Dear Reader,

The Berlin Olympic Stadium is one of the most well-known historic sports complexes in Europe. Built in 1936 for the Xth Olympic Games, it is an excellent example of the architectural history of the first half of the 20th century. Together with the Olympia Park of the former Reichssportfeld, it stands as a synthesis of the arts and has been classified as an historical monument for exactly 40 years.

The reconstruction of the stadium had to reconcile the conflicting requirements of modernizing an historical monument with the present-day requirements of a modern, multi-functional stadium. The original objective of the complex, planned by Professor Werner March with its architectural lines of sight, was to retain the stadium in its present form as a monument of urban architecture. Not an everyday task, but one which architects Gerkan, Marg and Partner successfully solved.

By responding to the location and its history, the architects developed new ideas and concepts that were adapted to the specific situation. For example, all of the essential new buildings are located underground, outside the stadium.

The most fundamental alteration is the new roof, which is open at the Marathon Gate and therefore defers to the bell tower as the vanishing point of this urban architecture.

The synthesis of architecture and lighting was recognized by the Deutsche Architektur Museum and Messe Frankfurt when they awarded the Light Architecture Prize equally to architects Gerkan, Marg and Partners, to Conceptlicht for the light planning and to Edgar Schlaefer for the implementation planning.

BEGA made an important contribution to this project. To meet the criteria of light planning, special luminaires that had not existed in that form before had to be developed to illuminate the exterior of the stadium. A welcome task for us, and an important step towards developing new, innovative products.

I am pleased to present the luminaires developed for the Olympic Stadium, as well as other products in this brochure.

Heiner Gantenbrink
Olympic Stadium Berlin · Historic architecture - modern technology

Hainer Letska, artur

Architect: von Gerkan, Marg and Partners, Berlin
General planning: Arcadis, Cologne
Construction: Walter Bau AG, Borken
Light planning: Conceptlicht Angerer, Traunreut
Light implementation planning: Edgar Schlafke, Berlin
The historic sports complex for the Xth Olympic Games in Berlin in 1936 followed the plans of architect Professor Werner March, and took two years to complete.

The Olympic Stadium, following its function in ancient times as the central element and architectural highlight of the complex, is characterized by monumental austerity. Architectural lines of sight dominate the entire complex. The principal building material is shell limestone, cut into huge cubes and formed into a stony oval. Despite the massive outward appearance, the stadium structure is based on a light reinforced concrete construction which was at the time very modern. As the stadium was only slightly damaged during the Second World War, the original shell limestone facades and pillar cladding were almost completely preserved.

The monumental impact of the stadium is achieved by the massive pillars, rounded off by an impressive cornice. The interplay of pillars on the light shell limestone surfaces gives the structure a three-dimensional character as well as depth.
Preserving this effect, also at night, presented the light planners with a special challenge. The walls of the lower and upper gallery are different in height. Both walls are seen in context. Their impact on the stadium’s image at night is decisive, and their light effect must be the same both horizontally and vertically. Furthermore, light planning requires uniform illumination of both walls from the bottom of the ceiling down to the ground. This was only possible with ceiling washers whose angles of beam adapt precisely to the architectural requirements.

Light planning defined the following specifications:
To illuminate both galleries, ceiling washers have to be used as surface-mounted luminaires for metal halide lamps with a colour temperature of 3000 K. They have to be suitable for use outside. The luminaires must be arranged in the pillar axes. Illumination by the washers must necessarily begin at the transition of ceiling and wall, and stop on the ground at the foot of the cornice. It must not superimpose itself on the optical path of the uplights on the columns. Illuminance on the wall has to be at least 50 lux, whereby a longitudinal uniformity of 1:2 must be achieved. Light distribution has to be designed to prevent light cones on the wall. The stepped view of the tribune structure must not be illuminated from below. This was impossible with our standard luminaires.

BEGA was confronted with this task and found solutions to meet all requirements of light planning. The upper gallery was illuminated with modified luminaires from our series of ceiling luminaires · downlights.
Ceiling washers to illuminate the lower gallery needed an angle of beam from the horizontal plane upwards. This could only be achieved with new construction, and this work produced a new BEGA product series, which complement the programme of ceiling luminaires · downlights.

Detailed information on these products is given on the next two pages.
Luminaires for fluorescent lamps or discharge lamps with symmetrical or asymmetrical light distribution.
Robust luminaires for installation under entrance canopies and cantilever plates, in subways, covered pedestrian areas and large rooms.
Due to their broad spread light distribution, the luminaires in the upper group are especially suitable for providing uniform lighting in rooms with low ceilings.
The luminaires with asymmetrical light distribution are primarily designed to illuminate walls from the ceiling.
These corrosion-resistant luminaires are highly robust. A tilting mechanism makes maintenance and relamping simple and fast.
Symmetrical or asymmetrical light distribution

Ceiling luminaires for fluorescent lamps and discharge lamps with **symmetrical** or **asymmetrical** light distribution

Protection class IP 65
Die cast aluminium, aluminium and stainless steel
Matt safety glass
Reflector of pure anodized aluminium
Colour graphite or white

- graphite – article number
- white – article number + W

### Symmetrical light distribution

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Lumen</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>6796</td>
<td>1 TC-TEL 26 W</td>
<td>210 x 210</td>
<td>95</td>
</tr>
<tr>
<td>6787</td>
<td>1 HIT-TC-CE 35 W</td>
<td>210 x 210</td>
<td>95</td>
</tr>
<tr>
<td>6796</td>
<td>1 TC-TEL 42 W</td>
<td>260 x 260</td>
<td>115</td>
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<tr>
<td>6797</td>
<td>2 TC-TEL 42 W</td>
<td>310 x 310</td>
<td>115</td>
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### Asymmetrical light distribution

<table>
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<td>115</td>
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<td>6733</td>
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<td>115</td>
</tr>
<tr>
<td>6733</td>
<td>1 TC-TEL 42 W</td>
<td>260 x 260</td>
<td>125</td>
</tr>
<tr>
<td>6726</td>
<td>1 Hi/HST-DE 70 W</td>
<td>260 x 260</td>
<td>125</td>
</tr>
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</table>
A further milestone for the new Esslingen Culture and Congress Centre – the Neckar Forum – is the completion of the new civic hall with adjoining hotel complex and underground car park.

The city council’s longstanding vision has come true. The vision to create a representative platform equipped with the latest technology and provide an attractive atmosphere and meeting place for residents and their clubs where all aspects of social, political and cultural life can develop.

In terms of urban planning, the city centre has also acquired an interesting and attractive new focal point, its charm both enhancing the identity of the residents and underlining its acceptance by the residents. The principal structure of the civic hall is like a monolithic natural stone cube, raised towards the square. The foyer is driven into this in the form of a glass wedge with a roof construction projecting outward some twelve metres.

The ensemble of civic hall, adjoining oblong hotel structure and houses of the Old Town, has opened up a whole new public square. A square that needs light to retain its architectural charm and acceptance by day and above all by night. The shape of the luminaires required here had to conform in terms of material appearance and quality with the design concept of the architecture, and harmonize with the surroundings. The square needed illumination at night to create space that attracts and invites passers-by to stop and linger. The light planners chose BEGA luminaire 6945 for this task. A detailed description is given on the next two pages.
Light for public squares

Building owner: Public Consult, Berlin
General contractor: Wolff & Müller, Stuttgart
Architects: Project GmbH, Ealingen, archimedia, Stuttgart
Light planning: cep ingenieurs, Waiblingen
Electrical installation: Prinzling Elektrotechnik, Salach
Light for outside areas

Luminaires with square layout and rotationally symmetrical light distribution. They are robust and striking luminaires which can delineate and structure outside areas. Their function is to locate, guide and demarcate. They are designed to illuminate and structure squares, driveways and entrances. The light exiting from the side provides broad spread light distribution and increases vertical illumination.
Light building element for discharge lamp HIT-CE 150 W
Protection class IP 65
Die cast aluminium, aluminium and stainless steel
Safety glass
Reflector of pure anodized aluminium
Door and connection box 632
Luminaire including anchorage section made of galvanized steel.
To special order, we supply mounting base 829 for bolting to a foundation without extra charge.
Colour graphite or silver
graphite – article number
silver – article number + A

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Lumen</th>
<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>8945</td>
<td>1 HIT-CE 150 W</td>
<td>14 000</td>
<td>220</td>
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</tbody>
</table>
Shielded bollards with single-sided or double-sided light output.
With inside louvres and broad spread light distribution.
The luminaires are designed for fluorescent lamps T 16 and equipped with
electronic ballasts. They can be operated with lamps with two different
light powers.
Depending on the length of the lamps, we supply the luminaires in three heights.
This solves diverse design requirements, and the luminaires can be installed
accordingly, to meet the various dimensions of the installation location.
These luminaires are designed to demarcate, and give optical guidance in
private and public areas. They are particularly suitable for illumination with
a guiding, indicating or structuring function.
Bollards with single-sided or double-sided light output for fluorescent lamps T 16 – electronic ballast

- Protection class: IP 65
- Die cast aluminium, aluminium and stainless steel
- Safety glass with optical texture
- Reflector of pure anodized aluminium
- Connection box 532
- With mounting plate for bolting to a foundation or anchorage unit
- Colour: graphite or silver graphite – article number silver – article number + A

**Single-sided light output**

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Lumen</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Anch. unit</th>
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<tr>
<td>8844</td>
<td>1 T 16 14 - 24 W</td>
<td>1750</td>
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<td>155</td>
<td>190</td>
</tr>
<tr>
<td>8845</td>
<td>1 T 16 21 - 39 W</td>
<td>3100</td>
<td>95</td>
<td>1200</td>
<td>155</td>
<td>190</td>
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<tr>
<td>8846</td>
<td>1 T 16 28 - 54 W</td>
<td>4450</td>
<td>95</td>
<td>1500</td>
<td>155</td>
<td>190</td>
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</table>

**Double-sided light output**

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Lumen</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Anch. unit</th>
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<tbody>
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<td>95</td>
<td>900</td>
<td>155</td>
<td>190</td>
</tr>
<tr>
<td>8895</td>
<td>1 T 16 21 - 39 W</td>
<td>3100</td>
<td>95</td>
<td>1200</td>
<td>155</td>
<td>190</td>
</tr>
<tr>
<td>8896</td>
<td>1 T 16 28 - 54 W</td>
<td>4450</td>
<td>95</td>
<td>1500</td>
<td>155</td>
<td>190</td>
</tr>
</tbody>
</table>
Pole-top luminaire with spherical reflectors for asymmetrical light distribution. Wide beam on one level, and narrow beam on the other level. Designed for fluorescent lamps or discharge lamps from 3200 to 10,000 lumen. Their light distribution makes them especially suitable for illuminating streets (DIN EN 13201), squares, car parks and driveways. These luminaires can be opened up completely for simple maintenance and fast relamping.
**Single and double pole-top luminaires**  
with asymmetrical light distribution  
for fluorescent lamps TC-TEL – electronic ballast  
for discharge lamps HIT-CE - HST-MF  
Protection class  IP 65  
Reflector of pure anodized aluminium  
Die cast aluminium, aluminium and stainless steel  
Safety glass  
Adjustable slope angle 0° or 15°  
For pole heights 4000 - 6000 mm - Pole top Ø 76 mm  
Colour graphite or silver  
graphite – article number  
silver – article number + A

**Single pole-top luminaires**

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Lumen</th>
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<tr>
<td>9050</td>
<td>42 W</td>
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<td>9054</td>
<td>57 W</td>
<td>4300</td>
<td>400</td>
<td>100</td>
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<tr>
<td>9055</td>
<td>70 W</td>
<td>8600</td>
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<tr>
<td>9056</td>
<td>50-70 W</td>
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<tr>
<td>9057</td>
<td>100 W</td>
<td>10000</td>
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**Double pole-top luminaires**

<table>
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<th>Lumen</th>
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<tr>
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<tr>
<td>9127</td>
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<td>100</td>
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<tr>
<td>9141</td>
<td>70 W</td>
<td>13200</td>
<td>400</td>
<td>100</td>
</tr>
<tr>
<td>9144</td>
<td>50-70 W</td>
<td>13300</td>
<td>400</td>
<td>100</td>
</tr>
<tr>
<td>9155</td>
<td>100 W</td>
<td>20000</td>
<td>400</td>
<td>100</td>
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</table>
Surface-mounted ceiling luminaires in three sizes, designed for tungsten halogen lamps. Luminaires with anodized mirror reflectors of pure aluminium and hand-blown crystal glass. The crystal glass which is partially frosted inside provides optimum anti-glare. Part of the light is directed through the thick-walled glass laterally onto the ceiling and into the room, its horizontal illuminance thus enhancing visual comfort.
Ceiling luminaires - IP44
Downlights for
- tungsten halogen lamps QT 14 - G9
- tungsten halogen lamps QT 18 - B15d

Partially frosted crystal glass
Anodized mirror reflector of pure aluminium
Threaded to open luminaire without tools
Aluminium luminaire housing
White aluminium enamel finish
RAL 9006

<table>
<thead>
<tr>
<th>Lamp</th>
<th>A</th>
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<tbody>
<tr>
<td>9686</td>
<td>40 W</td>
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<td>9687</td>
<td>75 W</td>
<td>105</td>
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<tr>
<td>9688</td>
<td>100 W</td>
<td>120</td>
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</tbody>
</table>
Open wall luminaires in four sizes for tungsten halogen lamps and fluorescent lamps, metal fitters made of matt aluminium.
The unshielded light is directed through the matt hand-blown opal glass uniformly and softly into the room and onto the installation surface. Perfect proportions make these luminaires aesthetic elements of interior design.
Wall luminaires for
- tungsten halogen lamps QT 14 - G9
- fluorescent lamps TC-SEL - electronic ballast
- fluorescent lamps TC-L - electronic ballast

Hand-blown opal glass, satin matt
Matt aluminium metal fittings

The luminaires for fluorescent lamps are fitted with the required discharge units.

Free space of approx. 80% of the luminaire length - E - is required above the luminaire for relamping.

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Type</th>
<th>Power</th>
<th>A</th>
<th>E</th>
<th>C</th>
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<tr>
<td>8674</td>
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<td>60 W</td>
<td>100</td>
<td>155</td>
<td>90</td>
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<td>8675</td>
<td>2 QT 14</td>
<td>60 W</td>
<td>100</td>
<td>290</td>
<td>90</td>
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<tr>
<td>8676</td>
<td>3 QT 14</td>
<td>60 W</td>
<td>100</td>
<td>425</td>
<td>90</td>
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<tr>
<td>8677</td>
<td>4 QT 14</td>
<td>60 W</td>
<td>100</td>
<td>560</td>
<td>90</td>
</tr>
<tr>
<td>8678</td>
<td>1 TC-SEL</td>
<td>11 W</td>
<td>100</td>
<td>290</td>
<td>115</td>
</tr>
<tr>
<td>8679</td>
<td>1 TC-L</td>
<td>24 W</td>
<td>100</td>
<td>425</td>
<td>115</td>
</tr>
<tr>
<td>8680</td>
<td>1 TC-L</td>
<td>36 W</td>
<td>100</td>
<td>560</td>
<td>115</td>
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</tbody>
</table>
The new headquarters of the Erfurt Chamber of Industry and Commerce is located in the impressive building of the former Institute of Dermatology in Erfurt. This listed building was completely redeveloped and two wings added. The old building and the modern architecture merge into one unit of urban architecture.

This homogenous image is reflected inside the building by timeless luminaires from GLASHÜTTE LIMBURG. Luminaires with hand-blown, three-ply opal glass. They are characterized by the formal unit of glass and metal as well as the material quality of the metal parts with polished surfaces.
Pendant luminaires for
- tungsten halogen lamps QT 32 - E 27
- fluorescent lamps TC-D - low-loss ballast
- fluorescent lamps TC-L - low-loss ballast

Hand-blown opal glass with thread

Metal parts and canopy
Surface either
- stainless steel - black connecting cable
- brass - black connecting cable
- white enamel finish RAL 9010
  white connecting cable

The luminaires for fluorescent lamps are fitted with the required discharge units.

L = overall length of luminaire

<table>
<thead>
<tr>
<th>Steel</th>
<th>Brass</th>
<th>White</th>
<th>Lamp</th>
<th>Lumen</th>
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<th>B</th>
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<tbody>
<tr>
<td>S315</td>
<td>4683</td>
<td>4682</td>
<td>1 QT 32 75 W</td>
<td>1050</td>
<td>80</td>
<td>405</td>
<td>2000</td>
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<tr>
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<td>4653</td>
<td>4651</td>
<td>1 TC-D 26 W</td>
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<td>405</td>
<td>2000</td>
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<tr>
<td>S317</td>
<td>4654</td>
<td>4652</td>
<td>1 TC-L 36 W</td>
<td>2900</td>
<td>120</td>
<td>620</td>
<td>3000</td>
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</tbody>
</table>
Reinterpretation of a classic.
We often think it is impossible to improve upon a well-known object, but in this instance we have reinterpreted a classic luminaire shape, creating a product that is contemporary, streamlined and equipped with the latest lamp technology. This new series is the continuation of a long tradition. Our objectives were flat design and high light output.
Sharply contured glass, with a wide projection over the fitter, illuminates both the installation surface and the room uniformly. High-quality fitters made of die cast aluminium ensure optimum heat conduction at maximum lamp loading. Perfect design elements of modern light planning – timeless, solid and reliable.
Ceiling and wall luminaires for
- incandescent lamps A 60 - E 27
- fluorescent lamps TC-D - low-loss ballast
- fluorescent lamps TC-T - low-loss ballast
- fluorescent lamps TC-TELI - electronic ballast
Protection class IP 44
Hand-blowed opal glass, satin matt with twist-lock closure
Die cast aluminium fitter
Surface either
- white aluminium enamel finish RAL 9006
- white enamel finish RAL 9010

With 2 cable entries for through-wiring
The luminaires with Ø 250mm and Ø 300mm have 1 cable entry.

The luminaires for fluorescent lamps are fitted with the required discharge units.
An information brochure from
BEGA - LIMBURG - BOOM
Editorial + Design: BEGA Grafik-Design

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