statements, which speak only as of the date on which they were made. Except as required by law, we assume no obligation to update or revise any forward-looking statement to reflect actual results or changes in, or additions to, the factors affecting such forward-looking statements. Given those risks and uncertainties, investors should not place undue reliance on forward-looking statements as prediction of actual results.

TABLE OF CONTENTS

PROSPECTUS SUPPLEMENT SUMMARY

This summary contains basic information about us, the common stock and this offering. It highlights certain information contained in or incorporated by reference in this prospectus supplement and the accompanying prospectus. Because this is a summary, it does not contain all of the information that you should consider before investing in our common stock. You should read this entire prospectus supplement, including the section entitled Risk Factors, the accompanying prospectus and our financial statements and the accompanying notes to the financial statements and the other documents included therein and incorporated by reference into this prospectus supplement and the accompanying prospectus before making an investment decision.

Kulicke and Sofa Industries, Inc.

We design, manufacture and market capital equipment and expendable tools, as well as service, maintain, repair and upgrade equipment, all used to assemble semiconductor devices, power semiconductors, power modules, LEDs and discrete devices. Our customers primarily consist of integrated device manufacturers, or IDMs, and subcontractor assembly companies. According to VLSI Research, Inc., or VLSI, we are the world's leading supplier of semiconductor ball bonder and wedge bonder assembly equipment.

We operate two main business segments, Equipment and Expendable Tools, and our goal is to be the technology leader and the lowest cost supplier in both these segments. Accordingly, we invest in research and engineering projects intended to enhance our position at the leading edge of semiconductor assembly technology. We also focus on reducing costs by consolidating operations, moving manufacturing to Asia, and sourcing from lower cost suppliers.

Cost reduction efforts are an important part of our normal ongoing operations, and are expected to generate efficiencies without affecting continuous improvement in overall product quality.

During our first fiscal quarter of 2009, we completed the sale of our Wire business to W.C. Heraeus GmbH, or Heraeus, and acquired Orthodyne Electronics Corporation, or Orthodyne, the world's leading wedge bonder manufacturer, as we refocused our business strategy on providing market leading assembly equipment.

Equipment Segment

Our Equipment segment includes ball bonders (used to connect fine gold and copper wires in semiconductor devices), wedge bonders (used to connect both fine and heavy aluminum wire or ribbon in power semiconductors and modules) and die bonders (used to attach die to the semiconductor package).

In March 2008, we launched a new generation of ball bonders, called the Power Series, which includes our *IConn^{PS}* and *ConnX^{PS}* products. In 2008, the *IConn^{PS}* machine won the Advanced Packaging magazine award for top new product in its class, the second time in three years a K&S product received this recognition. In the second quarter of fiscal 2009, we launched the *ConnX-VLED_{PS}TM* automatic ball bonder, an extension of our *ConnX^{PS}* ball bonder, designed specifically for vertical LED applications. Devices bonded with a vertical orientation of the lead frame include high brightness and high-power LED lamps, and represent a growing portion of the overall LED market.

During our first fiscal quarter of 2009, we completed the acquisition of substantially all of the assets and assumption of certain liabilities of Orthodyne, the leading supplier of both wedge bonders and wedges (the consumable product used in wedge bonding) for the power management and hybrid module markets. As a result of this acquisition, we now have a broad portfolio of wedge bonding products, which we believe allows us to address a significantly larger

total available market for our products. Our 3600plus and 7200plus wedge bonders are current market leaders for power interconnects in both the power hybrid and semiconductor markets. Our 7600 series wedge bonder is targeted primarily at the market for small power packages and will extend our product portfolio to include reel-to-reel type applications. The *PowerRibbon*® is a leading-edge interconnect for small power packages and high power applications, including automotive hybrid modules or other high current applications.

During the second fiscal quarter of 2009, we launched the *iStack_{PS}*TM, a next generation die bonding platform for stacked die and high-performance ball grid array applications. *iStack_{PS}*TM includes a number of innovative features that increase bonding speed, accuracy, and reliability. *iStack_{PS}*TM is capable of delivering significant productivity increases over the current generation of competing die bonders.

S-1

TABLE OF CONTENTS

Expendable Tools

We sell a range of expendable tools for the semiconductor packaging and assembly market. Our expendable tools are designed for use on both our own and our competitors' assembly equipment. Ball and wedge bonders use a capillary or wedge tool much like a sewing machine uses a needle. Our expendable tools include a wide variety of capillaries, wedge tools, clamp tooling, cutter blades, wire guides and wafer saw blades. This segment tends to be less volatile than our Equipment business, since sales of Expendable Tools represent consumable purchases for our customers.

Accordingly, these volumes follow the overall trend of total semiconductor interconnect unit production.

Additional Information

K&S was incorporated in Pennsylvania in 1956. Our principal offices are located at 1005 Virginia Drive, Fort Washington, Pennsylvania 19034 and our telephone number is (215) 784-6000. We maintain a website with the address *www.kns.com*. We are not including the information contained on our website as a part of, or incorporating it by reference into, this prospectus supplement. We make available free of charge (other than an investor's own Internet access charges) on or through our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to these reports, as soon as reasonably practicable after the material is electronically filed with or otherwise furnished to the SEC. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports are also available on the SEC website at *www.sec.gov*.

Recent Developments

Third Fiscal Quarter 2009 Results

In recent months, increases in IC unit output drove improvements in our customers' factory utilization and increased demand across nearly all of our business units. As a result, we have seen increased demand for our products during the third fiscal quarter ended June 27, 2009 as compared to the second fiscal quarter ended March 28, 2009. Net revenue from continuing operations for our third fiscal quarter was \$52.1 million, an increase of 106% from our previous fiscal quarter. In our Equipment segment, net revenue increased by 121% and our gross profit increased by 170% as compared to our previous fiscal quarter. Ball bonder revenue increased 332% over second fiscal quarter levels.

Approximately 20% of ball bonder units shipped in the third fiscal quarter were to the LED market. We continue to optimize our product portfolio for this important and growing segment. Our wedge bonder business saw an increase in customer activity during the third fiscal quarter, with sales of wedge bonding tools up significantly and customer interest in wedge bonder equipment increasing. Expendable Tools sales increased 76% over the previous fiscal quarter, consistent with the recovery in customer factory utilization.

We are forecasting net revenue of \$85 to \$90 million for our fourth fiscal quarter of 2009 due to increases in IC unit output and increased demand in nearly all of our business units.

For a more comprehensive discussion of our third fiscal quarter results, including segment information and comparisons to the three and nine months ended June 28, 2008, see our Quarterly Report on 10-Q for the quarter ended June 27, 2009.

TABLE OF CONTENTS

The Offering

Common Stock offered by us

7,000,000 shares

Common Stock to be outstanding immediately after this offering*

68,306,612 shares

Option to Purchase Additional Shares

We have granted to the underwriter an option to purchase up to 1,000,000 additional shares of common stock at the public offering price, less the underwriting discount within 30 days from the date of this prospectus supplement, solely to cover over-allotments.

Use of Proceeds

The net proceeds from this offering, after deducting the underwriter's discounts and estimated offering expenses are expected to be approximately \$ (or approximately \$ if the underwriter exercises its over-allotment option in full). We intend to use the net proceeds from the offering to fund working capital requirements and for general corporate purposes.

NASDAQ Global Market Symbol

KLIC

Risk Factors

You should read "Risk Factors" beginning on page S-8 of this prospectus supplement, page 5 of the accompanying prospectus and in the reports we file with the SEC that are incorporated by reference into this prospectus supplement to better understand the risks associated with an investment in our common stock.

The number of shares of common stock outstanding after the offering is based on 61,306,612 shares outstanding as of July 27, 2009. This number excludes as of July 27, 2009, 4,922,672 shares of common stock issuable upon the exercise of outstanding and vested stock options, 1,925,547 shares of outstanding restricted stock, 3,813,037 shares *of common stock issuable upon conversion of our outstanding 1.0% Convertible Subordinated Notes and 7,662,831 shares of common stock issuable upon conversion of our outstanding 0.875% Convertible Subordinated Notes. In addition, except as otherwise indicated, the information throughout this prospectus supplement assumes no exercise by the underwriter of its over-allotment option to purchase up to an additional 1,000,000 shares of common stock.

S-3

TABLE OF CONTENTS

Selected Consolidated Financial Data

The following table reflects selected historical consolidated financial data derived from the consolidated financial statements of Kulicke and Soffa Industries, Inc. and subsidiaries as of and for each of the five fiscal years ended 2004, 2005, 2006, 2007 and 2008. The selected financial data for the nine months ended June 27, 2009 and June 28, 2008 has been derived from the interim consolidated financial statements of Kulicke and Soffa Industries, Inc. and its subsidiaries. The selected financial data for the nine months ended June 27, 2009 reflects the acquisition of Orthodyne. All periods have been reclassified to reflect our Wire business as a discontinued operation. Due to this change, fiscal 2004, 2005, 2006 and 2007 and the nine months ended June 28, 2008 financial data have been revised from our previously issued consolidated financial statements. This data should be read in conjunction with our consolidated financial statements, including the accompanying notes and other financial information incorporated by reference into this prospectus supplement and the accompanying prospectus.

S-4

TABLE OF CONTENTS

(1) During fiscal 2004, we recorded the following charges as operating expenses in continuing operations: severance charges of \$1.9 million; China start-up costs of \$0.1 million; inventory write-downs of \$0.4 million; and a reversal of prior year resizing charges of \$0.1 million. We also recorded a gain on the sale of assets of \$0.9 million within fiscal 2004 operating expenses.

During fiscal 2005, we recorded the following charges as operating expenses in continuing operations: severance charges of \$0.9 million; China start-up costs of \$1.2 million; and inventory write-downs of \$1.0 million. We also recorded a gain on the sale of assets of \$1.7 million within fiscal 2005 operating expenses.

During fiscal 2006, we recorded the following charges in continuing operations: \$3.5 million in cost of sales and \$0.8 million in operating expenses for the cumulative adjustment to correct immaterial errors in the consolidated financial statements; \$0.6 million in cost of sales and \$4.1 million in operating expenses for SFAS 123R equity compensation expense; \$8.4 million in operating expenses for incentive compensation and a gain on the sale of assets of \$4.5 million in operating expenses.

S-5

TABLE OF CONTENTS

During fiscal 2007, we recorded the following charges in continuing operations: \$0.2 million in cost of sales and \$5.3 million in operating expenses for SFAS 123R equity compensation expense; and \$4.4 million in operating expense for incentive compensation.

During fiscal 2008, we recorded the following charges in continuing operations: \$0.3 million in cost of sales and \$4.4 million in operating expenses for SFAS 123R equity compensation expense; and \$2.2 million in operating expense for incentive compensation.

For the nine months ended June 28, 2008, we recorded the following charges in continuing operations: \$0.2 million in cost of sales and \$3.9 million in operating expenses for SFAS 123R equity compensation expense; and \$2.2 million in operating expense for incentive compensation.

For the nine months ended June 27, 2009, we recorded \$0.3 million in operating expenses for SFAS 123R equity compensation expense.

The following are the more significant factors which affect our provision for income taxes: implementation of our international restructuring plan in fiscal 2006, 2007 and 2008; volatility in our earnings each fiscal year and variation in earnings among various tax jurisdictions in which we operate; changes in assumptions regarding repatriation of earnings; and our provision for various tax exposure items.

(2) Reflects the operations of the Company's former flip chip business unit (sold February 2004), Test business (sold March 2006), and Wire business (sold subsequent to fiscal 2008).

(3) Certain of our per share data for fiscal 2004 and 2005 has been revised to correct immaterial errors in those unaudited amounts contained in the Selected Financial Data table of our Annual Report on Form 10-K for the year ended September 27, 2008.

(4) For fiscal 2004, 2005, 2006 and 2007 the exercise of dilutive stock options and expected vesting of performance-based restricted stock (fiscal 2007 only) and conversion of the convertible subordinated notes were assumed and \$5.2 million, \$1.7 million, \$1.4 million and \$1.3 million, respectively, of after-tax interest expense related to our convertible subordinated notes was added to the Company's net income to determine diluted earnings per share. Due to the Company's net loss from continuing operations for fiscal 2008 and for the nine months ended June 28, 2008 and June 27, 2009, potentially dilutive shares were not assumed since the effect would have been anti-dilutive.

(5) In August 2001, the Company issued \$125.0 million in principal amount of 5.25% Convertible Subordinated Notes due 2006, which the Company redeemed in their entirety in August 2004. In December 2003, the Company issued \$205.0 million in principal amount of 0.5% Convertible Subordinated Notes, which the Company redeemed in its entirety over the course of fiscal 2006, 2007, 2008 and 2009, as follows, respectively: \$75.0 million, \$53.6 million, \$4.0 million, and \$72.4 million. In June 2004, the Company issued \$65.0 million in principal amount of 1.0% Convertible Subordinated Notes due 2010, of which the Company repurchased \$16.0 million during fiscal 2009. In June 2007, the Company issued \$110.0 million in principal amount of 0.875% Convertible Subordinated Notes due 2012.

S-6

TABLE OF CONTENTS

The acquisition of Orthodyne occurred at the beginning of the first quarter of fiscal 2009. Therefore, its results are not included in the Company's financial data for the nine months ended June 28, 2008. The following table reflects certain pro forma unaudited operating results for the Company, assuming the acquisition of Orthodyne had occurred as of the beginning of the period presented and including certain pro forma adjustments*:

(in thousands, except per share data)	Nine months ended June 28, 2008 Unaudited
Net revenues	\$ 343,576
Gross profit	152,477
Loss from continuing operations	(9,760)
Loss from continuing operations, net of tax	\$ (6,035)
Loss per share from continuing operations:	
Basic	\$ (0.10)
Diluted	\$ (0.10)
Weighted average shares outstanding:	
Basic	60,510
Diluted	60,510

*

These pro forma adjustments include:

- (1) addition of rental expense related to a new lease between Orthodyne and K&S for Orthodyne's building in Irvine, California;
- (2) a reduction in annual depreciation resulting from decreased basis of property and equipment excluded from the assets purchase;
- (3) elimination of expense related to changes in the cash surrender value of the life insurance excluded from the assets purchased;
- (4) elimination of the historical Orthodyne intangible asset amortization and adjustment to record new amortization on the \$59.6 million fair value of intangible assets acquired; and
- (5) adjustment to eliminate the historical Orthodyne provision for income taxes and provide income tax expense at the applicable federal and California state tax rates assuming utilization of the Company's existing net operating loss carry forwards which offset ordinary income taxes.

S-7

TABLE OF CONTENTS

RISK FACTORS

Investing in our common stock involves risk. You should carefully consider the risk factors discussed below and those contained in our most recent Annual Report on Form 10-K and our subsequent Quarterly Reports on Form 10-Q, which are incorporated by reference herein, and the other information contained in this prospectus supplement and the accompanying prospectus, as updated by our subsequent filings under the Exchange Act, before you make an investment decision regarding our common stock.

The risks and uncertainties discussed below and in the documents incorporated by reference herein are not the only risks we face. Additional risks not currently known to us or that we currently deem immaterial may also harm our business. Our business, financial condition, or results of operations could be materially adversely affected by any of these risks and cause the value of our securities, including our common stock, to decline. The trading price of the securities, including our common stock, could decline due to any of these risks, and you may lose all or part of your investment.

Risks Related to the Offering and Our Common Stock

Our stock price has been and is likely to continue to be highly volatile.

In recent years, the price of our common stock has fluctuated greatly. These price fluctuations have sometimes been rapid and severe. The price of our common stock may continue to fluctuate greatly in the future due to a variety of factors, including:

slowdowns or downturns in the semiconductor industry and the global economy generally;
quarter to quarter variations in our operating results based on general economic and industry conditions or other factors;
differences in our revenue or earnings from levels expected by securities analysts as well as changes in their recommendations;

future equity or debt offerings;

additions or departures of key personnel; and

announcements of technological innovations or new products by us or other companies.

One or more of these factors could significantly harm our business and cause a decline in the price of our common stock in the public market, which could adversely affect your investment as well as our business and financial operations.

In addition, the market price of our common stock may be adversely affected by market conditions affecting the stock markets in general. The overall weakness in the economy and the current financial crisis have recently contributed to extreme volatility of the markets, including the market price of our common stock.

We do not expect to pay dividends on our common stock in the foreseeable future.

Although our shareholders may receive dividends if, as and when declared by our board of directors, we do not intend to pay dividends on our common stock in the foreseeable future. Therefore, you should not purchase our common stock if you need immediate or future income by way of dividends from your investment.

Our stock price may decline if additional shares are sold in the market after the offering.

The Company and its executive officers and directors have agreed not to dispose of or hedge any common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus supplement continuing through the date 90 days after the date of this prospectus supplement, subject to certain exceptions. Future sales of substantial numbers of shares of our common stock by our existing shareholders in the public market, or the perception that these sales could occur, may cause the market price of our common stock to decline. In addition, we may be required to issue additional shares upon exercise of previously granted options that are currently outstanding and pursuant to our convertible

S-8

TABLE OF CONTENTS

subordinated notes. Increased sales of our common stock in the market after exercise of currently outstanding options and upon conversion of our convertible subordinated notes could exert significant downward pressure on our stock price. These sales also might make it more difficult for us to sell equity or equity-related securities in the future at a time and price we deem appropriate, or at all.

Investors in this offering may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering. The price per share at which we sell additional shares of our common stock or securities convertible into common stock in future transactions may be higher or lower than the price per share in this offering.

S-9

TABLE OF CONTENTS

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately \$ million, after deducting estimated underwriting discounts and commissions and estimated offering expenses and assuming an offering price of \$ per share. We estimate the aggregate net proceeds to us will be approximately \$ if the underwriter exercises its over-allotment option to purchase additional shares in full.

We intend to use the net proceeds from the offering to fund working capital requirements and for general corporate purposes. We have not identified the amounts or timing of any expenditures, and our management will have broad discretion as to the use and application of the offering proceeds. Pending the uses described above, we intend to use the net proceeds to make short-term investments.

S-10

TABLE OF CONTENTS**CAPITALIZATION**

The following table shows our capitalization at June 27, 2009:

on an actual basis; and

on an as adjusted basis to reflect this offering and related use of proceeds, as described under Use of Proceeds, and assuming no exercise of the underwriter's over-allotment option to purchase additional shares.

This table should be read in conjunction with, and is qualified in its entirety by reference to, our historical financial statements and the accompanying notes in our Annual Report on Form 10-K for the fiscal year ended September 27, 2008 and our Quarterly Reports on Form 10-Q for the fiscal quarters ended December 27, 2008, March 28, 2009 and June 27, 2009, which are incorporated by reference herein.

	June 27, 2009 (in thousands)	
	Actual	As Adjusted
Cash, cash equivalents, restricted cash and short-term investments	\$117,285	
Short-term obligations:		
Current portion of long-term debt		
Long-term obligations:		
0.875% Convertible Subordinated Notes due 2012	110,000	
1.0% Convertible Subordinated Notes due 2010	48,964	
Total long-term obligations	\$158,964	
Shareholders' equity:		
Preferred Stock, no par value; 5,000 shares authorized; none issued or outstanding		
Common Stock, no par value; 200,000 shares authorized; 66,056 issued and 61,251 outstanding ⁽¹⁾	343,543	
Treasury Stock, at cost, 4,910 shares	(46,118)	
Accumulated Deficit	(191,982)	
Accumulated other comprehensive income	1,622	
Total Shareholders' Equity	107,056	
Total Capitalization	\$266,020	

Excludes as of June 27, 2009, 4,944 shares of common stock issuable upon exercise of outstanding stock options, 1,929 outstanding shares of restricted stock, 7,663 shares issuable upon conversion of the 0.875% Convertible Subordinated Notes due 2012 and 3,813 million shares issuable upon conversion of the 1.0% Convertible Subordinated Notes due 2010.

S-11

TABLE OF CONTENTS

PRICE RANGE OF COMMON STOCK AND DIVIDEND POLICY

As of July 27, 2009, 61,306,612 shares of our common stock were outstanding, held by approximately 419 shareholders of record.

Our common stock trades on the NASDAQ Global Market under the trading symbol KLIC.

	Common Stock Price	
	High	Low
Year ended September 29, 2007:		
First Quarter	\$ 9.67	\$ 7.92
Second Quarter	\$ 10.19	\$ 8.17
Third Quarter	\$ 11.04	\$ 9.11
Fourth Quarter	\$ 12.46	\$ 7.34
Year ended September 27, 2008:		
First Quarter	\$ 8.89	\$ 6.47
Second Quarter	\$ 7.01	\$ 4.55
Third Quarter	\$ 7.95	\$ 4.66
Fourth Quarter	\$ 7.49	\$ 4.53
Year ended October 3, 2009:		
First Quarter	\$ 4.71	\$ 1.11
Second Quarter	\$ 2.67	\$ 1.15
Third Quarter	\$ 5.04	\$ 2.11
Fourth Quarter through August 4, 2009	\$ 6.14	\$ 3.00

The last reported sales price for our common stock on the NASDAQ Global Market on August 4, 2009 was \$5.83 per share.

Dividend Policy

The payment of dividends on our common stock is within the discretion of our board of directors. We have not historically paid cash dividends on our common stock and we do not expect to declare cash dividends on our common stock in the foreseeable future. We intend to retain earnings to finance the growth of our business.

TABLE OF CONTENTS

DESCRIPTION OF COMMON STOCK

The following is a general description of our capital stock. The terms of our amended and restated articles of incorporation and bylaws are more detailed than the general information provided below. Therefore, you should carefully read and consider the actual provisions of those documents.

Authorized Capital Stock

We are authorized to issue a total of 205,000,000 shares of our capital stock, each of which is without par value. Of the authorized amount, 200,000,000 of the shares are designated as common stock and 5,000,000 of the shares are designated as preferred stock.

Our board of directors may, without further action by our shareholders, issue a series of preferred stock and fix the rights and preference of those shares, including the dividend rights, dividend rates, conversion rights, exchange rights, voting rights, terms of redemption, redemption price or prices, liquidation and other preferences and priorities and the number of shares constituting any series or the designation of such series. The rights of the holders of common stock will be subject to, and may be adversely affected by, the rights of the holders of any preferred stock issued by us. All of the 5,000,000 authorized shares of preferred stock are currently undesignated.

As of July 27, 2009 there were 61,306,612 shares of common stock issued and outstanding, and no shares of preferred stock issued or outstanding.

Common Stock

General. Each share of our common stock has the same rights and privileges. Holders of our common stock do not have any preferences or any preemptive, conversion or exchange rights. All of our outstanding shares of common stock are fully paid and nonassessable. Our common stock is listed on the NASDAQ Global Market under the symbol KLIC.

Voting Rights. The holders of our common stock are entitled to vote upon all matters submitted to a vote of our shareholders and are entitled to one vote for each share of common stock held. Our board of directors is classified into four classes, with one class being elected each year. In the election of directors, the holders of our common stock have cumulative rights, meaning that they may multiply the number of votes they are entitled to cast by the total number of directors to be elected at a meeting of shareholders and cast the whole number of votes for one candidate or distribute them among some or all candidates.

Dividends. Subject to the prior rights and preferences, if any, applicable to shares of preferred stock or any series of preferred stock, the holders of common stock are entitled to participate ratably in dividends, payable in cash, stock or otherwise, as may be declared by our board of directors out of any funds legally available for the payment of dividends. Each such distribution will be payable to holders of record as they appear on our stock transfer books on such record dates as may be fixed by our board of directors.

Liquidation and Distribution. If we voluntarily or involuntarily liquidate, dissolve or wind-up, or upon any distribution of our assets, the holders of our common stock will be entitled to receive after distribution in full of the preferential amounts, if any, to be distributed to the holders of preferred stock or any series of preferred stock, all of the remaining assets available for distribution equally and ratably in proportion to the number of shares of common

stock held by them.

Certain Charter and Bylaws Provisions

Some sections of our articles of incorporation and bylaws and provisions of Pennsylvania law may discourage certain transactions involving a change in control of the Company.

Our articles of incorporation and bylaws contain provisions that (i) classify the board of directors into four classes, with one class being elected each year, (ii) permit the board to issue blank check preferred stock without shareholder approval, and (iii) prohibit us from engaging in certain business combinations with a holder of 20% or more of our shares without super-majority board or shareholder approval. Further, under the Pennsylvania Business Corporation Law, because our bylaws provide for a classified board of directors, shareholders may only remove directors for cause.

S-13

TABLE OF CONTENTS

K&S has opted out of several provisions of the Pennsylvania Business Corporation Law that could have the effect of delaying or interfering with a proposed change of control, but is also subject to other provisions of that law which could have those effects. Our directors are subject to a provision of the Pennsylvania Business Corporation Law that permits them to consider the interests of constituencies other than the shareholders when deciding what will be in the best interests of the Company. In addition, we are subject to two statutory provisions that are similar to the last provision of our articles of incorporation described above. These statutory provisions impose certain price and other requirements, and special approvals before a holder of 20% or more of our shares may engage in certain transactions.

Transfer Agent and Registrar

American Stock Transfer and Trust Company currently is the transfer agent and registrar for our common stock, with offices in New York, New York. The transfer agent and registrar for any shares of preferred stock we issue will be set forth in the applicable prospectus supplement.

S-14

TABLE OF CONTENTS

CERTAIN UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS APPLICABLE TO NON-U.S. HOLDERS

The following is a summary of certain United States federal income tax considerations related to the purchase, ownership and disposition of our common stock that are applicable to a non-U.S. holder (defined below) of the common stock. This section does not address tax considerations applicable to U.S. Holders. U.S. Holders are urged to consult their own tax advisors to determine the specific tax consequences and risks to them of purchasing, holding and disposing of our common stock.

This summary:

does not purport to be a complete analysis of all of the potential tax considerations that may be applicable to an investor as a result of the investor's particular tax situation;
is based on the Internal Revenue Code of 1986, as amended, or the Code, United States federal income tax regulations promulgated or proposed under the Code, which we refer to as the Treasury Regulations, judicial authority and published rulings and administrative pronouncements, each as of the date hereof and each of which are subject to change at any time, possibly with retroactive effect;

is applicable only to beneficial owners of common stock who hold their common stock as a capital asset, within the meaning of section 1221 of the Code;

does not address all aspects of United States federal income taxation that may be relevant to holders in light of their particular circumstances or who are subject to special treatment under United States federal income tax laws, including but not limited to:

- certain former citizens and long-term residents of the United States;
- controlled foreign corporations and passive foreign investment companies ;
- partnerships, other pass-through entities and investors in these entities; and

investors that expect to receive dividends or realize gain in connection with the investors' conduct of a United States trade or business, permanent establishment or fixed base.

does not discuss any possible applicability of any United States state or local taxes, non-United States taxes or any United States federal tax other than the income tax, including, but not limited to, the federal gift tax and estate tax and the alternative minimum tax.

This summary of certain United States federal income tax considerations constitutes neither tax nor legal advice. Prospective investors are urged to consult their own tax advisors to determine the specific tax consequences and risks to them of purchasing, holding and disposing of our common stock, including the application to their particular situation of any United States federal income tax, United States federal estate and gift, United States alternative minimum tax, United States state and local, non-United States and other tax laws and of any applicable income tax treaty.

Non-U.S. Holder Defined

For purposes of this discussion, a non-U.S. holder is a beneficial holder of our common stock that is neither a United States person nor a partnership or entity or arrangement treated as a partnership for United States federal income tax purposes. A United States person is:

an individual citizen or resident of the United States;

a corporation, or other entity treated as an association taxable as a corporation for United States federal income tax purposes, that is organized in or under the laws of the United States, any state thereof or the District of Columbia; an estate the income of which is subject to United States federal income taxation regardless of its source; or

S-15

TABLE OF CONTENTS

a trust if it (1) is subject to the primary supervision of a court within the United States and one or more United States persons have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable the Treasury Regulations to be treated as a United States person.

If a partnership (or an entity or arrangement treated as a partnership for United States federal income tax purposes) holds our common stock, then the United States federal income tax treatment of a partner in that partnership generally will depend on the status of the partner and the partnership's activities. Partners and partnerships should consult their own tax advisors with regard to the United States federal income tax treatment of an investment in our common stock.

Distributions

Distributions, if any, paid to a non-U.S. holder of our common stock, other than certain pro rata distributions of common stock, will constitute dividends for United States federal income tax purposes to the extent paid out of our current or accumulated earnings and profits, as determined for United States federal income tax purposes. Any distributions that exceed both our current and accumulated earnings and profits would first constitute a non-taxable return of capital, which would reduce the holder's basis in our common stock, but not below zero, and thereafter would be treated as gain from the sale of our common stock (see Sale or Taxable Disposition of Common Stock below).

Subject to the following paragraphs, dividends on our common stock generally will be subject to United States federal withholding tax at a 30% gross rate, subject to any exemption or lower rate as may be specified by an applicable income tax treaty. We may withhold up to 30% of either (i) the gross amount of the entire distribution, even if the amount of the distribution is greater than the amount constituting a dividend, as described above, or (ii) the amount of the distribution we project will be a dividend, based upon a reasonable estimate of both our current and our accumulated earnings and profits for the taxable year in which the distribution is made. If tax is withheld on the amount of a distribution in excess of the amount constituting a dividend, then you may obtain a refund of such excess amounts by timely filing a claim for refund with the United States Internal Revenue Service.

In order to claim the benefit of a reduced rate of or an exemption from withholding tax under an applicable income tax treaty, a non-U.S. holder will be required (a) to satisfy certain certification requirements, which may be made by providing us or our agent with a properly executed and completed Internal Revenue Service Form W-8BEN (or other applicable form) certifying, under penalty of perjury, that the holder qualifies for treaty benefits and is not a United States person or (b) if our common stock is held through certain non-United States intermediaries, to satisfy the relevant certification requirements of Treasury Regulations. Special certification and other requirements apply to certain non-U.S. holders that are pass-through entities.

Dividends that are effectively connected with the conduct of a trade or business by the non-U.S. holder within the United States (and, if required by an applicable income tax treaty, are attributable to a U.S. permanent establishment or, in the case of an individual non-U.S. holder, a fixed base) are not subject to the withholding tax, provided that the non-U.S. holder so certifies, under penalty of perjury, on a properly executed and delivered Internal Revenue Service Form W-8ECI (or other applicable form). Instead, such dividends would be subject to United States federal income tax on a net income basis in the same manner as if the non-U.S. holder were a United States person.

Corporate holders who receive effectively connected dividends may also be subject to an additional branch profits tax at a gross rate of 30% on their earnings and profits for the taxable year that are effectively connected with the holder's conduct of a trade or business within the United States, subject to any exemption or reduction provided by an applicable income tax treaty.

Sale or Taxable Disposition of Common Stock

Any gain realized on the sale, exchange or other taxable disposition of our common stock generally will not be subject to United States federal income tax unless:

the gain is effectively connected with a trade or business of the non-U.S. holder in the United States (and, if required by an applicable income tax treaty, is attributable to a U.S. permanent establishment of the non-U.S. holder or, in the case of an individual, a fixed base);

S-16

TABLE OF CONTENTS

the non-U.S. holder is an individual who is present in the United States for 183 days or more in the taxable year of that disposition, and certain other conditions are met; or we are or have been a United States real property holding corporation for United States federal income tax purposes at any time during the shorter of the five-year period preceding such disposition and the non-U.S. holder's holding period in the common stock.

A non-U.S. holder described in the first bullet point above generally will be subject to United States federal income tax on the net gain derived from the sale or disposition under regular graduated United States federal income tax rates, as if the holder were a United States person. If such non-U.S. holder is a corporation, then it may also, under certain circumstances, be subject to an additional branch profits tax at a gross rate of 30% on its earnings and profits for the taxable year that are effectively connected with its conduct of its United States trade or business, subject to exemption or reduction provided by any applicable income tax treaty.

An individual non-U.S. holder described in the second bullet point immediately above will be subject to a tax at a 30% gross rate, subject to any reduction or reduced rate under an applicable income tax treaty, on the net gain derived from the sale, which may be offset by U.S. source capital losses, even though the individual is not considered a resident of the United States.

We believe we are not, have not been and will not become a United States real property holding corporation for United States federal income tax purposes. In the event that we are or become a United States real property holding corporation at any time during the applicable period described in the third bullet point above, any gain recognized on a sale or other taxable disposition of our common stock may be subject to United States federal income tax, including any applicable withholding tax, if either (1) the non-U.S. holder beneficially owns, or has owned, more than 5% of the total fair value of our common stock at any time during the applicable period, or (2) our common stock ceases to be traded on an established securities market within the meaning of the Code. Non-U.S. holders who own or may own more than 5% of our common stock are encouraged to consult their tax advisors with respect to the United States tax consequences of a disposition of our common stock.

Information Reporting and Backup Withholding

We must report annually to the Internal Revenue Service and to each non-U.S. holder the amount of dividends paid to such holder and the tax withheld with respect to such dividends, regardless of whether withholding was required.

Copies of the information returns reporting such dividends and withholding may also be made available to the tax authorities in the country in which the non-U.S. holder resides under the provisions of an applicable income tax treaty.

A non-U.S. holder will be subject to backup withholding, currently at a 28% rate, for dividends paid to such holder unless such holder certifies under penalty of perjury as to non-United States person status or such holder otherwise establishes an exemption (provided that neither we nor the paying agent has actual knowledge or reason to know that such holder is a United States person or that the conditions of any other exemptions are not in fact satisfied).

Information reporting and, depending on the circumstances, backup withholding will apply to the proceeds of a sale of our common stock within the United States or conducted through certain U.S.-related financial intermediaries, unless the beneficial owner certifies under penalty of perjury as to non-United States person status or such owner otherwise establishes an exemption (provided that neither the broker nor intermediary has actual knowledge or reason to know that such owner is a United States person or that the conditions of any other exemptions are not in fact satisfied).

Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a non-U.S. holder's United States federal income tax liability provided the required information is timely furnished to the Internal

Revenue Service.

S-17

TABLE OF CONTENTS

Recent Legislative Developments

The Obama Administration has recently proposed legislation that would limit the ability of non-U.S. investors to claim relief from U.S. withholding tax in respect of dividends paid on common stock, if such investors hold common stock through a non-U.S. intermediary that is not a qualified intermediary. The Administration's proposals also would limit the ability of certain non-U.S. entities to claim relief from U.S. withholding tax in respect of dividends paid to such non-U.S. entities unless those entities have provided documentation of their beneficial owners to the withholding agent. Another proposal would impose a 20% withholding tax on the gross proceeds of the sale of common stock effected through a non-U.S. intermediary that is not a qualified intermediary and that is not located in a jurisdiction with which the United States has a comprehensive income tax treaty having a satisfactory exchange of information provision. A non-U.S. investor generally would be permitted to claim a refund to the extent any tax withheld exceeded the investor's actual tax liability. It is unclear whether, or in what form, these proposals may be enacted. Non-U.S. holders are encouraged to consult with their tax advisers regarding the possible implications of the Administration's proposals on their investment in respect of the common stock.

S-18

TABLE OF CONTENTS

UNDERWRITING

Under the terms and subject to the conditions contained in an underwriting agreement dated _____, 2009, the underwriter named below has agreed to purchase, and we have agreed to sell to it, the number of shares of common stock indicated in the table below:

<u>Name</u>	<u>Number of Shares</u>
Jefferies & Company, Inc.	

The underwriter is offering the shares of common stock subject to its acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the underwriter to pay for and accept delivery of the shares of common stock offered by this prospectus supplement are subject to the approval of certain legal matters by its counsel and to certain other conditions. The underwriter is obligated to take and pay for all of the shares of common stock if any such shares are taken. However, the underwriter is not required to take or pay for the shares covered by the underwriter's option to purchase additional shares described below.

Option to Purchase Additional Shares

We have granted to the underwriter an option, exercisable, in whole or in part, for 30 days from the date of this prospectus supplement, to purchase up to an aggregate of 1,000,000 additional shares of common stock at the public offering price set forth on the cover page of this prospectus supplement, less underwriting discounts and commissions, solely to cover over-allotments, if any, made in connection with the offering of the shares of common stock.

Commission and Expenses

The underwriter has advised us that it proposes to offer the shares of common stock to the public at the public offering price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession not in excess of \$ _____ per share. The underwriter may allow, and certain dealers may reallow, a discount from the concession not in excess of \$ _____ per share of common stock to certain brokers and dealers. After the offering, the public offering price, concession and reallowance to dealers may be reduced by the underwriter. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus supplement. The shares of common stock are offered by the underwriter as stated herein, subject to receipt and acceptance by it and subject to its right to reject any order in whole or in part. The underwriter does not intend to confirm sales to any accounts over which it exercises discretionary authority.

The following table shows the public offering price, the underwriting discounts and commissions payable to the underwriter by us and the proceeds, before expenses, to us. Such amounts are shown assuming both no exercise and full exercise of the underwriter's option to purchase additional shares.

Per Share		Total	
Without	With Option	Without	With Option
Option	to Purchase	Option	to Purchase
to	Additional	to	Additional
Purchase Shares	Purchase Shares	Purchase Shares	Purchase Shares
Additional	Additional	Additional	Additional

	Shares		Shares	
Public offering price	\$	\$	\$	\$
Underwriting discounts and commissions paid by us	\$	\$	\$	\$
Proceeds to us, before expenses	\$	\$	\$	\$

We estimate expenses payable by us in connection with the offering of common stock, other than the underwriting discounts and commissions referred to above, will be approximately \$.

Indemnification

We have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act, or to contribute to payments that the underwriter may be required to make in respect of those liabilities.

S-19

TABLE OF CONTENTS

Lock-up Agreements

We, our officers, directors and certain of our stockholders have agreed, subject to specified exceptions, not to directly or indirectly:

sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open put equivalent position within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934; otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially; or publicly announce an intention to do any of the foregoing, for a period of 90 days after the date of this prospectus supplement without the prior written consent of Jefferies & Company, Inc.

This restriction terminates after the close of trading of the shares of common stock on and including the 90 days after the date of this prospectus supplement. However, subject to certain exceptions, in the event that either (i) during the last 17 days of the 90-day restricted period, we issue an earnings release or material news or a material event relating to us occurs or (ii) prior to the expiration of the 90-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 90-day restricted period, then in either case the expiration of the 90-day restricted period will be extended until the expiration of the 18-day period beginning on the date of the issuance of an earnings release or the occurrence of the material news or event, as applicable, unless the underwriter waives, in writing, such an extension.

The underwriter may, in its sole discretion and at any time or from time to time before the termination of the 90-day period, without notice, release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriter and any of our executive officers and directors who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period. Certain former employees of Orthodyne, the Orthodyne Employee Stock Ownership Plan and our former Chief Financial Officer who resigned effective August 4, 2009, will not be subject to the lock-up agreements.

Listing

Our common stock is listed on the NASDAQ Global Market under the trading symbol **KLIC**.

Electronic Distribution

A prospectus supplement in electronic format may be made available on websites or through other online services maintained by the underwriter of the offering, or by its affiliates. Other than the prospectus supplement in electronic format, the information on the underwriter's website and any information contained in any other website maintained by the underwriter is not part of the prospectus supplement or the registration statement of which this prospectus supplement forms a part, has not been approved and/or endorsed by us or the underwriter in its capacity as underwriter and should not be relied upon by investors.

Price Stabilization and Short Positions

Until the distribution of the shares of common stock is completed, SEC rules may limit the underwriter from bidding for and purchasing the shares of common stock. However, the underwriter may engage in transactions that stabilize the market price of the shares of common stock, such as bids or purchases to peg, fix or maintain that price so long as

stabilizing transactions do not exceed a specified maximum.

In connection with this offering, the underwriter may engage in transactions that stabilize, maintain or otherwise make short sales of shares of our common stock and may purchase shares of our common stock on the open market to cover positions created by short sales. Short sales involve the sale by the underwriter of a greater number of shares than it is required to purchase in this offering. Covered short sales are sales made in an amount not greater than the underwriter's over-allotment option to purchase additional shares in this offering. The underwriter may close out any covered short position by either exercising its over-allotment option or purchasing shares in the open market. In determining the source of shares to close out the covered

S-20

TABLE OF CONTENTS

short position, the underwriter will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which it may purchase shares through the over-allotment option. Naked short sales are sales in excess of the over-allotment option. The underwriter must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in this offering. A stabilizing bid is a bid for or the purchase of shares of common stock on behalf of the underwriter in the open market prior to the completion of this offering for the purpose of fixing or maintaining the price of the shares of common stock. A syndicate covering transaction is the bid for or purchase of shares of common stock on behalf of the underwriter to reduce a short position incurred by the underwriter in connection with the offering.

Similar to other purchase transactions, the underwriter's purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our stock or preventing or retarding a decline in the market price of our stock. As a result, the price of our stock may be higher than the price that might otherwise exist in the open market.

In connection with this offering, the underwriter may also engage in passive market making transactions in our common stock on the NASDAQ Global Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

Neither we, nor the underwriter, makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of the shares of our common stock. In addition, neither we nor the underwriter makes any representation that the underwriter will engage in these transactions or that any transaction, if commenced, will not be discontinued without notice.

Affiliations

The underwriter and its affiliates have provided, and may in the future provide, various investment banking, commercial banking, financial advisory and other services to us and our affiliates for which services they have received, and may in the future receive, customary fees. In the course of their businesses, the underwriter and its affiliates may actively trade our securities or loans for their own account or for the accounts of customers, and, accordingly, the underwriter and its affiliates may at any time hold long or short positions in such securities or loans.

NOTICE TO INVESTORS

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (as defined below) (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date) an offer of our common stock to the public may not be made in that Relevant Member State prior to the publication of a prospectus in relation to our common stock which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant

Member State, all in accordance with the Prospectus Directive, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive if they have been implemented in the Relevant Member State:

- (a) to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;
- to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year;
- (b)(2) a total balance sheet of more than €43,000,000 and (3) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts;

S-21

TABLE OF CONTENTS

- (c) to fewer than 100 natural or legal persons per Relevant Member State (other than qualified investors as defined in the Prospectus Directive); or
- (d) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of our common stock will result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an offer of our common stock to the public in relation to any shares of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and our common stock to be offered so as to enable an investor to decide to purchase or subscribe our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression Prospectus Directive means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

Germany

Any offer or solicitation of securities within Germany must be in full compliance with the German Securities Prospectus Act (Wertpapierprospektgesetz – WpPG). The offer and solicitation of securities to the public in Germany requires the publication of a prospectus that has to be filed with and approved by the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht – BaFin). This prospectus supplement has not been and will not be submitted for filing and approval to the BaFin and, consequently, will not be published. Therefore, this prospectus supplement does not constitute a public offer under the German Securities Prospectus Act (Wertpapierprospektgesetz). This prospectus supplement and any other document relating to our common stock, as well as any information contained therein, must therefore not be supplied to the public in Germany or used in connection with any offer for subscription of our common stock to the public in Germany, any public marketing of our common stock or any public solicitation for offers to subscribe for or otherwise acquire our common stock. This prospectus and other offering materials relating to the offer of our common stock are strictly confidential and may not be distributed to any person or entity other than the designated recipients hereof.

The Netherlands

Shares of our common stock may not, directly or indirectly, be offered or acquired in the Netherlands and this prospectus supplement may not be circulated in the Netherlands, as part of an initial distribution or any time thereafter, other than to individuals or (legal) entities who or which qualify as qualified investors within the meaning of Article 1:1 of the Financial Supervision Act (*Wet op het financieel toezicht*) as amended from time to time.

United Kingdom

Shares of our common stock may not be offered or sold and will not be offered or sold to any persons in the United Kingdom other than to persons whose ordinary activities involve them in acquiring, holding, managing or disposing of investments (as principal or as agent) for the purposes of their businesses or otherwise in circumstances which have not resulted or will not result in an offer to the public in the United Kingdom within the meaning of the Financial Services and Markets Act 2000, or the FSMA.

In addition, any invitation or inducement to engage in investment activity (within the meaning of section 21 of the FSMA) in connection with the issue or sale of shares of our common stock may only be communicated or caused to be communicated in circumstances in which Section 21(1) of the FSMA does not apply to us. Without limitation to

the other restrictions referred to herein, this prospectus supplement is directed only at (1) persons outside the United Kingdom or (2) persons who:

- (a) are qualified investors as defined in section 86(7) of FSMA, being persons falling within the meaning of article 2.1(e)(i), (ii) or (iii) of the Prospectus Directive; and
- (b) are either persons who fall within article 19(1) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or Order, or are persons who fall within article 49(2)(a) to (d) (high net worth companies, unincorporated associations, etc.) of the Order; or

S-22

TABLE OF CONTENTS

(c) to whom it may otherwise lawfully be communicated in circumstances in which Section 21(1) of the FSMA does not apply.

Without limitation to the other restrictions referred to herein, any investment or investment activity to which this offering circular relates is available only to, and will be engaged in only with, such persons, and persons within the United Kingdom who receive this communication (other than persons who fall within (2) above) should not rely or act upon this communication.

LEGAL MATTERS

The validity of the securities being offered by this prospectus supplement has been passed upon for us by Drinker Biddle & Reath LLP. Certain legal matters in connection with this offering are being passed upon for the underwriter by Jones Day.

EXPERTS

The consolidated financial statements, financial statement schedule and management's report on the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) of Kulicke and Soffa Industries, Inc. incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended September 27, 2008 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The financial statements of Orthodyne Electronics Corporation incorporated into this prospectus supplement by reference from our Current Reports on Form 8-K/A dated October 28, 2008 and Form 8-K dated July 2, 2009 have been audited by McGladrey & Pullen, LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3, of which this prospectus supplement is a part. This prospectus supplement and the accompanying prospectus do not contain all of the information set forth in the registration statement and exhibits and schedules to the registration statement. For further information with respect to us and the securities registered hereby, reference is made to the registration statement, including the exhibits and schedules to the registration statement. Statements contained in this prospectus supplement and the accompanying prospectus as to the contents of any contract or other document referred to in, or incorporated by reference in, this prospectus supplement and the accompanying prospectus are not necessarily complete and, where that contract or other document is an exhibit to the registration statement, each statement is qualified in all respects by the exhibit to which the reference relates.

We file annual, quarterly, special reports, proxy statements and other information with the SEC. These documents contain specific information regarding us. These documents, including exhibits and schedules thereto, may be inspected without charge at the SEC's principal office in Washington, D.C., and copies of all or any part thereof may be obtained from the Public Reference Section of the SEC, 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Section may be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website which provides online access to reports, proxy and information statements and other

information regarding registrants that file electronically with the SEC at the address <http://www.sec.gov>.

We make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act available (free of charge) on or through our Internet website located at <http://www.kns.com>. We maintain a website with the address www.kns.com. We are not including the information contained on our website as part of, or incorporating it by reference into, this prospectus supplement.

Our common stock is listed on the NASDAQ Global Market under the symbol KLIC. Our reports, proxy statements, and other information are also available at the following NASDAQ address: NASDAQ Operations, 1735 K Street, N.W., Washington, D.C. 20006.

S-23

TABLE OF CONTENTS

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference the information we file with them, which means that we can disclose important information to you by referring you to those document. These documents contain important information about us and our financial condition. The information incorporated by reference is considered to be part of this prospectus supplement.

Information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below, except for information furnished under Item 2.02 or Item 7.01 of Form 8-K which is neither deemed filed nor incorporated by reference herein:

Our Annual Report on Form 10-K for the year ended September 27, 2008;

Our Quarterly Reports on Form 10-Q for the quarters ended December 27, 2008, March 28, 2009 and June 27, 2009; Our Current Reports on Form 8-K filed on October 2, 2008, October 3, 2008, October 8, 2008 and amended on October 28, 2008, October 15, 2008, November 18, 2008, December 1, 2008, January 2, 2009, January 8, 2009, January 15, 2009, February 25, 2009, March 31, 2009, April 2, 2009, May 19, 2009, June 26, 2009, July 2, 2009 and July 13, 2009;

The description of our common stock contained in our registration statement on Form 8-A12G/A filed on July 17, 2000, including any and all amendments and reports filed for the purpose of updating that description; and Any future filings we make under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including any filings after the date of this prospectus supplement until we terminate this offering.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein may be modified or superseded in the future. Any such statement so modified will not be deemed to constitute a part of this prospectus supplement except as so modified and any statement so superseded will not be deemed to constitute a part of this prospectus supplement.

We will provide to you without charge, upon receipt of your written or oral request, a copy of any or all of the documents that are incorporated by reference in this prospectus supplement, other than exhibits that are not specifically incorporated by reference in such documents. You should direct written or telephone requests to Investor Relations Department, Kulicke and Soffa Industries, Inc., 1005 Virginia Drive, Fort Washington, PA 19034, telephone (215) 784-6000.

You should rely only upon the information provided in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus supplement is accurate as of any date other than the date of this prospectus supplement.

Our logo appearing on the front and back covers of this prospectus supplement is a trademark of Kulicke and Soffa Industries, Inc.

S-24

TABLE OF CONTENTS

\$100,000,000

**Common Stock
Preferred Stock
Senior Debt Securities
Senior Subordinated Debt Securities
Subordinated Debt Securities
Warrants
Units**

Kulicke & Soffa, from time to time, may offer, issue and sell, together or separately, (i) shares of common stock, (ii) shares of preferred stock, (iii) debt securities, which may be senior debt securities, senior subordinated debt securities or subordinated debt securities, and shares of common stock or preferred stock issuable upon conversion of such debt securities, (iv) warrants to purchase common stock, preferred stock, or other securities and (v) units consisting of two or more classes of the securities registered hereunder. The aggregate public offering price of the securities we may sell under this prospectus will not exceed \$100,000,000.

The form in which we are to issue the securities, their specific designation, aggregate principal amount or aggregate initial offering price, maturity, if any, rate and times of payment of interest or dividends, if any, redemption, conversion, and sinking fund terms, if any, voting or other rights, if any, exercise price and detachability, if any, and other specific terms will be described in a supplement to this prospectus, together with the terms of the offering of such securities.

Our common stock is traded on the NASDAQ Global Market under the symbol **KLIC**. Any prospectus supplement will also contain information, where applicable, as to any other listing on a securities exchange of the securities covered by such prospectus supplement.

Investing in the securities offered hereby involves risks. Purchasers of securities should read and consider the information set forth under Risk Factors on page 5 of this prospectus, in any accompanying prospectus supplement, and in the reports we file with the Securities and Exchange Commission that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus or the accompanying prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

We may sell the securities directly or to or through underwriters or dealers, and also to other purchasers or through agents or a combination of these methods. The names of any underwriters or agents participating in a sale of securities to you, and any applicable commissions or discounts, will be stated in an accompanying prospectus supplement. For general information about the distribution of securities offered, please see Plan of Distribution on page 28 of this prospectus.

This prospectus may not be used to offer and sell securities unless it is accompanied by a prospectus supplement.

This prospectus is dated July 23, 2009.

TABLE OF CONTENTS

TABLE OF CONTENTS

<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	3
<u>SUMMARY</u>	4
<u>RISK FACTORS</u>	5
<u>USE OF PROCEEDS</u>	6
<u>RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS</u>	7
<u>GENERAL DESCRIPTION OF SECURITIES</u>	8
<u>DESCRIPTION OF CAPITAL STOCK</u>	8
<u>DESCRIPTION OF DEBT SECURITIES</u>	11
<u>DESCRIPTION OF WARRANTS</u>	27
<u>DESCRIPTION OF UNITS</u>	27
<u>PLAN OF DISTRIBUTION</u>	28
<u>LEGAL MATTERS</u>	30
<u>EXPERTS</u>	30
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	30
<u>INCORPORATION OF CERTAIN INFORMATION BY REFERENCE</u>	31

i

TABLE OF CONTENTS

About this Prospectus

All references in this prospectus to Kulicke & Soffa, K&S, the Company, our, us and we refer to Kulicke and Soffa Industries, Inc. and its consolidated subsidiaries, except where the context otherwise requires or as otherwise indicated.

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the SEC) using a shelf registration. Under this shelf registration, we may sell any combination of the securities described in this prospectus in one or more offerings up to an aggregate initial offering price of \$100,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus.

For general information about the distribution of securities offered, please see Plan of Distribution on page 28 of this prospectus. You should read both this prospectus and any prospectus supplement together with the additional information described in Where You Can Find More Information and Incorporation of Certain Information by Reference before you decide whether to invest in the securities.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement. You may obtain the information incorporated by reference into this prospectus without charge by following the instructions under Where You Can Find More Information and Incorporation of Certain Information by Reference below. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities or soliciting an offer to buy the securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus summarizes certain documents and other information, and we refer you to them for a more complete understanding of what we discuss in this prospectus. In making an investment decision, you must rely on your own examination of our company and the terms of this offering and the securities, including the merits and risks involved.

We are not making any representation to any purchaser of the securities regarding the legality of an investment in the securities by such purchaser. You should not consider any information in this prospectus to be legal, business or tax advice. You should consult your own attorney, business advisor or tax advisor for legal, business and tax advice regarding an investment in the securities.

TABLE OF CONTENTS

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

In addition to historical information, this prospectus, including the information incorporated by reference into this prospectus, contains statements relating to future events or our future results. These statements are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act) and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act), and are subject to the safe harbor provisions created by statute. Such forward-looking statements include, but are not limited to, statements that relate to our future revenue, product development, demand forecasts, competitiveness, operating expenses, cash flows and liquidity, profitability, gross margins, product prices, and benefits expected as a result of (among other factors):

projected growth rates in the overall semiconductor industry, the semiconductor assembly equipment market, and the market for semiconductor expendable tools; and

projected demand for ball, wedge and die bonder equipment.

Generally, words such as may, will, should, could, anticipate, expect, intend, estimate, plan, believe, or the negative of or other variations on these and other similar expressions identify forward-looking statements. These forward-looking statements are made only as of the date of this prospectus. We do not undertake to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise.

Forward-looking statements are based on current expectations and involve risks and uncertainties. Our future results could differ significantly from those expressed or implied by our forward-looking statements. These risks and uncertainties include, without limitation, those described in this prospectus and in the applicable prospectus supplement and those incorporated by reference into this prospectus and under the heading Risk Factors within our reports and registration statements filed from time to time with the Securities and Exchange Commission, which are incorporated by reference into this prospectus. This discussion should be read in conjunction with the Consolidated Financial Statements and Notes incorporated by reference into this prospectus.

We operate in a rapidly changing and competitive environment. New risks emerge from time to time and it is not possible for us to predict all risks that may affect us. Future events and actual results, performance and achievements could differ materially from those set forth in, contemplated by or underlying the forward-looking statements, which speak only as of the date on which they were made. Except as required by law, we assume no obligation to update or revise any forward-looking statement to reflect actual results or changes in, or additions to, the factors affecting such forward-looking statements. Given those risks and uncertainties, investors should not place undue reliance on forward-looking statements as prediction of actual results.

TABLE OF CONTENTS

SUMMARY

The following summary highlights certain information contained in or incorporated by reference in this prospectus. It does not contain all of the information that may be important to you and to your investment decision. The following summary is qualified in its entirety by the more detailed information and the financial statements and the notes included or incorporated by reference in this prospectus. You should carefully read this entire prospectus and the applicable prospectus supplement and should consider, among other things, the risks incorporated by reference into the sections of this prospectus and the applicable prospectus supplement entitled Risk Factors before deciding to invest in any of our securities.

Kulicke and Sofa Industries, Inc.

We design, manufacture and market capital equipment and expendable tools, as well as service, maintain, repair and upgrade equipment, all used to assemble semiconductor devices. Our customers primarily consist of integrated device manufacturers and subcontractor assembly facilities. Beginning in fiscal 2009, our Packaging Materials segment was renamed Expendable Tools.

Our goal is to be the technology leader and the lowest cost supplier in our main business segments which are:

equipment, and
expendable tools.

Accordingly, we invest in research and engineering projects intended to enhance our position at the leading edge of semiconductor assembly technology. We also remain focused on our cost structure, consolidating operations, moving certain manufacturing to Asia, moving a portion of our supply chain to lower cost suppliers and designing higher performing, lower cost equipment. Cost reduction efforts are an important part of our normal ongoing operations, and are expected to generate efficiencies while maintaining overall product quality.

During our first fiscal quarter of 2009, we completed the acquisition of substantially all of the assets and assumption of certain liabilities of Orthodyne Electronics Corporation (Orthodyne). Orthodyne is the leading supplier of both wedge bonders and wedges (the consumable product used in wedge bonding) for the power management and hybrid module markets. In addition, during our first fiscal quarter of 2009, we completed the sale of our Wire business to W.C. Heraeus GmbH (Heraeus).

K&S was incorporated in Pennsylvania in 1956. Our principal offices are located at 1005 Virginia Drive, Fort Washington, Pennsylvania 19034 and our telephone number is (215) 784-6000. We maintain a website with the address www.kns.com. We are not including the information contained on our website as a part of, or incorporating it by reference into, this prospectus. We make available free of charge (other than an investor's own Internet access charges) on or through our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to these reports, as soon as reasonably practicable after the material is electronically filed with or otherwise furnished to the SEC. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports are also available on the SEC website at www.sec.gov.

TABLE OF CONTENTS

RISK FACTORS

Investing in our securities involves risk. You should carefully consider the risk factors contained in our most recent Annual Report on Form 10-K and our subsequent Quarterly Reports on Form 10-Q, which are incorporated by reference herein, and the other information contained in this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement before you make an investment decision regarding the securities.

Our business, financial condition, or results of operations could be materially adversely affected by any of these risks and cause the value of our securities to decline. The trading price of the securities could decline due to any of these risks, and you may lose all or part of your investment.

5

TABLE OF CONTENTS

USE OF PROCEEDS

We do not currently know either the number or types of securities that will be ultimately sold pursuant to this prospectus or the prices at which such securities will be sold. Unless the applicable prospectus supplement for a particular issuance of securities states otherwise, the net proceeds we receive from the sale of the securities offered by this prospectus will be used for general corporate purposes, which may include:

funding the development and growth of our product offerings and business;
repaying indebtedness that we may incur from time to time;
financing potential business acquisitions that we may consider from time to time; and
general working capital.

Pending these uses, we may use the net proceeds to make short-term investments or reduce short-term borrowings.

TABLE OF CONTENTS

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

The ratio of earnings to fixed charges for each of the periods indicated is as follows:

Fiscal Years Ended,					Six Months
September	September	September	September	September	Ended
30,	30,	30,	29,	27,	March 28,
2004	2005	2006	2007	2008	2009

Ratio of earnings to fixed charges 6.34x 4.94x 14.31x 5.54x

These computations include us and our consolidated subsidiaries. These ratios are computed by dividing (a) income (loss) before taxes from continuing operations plus fixed charges and equity in loss of joint ventures by (b) fixed charges, which includes interest expense plus the portion of rent expense under operating leases we deem to be representative of the interest factor and amortization of debt issuance costs.

We would have had to generate additional earnings of \$23.2 million and \$63.5 million in fiscal 2008 and for the six months ended March 28, 2009, respectively, to achieve a ratio of 1:1. We had no preferred stock outstanding for any period presented.

TABLE OF CONTENTS

GENERAL DESCRIPTION OF SECURITIES

This prospectus, including any information incorporated by reference into this prospectus, together with the additional information included in any applicable prospectus supplements, contains a summary of the material terms and provisions of our common stock, preferred stock, debt securities, including senior debt securities, senior subordinated debt securities and subordinated debt securities consisting of notes, debentures or other evidence of indebtedness, warrants, and units consisting of two or more classes of these securities. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. We will also include in the prospectus supplement information, when applicable, about material U.S. federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

The securities offered by this prospectus may be offered in amounts, at prices and on terms to be determined at the time of the offering. The aggregate initial offering price of securities offered by us under this prospectus will not exceed \$100,000,000. These summaries are not meant to be a complete description of each security.

DESCRIPTION OF CAPITAL STOCK

The following is a general description of our capital stock. The terms of our amended and restated articles of incorporation and bylaws are more detailed than the general information provided below. Therefore, you should carefully read and consider the actual provisions of those documents, which are incorporated by reference as exhibits to the registration statement of which this prospectus forms a part.

Authorized Capital Stock

We are authorized to issue a total of 205,000,000 shares of our capital stock, each of which is without par value. Of the authorized amount, 200,000,000 of the shares are designated as common stock and 5,000,000 of the shares are designated as preferred stock.

Our board of directors may, without further action by our shareholders, issue a series of preferred stock and fix the rights and preference of those shares, including the dividend rights, dividend rates, conversion rights, exchange rights, voting rights, terms of redemption, redemption price or prices, liquidation and other preferences and priorities and the number of shares constituting any series or the designation of such series. The rights of the holders of common stock will be subject to, and may be adversely affected by, the rights of the holders of any preferred stock issued by us. All of the 5,000,000 authorized shares of preferred stock are currently undesignated.

As of June 29, 2009 there were 61,251,334 shares of common stock issued and outstanding, and no shares of preferred stock issued or outstanding.

Common Stock

General. Each share of our common stock has the same rights and privileges. Holders of our common stock do not have any preferences or any preemptive, conversion or exchange rights. All of our outstanding shares of common stock are fully paid and nonassessable. Our common stock is listed on the NASDAQ Global Market under the symbol KLIC .

Voting Rights. The holders of our common stock are entitled to vote upon all matters submitted to a vote of our shareholders and are entitled to one vote for each share of common stock held. Our board of directors is classified into four classes, with one class being elected each year. In the election of directors, the holders of our common stock have cumulative rights, meaning that they may multiply the number of votes they are entitled to cast by the total number of directors to be elected at a meeting of shareholders and cast the whole number of votes for one candidate or distribute them among some or all candidates.

Dividends. Subject to the prior rights and preferences, if any, applicable to shares of preferred stock or any series of preferred stock, the holders of common stock are entitled to participate ratably in dividends, payable in cash, stock or otherwise, as may be declared by our board of directors out of any funds legally available for the payment of dividends. Each such distribution shall be payable to holders of record as they appear on our stock transfer books on such record dates as may be fixed by our board of directors.

TABLE OF CONTENTS

Liquidation and Distribution. If we voluntarily or involuntarily liquidate, dissolve or wind-up, or upon any distribution of our assets, the holders of our common stock will be entitled to receive after distribution in full of the preferential amounts, if any, to be distributed to the holders of preferred stock or any series of preferred stock, all of the remaining assets available for distribution equally and ratably in proportion to the number of shares of common stock held by them.

Preferred Stock

General. The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to each particular series. A prospectus supplement relating to each such series will specify the terms of the preferred stock as determined by our board of directors, including the following:

- the title and stated value of the preferred stock being offered;
- the number of shares of preferred stock being offered, their liquidation preference per share, if any, and their purchase price;
- the dividend rate(s), period(s) and payment date(s) or method(s) of calculating the payment date(s) applicable to the preferred stock being offered;
- whether dividends shall be cumulative or non-cumulative;
- the provisions for redemption, if applicable, of the preferred stock being offered;
- any listing of the preferred stock being offered on any securities exchange or market;
- voting rights, if any, of the preferred stock being offered;
- the relative ranking and preference of the series as to dividend rights and rights upon our dissolution or upon any distribution of our assets;
- any limitations on issuance of any series of our preferred stock ranking senior to or on parity with that particular series of our preferred stock as to dividend rights and rights upon our dissolution or upon any distribution of our assets;
- the provision for a sinking fund, if any, for such preferred stock;
- any listing on any securities exchange of such preferred stock;
- conversion features, including the conversion price of such stock; and
- any other specific terms, preferences, priorities, rights, limitations or restrictions of the preferred stock being offered.

The description of the preferred stock set forth above and in any description of the terms of a particular series of preferred stock in the related prospectus supplement will not be complete. You should refer to the applicable certificate of designation for such series of preferred stock for complete information with respect to such preferred stock. The prospectus supplement will also contain a description of certain material United States federal income tax consequences relating to the preferred stock.

Although it has no present intention to do so, our board of directors, without shareholder approval, may issue preferred stock with voting and conversion rights that could adversely affect the voting power of the holders of common stock. If we issue preferred stock, it may have the effect of delaying, deferring or preventing a change in control.

Voting Rights. Holders of preferred stock will have voting rights as indicated in the applicable prospectus supplement.

Dividends. Holders of the preferred stock of each series will be entitled to receive, when, as and if declared by our board of directors, out of our funds legally available for payment to shareholders, dividends at such rates and on such dates as will be set forth in the applicable prospectus supplement. Each such distribution shall be payable to holders of record as they appear on our stock transfer books on such record dates as shall be fixed by our board of directors.

TABLE OF CONTENTS

Liquidation and Distribution. If we voluntarily or involuntarily liquidate, dissolve or wind-up, or upon any distribution of our assets, the holders of our preferred stock will have the rights as stated in the applicable prospectus supplement.

Redemption. The terms and conditions, if any, upon which the preferred stock will be subject to mandatory redemption or redemption at our option, either in whole or in part, will be described in the applicable prospectus supplement.

Certain Charter and Bylaws Provisions

Some sections of our articles of incorporation and bylaws and provisions of Pennsylvania law may discourage certain transactions involving a change in control of the Company.

Our articles of incorporation and bylaws contain provisions that (i) classify the board of directors into four classes, with one class being elected each year, (ii) permit the board to issue blank check preferred stock without shareholder approval, and (iii) prohibit us from engaging in certain business combinations with a holder of 20% or more of our shares without super-majority board or shareholder approval. Further, under the Pennsylvania Business Corporation Law, because our bylaws provide for a classified board of directors, shareholders may only remove directors for cause.

Kulicke and Soffa has opted out of several provisions of the Pennsylvania Business Corporation Law that could have the effect of delaying or interfering with a proposed change of control, but is also subject to other provisions of that law which could have those effects. Our directors are subject to a provision of the Pennsylvania Business Corporation Law that permits them to consider the interests of constituencies other than the shareholders when deciding what will be in the best interests of the Company. In addition, we are subject to two statutory provisions that are similar to the last provision of our articles of incorporation described above. These statutory provisions impose certain price and other requirements, and special approvals before a holder of 20% or more of our shares may engage in certain transactions.

Transfer Agent and Registrar

American Stock Transfer and Trust Company currently is the transfer agent and registrar for our common stock, with offices in New York, New York. The transfer agent and registrar for any shares of preferred stock we issue will be set forth in the applicable prospectus supplement.

TABLE OF CONTENTS

DESCRIPTION OF DEBT SECURITIES

The following is a general description of the debt securities that we may issue from time to time. The particular terms relating to each debt security, which may be different from or in addition to the terms described below, will be set forth in the prospectus supplement relating to such securities.

The debt securities will be our direct obligations. The senior debt securities will rank equally with all of our other senior and unsubordinated debt. The senior subordinated debt securities will have a junior position to all of our senior debt, which is generally defined in both the subordinated indenture and senior subordinated indenture to include all debt other than debt that is expressly subordinated to or *pari passu* with the subordinated debt securities or senior subordinated debt securities, as the case may be. The subordinated debt securities will have a junior position to all of our senior debt and all of our senior subordinated debt. The senior debt securities will be issued under a senior debt indenture, the senior subordinated debt securities will be issued under a senior subordinated debt indenture, and the subordinated debt securities will be issued under a subordinated debt indenture. The indentures will be qualified under the Trust Indenture Act of 1939.

We have summarized below the material provisions of these indentures. The summary is not complete and is subject in all respects to the provisions of, and is qualified in its entirety by reference to, the forms of indentures, which are filed as exhibits and incorporated by reference into the registration statement of which this prospectus forms a part.

The prospectus supplement relating to the applicable issuance of debt securities will describe any significant differences between the indentures and the summary below. The senior indenture, the senior subordinated indenture and the subordinated indenture are substantially the same, except for certain covenants of ours and provisions relating to subordination. You should read the indentures for provisions that may be important to you. The indentures may be supplemented or revised in connection with the filing of a prospectus supplement and such later version will govern any debt securities issued in conjunction with that prospectus supplement.

Terms Applicable to All Debt Securities

No Limit on Debt Amounts. The indentures do not limit the amount of debt that can be issued under the indentures. These amounts will be set from time to time by our board of directors.

Prospectus Supplements. The applicable prospectus supplement will summarize the specific terms for the debt securities and the related offering including, with respect to each series of debt securities, some or all of the following, as well as any other material terms of the securities:

title and form of the securities;
offering price;
any limit on the amount that may be issued;
maturity date(s);

interest rate or the method of computing the interest rate;

dates on which interest will accrue, or how the dates will be determined, the interest payment dates and any related record dates;

the place or places where debt securities may be surrendered for registration of transfer or for exchange, where notices and demands to or upon us in respect of the debt securities and the indentures may be served and where notices to holders will be published;

terms and conditions on which the debt securities may be redeemed, in whole or in part, at our option;

date(s), if any, on which, and the price(s) at which we are obligated to redeem, or at the holder's option to purchase, in whole or in part, the debt securities and related terms and provisions;

details of any required sinking fund payments;

the currency or currencies in which the debt securities will be denominated or payable, if other than U.S. dollars;

11

TABLE OF CONTENTS

any index, formula or other method by which payments on the debt securities will be determined, and any special voting or defeasance provisions in connection with a determination, if the amount of payments are to be determined with reference to an index, formula or other method;

the persons to whom payments of interest will be made;

any provisions granting special rights to holders when a specified event occurs;

any changes to or additional events of defaults or covenants beyond or modifying those contained in the applicable indenture;

any special tax implications of the debt securities; including under what circumstances, if any, and with what procedures and documentation we will pay additional amounts on the debt securities held by a non-U.S. person in respect of taxes, assessments or similar charges withheld or deducted and, if so, the terms related to any option we will have to redeem those debt securities rather than pay those additional amounts;

whether or not the debt securities will be issued in global form and who the depository will be;

any restrictions on the registration, transfer or exchange of the debt securities;

terms, if any, on which a series of debt securities may be convertible into or exercisable or exchangeable for our common stock, preferred stock or other securities, including provisions as to whether conversion, exercise or exchange is mandatory, at the option of the holder or at our option;

if the debt securities are convertible, exercisable or exchangeable, the events or circumstances that will result in adjustments to the conversion, exercise or exchange price and the formulae for determining the adjusted price;

whether the debt securities are secured or unsecured, and if secured, the amount and form of the security and related terms;

subordination terms of any senior subordinated debt securities and subordinated debt securities; and

any other terms that are not inconsistent with the indenture applicable to a series of debt securities, including any terms that may be required by or advisable under United States laws or regulations or advisable (as determined by us) in connection with the marketing of that series of debt securities.

A series of debt securities may be issued under the relevant indenture as original issue discount securities, which are securities that are offered and sold at a substantial discount from their stated principal amount. In addition, debt securities offered and sold at their stated principal amount may under some circumstances, pursuant to applicable

Treasury Regulations, be treated as issued at an original issue discount for federal income tax purposes. Federal income tax consequences and other special considerations applicable to any such original issue discount securities (or other debt securities treated as issued at an original issue discount) will be described in the prospectus supplement relating to those securities.

Covenants. We will agree in the indentures to:

pay the principal, interest and any premium on the debt securities when due;

maintain an office or agency where debt securities may be surrendered for registration of transfer, exchange, payment or conversion (if the debt securities are convertible) and where notices and demands to or upon us in respect of the debt securities and the relevant indenture(s) may be served;

prepare and file or deliver certain reports, as more fully specified in the relevant indenture, with the trustee under the relevant indenture, the SEC, and/or registered holders of debt securities, as the case may be;

deliver to the trustee under the relevant indenture, as more fully specified in that indenture, officers' certificates relating to our compliance under the relevant indenture and the occurrence of any default or event of default under that indenture;

12

TABLE OF CONTENTS

file with the trustee under the relevant indenture and the SEC, in accordance with, and as may be required by, the rules and regulations prescribed from time to time by the SEC, the additional information, documents and reports with respect to compliance by the Company with the conditions and covenants provided for in the relevant indenture; and unless our board of directors determines that it is no longer desirable in the conduct of our business and our significant subsidiaries, taken as a whole, and that there will be no adverse impact in any material respect to the holders of debt securities, subject to those exceptions as more fully specified in the relevant indenture, do or cause to be done all things necessary to preserve and keep in full force and effect:

- our corporate existence; and
- the rights, licenses and franchises of us and certain of our subsidiaries; and

not at any time seek application of any applicable stay, extension or usury law that may affect the covenants or the performance under the indentures.

Consolidation, Merger and Sale of Assets. We will not consolidate with or merge into any other entity or transfer all or substantially all of our assets unless:

- we are the surviving entity; or

the successor or surviving entity assumes all of our obligations under the debt securities and the indentures pursuant to supplemental indentures in forms reasonably satisfactory to the trustee(s) under the relevant indentures and either (A) is organized or existing under the laws of the United States of America, any state thereof or the District of Columbia or (B) if not organized in any such jurisdiction, then (1) the successor or surviving entity agrees to be subject to the service of process laws of the State of New York, and (2) under the laws of its jurisdiction or organization, payments on the securities would not be subject to withholding tax; and, in any case immediately after we consolidate or merge, no event of default and no event which, after notice or lapse of time, or both, would become an event of default, will have happened and be continuing.

Upon any such consolidation, merger or transfer or all or substantially all of our assets, the successor will be substituted for us under the indenture and we will be relieved of all obligations and covenants under the indenture and the debt securities.

Satisfaction and Discharge. Upon our request, the relevant indenture will no longer be effective with respect to any series for all but certain specified purposes if either:

all outstanding securities of that series have been delivered to the trustee for cancellation and we have paid all sums payable in respect of that series and we have delivered to the trustee a certificate and opinion of legal counsel that all conditions precedent to satisfaction and discharge have been fulfilled; or

the only securities that are still outstanding have, or within one year will, become due and payable or are to be called for redemption, we have deposited with the trustee funds that are sufficient to make all future payments, no default or event of default will have occurred and be continuing on the date of that deposit, we have paid all other sums payable in respect of that series, and we have delivered to the trustee a certificate and opinion of counsel that all conditions precedent to satisfaction and discharge have been fulfilled.

Legal Defeasance and Covenant Defeasance. Under each indenture, we may elect with respect to a series of debt securities at our option and subject to the satisfaction of the conditions described below, either:

to be deemed to have paid and discharged the entire indebtedness represented by the outstanding debt securities of the applicable series and to have satisfied all of our other obligations under the debt securities of the applicable series and under the provisions of the relevant indenture, which we refer to as legal defeasance; or

TABLE OF CONTENTS

to be released from some of our obligations under the relevant indenture, which we refer to as covenant defeasance. We can exercise legal or covenant defeasance if the following conditions are met:

we irrevocably deposit with the applicable indenture trustee (or another trustee meeting certain eligibility requirements and agreeing to be bound by the applicable provisions of the relevant indenture), in trust, for the benefit of the holders of the applicable series of debt securities:

o

cash in United States dollars;

non-callable and non-redeemable direct obligations of the United States of America or of an agency or instrumentality controlled or supervised by the United States of America, in each instance, the payment of which is unconditionally guaranteed as a full faith and credit obligation of the United States of America; or

a combination of the foregoing, that in each case is sufficient, in the opinion of a nationally recognized firm of independent public accountants, to pay the principal of, interest and premium, if any, on the outstanding debt

securities of the applicable series on their stated maturity or applicable redemption date, as the case may be, and any mandatory sinking fund payments applicable to that particular series of the debt securities on the day on which the payments are due;

we deliver to the trustee an opinion of counsel confirming that the holders of the outstanding securities of the applicable series will not recognize income, gain or loss for federal income tax purposes as a result of the defeasance; no default or event of default shall have occurred and be continuing on the date of the deposit of the amounts to be held in trust for the benefit of the holders (other than a default or event of default resulting from the borrowing of funds to be applied to the deposit) or in the case of any insolvency-related defaults, at any time in the period ending on the 91st day after the date of the deposit (or greater period of time in which any such deposit of trust funds may remain subject to bankruptcy or insolvency laws that apply to the deposit by us); and

we deliver to the trustee an officers' certificate and an opinion of counsel, each stating that all conditions precedent provided for or relating to legal defeasance or covenant defeasance, as the case may be, have been complied with.

After satisfying the conditions for legal defeasance, the applicable debt securities will be deemed outstanding only for limited purposes as more fully set forth in the relevant indenture. After legal defeasance, the holders of outstanding debt securities will have to rely solely on the deposits we make to the trust for repayment on the debt securities.

After satisfying the conditions for covenant defeasance, the debt securities of the applicable series will be deemed not outstanding for the purposes of the covenants from which we have been released, but will continue to be deemed outstanding for all other purposes under the relevant indenture.

The applicable prospectus supplement may further describe additional provisions, if any, permitting legal defeasance or covenant defeasance, including any modifications to the provisions described above, with respect to the debt securities of or within a particular series.

Information Concerning the Trustee. The prospectus supplement with respect to particular debt securities will include information concerning the trustee and describe any relationship that we may have with the trustee for the debt securities offered. We may also maintain bank accounts, borrow money and have other customary banking or investment banking relationships with the trustee, or its affiliates, in the ordinary course of business.

Form, Exchange, Transfer. Unless otherwise specified in the prospectus supplement, debt securities will be issued in registered form without coupons, in denominations of \$1,000 or any integral multiple thereof. They may also be issued in global form with accompanying book-entry procedures as outlined below.

TABLE OF CONTENTS

A holder of debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and with the same terms and aggregate principal amount. The securities are transferable at the corporate trust office of the trustee or at any transfer agent designated by us for that purpose. No charge will be made for any such exchange or transfer except for any tax or governmental charge related to such exchange or transfer and any expenses payable in connection with any registration of transfer or exchange of debt securities, other than exchanges not involving any transfer, such as the issuance of definitive securities in replacement of temporary securities or the issuance of new securities upon surrender of a security that is redeemed or purchased in part.

Global Securities. The registered debt securities may be issued in the form of one or more fully registered global securities that will be deposited with and registered in the name of a depository or with a nominee for a depository identified in the applicable prospectus supplement.

The specific terms of the depository arrangement with respect to any debt securities to be represented by a registered global security will be described in the applicable prospectus supplement. We anticipate the following will apply to all depository arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons that have accounts with the depository for such registered global security (participants) or persons that may hold interests through participants. Upon the issuance of a registered global security, the depository will credit, on its book-entry registration and transfer system, the participants' accounts with the principal amounts of the debt securities represented by the registered global security beneficially owned by such participants. Ownership of beneficial interests in such registered global security will be shown on, and the transfer of such ownership interests will be effected only through, records maintained by the depository for such registered global security or on the records of participants for interests of persons holding through participants.

So long as the depository for a registered global security, or its nominee, is the registered owner of a registered global security, the depository or the nominee will be considered the sole owner or holder of the debt securities represented by the registered global security for all purposes. Except as set forth below, owners of beneficial interests in a registered global security will not:

- be entitled to have the debt securities represented by such registered global security registered in their names;
- receive or be entitled to receive physical delivery of such debt securities in definitive forms; or
- be considered the owners of record or holders of the debt securities.

Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depository for such registered global security and, if such person is not a participant, on the procedures of the participant through which such person owns its interest, to exercise any rights of a holder under the applicable indenture. We understand that under existing industry practices, if we request any action of holders, or if an owner of a beneficial interest in a registered global security desires to take any action that a holder is entitled to take under the applicable indenture, the depository would authorize the participants holding the relevant beneficial interests to take such action, and such participants would authorize beneficial owners owning through such participants to take such action.

Principal, premium, if any, and interest payments on debt securities represented by a registered global security registered in the name of a depository or its nominee will be made to such depository or its nominee, as the case may be, as the registered owner of such registered global security. Neither we nor the trustee will have any responsibility or liability for any aspect of the records relating to or payment made on account of beneficial ownership interests in such registered global security.

We expect that the depositary for any debt securities represented by a registered global security, upon receipt of any payment of principal, premium or interest will immediately credit participants' accounts with payments in amounts proportionate to their respective beneficial interests in such registered global security as shown on the records of such depositary. We also expect that payments by participants to owners of beneficial interest in

TABLE OF CONTENTS

such a registered global security held by the participants will be governed by standing customer instructions and customary practices, as is now the case with securities held for the accounts of customers in bearer form or registered in street name.

If the depository notifies us that it is unwilling or unable to continue as depository for the global security or if at any time the depository ceases to be a clearing agency registered under the Exchange Act, if so required by applicable law or regulation, and, in either case, we do not appoint a successor depository within 90 days, we will issue debt securities in certificated form in exchange for the global security.

We may at any time determine not to have any of the debt securities of a series represented by one or more registered global securities and, in such event, will issue debt securities of such series in certificated form in exchange for all of the global security or securities representing such debt securities. Any debt securities issued in certificated form in exchange for a global security will be registered in such name or names as the depository shall instruct the relevant trustee. We expect that such instructions will be based upon directions received by the depository from participants with respect to ownership of beneficial interests in such registered global security.

If provided in a prospectus supplement relating to a series of debt securities, the debt securities of that series may also be issued in the form of one or more global securities that will be deposited with a common depository identified in the prospectus supplement. The specific terms and procedures, including the specific terms of the depository arrangement, with respect to any portion of a series of debt securities to be represented by a global security will be described in the prospectus supplement.

Particular Terms of the Senior Debt Securities

Ranking of Senior Debt Securities. The senior debt securities will constitute part of our senior debt and rank equally with all our other senior and unsecured debt (and will effectively rank junior to any secured debt). The senior debt securities will be senior to our senior subordinated debt and subordinated debt.

Events of Default. The following are events of default under a series of senior debt securities:

we fail to pay the principal, premium, if any, or any sinking fund payment, on any senior debt securities of that series when due;

we fail to pay interest on any senior debt securities of that series when due and that failure continues for a period of 30 days;

we fail to observe or perform any other covenant, representation, warranty or other agreement in the senior indenture for the benefit of that series other than a covenant, representation or warranty with respect to which a failure to observe or perform is dealt with otherwise in the senior indenture or is expressly included in the senior indenture solely for the benefit of a series of debt securities other than such series of senior debt securities and that failure continues for 90 days after we receive notice to comply from the trustee or holders of at least 25% in aggregate principal amount of the outstanding senior debt securities of all series affected by that failure, treating all those series as a single class; and

certain events of bankruptcy or insolvency occur, whether voluntary or not.

No event of default will have occurred under a series of senior debt securities if we fail to file timely any annual report or information, document or other report that we are required to file with the SEC.

The prospectus supplement for a particular series may describe additional or different events of default that apply to that series. An event of default with respect to one series of senior debt securities does not necessarily constitute an

event of default with respect to any other series of senior debt securities.

If a default or an event of default occurs and is continuing, and if a responsible officer of the trustee under the indenture has actual knowledge thereof, the trustee will mail to the holders of senior debt securities of the affected series a notice to that effect within 90 days after it occurs. Except in the case of a default in the payment of principal or interest, the trustee under the senior indenture may withhold notice if and so long as a committee of the trustee's responsible officers in good faith determines that withholding the notice is in the

TABLE OF CONTENTS

interests of the holders. In the case of any default specified in the third bullet above, no notice of default will be given to holders of the senior debt securities of the affected series until at least 90 days after we receive notice of the occurrence thereof.

If an event of default with respect to one or more series of senior debt securities occurs and is continuing, the trustee or the holders of at least 25% in aggregate principal amount of the then outstanding senior debt securities of all series with respect to which the event of default occurs and is continuing, treating all those series as a single class, may declare the principal of, premium, if any, and accrued and unpaid interest of all the senior debt securities of those series (or a lesser amount as may be provided for in the senior debt securities of the series) to be immediately due and payable. The holders of a majority in aggregate principal amount of the then outstanding senior debt securities of all series covered by such declaration may annul or rescind the declaration and any related payment default that resulted from the declaration but not any other payment default. Certain events of bankruptcy and insolvency will result in all outstanding series of senior debt securities becoming due and payable immediately without any further action on the part of the trustee or the holders.

The senior indenture entitles the trustee to be indemnified by the holders before proceeding to exercise any right or power at the request of any of the holders.

The holders of a majority in principal amount of the outstanding senior debt securities of all series with respect to which an event of default occurs and is continuing, treating all those series as a single class, may direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust power conferred on it, except that:

the direction cannot conflict with any law or regulation or the indenture;
the trustee may take any other action deemed proper by the trustee that is not inconsistent with the direction; and
the trustee need not take any action that might involve it in personal liability or be unduly prejudicial to the holders of the senior debt securities not joining in the action.

A holder may pursue a remedy directly under the indenture or the series of senior debt securities, but before doing so, the following must occur:

the holder must give to the trustee written notice that an event of default has occurred and is continuing;
the holders of at least 25% in principal amount of the then outstanding senior debt securities of all affected series, treating all those series as a single class, must make a written request to the trustee to pursue the remedy;
the holder, or holders, must offer and, if requested, provide to the trustee an indemnity satisfactory to the trustee against any loss, liability or expense from the taking of the action;
the trustee does not comply with the request within 60 days after receipt of the request and offer of indemnity; and
during the 60-day period, the holders of a majority in principal amount of the then outstanding senior debt securities of all those series, treating all those series as a single class, do not give the trustee a direction inconsistent with the written request.

However, holders have an absolute right to receipt of principal, premium, if any, and interest on or after the respective due dates and to institute suit for the enforcement of those payments. The right of a holder of senior debt securities to bring suit for the enforcement of any payments of principal, premium, if any, and interest on senior debt securities on or after the respective due dates may not be impaired or affected without the consent of that holder.

TABLE OF CONTENTS

The holders of a majority in principal amount of the senior debt securities then outstanding of all affected series, treating all such series as a single class, may by notice to the trustee on behalf of all holders of the senior debt securities of such series waive any past defaults, except:

a continuing default in payment of the principal of, premium, if any, or interest on, or any sinking fund payment on, senior debt securities of the series; and
a continuing default in respect of a covenant or provision of the indenture that cannot be amended or modified without the consent of each holder of senior debt securities affected.
We will periodically file statements with the trustees regarding our compliance with covenants in the senior indenture.

Modifications and Amendments. Except as provided below, or more fully specified in the senior indenture and described in the prospectus supplement relating to a series of senior debt securities, the senior indenture may be amended or supplemented by us and the trustee with the consent of holders of a majority in principal amount of all series of senior debt securities affected by the amendment or supplement, treating all such series as a single class. In addition, the record holders of a majority in principal amount of the outstanding senior debt securities of all series affected by the waiver, treating all such series as a single class, may, with respect to those series, waive defaults under, or compliance with, the provisions of the senior indenture. Some amendments or waivers, however, require the consent of each holder of any senior debt security affected. Without the consent of each holder, an amendment or waiver may not:

reduce the principal amount of the senior debt securities of any series whose holders must consent to an amendment, supplement or waiver;
reduce the principal or change the fixed maturity of the principal of, premium, if any, or mandatory sinking fund obligation, if any, of any senior debt securities of any series or alter the provisions with respect to the redemption of the senior debt securities;
reduce the rate, or change the time for payment, of interest, including default interest, on any senior debt security of any series;
impair the right, if any, to convert the senior debt securities into common stock;
waive a default or event of default in the payment of principal of, or interest or premium on, the senior debt securities of any series, except a rescission of acceleration of the senior debt securities by the holders of a majority in aggregate principal amount of the senior debt securities of any series and a waiver of the payment default that resulted from that acceleration;
make any senior debt security of any series payable in currency other than that stated in the senior debt securities of that series;
make any change in the provisions of the senior indenture relating to waivers of past defaults or the rights of the holders of senior debt securities to receive payments of principal of or interest or premium on the senior debt securities;
waive a redemption payment with respect to any senior debt security;
make any change in the right of any holders of senior debt securities regarding waivers of defaults or impair or affect the right of any holder of a senior debt security of any series to receive payment of principal, premium, if any, and interest on that security on or after the due date expressed in that security or to bring suit for the enforcement of any payment on or after the due date; or
make any change in the above amendment and waiver provisions.

We and the trustee under the senior indenture may amend or supplement the senior indenture or the senior debt securities issued thereunder without the consent of any holder:

to evidence the succession of another person to us, or successive successions, and the assumption by the successors of our covenants, agreements and obligations under the indenture as permitted by the indenture;

TABLE OF CONTENTS

to add other covenants, restrictions or conditions for the protection of the holders of all or any series of senior debt securities;

to add events of default;

to provide for the issuance of senior debt securities in coupon form and to provide for exchangeability of those senior debt securities under the indenture in fully registered form;

to provide for the issuance of and to establish the form, terms and conditions of senior debt securities of any series; to evidence and provide for the acceptance of appointment by a successor trustee and to add or change any of the provisions of the indenture necessary to provide for or facilitate the administration of the trusts under the indenture by more than one trustee;

to cure any ambiguity, or to correct or supplement any provision in the indenture that may be defective or inconsistent with any other provision contained in the indenture or in any supplemental indenture, or to make any other provisions with respect to matters or questions arising under that indenture, so long as the interests of holders of senior debt securities of any series are not adversely affected in any material respect under that indenture; or

to comply with the requirements of the Securities and Exchange Commission or to effect or maintain the qualification of the indenture under the Trust Indenture Act of 1939.

Particular Terms of the Senior Subordinated Debt Securities

Ranking of Senior Subordinated Debt Securities. The senior subordinated debt securities will rank senior to any subordinated debt securities and will be subordinated and junior in right of payment to any senior debt securities and certain other indebtedness of Kulicke & Soffa to the extent set forth in the applicable indenture. All series of the senior subordinated debt securities will rank equally with each other.

Subordination. Unless the prospectus supplement indicates otherwise, the following provisions will apply to the senior subordinated debt securities. Our obligations under the senior subordinated debt securities will be subordinated in right of payment to our obligations under our senior debt. For this purpose, senior debt generally includes any indebtedness that does not expressly provide that it is on parity with or subordinated in right of payment to the senior subordinated debt securities. Specifically, senior debt includes obligations under any credit facility with banks or other institutional lenders and obligations under the senior debt securities described in this prospectus. Senior debt will not include:

any liability for federal, state, local or other taxes;

any indebtedness to any of our subsidiaries or other affiliates;

any trade payables;

any indebtedness that we may incur in violation of the senior subordinated indenture; or

obligations under the subordinated debt securities.

If we distribute our assets to creditors upon any dissolution, winding-up, liquidation or reorganization or in bankruptcy, insolvency, receivership or similar proceedings, we must first pay all amounts due or to become due on all senior debt before we pay the principal of, or make any other payment on, the senior subordinated debt securities.

The provisions of the senior subordinated indenture providing these payment restrictions will not limit the right, if any, of a holder of senior subordinated debt securities to convert the debt securities into equity securities.

We may not make any payment on the senior subordinated debt securities if a default in the payment of the principal, premium, if any, or interest, including a default under any repurchase or redemption obligation, in respect of designated senior debt occurs and continues beyond any applicable grace period. We may not make any payment on the senior subordinated debt securities if any other default occurs and continues with respect to designated senior debt that permits holders of the designated senior debt to accelerate its maturity and the trustee receives a notice of default from us, a holder of designated senior debt or other person permitted to

TABLE OF CONTENTS

give notice. We may not resume payments on the senior subordinated debt securities until the defaults are cured or specified time periods pass, unless the maturity of the senior debt is actually accelerated. The provisions of the senior subordinated indenture providing these payment restrictions will not limit the right, if any, of a holder of senior subordinated debt securities to convert the debt securities into equity securities.

The term "designated senior debt" means our obligations under our principal bank or other institutional credit facility and any other debt expressly designated as senior debt with respect to the applicable senior subordinated debt securities.

We expect that the terms of some of our senior debt will provide that an event of default under the senior subordinated debt securities or an acceleration of their maturity will constitute an event of default under the senior debt. In that case, if the maturity of the senior subordinated debt securities is accelerated because of an event of default, we may not make any payment on the senior subordinated debt securities until we have paid all senior debt or the acceleration has been rescinded. If the payment of the senior subordinated debt securities is accelerated because of an event of default, we must promptly notify the holders of senior debt of the acceleration.

If we experience a bankruptcy, dissolution or reorganization, holders of senior debt may receive more, ratably, and holders of the senior subordinated debt securities may receive less, ratably, than our other creditors.

The indenture for senior subordinated debt securities may not limit our ability to incur additional senior debt.

The subordination provisions may not be amended in a manner adverse to the holders of the senior subordinated debt securities without the consent of the holders of at least 75% of the aggregate principal amount of senior subordinated debt securities then outstanding affected by the amendment, voting as a single class.

Events of Default. The following are events of default under a series of senior subordinated debt securities:

we fail to pay the principal, premium, if any, or any sinking fund payment, on any senior subordinated debt securities of that series when due;

we fail to pay interest on any senior subordinated debt securities of that series when due and that failure continues for a period of 30 days;

we fail to observe or perform any other covenant, representation, warranty or other agreement in the senior subordinated debt indenture for the benefit of that series other than a covenant, representation or warranty with respect to which a failure to observe or perform is dealt with otherwise in the senior subordinated debt indenture or is expressly included in the senior subordinated debt indenture solely for the benefit of a series of debt securities other than such series of senior subordinated debt securities and that failure continues for 90 days after we receive notice to comply from the trustee or holders of at least 25% in aggregate principal amount of the outstanding senior subordinated debt securities of all series affected by that failure, treating all those series as a single class; and certain events of bankruptcy or insolvency occur, whether voluntary or not.

No event of default will have occurred under a series of senior subordinated debt securities if we fail to file timely any annual report or information, document or other report that we are required to file with the SEC.

The prospectus supplement for a particular series may describe additional or different events of default that apply to that series. An event of default with respect to one series of senior subordinated debt securities does not necessarily constitute an event of default with respect to any other series of senior subordinated debt securities.

If a default or an event of default occurs and is continuing, and if a responsible officer of the trustee under the indenture has actual knowledge thereof, the trustee will mail to the holders of senior subordinated debt securities of

the affected series a notice to that effect within 90 days after it occurs. Except in the case of a default in the payment of principal or interest, the trustee under the senior subordinated indenture may withhold notice if and so long as a committee of the trustee's responsible officers in good faith determines that withholding the notice is in the interests of the holders. In the case of any default specified in the third bullet

TABLE OF CONTENTS

above, no notice of default will be given to holders of the senior subordinated debt securities of the affected series until at least 90 days after we receive notice of the occurrence thereof.

If an event of default with respect to one or more series of senior subordinated debt securities occurs and is continuing, the trustee or the holders of at least 25% in aggregate principal amount of the then outstanding senior subordinated debt securities of all series with respect to which the event of default occurs and is continuing, treating all those series as a single class, may declare the principal of, premium, if any, and accrued and unpaid interest (subject to applicable subordination provisions in the senior subordinated indenture) of all the senior subordinated debt securities of those series (or a lesser amount as may be provided for in the senior subordinated debt securities of the series) to be immediately due and payable. The holders of a majority in aggregate principal amount of the then outstanding senior subordinated debt securities of all series covered by such declaration may annul and rescind the declaration and any related payment default that resulted from the declaration but not any other payment default. Certain events of bankruptcy and insolvency will result in all outstanding series of senior subordinated debt securities becoming due and payable immediately without any further action on the part of the trustee or the holders.

The senior subordinated indenture entitles the trustee to be indemnified by the holders before proceeding to exercise any right or power at the request of any of the holders.

The holders of a majority in principal amount of the outstanding senior subordinated debt securities of all series with respect to which an event of default occurs and is continuing, treating all those series as a single class, may direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust power conferred on it, except that:

the direction cannot conflict with any law or regulation or the indenture;

the trustee may take any other action deemed proper by the trustee that is not inconsistent with the direction; and the trustee need not take any action that might involve it in personal liability or be unduly prejudicial to the holders of the senior subordinated debt securities not joining in the action.

A holder may pursue a remedy directly under the senior subordinated indenture or the series of senior subordinated debt securities, but before doing so, the following must occur:

the holder must give to the trustee written notice that an event of default has occurred and is continuing; the holders of at least 25% in principal amount of the then outstanding senior subordinated debt securities of all affected series, treating all those series as a single class, must make a written request to the trustee to pursue the remedy;

the holder, or holders, must offer and, if requested, provide to the trustee an indemnity satisfactory to the trustee against any loss, liability or expense from the taking of the action;

the trustee does not comply with the request within 60 days after receipt of the request and offer of indemnity; and during the 60 day period, the holders of a majority in principal amount of the then outstanding senior subordinated debt securities of all those series, treating all those series as a single class, do not give the trustee a direction inconsistent with the written request.

Holders have an absolute right, however, to receipt of principal, premium, if any, and interest on or after the respective due dates and to institute suit for the enforcement of those payments. The right of a holder of senior subordinated debt securities to bring suit for the enforcement of any payments of principal, premium, if any, and interest on senior subordinated debt securities on or after the respective due dates, without regard to acceleration or default, may not be impaired or affected without the consent of that holder.

TABLE OF CONTENTS

The holders of a majority in principal amount of the senior subordinated debt securities then outstanding of all affected series, treating all such series as a single class, may by notice to the trustee on behalf of all holders of the senior subordinated debt securities of such series waive any past defaults, except:

a continuing default in payment of the principal of, premium, if any, or interest on, or any sinking fund payment on, senior subordinated debt securities of the series; and
a continuing default in respect of a covenant or provision of the indenture that cannot be amended or modified without the consent of each holder of senior subordinated debt securities affected.

We will periodically file statements with the trustees regarding our compliance with covenants in the senior subordinated indenture.

Modifications and Amendments. Except as provided below, or more fully specified in the senior subordinated indenture and described in the prospectus supplement relating to a series of senior subordinated debt securities, the senior subordinated indenture may be amended or supplemented by us and the trustee with the consent of holders of a majority in principal amount of all series of senior subordinated debt securities affected by the amendment or supplement, treating all such series as a single class. In addition, the record holders of a majority in principal amount of the outstanding senior subordinated debt securities of all series affected by the waiver, treating all such series as a single class, may, with respect to those series, waive defaults under, or compliance with, the provisions of the senior subordinated indenture. Some amendments or waivers, however, require the consent of each holder of any senior subordinated debt security affected. Without the consent of each holder, an amendment or waiver may not:

- reduce the principal amount of the senior subordinated debt securities of any series whose holders must consent to an amendment, supplement or waiver;
- reduce the principal or change the fixed maturity of the principal of, premium, if any, or mandatory sinking fund obligation, if any, of any senior subordinated debt securities of any series or alter the provisions with respect to the redemption of the senior subordinated debt securities;
- reduce the rate, or change the time for payment, of interest, including default interest, on any senior subordinated debt security of any series;
- impair any right, if any, to convert the senior subordinated debt securities into common stock;
- waive a default or event of default in the payment of principal of, or interest or premium on, the senior subordinated debt securities of any series, except a rescission of acceleration of the senior subordinated debt securities by the holders of a majority in aggregate principal amount of the senior subordinated debt securities of any series and a waiver of the payment default that resulted from that acceleration;
- make any senior subordinated debt security of any series payable in currency other than that stated in the senior subordinated debt securities of that series;
- make any change in the provisions of the senior subordinated indenture relating to waivers of past defaults or the rights of the holders of senior subordinated debt securities to receive payments of principal of or interest or premium on the senior subordinated debt securities;
 - waive a redemption payment with respect to any senior subordinated debt security;
- make any change in the right of any holders of senior subordinated debt securities regarding waivers of defaults or impair or affect the right of any holder of a senior subordinated debt security of any series to receive payment of principal, premium, if any, and interest on that security on or after the due date expressed in that security or to bring suit for the enforcement of any payment on or after the due date; or
 - make any change in the above amendment and waiver provisions.

TABLE OF CONTENTS

We and the trustee under the senior subordinated indenture may amend or supplement the senior subordinated indenture or the senior subordinated debt securities issued thereunder without the consent of any holder:

to evidence the succession of another person to us, or successive successions, and the assumption by the successors of our covenants, agreements and obligations under the senior subordinated indenture as permitted by the indenture; to add other covenants, restrictions or conditions for the protection of the holders of all or any series of senior subordinated debt securities;

to add events of default;

to provide for the issuance of senior subordinated debt securities in coupon form and to provide for exchangeability of those senior subordinated debt securities under the indenture in fully registered form;

to provide for the issuance of and to establish the form, terms and conditions of senior subordinated debt securities of any series;

to evidence and provide for the acceptance of appointment by a successor trustee and to add or change any of the provisions of the indenture necessary to provide for or facilitate the administration of the trusts under the indenture by more than one trustee;

to cure any ambiguity, or to correct or supplement any provision in the indenture that may be defective or inconsistent with any other provision contained in the indenture or in any supplemental indenture, or to make any other provisions with respect to matters or questions arising under that indenture, so long as the interests of holders of senior subordinated debt securities of any series are not adversely affected in any material respect under that indenture; or to comply with the requirements of the Securities and Exchange Commission or to effect or maintain the qualification of the indenture under the Trust Indenture Act of 1939.

Particular Terms of the Subordinated Debt Securities

Ranking of Subordinated Debt Securities. The subordinated debt securities will be subordinated and junior in right of payment to any senior debt securities and senior subordinated debt securities and certain other indebtedness of Kulicke & Soffa to the extent set forth in the prospectus supplement.

Subordination. Unless the prospectus supplement indicates otherwise, the subordination provisions of the subordinated debt securities will be the same as those of the senior subordinated debt securities just described, with the following exceptions:

Senior debt will include our obligations under the senior subordinated debt securities, as well as under the other debt specified above; and different series of subordinated debt securities may rank senior to other series. In that case, our obligations under the higher-ranking series will be senior debt in relation to the lower-ranking series.

Events of Default. The following are events of default under a series of subordinated debt securities:

we fail to pay the principal, premium, if any, or any sinking fund payment, on any subordinated debt securities of that series when due;

we fail to pay interest on any debt securities of that series when due and that failure continues for a period of 30 days; we fail to observe or perform any other covenant, representation, warranty or other agreement in the subordinated debt indenture for the benefit of that series other than a covenant, representation or warranty with respect to which a failure to observe or perform is dealt with otherwise in the subordinated debt indenture or is expressly included in the subordinated debt indenture solely for the benefit of a series of debt securities other than such series of subordinated debt securities and that

TABLE OF CONTENTS

failure continues for 90 days after we receive notice to comply from the trustee or holders of at least 25% in aggregate principal amount of the outstanding subordinated debt securities of all series affected by that failure, treating all those series as a single class; and

certain events of bankruptcy or insolvency occur, whether voluntary or not.

No event of default will have occurred under a series of subordinated debt securities if we fail to file timely any annual report or information, document or other report that we are required to file with the SEC.

The prospectus supplement for a particular series may describe additional or different events of default that apply to that series. An event of default with respect to one series of subordinated debt securities does not necessarily constitute an event of default with respect to any other series of subordinated debt securities.

If a default or an event of default occurs and is continuing, and if a responsible officer of the trustee under the indenture has actual knowledge thereof, the trustee will mail to the holders of subordinated debt securities of the affected series a notice to that effect within 90 days after it occurs. Except in the case of a default in the payment of principal or interest, the trustee under the subordinated indenture may withhold notice if and so long as a committee of the trustee's responsible officers in good faith determines that withholding the notice is in the interests of the holders.

In the case of any default specified in the third bullet above, no notice of default will be given to holders of the subordinated debt securities of the affected series until at least 90 days after we receive notice of the occurrence thereof.

If an event of default with respect to any series of subordinated debt securities occurs and is continuing, the trustee or the holders of at least 25% in aggregate principal amount of the then outstanding subordinated debt securities of that series and all other series that rank equal with that series and with respect to which the event of default occurs and is continuing, treating all those series as a single class, may declare the principal of, premium, if any, and accrued and unpaid interest (subject to applicable subordination provisions in the relevant indenture) of all the subordinated debt securities of those series (or a lesser amount as may be provided for in the subordinated debt securities of the series) to be immediately due and payable. The holders of a majority in aggregate principal amount of the then outstanding subordinated debt securities of all series covered by such declaration may annul and rescind the declaration and any related payment default that resulted from the declaration but not any other payment default. Certain events of bankruptcy and insolvency will result in all outstanding series of subordinated debt securities becoming due and payable immediately without any further action on the part of the trustee or the holders.

The subordinated indenture entitles the trustee to be indemnified by the holders before proceeding to exercise any right or power at the request of any of the holders.

The holders of a majority in principal amount of the outstanding subordinated debt securities of all series with respect to which an event of default occurs and is continuing and that rank equal with each other, treating all those series as a single class, may direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust power conferred on it with respect to those series, except that:

the direction cannot conflict with any law or regulation or the subordinated indenture;

the trustee may take any other action deemed proper by the trustee that is not inconsistent with the direction; and the trustee need not take any action that might involve it in personal liability or be unduly prejudicial to the holders of the subordinated debt securities not joining in the action.

A holder may pursue a remedy directly under the indenture or the series of subordinated debt securities, but before doing so, the following must occur:

the holder must give to the trustee written notice that an event of default has occurred and is continuing;

TABLE OF CONTENTS

the holders of at least 25% in principal amount of the then outstanding subordinated debt securities of all affected series that rank equal with each other, treating all those securities as a single class, must make a written request to the trustee to pursue the remedy;

the holder, or holders, must offer and, if requested, provide to the trustee an indemnity satisfactory to the trustee against any loss, liability or expense from the taking of the action;

the trustee does not comply with the request within 60 days after receipt of the request and offer of indemnity; and during the 60 day period, the holders of a majority in principal amount of the then outstanding subordinated debt securities of all those series, treating all those securities as a single class, do not give the trustee a direction inconsistent with the written request.

Holders have an absolute right, however, to receipt of principal, premium, if any, and interest on or after the respective due dates and to institute suit for the enforcement of those payments. The right of a holder of subordinated debt securities to bring suit for the enforcement of any payments of principal, premium, if any, and interest on subordinated debt securities on or after the respective due dates may not be impaired or affected without the consent of that holder.

The holders of a majority in principal amount of the subordinated debt securities then outstanding of all affected series that rank equal with each other, treating all such series as a single class, may by notice to the trustee on behalf of all holders of the subordinated debt securities of such series waive any past defaults, except:

a continuing default in payment of the principal of, premium, if any, or interest on, or any sinking fund payment on, subordinated debt securities of the series; and

a continuing default in respect of a covenant or provision of the indenture that cannot be amended or modified without the consent of each holder of debt securities affected.

We will periodically file statements with the trustee regarding our compliance with covenants in the subordinated indenture.

Modifications and Amendments. Except as provided below, or more fully specified in the subordinated indenture and described in the prospectus supplement relating to a series of subordinated debt securities, the subordinated indenture may be amended or supplemented by us and the trustee with the consent of holders of a majority in principal amount of each series of subordinated debt securities affected by the amendment or supplement that rank equal with each other, treating all such series as a single class. In addition, the record holders of a majority in principal amount of the outstanding subordinated debt securities of all series affected by the waiver that rank equal with each other, treating all such series as a single class, may, with respect to those series, waive defaults under, or compliance with, the provisions of the subordinated indenture. Some amendments or waivers, however, require the consent of each holder of any subordinated debt security affected. Without the consent of each holder, an amendment or waiver may not:

reduce the principal amount of the subordinated debt securities of any series whose holders must consent to an amendment, supplement or waiver;

reduce the principal or change the fixed maturity of the principal of, premium, if any, or mandatory sinking fund obligation if any, of any subordinated debt securities of any series or alter the provisions with respect to the redemption of the subordinated debt securities;

reduce the rate, or change the time for payment, of interest, including default interest, on any subordinated debt security of any series;

impair the right, if any, to convert the subordinated debt securities into common stock;

waive a default or event of default in the payment of principal of, or interest or premium on, the subordinated debt securities of any series, except a rescission of acceleration of the subordinated debt securities by the holders of a majority in aggregate principal amount of the subordinated debt securities of any series and a waiver of the payment default that resulted from that acceleration;

TABLE OF CONTENTS

make any subordinated debt security of any series payable in currency other than that stated in the debt securities of that series;

make any change in the provisions of the subordinated indenture relating to waivers of past defaults or the rights of the holders of subordinated debt securities to receive payments of principal of or interest or premium on the subordinated debt securities;

waive a redemption payment with respect to any subordinated debt security;

make any change in the right of any holders of subordinated debt securities regarding waivers of defaults or impair or affect the right of any holder of a subordinated debt security of any series to receive payment of principal, premium, if any, and interest on that security on or after the due date expressed in that security or to bring suit for the enforcement of any payment on or after the due date; or

make any change in the above amendment and waiver provisions.

We and the trustee under the subordinated indenture may amend or supplement the subordinated indenture or the subordinated debt securities issued thereunder without the consent of any holder:

to evidence the succession of another person to us, or successive successions, and the assumption by the successors of our covenants, agreements and obligations under the subordinated indenture as permitted by the indenture;

to add other covenants, restrictions or conditions for the protection of the holders of all or any series of subordinated debt securities;

to add events of default;

to provide for the issuance of subordinated debt securities in coupon form and to provide for exchangeability of those debt securities under the indenture in fully registered form;

to provide for the issuance of and to establish the form, terms and conditions of subordinated debt securities of any series;

to evidence and provide for the acceptance of appointment by a successor trustee and to add or change any of the provisions of the indenture necessary to provide for or facilitate the administration of the trusts under the indenture by more than one trustee;

to cure any ambiguity, or to correct or supplement any provision in the indenture that may be defective or inconsistent with any other provision contained in the indenture or in any supplemental indenture, or to make any other provisions with respect to matters or questions arising under that indenture, so long as the interests of holders of debt securities of any series are not adversely affected in any material respect under that indenture; or

to comply with the requirements of the Securities and Exchange Commission or to effect or maintain the qualification of the indenture under the Trust Indenture Act of 1939.

For the purpose of amending or supplementing our subordinated indenture, or waiving a default under or compliance with the provisions of the subordinated indenture, debt securities that are convertible into equity securities and debt securities that are not so convertible shall not be treated as part of the same class notwithstanding that such debt securities may otherwise rank equal with each other.

TABLE OF CONTENTS

DESCRIPTION OF WARRANTS

The following is a description of the general terms and provisions of the warrants to which any prospectus supplement may relate. The prospectus supplement relating to the warrants will describe the particular terms of the warrants and the extent, if any, to which these general provisions may apply to the warrants offered.

We may issue warrants to purchase senior debt securities, senior subordinated debt securities, subordinated debt securities, preferred stock, common stock or any combination thereof. The warrants may be issued independently or together with any other securities and may be attached or separate from the other securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between a warrant agent and us. The warrant agent will act solely as our agent in connection with the warrants of any series and will not assume any obligation or relationship of agency for or with holders or beneficial owners of warrants.

The applicable prospectus supplement will describe the terms of any warrants and the related offering in respect of which this prospectus is being delivered, including the following:

- the title of the warrants;
- the aggregate number of the warrants;
- the price or prices at which the warrants will be issued;
- the designation and terms of the underlying securities purchasable upon exercise of the warrants and the number of such underlying securities initially issuable upon exercise of the warrants;
- the price or prices at which the warrants may be exercised to purchase the securities underlying them;
- the date on which the right to exercise the warrants will commence and the date on which the right shall expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- if applicable, the designation and terms of the other securities with which the warrants are issued and the number of such warrants issued with each such underlying warrant security;
- if applicable, the date on and after which the warrants and other securities will be separately transferable;
- information with respect to book-entry procedures, if any;
- if applicable, a discussion of certain material United States federal income tax considerations;
- the procedures and conditions relating to the exercise of the warrants; and

any other terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

DESCRIPTION OF UNITS

We may issue units consisting of common stock, preferred stock, warrants, debt securities or any combination of those securities. The applicable prospectus supplement will describe the terms of any units including the following:

- the terms of the units and each of the securities included in the units, including whether and under what circumstances the securities included in the units may or may not be traded separately;
- the terms of any unit agreement governing the units; and
- the provisions for the payment, settlement, transfer or exchange of the units.

TABLE OF CONTENTS

PLAN OF DISTRIBUTION

We may sell the securities in any one or more of the following ways:

directly to investors, including through a specific bidding, auction or other process;
to investors through agents;
directly to agents;
to or through brokers or dealers;
to the public through underwriting syndicates led by one or more managing underwriters;
in at the market offerings, within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or
into an existing trading market on an exchange or otherwise;
to one or more underwriters acting alone for resale to investors or to the public; and
through a combination of any such methods of sale.

If we sell securities to a dealer acting as principal, the dealer may resell such securities at varying prices to be determined by such dealer in its discretion at the time of resale without consulting with us and such resale prices may not be disclosed in the applicable prospectus supplement.

Any underwritten offering may be on a best efforts or a firm commitment basis. We may also offer securities through subscription rights distributed to our stockholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

Sales of the securities may be effected from time to time in one or more transactions, including negotiated transactions:

at a fixed price or prices, which may be changed;
at market prices prevailing at the time of sale;
at prices related to prevailing market prices; or
at negotiated prices.

Any of the prices may represent a discount from the then prevailing market prices.

In connection with the sale of any of the securities, underwriters or agents may receive compensation from us in the form of underwriting discounts or commissions and may also receive compensation from purchasers of the securities, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Discounts, concessions and commissions may be changed from time to time. Dealers and agents that participate in the distribution of the securities may be deemed to be underwriters under the Securities Act, and any discounts, concessions or commissions they receive from us and any profit on the resale of securities they realize may be deemed to be underwriting compensation under applicable federal and state securities laws.

The applicable prospectus supplement will, where applicable:

identify any such underwriter, dealer or agent;
describe any compensation in the form of discounts, concessions, commissions or otherwise received from us by each such underwriter or agent and in the aggregate by all underwriters and agents;

describe any discounts, concessions or commissions allowed by underwriters to participating dealers;
identify the amounts underwritten; and
identify the nature of the underwriter s or underwriters obligation to take the securities.

TABLE OF CONTENTS

Unless otherwise specified in the related prospectus supplement, each series of securities will be a new issue with no established trading market, other than our common stock, which is listed on the NASDAQ Global Market. Any common stock sold pursuant to a prospectus supplement will be listed on the NASDAQ Global Market, subject to official notice of issuance. We may elect to list any series of debt securities or preferred stock on an exchange, but we are not obligated to do so. It is possible that one or more underwriters may make a market in the securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice. No assurance can be given as to the liquidity of, or the trading market for, any offered securities.

We may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If disclosed in the applicable prospectus supplement, in connection with those derivative transactions third parties may sell securities covered by this prospectus and such prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or from others to settle those short sales or to close out any related open borrowings of securities, and may use securities received from us in settlement of those derivative transactions to close out any related open borrowings of securities. If the third party is or may be deemed to be an underwriter under the Securities Act, it will be identified in the applicable prospectus supplements.

Until the distribution of the securities is completed, rules of the SEC may limit the ability of any underwriters and selling group members to bid for and purchase the securities. As an exception to these rules, underwriters are permitted to engage in some transactions that stabilize the price of the securities. Such transactions consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities.

Underwriters may engage in overallotment. If any underwriters create a short position in the securities in an offering in which they sell more securities than are set forth on the cover page of the applicable prospectus supplement, the underwriters may reduce that short position by purchasing the securities in the open market.

The lead underwriters may also impose a penalty bid on other underwriters and selling group members participating in an offering. This means that if the lead underwriters purchase securities in the open market to reduce the underwriters short position or to stabilize the price of the securities, they may reclaim the amount of any selling concession from the underwriters and selling group members who sold those securities as part of the offering.

In general, purchases of a security for the purpose of stabilization or to reduce a short position could cause the price of the security to be higher than it might be in the absence of such purchases. The imposition of a penalty bid might also have an effect on the price of a security to the extent that it were to discourage resales of the security before the distribution is completed.

We do not make any representation or prediction as to the direction or magnitude of any effect that the transactions described above might have on the price of the securities. In addition, we do not make any representation that underwriters will engage in such transactions or that such transactions, once commenced, will not be discontinued without notice.

Under agreements into which we may enter, underwriters, dealers and agents who participate in the distribution of the securities may be entitled to indemnification by us against or contribution towards certain civil liabilities, including liabilities under the applicable securities laws.

Underwriters, dealers and agents may engage in transactions with us, perform services for us or be our tenants in the ordinary course of business.

If indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by particular institutions to purchase securities from us at the public offering price set forth in such prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in such prospectus supplement. Each delayed delivery contract will be for an amount no less than, and the aggregate amounts of securities sold under delayed delivery contracts shall be not less nor more than, the respective amounts stated in the applicable prospectus supplement. Institutions with which such contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others, but will in

TABLE OF CONTENTS

all cases be subject to our approval. The obligations of any purchaser under any such contract will be subject to the conditions that (a) the purchase of the securities shall not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the purchaser is subject, and (b) if the securities are being sold to underwriters, we shall have sold to the underwriters the total amount of the securities less the amount thereof covered by the contracts. The underwriters and such other agents will not have any responsibility in respect of the validity or performance of such contracts.

To comply with applicable state securities laws, the securities offered by this prospectus will be sold, if necessary, in such jurisdictions only through registered or licensed brokers or dealers. In addition, securities may not be sold in some states unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

LEGAL MATTERS

Certain legal matters in connection with the legality of any common stock, preferred stock, debt securities, warrants and units offered hereby will be passed upon for us by Drinker Biddle & Reath LLP, Philadelphia, Pennsylvania.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) of Kulicke and Soffa Industries, Inc. incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended September 27, 2008 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The financial statements of Orthodyne Electronics Corporation incorporated into this prospectus by reference from our Current Reports on Form 8-K/A dated October 28, 2008 and Form 8-K dated July 2, 2009 have been audited by McGladrey & Pullen, LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission a registration statement on Form S-3, of which this prospectus is a part. This prospectus and any accompanying prospectus supplement do not contain all of the information set forth in the registration statement and exhibits and schedules to the registration statement. For further information with respect to our Company and the securities registered hereby, reference is made to the registration statement, including the exhibits and schedules to the registration statement. Statements contained in this prospectus and any accompanying prospectus supplement as to the contents of any contract or other document referred to in, or incorporated by reference in, this prospectus and any accompanying prospectus supplement are not necessarily complete and, where that contract or other document is an exhibit to the registration statement, each statement is qualified in all respects by the exhibit to which the reference relates.

We file annual, quarterly, special reports, proxy statements and other information with the Securities and Exchange Commission. These documents contain specific information regarding us. These documents, including exhibits and

schedules thereto, may be inspected without charge at the Securities and Exchange Commission's principal office in Washington, D.C., and copies of all or any part thereof may be obtained from the Public Reference Section of the Securities and Exchange Commission, 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Section may be obtained by calling the Securities and Exchange Commission at 1-800-SEC-0330. The Securities and Exchange Commission also maintains a World Wide Web site which provides online access to reports, proxy and information statements and other information regarding registrants that file electronically with the Securities and Exchange Commission at the address <http://www.sec.gov>.

TABLE OF CONTENTS

We make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act available (free of charge) on or through our Internet website located at <http://www.kns.com>. We maintain a website with the address www.kns.com. We are not including the information contained on our website as part of, or incorporating it by reference into, this prospectus.

Our common stock is listed on the NASDAQ Global Market under the symbol **KLIC**. Our reports, proxy statements, and other information are also available at the following NASDAQ address: NASDAQ Operations, 1735 K Street, N.W., Washington, D.C. 20006.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with them, which means that we can disclose important information to you by referring you to those document. These documents contain important information about us and our financial condition. The information incorporated by reference is considered to be part of this prospectus.

Information that we file later with the Securities and Exchange Commission will automatically update and supersede this information. We incorporate by reference the documents listed below, except for information furnished under Item 2.02 or Item 7.01 of Form 8-K which is neither deemed filed nor incorporated by reference herein:

Our Annual Report on Form 10-K for the year ended September 27, 2008;

Our Quarterly Reports on Form 10-Q for the quarters ended December 27, 2008 and March 28, 2009;

Our Current Reports on Form 8-K filed on October 2, 2008, October 3, 2008, October 8, 2008 and amended on October 28, 2008, October 15, 2008, November 18, 2008, December 1, 2008, January 2, 2009, January 8, 2009, January 15, 2009, February 25, 2009, March 31, 2009, April 2, 2009, May 19, 2009, June 26, 2009 and July 2, 2009;

The description of our common stock contained in our registration statement on Form 8-A12G/A filed on July 17, 2000, including any and all amendments and reports filed for the purpose of updating that description; and

Any future filings we make under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, including any filings after the date of this registration statement until we terminate this offering.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein may be modified or superseded in the future. Any such statement so modified shall not be deemed to constitute a part of the Registration Statement except as so modified and any statement so superseded shall not be deemed to constitute a part of this Registration Statement.

We will provide to you without charge, upon receipt of your written or oral request, a copy of any or all of the documents that are incorporated by reference in this prospectus, other than exhibits that are not specifically incorporated by reference in such documents. You should direct written or telephone requests to Investor Relations Department, Kulicke and Soffa Industries, Inc., 1005 Virginia Drive, Fort Washington, PA 19034, telephone (215) 784-6000.

You should rely only upon the information provided in this prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus.

Our logo appearing on the front and back covers of this prospectus is a trademark of Kulicke and Soffa Industries, Inc.

31

TABLE OF CONTENTS

7,000,000 Shares

Common Stock

Prospectus Supplement

Jefferies & Company

, 2009
