



# MUSIC STAND LAMP

NEW!  
Now with  
adjustable light  
colour!



- OPTIMUM BRIGHTNESS
- BATTERY OPERATION POSSIBLE
- USE WITHOUT ORCHESTRA PIT MODIFICATION
- FULLY ANTI-DAZZLE
- FREE VIEW TO CONDUCTOR

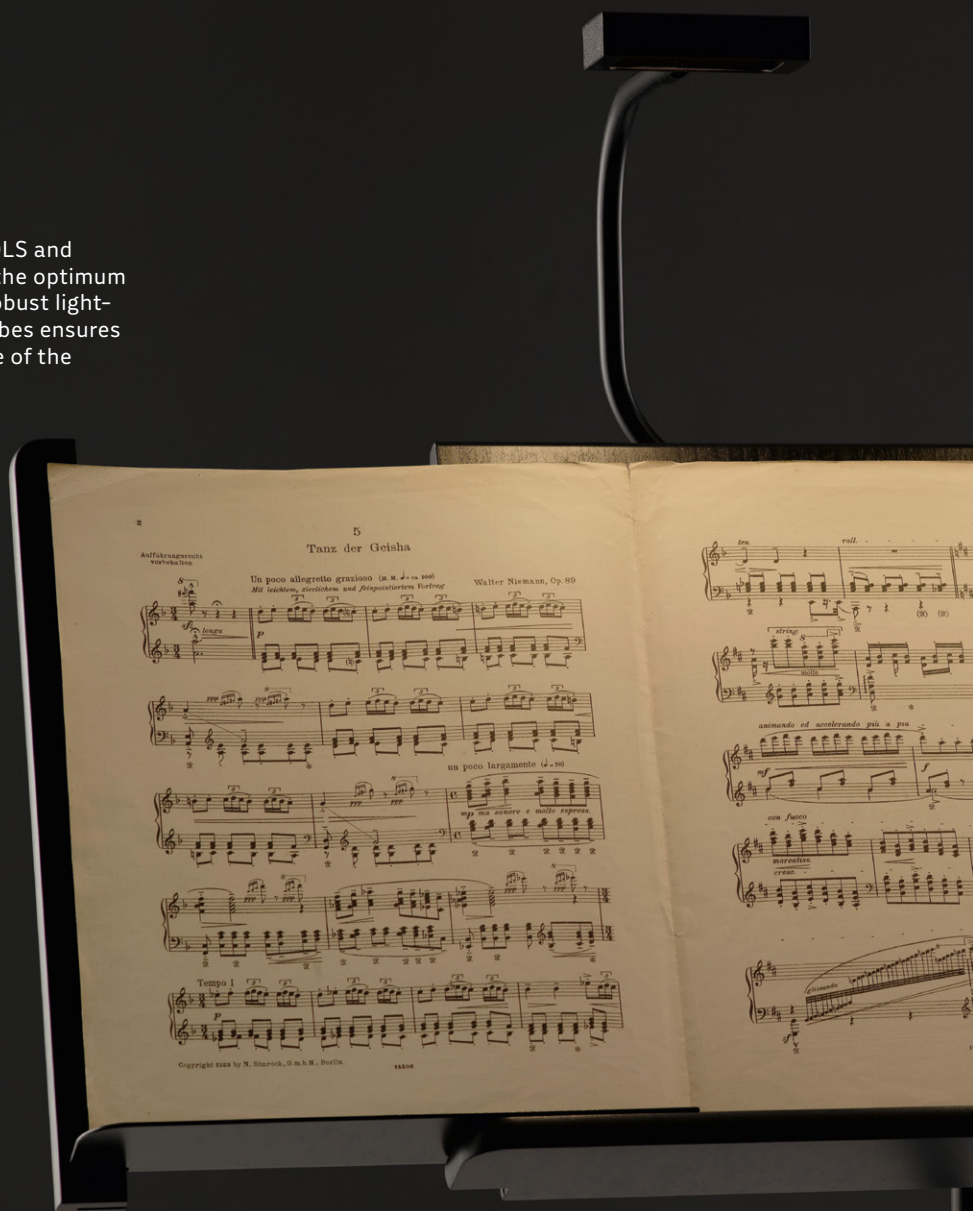
# A BRIGHT DELIGHT

The new Kolberg LED music stand lamps 4320DLS and 4320DLSA had been specifically developed for the optimum illumination of music stands. The slender yet robust lighting housing made from powder-coated steel tubes ensures long-term durability in the rough day to day life of the orchestra; quality you have come to expect from Kolberg!

High-performance LEDs from the latest generation ensure homogenous illumination of the entire music sheet – even for large format sheets. With a brightness of up to 1,400 Lux (at a distance of 35 cm) the lights more than comply with legal conditions regarding lighting in the work places. The extensively developed lamp shades prevent musicians or the audience from being dazzled due to their special design and do not restrict the view to the conductor thanks to the tiny dimensions and divided structure.

The lights technology are cutting edge using many different operating modes: leading phase control or via sine wave dimmer, local brightness regulator, digital via DMX-RDM or by radio. The lights can either be supplied by AC voltage, DC voltage, power adaptor, central transformer or via battery for mobile use.

Simply enquire with us, we are happy to help!



High power LEDs per light shade ensure optimum, anti-dazzle lighting.

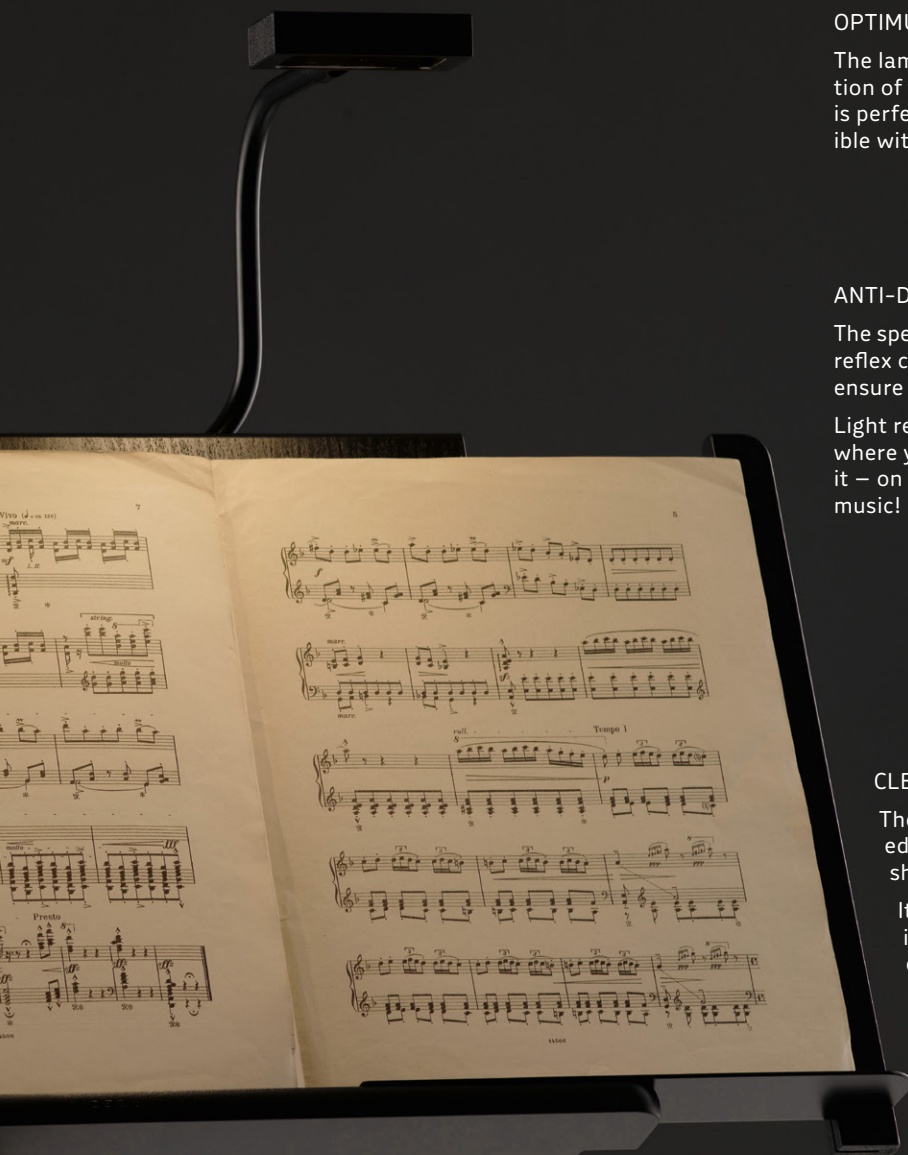


Brightness can also be optionally adjusted directly on the lamp.



Slender and robust steel construction.





## OPTIMUM BRIGHTNESS

The lamps are specially optimised for even, strong illumination of the entire sheet music. Even over-sized sheet music is perfectly illuminated without shadows! It is clear and legible with no eye strain, even at the lower edge of the sheet.

## ANTI-DAZZLE FOR THE ENTIRE ORCHESTRA

The special construction of the lamp shades and the anti-reflex coating of the extensively optimised internal design ensure dazzle-free illumination.

Light really is only where you need it – on the sheet music!



## CLEAR VIEW

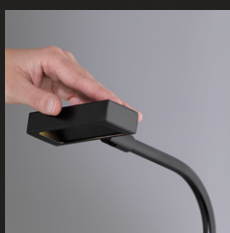
The proven design of twin lamps ensures an unrestricted view of the conductor. The silhouette of the lamp shade has been reduced to a minimum.

It appears as if the light comes from nowhere!



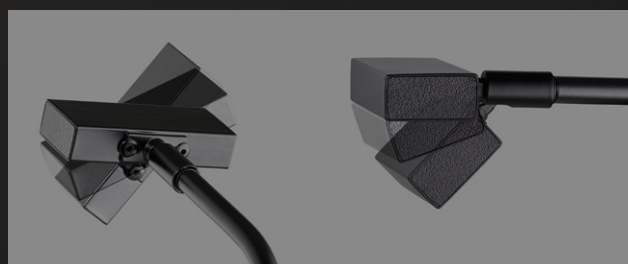
## TOUCH IT!

Thanks to the new energy saving LED technology, the lights are long burning but not hot. The thermally optimised design ensures a low LED operating temperature and thus a maximum lifespan. The lamp shades reach up to 40°C in long-term operation. You can touch them at any time.



## TARGETED LIGHT

The robust and long-lasting articulated joints enable the perfect adjustment of the lamp shade. No swan-necks, no wearing out!



# PUTTING MUSIC IN A GOOD LIGHT

## CHOOSE YOUR COLOUR

Light is emotion and not every light suits everybody. All lights are certainly not suitable for all uses. We understand this and provide a wide range of different light colours.

In our LED programme you can choose between two music stand lights:

- The 4320DLS music stand light with a single light colour
- The 4320DLSA music stand light with continuously adjustable light colour

## 4320DLS – simple, bright, great!

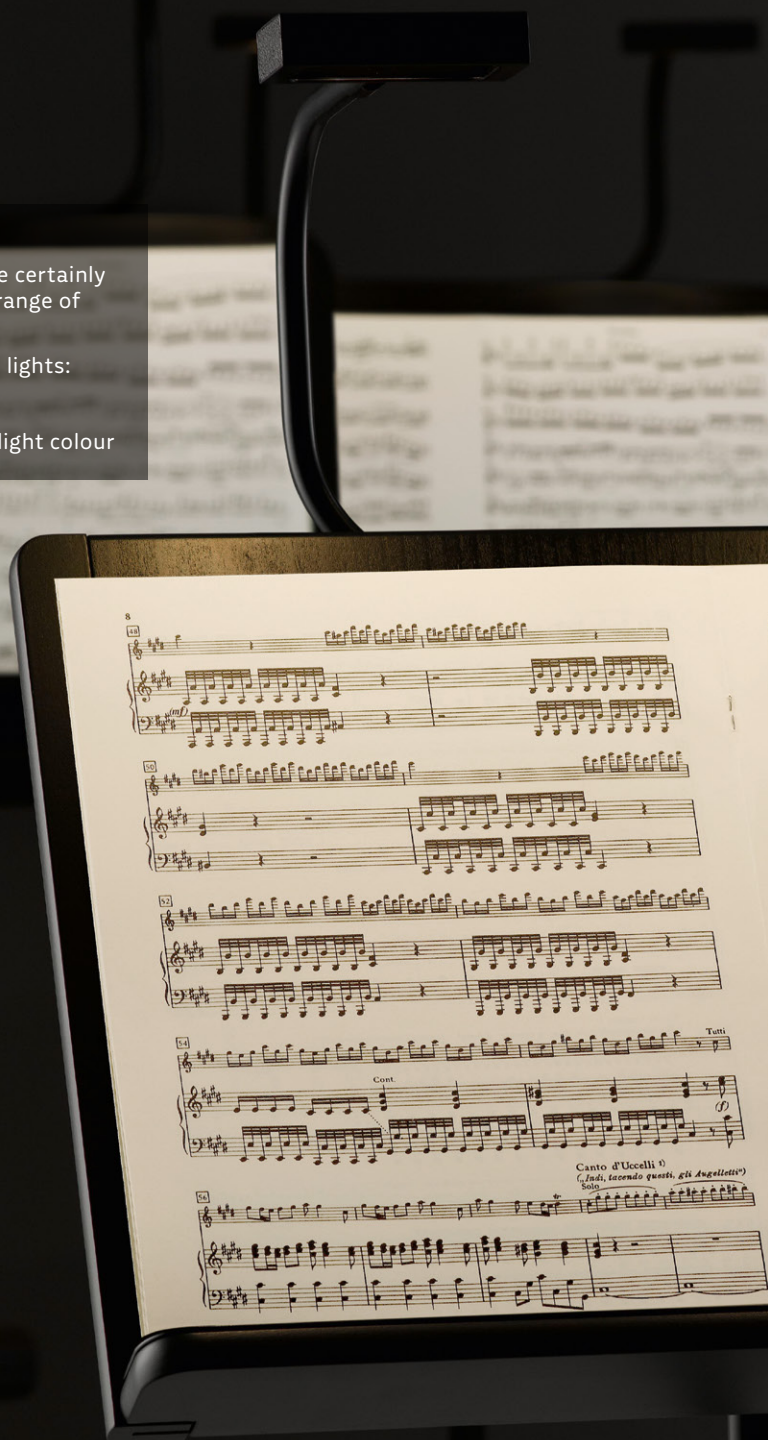
The simplest and most cost-effective variant is to use an LED light with a fixed light colour. The brightness of the warm light and the colour fastness of the LEDs achieve an excellent result.

Up to 1400 Lux you enjoy a lot of brightness with the best colour reproduction.

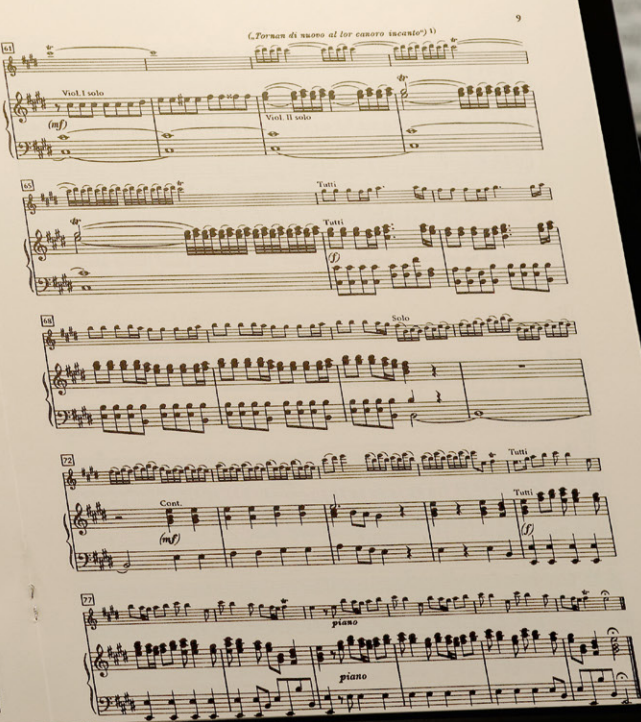
### OUR RECOMMENDATION:

With a colour temperature of 3000 Kelvin the LED light is extremely similar to the usual halogen lights. It represents an excellent compromise which ensures pleasant lighting of the music on very white paper and high levels of brightness for yellowed music paper.

The positive resonance from the orchestras which are already equipped with Kolberg LED lights confirms this. For a surcharge we can deliver the neighbouring light colours 2750 Kelvin and 3500 Kelvin.







#### 4320DLSA – for individual light colour

If it is essential to you that each musician can determine the light colour themselves as required then we recommend the music light stand 4320DLSA.

Until now, there was a choice in adjustable light colour between cold light with more brightness and warm light with less brightness. There were generally no settings in between. However, this compromise is no longer necessary with our lights. With the continuously adjustable light temperature from 2750 K to 4000 K, each musician has the opportunity to individually adjust the light colour – as appropriate for the paper quality of the literature at hand and entirely to their personal preference.

We have also taken into consideration that each light temperature setting gives an optimum lighting result and that the brightness does not change depending on the light temperature. Equally, the light is compatible with all accessories from the DLS range.

#### Our recommendation



3000 K

2750 K

# FREE-STANDING LED-LAMP

*Stoccarda*

for  
keyboard instruments  
and percussion



## LACK OF LIGHT?

Often, the question of illumination for keyboard instruments in the orchestra pit has not been solved ideally. The problems mostly already begin with the affixing of the lamp to the instrument, as the different manners in which the instruments are constructed do not permit uniform fixtures. Out of necessity unsatisfactory in-house solutions are born that do not do justice to the demands made in the orchestra pit.

## VARIABLY DEPLOYABLE

The easy handling and unobtrusive design of the free-standing LED-lamp "Stoccarda" permit a wide-ranging usage of this lamp in the orchestra pit. For example, in the percussion register the lamps on the music stands are often not able to shed sufficient light on the mallets, small instruments or the timpani pitch indicator. Thanks to the free-standing LED-lamp "Stoccarda" this is no longer a problem. This lamp provides light wherever it is needed.

## NO MORE COMPROMISES

Thanks to the free-standing LED-lamp "Stoccarda" you need no longer enter into any compromises. It illuminates perfectly both the keyboard and the sheet music.

- Deployable for all keyboard instruments as it may be adjusted in both depth and height
- A flat base for instruments with low floor clearance such as the celesta or keyboard glockenspiel
- May be taken apart for transport or storage
- A robust construction to cope with the day-to-day life of an orchestra
- Unobtrusive design
- If desired, available with casters for a surcharge (item no. 4311DLSR)
- Perfect LED-light of a very high quality of light (CRI 95)
- Dimmable by leading phase control or via sine wave dimmer (24 V AC, 230 V AC with a mains adaptor 4315DLSNTK or 4315DLSNTK)
- Dimmable by DC voltage
- Dimmable both centrally and locally
- Fully compatible with the Kolberg LED-Programme (e.g. rechargeable battery and additional modules)





## ORIGINS

"After the successful conversion of the illumination of the orchestra to modern LED-lamps it was clear that the makeshift solutions for the illumination of the keyboard instruments would have to be replaced by a professional solution at last. After the many years of positive experiences we have made with the orchestral illumination provided by Kolberg it stood to reason that we should develop the perfect solution together. The requirements were for a large adjustable section of the stand to allow deployment for all keyboard instruments, flexible adjustment of the luminous body itself, low on stray light but nonetheless providing a broad illumination of both sheet music and keyboard. And last but not least the lamp must be dimmable in conjunction with the LED-music stand lamps without the need to deploy additional technology.

The finished product that Kolberg then presented to us even exceeded our expectations. The illumination of the keyboard is perfect and even large sheets of music are ideally illuminated.

Thanks to its high degree of flexibility we are now at last able to master other problematic lighting situations in the orchestra pit. The compatibility with available technology meant that the lamp was immediately deployable. We are currently using three free-standing lamps in the orchestra pit."

*Thomas Bäurle, Orchestra Manager  
of the Staatsorchester Stuttgart*

## "THE KOLBERG FREE-STANDING LED- LAMP EXCEEDED OUR EXPECTATIONS!"

## CURIOUS?

We would gladly send you a sample specimen of the lamp without obligation. Please provide us with the following information when making an enquiry:

- What is the supply voltage in your orchestra pit?
- What kind of plug connector do you use?
- Is the lamp also to be operated at 230 V?



### MADE IN GERMANY

With our commitment to production in Germany, we take on responsibility – for our employees and our environment. All our products, including the new LED lights, are fully produced at our factory in Uhingen. This is the only way we can guarantee the highest quality and fast reaction times. Our in-house development department means we are able to comply with individual customer requests. We are also happy to advise you about the re-design of your orchestra pit. Please get in touch!



### THE KOLBERG GOODWILL

We know our products inside out and we can determine if, for example, there is a fault in the material which prevents proper use.

In this case, Kolberg goodwill kicks in. We guarantee this even beyond the two year legal warranty. Get in contact with us and we will take care of the situation!

As we manufacture our products ourselves, we usually have all the replacement parts in storage and can generally still deliver these at short notice after many years.

Kolberg products are manufactured at the highest level and our customers are satisfied with their longevity and the highest quality.





# CUSTOMER VOICES

Excerpt of our reference list:

Theater **Augsburg** · Konzert Theater **Bern** · Staatstheater **Darmstadt** · Semperoper **Dresden** · Oper **Graz** · Stadttheater **Klagenfurt** · LAC **Lugano** Arte Culture · Bayerische Staatsoper **München** · Stadttheater **Passau** · Theater **Regensburg** · Staatstheater **Stuttgart** · Theater **Wolfsburg**



Bayerische Staatsoper München



Staatstheater Stuttgart



Oper Graz




Stadttheater Klagenfurt

“ As specialists for scene lighting technology we are a contact partner for many operas and theatres. The Kolberg Percussion company with their focus on LED music stand lights is a reliable partner for us. ”

*LSS – Licht-, Steuer- und Schaltanlagenbau GmbH  
Markus Kaminski, Managing Director*





“ In the conversion from halogen to modern LED music stand lights it was important to us to find the simplest and most cost-effective solution. The Kolberg LED music stand lights are the perfect choice for us as the lights could be used immediately without having to convert the orchestra pit and make changes to the existing technology and infrastructure. Without question the LED lights provide significantly better brightness and light quality making the legibility of the sheet music considerably easier. It is a significant upgrade for our musicians' workplaces. An additional bonus is that the Kolberg LED lights can be dimmed just as easily as the previous halogen lights. I would also like to particularly mention the fast order process and extremely friendly communication with the Kolberg company. ”

Sigurd Emme, Orchestra Managing Director  
Theater Augsburg

“ Due to the electronic technology used in our opera, conversion to LED music stand lights was only possible with a special solution. The Kolberg company adjusted their lighting system specifically for our technology. We are extremely pleased with the results and our musicians are delighted with the new lights. The sheet music is perfectly lit and clearly legible without tiring the eyes. ”

Eva Bunte, Orchestra Managing Director  
Staatstheater Stuttgart



# PURE TECHNOLOGY

## PERFECT FOR BLACKOUT!

Do you control your orchestra lighting with a leading phase control dimmer or via sine wave dimmer with a downstream 24 V central transformer? Then you do not need to modify your orchestra pit! Simply unplug your old halogen lamp and plug in the new LED music stand light - done! The lamp can also be operated directly with 230 V AC thanks to the 4315DLSNT power adaptor (compatible with leading phase control dimmers).\*

## FLICKER-FREE AND ECONOMICAL!

We have specially designed our LED lamps for operation in leading phase control dimmers. A microprocessor analyses the supply voltage for flicker-free dimming, even at low levels of brightness. In order to guarantee flicker-free operation even when recording films, the built-in microprocessor controls the LEDs in this mode of operation using pulse width modulation (PWM) at a frequency of 410 Hz.

The dimmer response has been adapted to a halogen lamp so that a mixed operation of LED and halogen lamps is possible. Of course, the new LED is brighter than a 2 x 20 W halogen lamp but at 8.5 W it uses less than a quarter of the energy.

## FLEXIBLE APPLICATION!

Thanks to the modular system, the lamps can be upgraded with further functions at any time. A connector slot enables retrofitting with special modules.

So, for example, if you wanted to digitally control your lamps via DMX, simply retrofit the 4316DLSDMX module. The 4316DLSHR module enables you to limit the maximum brightness and regulate the brightness without an external dimmer. With the 4316DLSFM module the lights can also be radio controlled.

## FUTURE-PROOF!

We are constantly developing our lights. You can also benefit from further improvements and optimisations in the future via software update. If necessary, lights can also be adjusted for individual requirements.

## WIRELESS – BATTERY OPERATION POSSIBLE!

Music on stage? The cables get in the way! Simply clip the battery adaptor onto the music stand and use the high-performance Lithium-Ion battery. This can supply the lamps for at least ten hours. The integrated display lets you know the current battery state of charge. The battery is exchanged by hand in a few seconds. The brightness can either be controlled with the 4316DLSHR module directly on the lamps or centrally via DMX with the 4316DLSFM radio module.

## HIGH LONGEVITY!

Kolberg Percussion has stood for quality for over 50 years. That is why we also placed particular emphasis on quality and longevity when developing the control electronics for our LED lamps. We only use high-quality components; planned obsolescence is not a term we are familiar with – you can be sure of that.

## CONTROL VIA DC VOLTAGE

In order to avoid the documented problems and restrictions, such as minimum load in operation with leading phase control dimmers, the LED music stand lamps can also be controlled via DC voltage. The level of the connected voltage determines the brightness of the light. Kolberg also provides the appropriate DMX controllable power adaptor. If the installation in the orchestra pit does not need to be changed, the existing central transformer can simply be replaced using the 4315DLSGNT power adaptor. Thanks to the modular construction of this power adaptor, as many lamps as necessary can be supplied and controlled jointly or in groups.

The 4315DLSGNT4 power adaptor offers four separately controllable outputs and thus enables the individual control of each lamp.

\* Compatibility dependent on the transformer dimmer combination



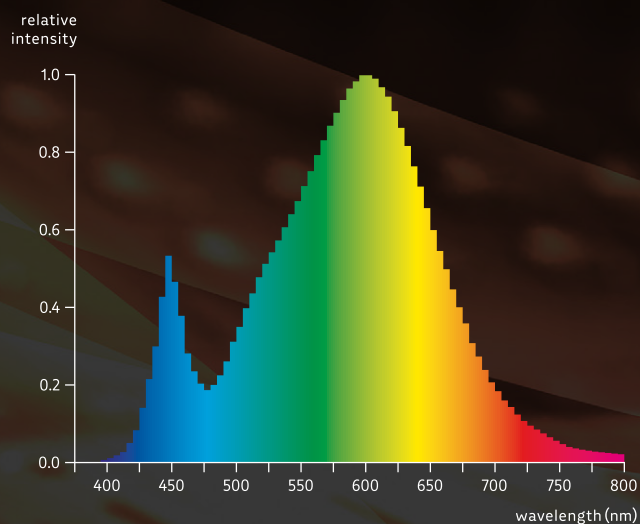


## CRI

CRI is an abbreviation for Colour Rendering Index. It is a measure of the quality of the colour reproduction of light sources. It indicates how naturally the colours are realised when they are illuminated by a light source. The values are ascertained using regularly recurring test colours. Ideally, a light source has a CRI of 100 (for example, daylight), meaning the colours are reproduced without any distortion. Light sources with a CRI of less than 85 should not be used, particularly when illuminating sheet music. The high level of distortion of the colours strains the eyes too much during a long performance.

Thanks to the use of high-quality LEDs from the latest generation, our lamps achieve an unusually high CRI of 95 and thereby ensure pleasing lighting and a performance untainted by tiredness.

The diagram below demonstrates the spectral division of the light on our LED music stand lamp.



Dipl.-Ing. Christian Brauer, Head of development

## FULL IN-HOUSE DEVELOPMENT

We have been developing lamps specifically for orchestras for over 30 years. Our experienced team of technicians and engineers constructs all the components under one roof. This is the only way to perfectly balance the mechanics with the electronics and assemble these as a high-quality end product. Short paths also allow fast implementation of special requests. Why not get in touch?

## TECHNICAL DATA 4320DLS

Operational voltage	from 14 V DC to 19 V DC and from 22 V AC to 28 V AC
Power consumption	15 W at full brightness
Level of illumination	maximum 1,400 Lux at a distance of 35 cm
Colour temperature	3,000 K 2750 K or 3500 K at extra charge
Lighting duration battery	min. 10 h for operation with 100 Wh Li-Ion battery
Connector plug	5 pin XLR black
Energy efficiency class	A+ (15 kWh per 1,000 h)
Dynamic scope when dimming	> 1:30000

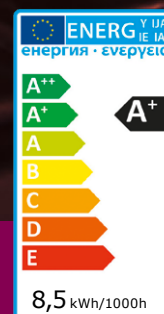
## TECHNICAL DATA 4320DLSA

Operational voltage	from 14 V DC to 19 V DC and from 22 V AC to 28 V AC
Power consumption	15 W at full brightness
Level of illumination	maximum 1,400 Lux at a distance of 35 cm
Colour temperature	adjustable between 2750 K and 4000 K
Lighting duration battery	min. 10 h for operation with 100 Wh Li-Ion battery
Connector plug	5 pin XLR black
Energy efficiency class	A+ (15 kWh per 1,000 h)
Dynamic scope when dimming	> 1:30000

## TECHNICAL DATA 4311DLS „STOCCARDA“

Dimensions (L x W x H in mm):	retracted: 1,150 x 640 x 950 extended: 1,400 x 640 x 1,600
Operational voltage	from 14 V DC to 19 V DC and from 22 V AC to 28 V AC
Power consumption	15 W at full brightness
Level of illumination	maximum 1,400 Lux at a distance of 35 cm
Colour temperature	3,000 K 2750 K or 3500 K at extra charge
Lighting duration battery	min. 10 h for operation with 100 Wh Li-Ion battery
Connector plug	5 pin XLR black
Energy efficiency class	A+ (15 kWh per 1,000 h)

Our products are tested by an independent test laboratory for interference emissions according to DIN EN 55015 and DIN EN 6100-6-3 (threshold class B, residential areas) as well as for interference immunity according to EN 61000-6-2 (use in industrial environments).



# MODULAR SYSTEM

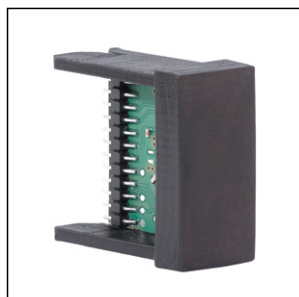
Thanks to the modular concept the lamps can get adapted to different requirements quickly and easily. This guarantees the sustainability of your investment and makes the new LED music stand lamps a real all-rounder!



Local Dimmer (4316DLSHR)

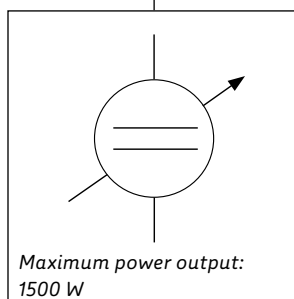


DMX RDM module (4316DLSDMX)

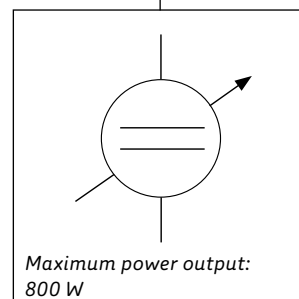


Radio module (4316DLSFM)

Socket for one module of choice



Maximum power output:  
1500 W  
DC Power Supply for control of  
up to 130 LED lamps  
(4315DLSGNT-1500)



Maximum power output:  
800 W  
DC Power Supply for control of  
up to 70 LED lamps  
(4315DLSGNT-800)



Stand joint with integrated  
lamp holder (4318)

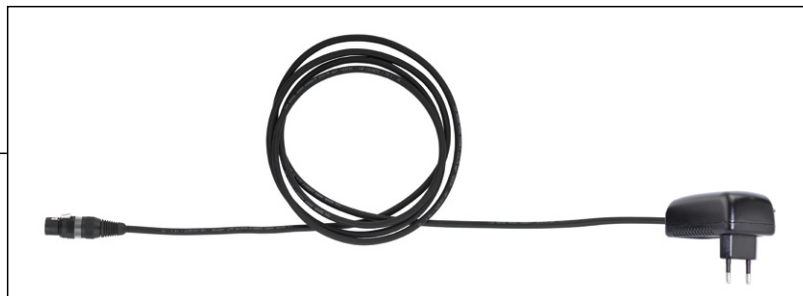


Universal holder for Kolberg  
music stand lamps (4320HU)



Retrofittable lamp holder (4319)

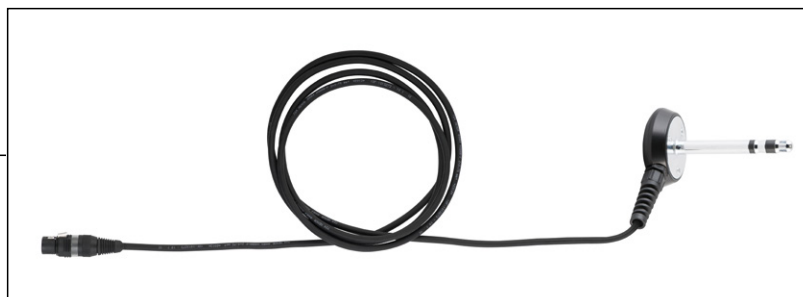




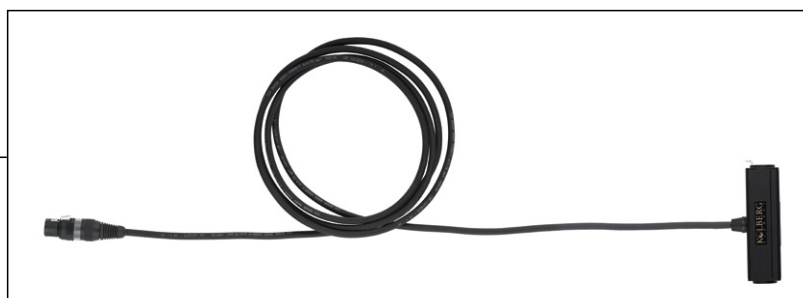
Plug-in power adapter (4315DLSSNT)



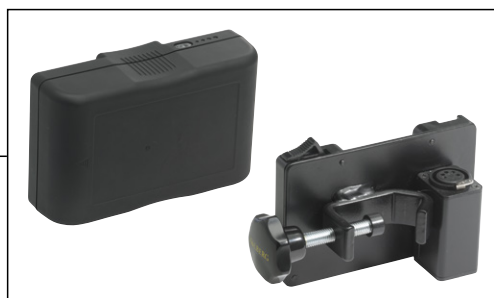
Power adapter dimmable (4315DLSSNT) optionally with clamp-on holder (4315DLSNTK)



Connecting cable (inclusive), optionally with mounted stage plug, 24V AC (4314DLS)



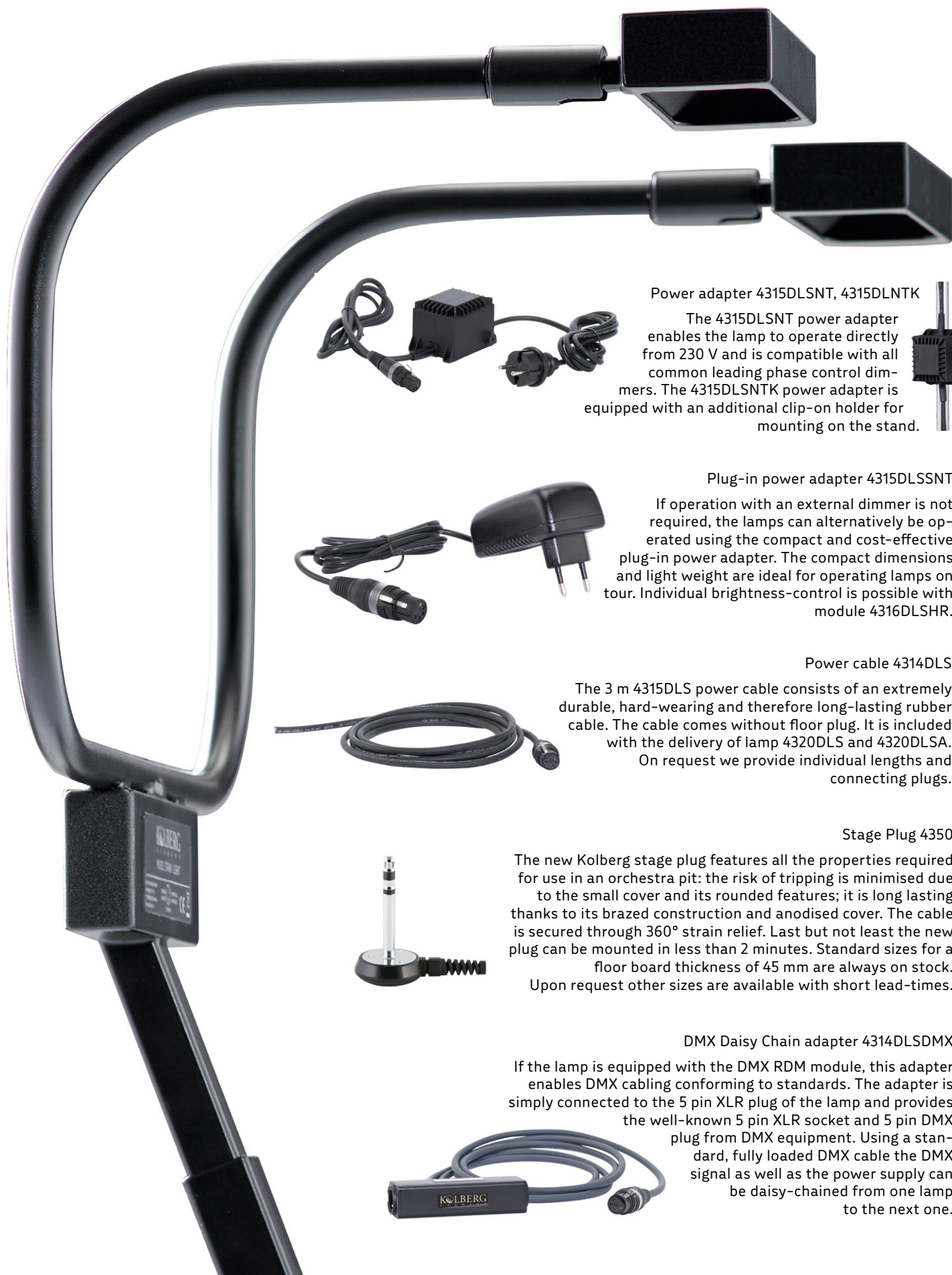
Connecting cable with DMX Daisy Chain Adapter (4314DLSDMX)



Lithium-Ion battery (4315DLSA100) for clip-on battery holder (4315DLSAK)

# ACCESSORIES

A wide range of accessories makes the new LED music stand lamps suitable for universal use.



## Power adapter 4315DLSNT, 4315DLNTK

The 4315DLSNT power adapter enables the lamp to operate directly from 230 V and is compatible with all common leading phase control dimmers. The 4315DLSNTK power adapter is equipped with an additional clip-on holder for mounting on the stand.



## Plug-in power adapter 4315DLSSNT

If operation with an external dimmer is not required, the lamps can alternatively be operated using the compact and cost-effective plug-in power adapter. The compact dimensions and light weight are ideal for operating lamps on tour. Individual brightness-control is possible with module 4316DLSHR.



## Power cable 4314DLS

The 3 m 4315DLS power cable consists of an extremely durable, hard-wearing and therefore long-lasting rubber cable. The cable comes without floor plug. It is included with the delivery of lamp 4320DLS and 4320DLSA.

On request we provide individual lengths and connecting plugs.



## Stage Plug 4350

The new Kolberg stage plug features all the properties required for use in an orchestra pit: the risk of tripping is minimised due to the small cover and its rounded features; it is long lasting thanks to its brazed construction and anodised cover. The cable is secured through 360° strain relief. Last but not least the new plug can be mounted in less than 2 minutes. Standard sizes for a floor board thickness of 45 mm are always on stock. Upon request other sizes are available with short lead-times.



## DMX Daisy Chain adapter 4314DLSDMX

If the lamp is equipped with the DMX RDM module, this adapter enables DMX cabling conforming to standards. The adapter is simply connected to the 5 pin XLR plug of the lamp and provides the well-known 5 pin XLR socket and 5 pin DMX plug from DMX equipment. Using a standard, fully loaded DMX cable the DMX signal as well as the power supply can be daisy-chained from one lamp to the next one.





## Controllable DC Power Supplies

Controllable DC Power Supplies (4315DLGNT) or 4-channel power supplies (4315DLGNT4) are available upon request. For further details see page 10.

## Battery 4315DLSA100

The high-performance Lithium-Ion battery together with the 4315DLSAK clip-on battery holder enable mobile lighting operation. The battery can be removed from the battery clip-on holder with one hand movement and changed in seconds. There is no complex assembly work involved in changing the battery. The integrated state of charge indicator provides information about remaining run time at the push of a button. With a capacity of up to 100 Wh, the battery can supply one lamp for at least 10 hours.



## Clip-on battery holder 4315DLSAK

The 4315DLSAK clip-on battery holder enables the assembly of the Lithium-Ion battery. The holder can be simply clipped to the stand. The special battery mounting plate guarantees fast battery changes; the battery can be removed and changed with one hand movement.



## Dual charger 4315DLSAL2

The high-quality 4315DLSAL2 charger can charge two 4315DLSA100 Li-Ion batteries simultaneously. This is time saving and means you always have the power you need! The compact dimensions, light weight and ergonomic handle make the battery charger perfectly suited to mobile use. The fold-out foot guarantees a stable stand, even if two batteries are attached simultaneously. The charging status is displayed for each battery by bicoloured LEDs. Also available as a quadruple device (4315DLSAL4).



## Upgradeable lamp holder 4319

Holder designed for affixing Kolberg lamps onto music stands made by other manufacturers or as retrofit for Kolberg music stands and conductor's stands. The lamp holder is rigidly mounted on the stand by means of four screws. The lamp can be easily attached; its height can be adjusted by around 10 cm.



## Universal holder for Kolberg music stand lamps 4320HU

The extremely stable clip-on holder fits all common music stands up to 13 mm. It enables mobile use of the lamps without permanent construction alterations. Never be without perfect music illumination again! The high adjustable range of 50 mm guarantees an optimal distance of the light from the stand.

## Mobile rack for music stand lamps 4340

Moveable mobile rack with brake swivel casters to move and store up to 60 Kolberg music stand lamps. Ideal for opera houses, when music stands without lighting have to be placed on the stage for symphonic concerts, and for concert halls where operas are performed.



## Flight case for music stand lamps

We can provide individually produced flight cases for the safe transport of music stand lamps. Please get in touch with us for more information.

## Brightness regulator 4316DLS HR

The simple retrofittable module enables brightness control directly on the lamps. The brightness can therefore also be adjusted without an external dimmer if the lamps are used together with, for example, the 4315DLGNT power adapter, the 4315DLGNT plug power adapter or the 4315DLSA100 battery. If the lamps are controlled using an external dimmer, the maximum brightness can be limited using the 4316DLSHR module.

## DMX RDM module 4316DLSDMX

The 4316DLSDMX module together with the 4314DLSDMX daisy chain adapter extends the function of the lamps with digital control via DMX. The lamps can therefore be seamlessly integrated into the lighting technology. It can be easily configured using remote device management (RDM). There are no complicated settings required directly on the lamps, as is often the case with DMX equipment. The module also supports all standard RDM parameters.

## Radio module 4316DLSFM

Using the 4316DLSFM radio module together with the 4316DLSFBS base station, the lamps can be controlled wirelessly. The latest digital transmission technology ensures interference-free communication. It can be operated worldwide due to the use of the 2.4 GHz-ISM frequency. The intelligent mesh network ensures seamless radio coverage. Each lamp can act as a repeater here, if required, increasing the coverage of the base station.

## THE KOLBERG STAND PROGRAMME

Our high-quality stands are the perfect addition to the Kolberg LED music stand light, they are available in the widest variety of designs.

For orchestra pits we recommend the extremely sturdy 4230D double-shelf music stand desk made from shock-resistant synthetic material with wood appearance and 4125S foot with anti-tilt protection. We are happy to advise you about choosing the right music stand for you.



### CONDUCTOR'S MUSIC STAND – THEATRE MODEL

We recommend the 4550 conductor's music stand - which is also equipped with the most up-to-date LED technology - for special theatre requirements.

MORE PRODUCTS ON  
WWW.KOLBERG.COM



TOP MODEL



### ORCHESTRA CHAIR 3100PHK

Stackable chair with pneumatic height adjustment (48-54 cm).



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info@kolberg.com · www.kolberg.com

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Our current prices can be found on the internet under [www.kolberg.com](http://www.kolberg.com)

**KOLBERG**  
G E R M A N Y