



BEGA

Das gute Licht

01 | 2022

Illumination with floodlights

The most important task of high-quality illumination is to attractively highlight the many facets of architecture at night. The BEGA floodlight portfolio allows for custom solutions for the many characteristics of structures and their requirements for exceptional light.



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The unique cupola feature of Dresden's Frauenkirche



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Foreword



Dear reader,

“Making the world of night unmistakably visible” – this has been the challenge driving our company every single day for many decades. We want our luminaires to create an efficient, yet inconspicuous stage for any kind of architecture. Design ideas are at the heart of what we do and are staged in accordance with their meaning.

In this edition of our customer magazine, we illustrate a variety of floodlight illumination options. We are dedicated to visualising possible requirements and their solutions. These are important topics for architects, installers, lighting designers and our own production.

BEGA luminaires are precision tools that set the lighting scene, fulfil the framework conditions of the relevant lighting installation in terms of energy, economy and ecology, and create a stage for beautiful light. Our extensive portfolio facilitates a targeted selection of luminaires in various sizes, luminous intensities and light distribution versions. The design narrative of each individual structure is at the core of lighting design and its efficient implementation.

Precision also means: Lighting design should only use as much light as will be needed for the actual staging. Our optical systems allow for optimal application efficiency, in which virtually every beam of light from the LED modules is captured, directed and used for the right light distribution. Our accessories like shields and louvres, or custom productions from collaborations with our partners and

customers create on-point light staging – literally.

Terms like “dark sky” and “insect-friendly” have taken on a new and important meaning in our time. They confirm that our actions – specifically our striving for light efficiency using the most low-cost and targeted light deployment – is the right approach.

An overview at the end of this magazine delivers some initial answers for important questions: What will you need for your project? What can you achieve with your selected BEGA luminaires? Consider this the basis for our conversation with you. For a successful implementation of your planning – with light solutions that will last for decades.

I would like to conclude now with an invitation: we would be delighted to welcome you at Light + Building 2022, when the lighting sector can finally set content accents in person after the forced break due to coronavirus. You will find BEGA as always in Hall 3.0, Stand C91.

I hope you enjoy reading our magazine!

Heinrich Gantenbrink
Managing Partner

Delicate light staging of the “Stone Bell”

Frauenkirche Cathedral, Dresden: From a memorial against war and destruction to a symbol for peace and reconciliation



The history of Frauenkirche in Dresden is as turbulent as it is moving. Built in the 18th century, the burnt-out cathedral collapsed in February 1945 after the devastating bombing of the city. For 48 years, the mountain of rubble on Neumarkt was a memorial against war and destruction. After 1982, it became a symbol of the East German peace movement and non-violent protest.

The baroque cupola structure was rebuilt between 1993 and 2005, re-utilising as much as possible of the original building materials. The project was funded with donations from around the world. The “new” Frauenkirche has been a symbol of peace and reconciliation since its completion.

The sandstone church, built on a comparatively small area, has an octagonal shape in the lower part. Dark original stones,

which were installed in their original place, are interspersed in the light façade. Old and new intertwined – the past as part of the future.

The cupola itself is constructed entirely with sandstone. At a height of 24 metres and a diameter of 26 metres, it weighs more than 12,000 metric tonnes. The Frauenkirche owes its nickname “stone bell” to the unique shape of the dome and the curved cornice.

The illumination of the baroque cupola construction was a unique challenge. “The imaginary power for peace and reconciliation comes from within and radiates into the world”, says lighting designer Walter Bamberger, explaining the principle that the church should primarily shine from within. The light from within the structure is therefore also part of the exterior lighting and had to be integrated in the design accordingly. ►



Selig
sind die
Frieden
stiften
Matthias 5, 9

Blessed
are the
peace-
makers
Matthias 5, 9

From the specified position of the luminaires to the importance of lighting technology and the varying brightness of the façade elements: in Dresden, a special feat of façade illumination was achieved



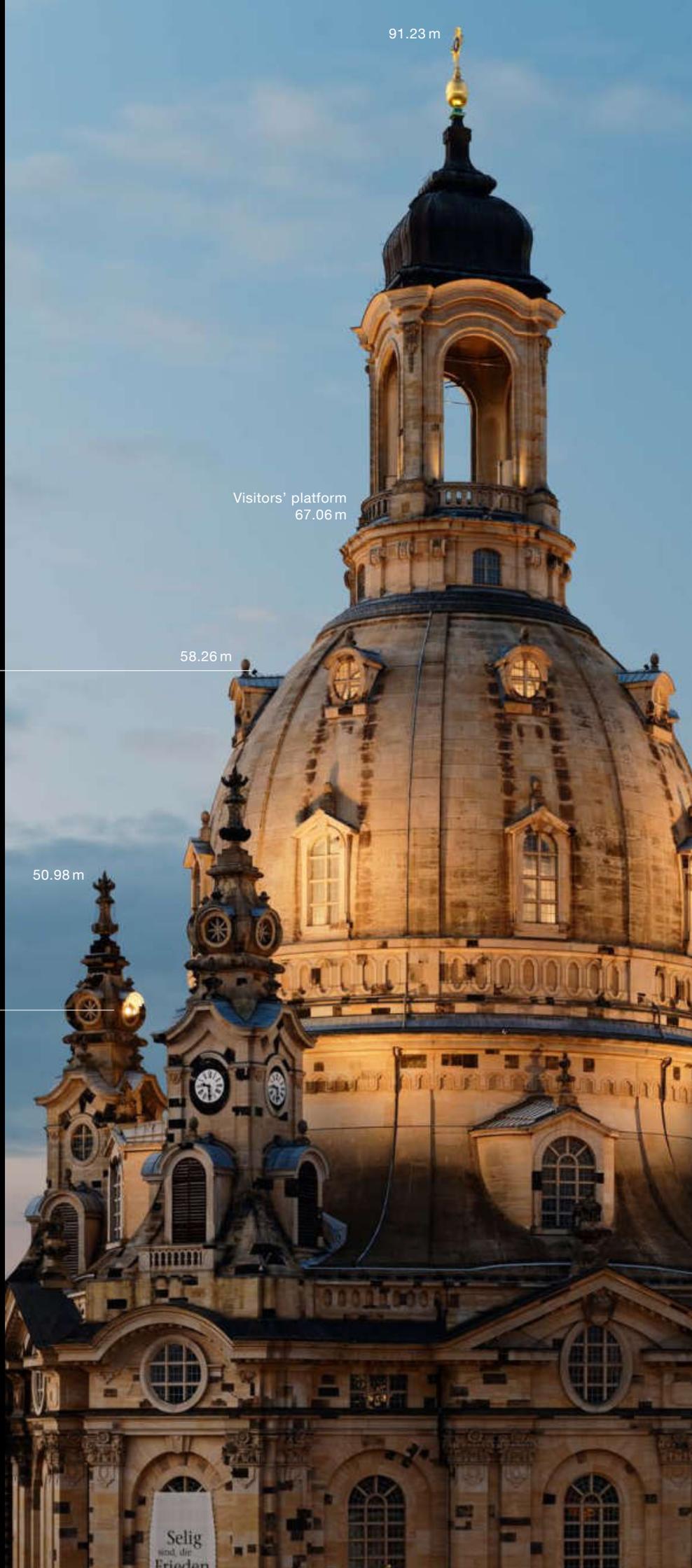
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The compact floodlights with focused light distribution were mounted and aligned on the cupola dormers by industrial climbers



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Surface floodlights with a flat beam and performance floodlights with symmetrical wide beam light distribution provide the desired illumination of the cupola



91.23 m

Visitors' platform
67.06 m

58.26 m

50.98 m



Highly reliable BEGA floodlights provide light at the four staircase turrets at a height of about 44 metres.

The successful staging of Dresden's Frauenkirche at night time required the consideration of a great number of parameters. The highly complicated variety in the overall lighting design was addressed by seasoned specialists: lighting designer Walter Bamberger is a highly sought-after expert for special projects. Working closely with Thomas Gottschlich, chief architect of the church construction administration in Dresden, the illumination focused on highlighting the most meaningful historical details for which the Frauenkirche stands.

The lower part of the construction relies on standard urban illumination. It seems as if that light also illuminates the cupola. In reality, however, the outdoor lighting includes various types of BEGA floodlights.

“The location-oriented concept does without direct façade illumination, because the church is meant to shine from within.”

Thomas Gottschlich, chief architect of the church construction administration in Dresden

The design included some great challenges, as the placement of the light sources were predefined for architectural design reasons. “The lighting is chosen so that the architecture and its elements are experienced in a very intricate and three-dimensional way”, says Walter Bamberger. The lighting technology had to adapt and take

into account the varying brightness of the façade on the different levels of luminaire placement. The originally intended result had to be achieved, despite the darker surface of the original stone material. “The aim was to create a similar luminance or more light directed to the right places”, explained the lighting designers.

The end result is a special feat of façade illumination using floodlights:

“The outer hull of the cupola above the lantern neck up to the lantern itself has become an illuminated beacon in the cityscape.”

Lighting Designer Walter Bamberger

the actual brightness is very muted, as the entire idea is to convey the message that the light comes from within, explains Bamberger.

When selecting the products, the quality of the luminaires and a very long lifespan were also important factors, in view of excessive follow-on costs. For those in charge of the budget, this is one of the hallmarks for the reliability of a premium manufacturer.

After all, the phenomenon that is the Frauenkirche also means industrial climbers were needed, as the light concept extended to very hard to reach positions at heights of more than 50 metres. ■



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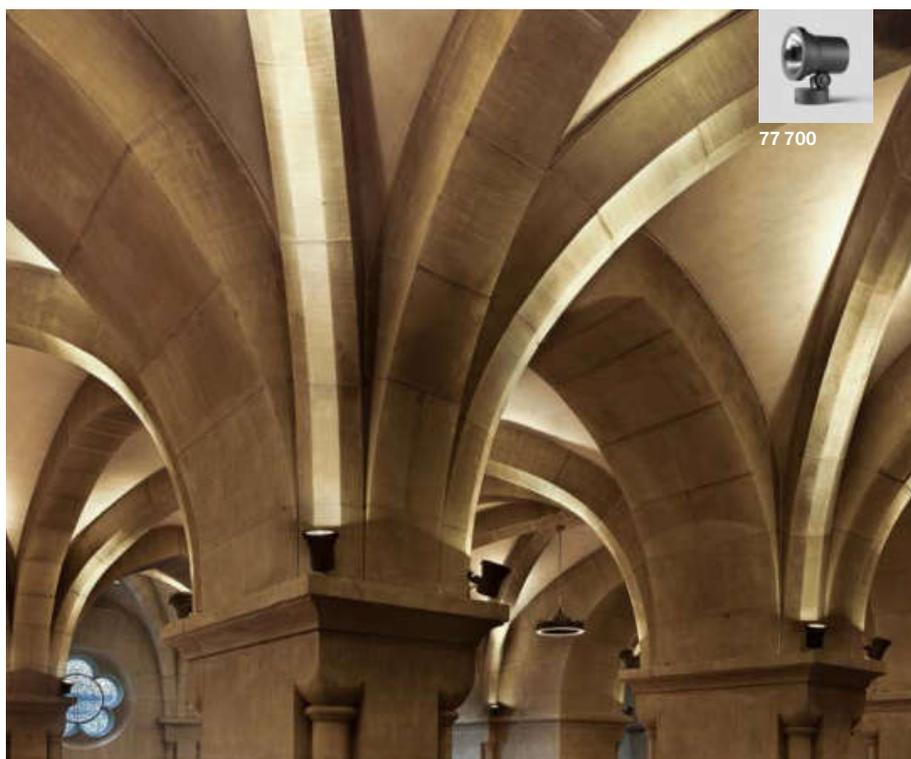


Valkbrug · Leiden · Netherlands



The concrete structure of the new bridge in the city centre of Leiden (Netherlands) is staged using BEGA performance floodlights.

The focused light distribution with simultaneous reduction of stray light adds special interest to the architecture of this central structure. Passers-by are not blinded by the light.



Christ Catholic Church St. Peter & Paul · Berne · Switzerland

Redrawing the lines of architectural structures with light

Floodlights with focused light distribution and stray light reduction add significant depth to individual structural details

One special purpose of lighting design is to redraw architectural details. The light follows the special features of the architecture. It highlights and draws attention with very narrow beam illumination. Recurring structures in particular are given more depth with accented light.

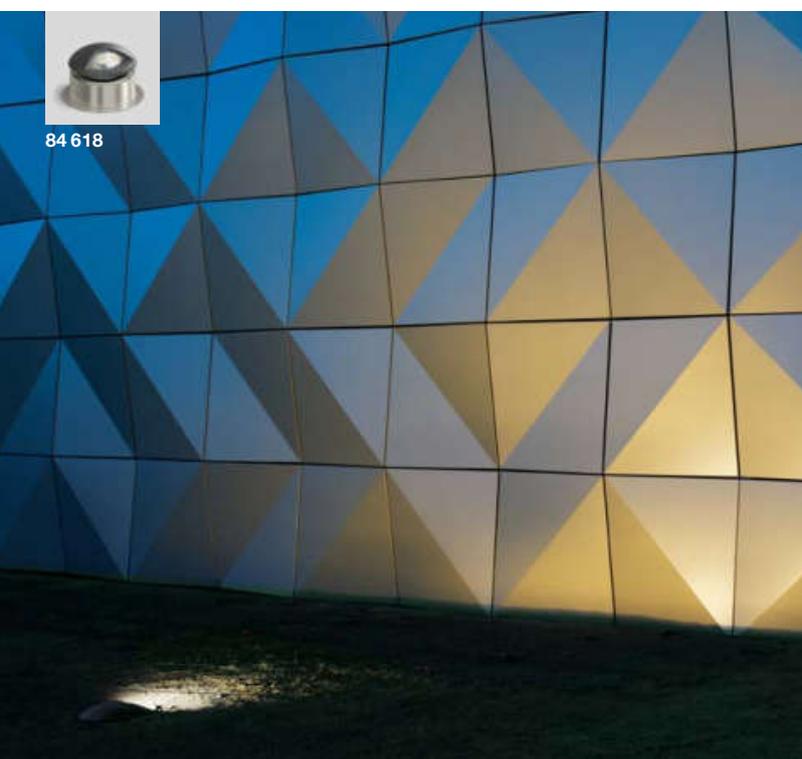
The initial preparation of the lighting design should be viewed separately from the type and size of the actual project. Our examples depict very different types of architecture: the new Valkbrug Bridge in Leiden connects the northern and southern part of Lammermarkt, while picking up on the design of the

actual market square. The performance floodlights, with focused light distribution and integrated louvres to reduce stray light, set the stage perfectly for this type of architecture. At the same time, the floodlights prevent glare for passers-by.

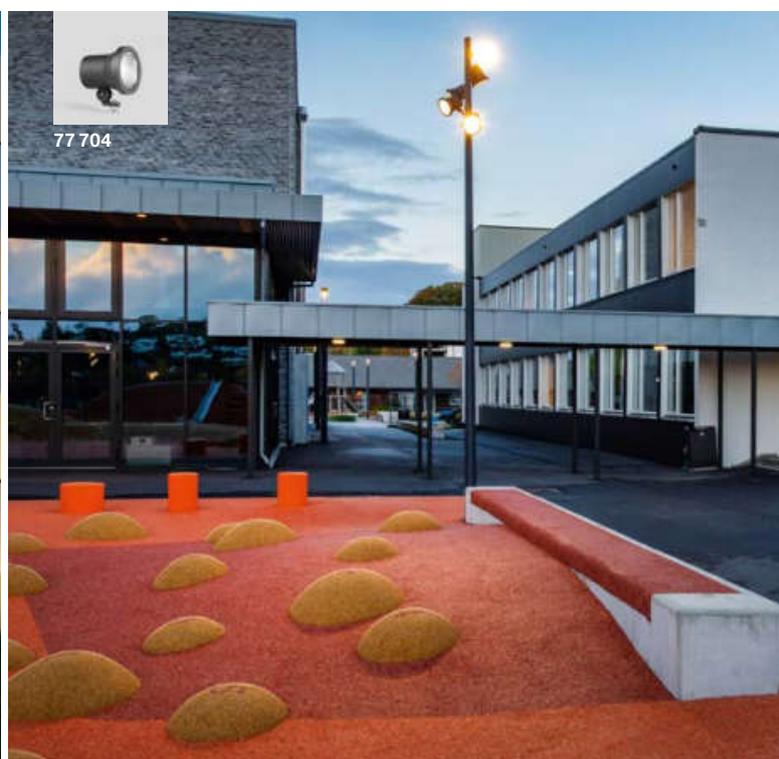
In the church of Saint Peter and Paul in Berne (Switzerland), compact floodlights with focused light distribution and a built-in glass lens are used to reduce stray light. They emphasise the struts in the vaulted ceiling. The light shining from the bottom up makes the ceiling appear higher and more imposing. ■

Distinctive surfaces and structures

The positioning of floodlights has a major influence on the interaction of light and shadow, and therefore on the result of the staged lighting



Wall washers combined with twilight emphasise the value of a structured façade



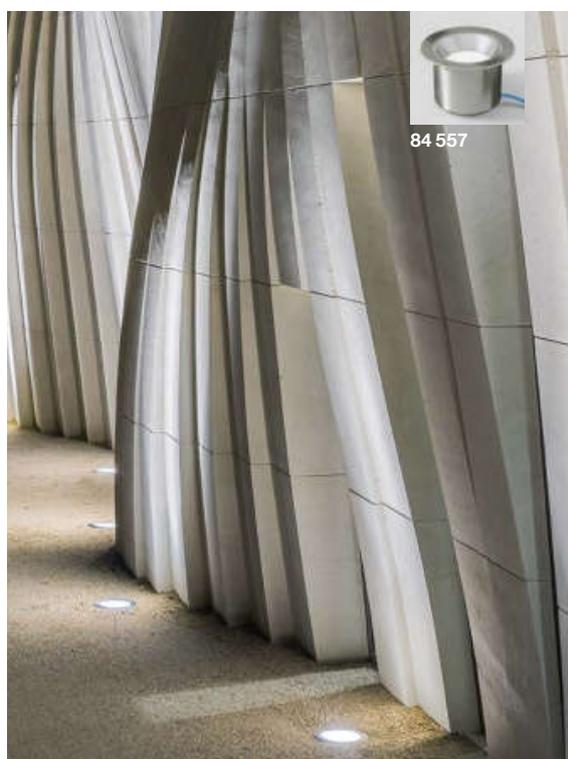
Good illumination of the court: pole-mounted floodlights make the structure recognisable and tangible

The façade is the calling card and unique selling point of the architecture. Distinctive surfaces and a structurally emphasised design draw attention to buildings and functional areas.

There are many options for the illumination of such exposed surfaces and the staging of their materiality in the dark. Beyond the

fascination beautiful architecture creates, its illumination can be planned and realised uniquely.

The structure and reflectivity of the surfaces must be considered as part of the lighting design. If the structures on façades are to be individually emphasised and staged, the positioning of the luminaires can have



Targeted staging of the gradations and undulations of a façade



A reflective surface creates very special illumination effects



Illumination at an acute angle emphasises the relief in the façade

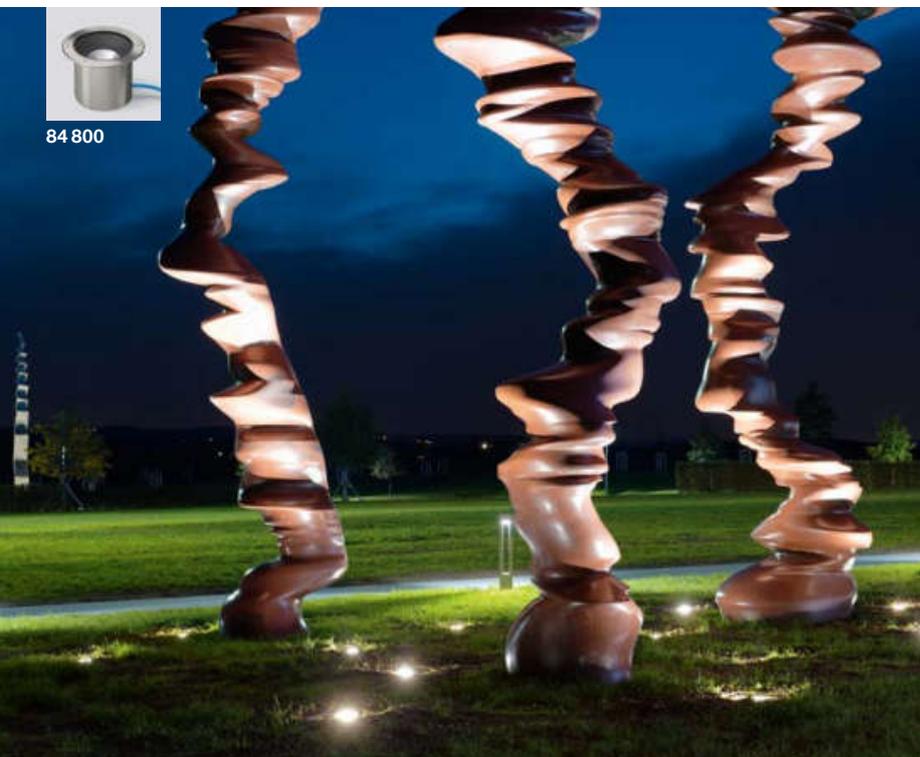
a special influence on the lighting results. Light from an acute angle to the façade brings out the structures to best effect. The more acute the angle, the more striking the interaction of light and shadow. With a slightly greater distance between the luminaires and the architecture and the choice of wall washer luminaires, the façade can be experienced in its entirety in the dark – thanks

to softly drawn lighting effects without light cones.

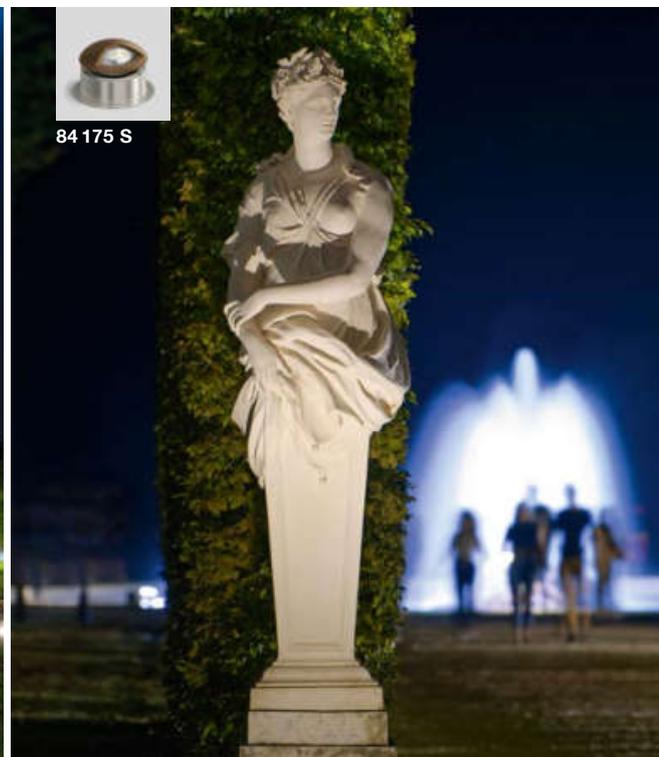
Glossy and textured surfaces can also be illuminated with direct light at a 90-degree angle. Every light point that is directed onto the façade becomes visible and creates an even more multi-faceted light accentuation. ■

Accents in sculptural illumination

Here, the illumination uses targeted light distribution to draw the attention of the viewer



The light grazes the shape of this winding sculpture from below for its perfect staging

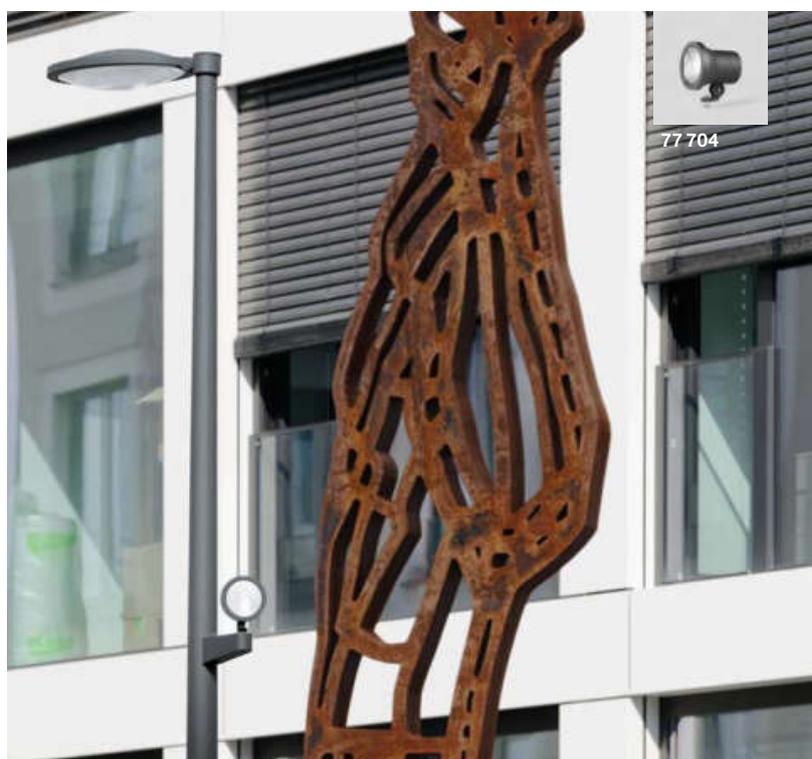


In this case, the optical system of wide-beam luminaires was customised for sculpture illumination

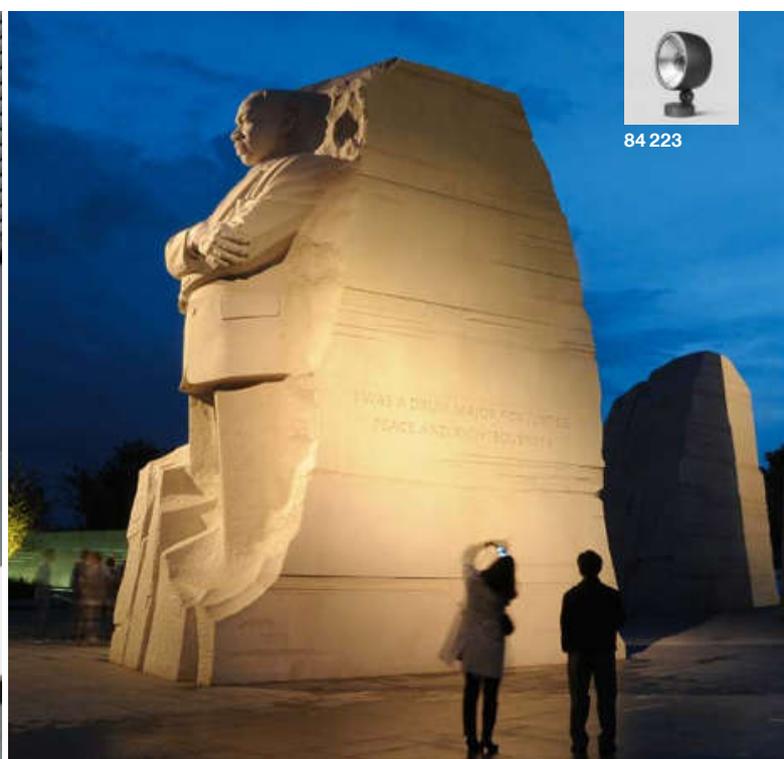
Accent lighting is the perfect stage for special objects. Installers and lighting designers solve the challenge of creating easy to grasp focal points in a generally illuminated environment by using targeted light distribution. Very narrow beam light directs attention to sculptures, works of art, or special architectural features.

Focused illumination creates the perception of more intense brightness on the staged object than the general illumination in its immediate vicinity.

The positioning of the light points promotes appreciation of the details highlighted in sculptural illumination. Grazing light in an



A cross beam on the pole of the pole-top luminaire allows for the simple installation of floodlights



Wide-area lighting from multiple sides accentuates the majesty of the Martin Luther King, Jr. National Memorial in Washington

acute angle from below impressively sets the scene for material and structures with changes in light and shadow. Light from a slightly greater distance lets the viewer experience the illuminated object in its entirety without glare from the luminaires. Wide-area illumination from multiple sides emphasises the size of an object while

combining the clarity and serenity of an illumination without light cones and edges.

The versatility of the extensive BEGA floodlight portfolio facilitates efficient lighting design for sophisticated staging – in line with the requirements of the project and all options for light point placements. ■

Uniform illumination with impressive long-distance effect

Palace of Versailles: two almost identical luminaires fulfil different tasks on the structure itself and in the park

One of the largest palace complexes in Europe and also one of the most historic structures on the continent sparks a very special magic far beyond the borders of France. The objective of the lighting design for the baroque structure is to give the Palace of Versailles, which, at its widest point, stretches to more than half a kilometre, a sublime long-distance effect at night.

Countless palace buildings were modelled after this UNESCO World Heritage Site until the 19th century. Special BEGA LED in-ground luminaires contribute to its appropriate staging. Two almost identical luminaires, which are barely distinguishable from the outside and create a harmonious overall look, take on very different lighting tasks at the palace proper and in the landscaped parks.

The in-ground floodlights with asymmetrical wide-angle light distribution illuminate vertical surfaces to perfection – in this case: the façade of the palace. The lower limit of the light distribution is linear and without any distracting light cones on the illuminated surface. The effect of the palace on the viewer is suitably imposing, even from a greater distance.

These custom in-ground floodlights are embedded in the light staging of the far-flung palace gardens with its sculptures and landscaped features. Special reflectors and the resulting very narrow beam light distribution are used to stage the details of numerous sculptures, integrating the statues into the context of the gardens and the artfully pruned plants. ■



Two nearly identical luminaires with completely different illumination tasks: BEGA custom products are the answer. The in-ground luminaires with modified optical system stage the sculptures – while the standard version illuminates the lower part of the palace façade without distracting light cones.



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Palace of Versailles · Paris

Avoiding glare in urban environments

Two lighting concepts for uniform light, consideration for residents' concerns and insect protection

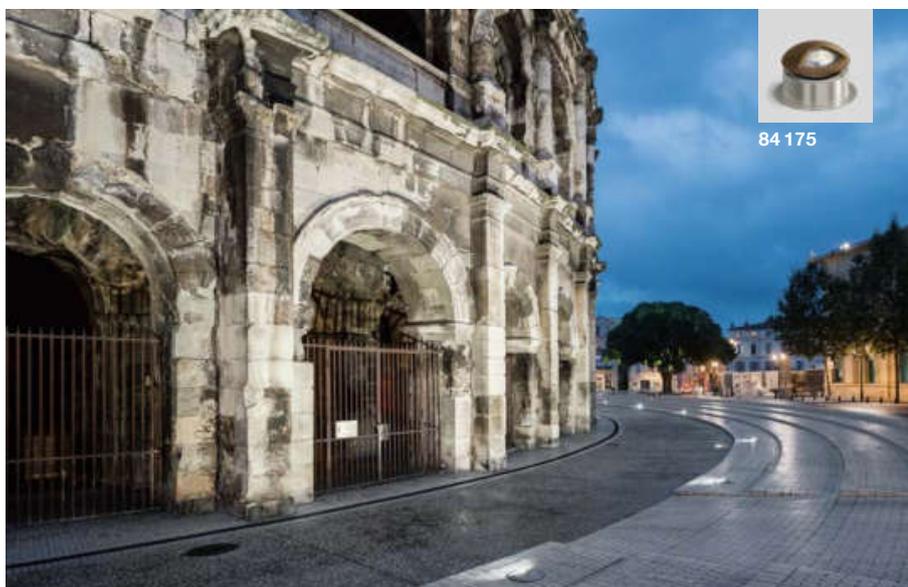
Lighting concepts in urban spaces can be realised for spatially limited areas, as well as for structures with larger dimensions:

In addition to the task of appropriately staging the illumination, the conditions of the immediate surroundings must be taken into account. An essential requirement here is to prevent glare. Light shielded upwards has proven to be particularly insect-friendly as well. The right choice of luminaires and effective accessories ensures satisfactory results for lighting designers and local residents alike.

The light stagings presented here follow the main brief of illuminating with uniform light. They do, however, use different concepts to match local conditions, while achieving outstanding lighting results for the respective



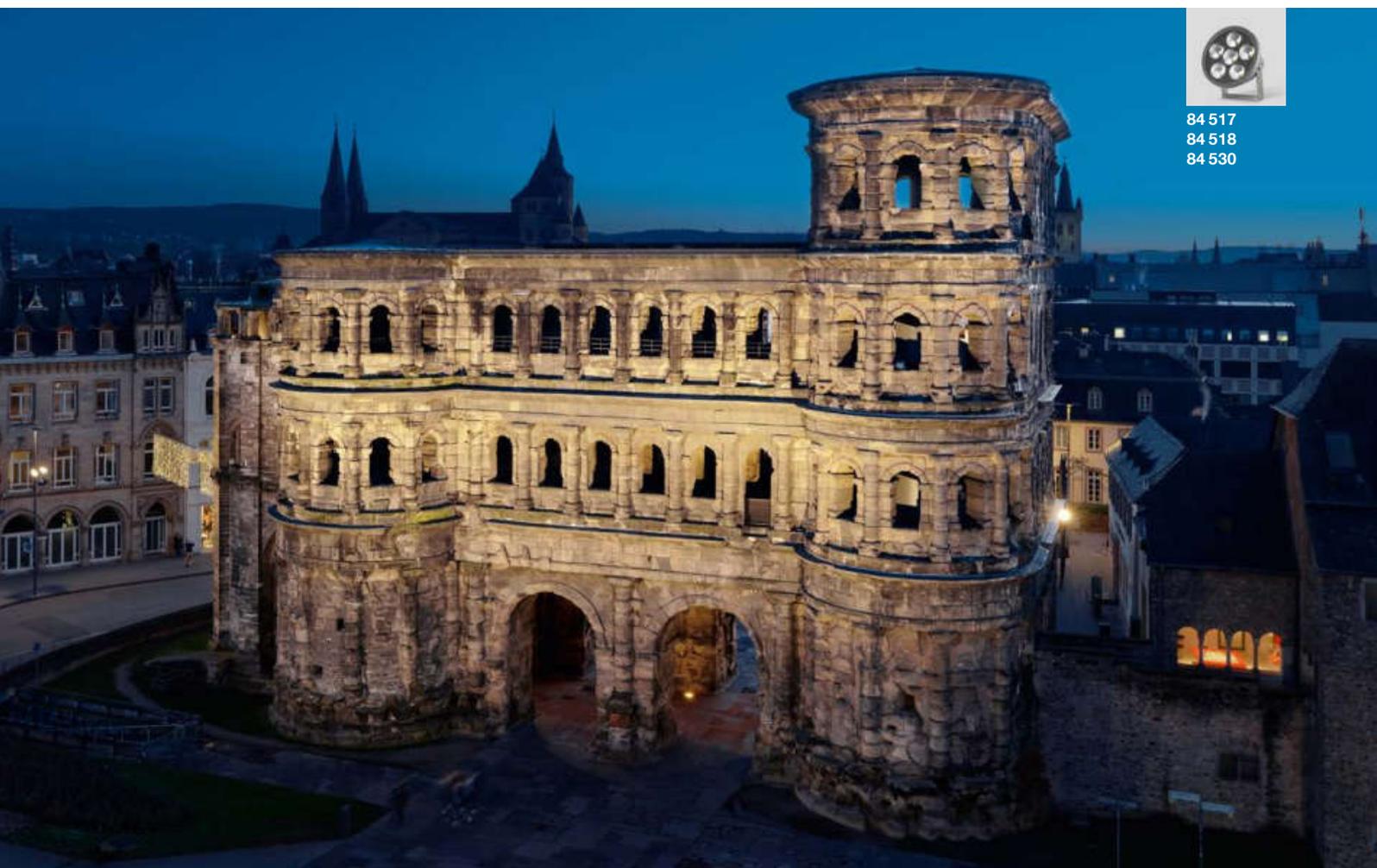
projects. The sprawling dimensions of the amphitheatre in Nîmes allowed the use of in-ground luminaires as wall washers for its illumination. The luminaires were placed close to the structure, so that viewers find themselves behind the light source to avoid glare. The uniform light without distracting light cones in the lower area stages the 2000-year-old bricks, with their varied colour shading, to perfection.



Amphitheatre in Nîmes · France



In Trier, precisely aligned luminaires with additional light-directing shields and louvres are installed on cross beams to avoid glare for visitors and residents by the Porta Nigra. The light distribution additionally addresses the concerns of insect protection.



Porta Nigra · Trier · Germany

For Porta Nigra in Trier, glare-free illumination was an important planning factor. The luminaires had to be installed at a distance from the structure and above the eyeline of viewers, as they would usually be located in front of the luminaires. This placement prevents glare. High-performance floodlights

with shields and louvres create directed light for the uneven shape of the building in such a way as to achieve a very uniform illumination. Secondly, virtually every beam of light is captured and targeted precisely to exactly where the light is needed. ■



Using the reflectivity of structures

Indirect light allows for additional and attractively gentle illumination of surrounding ground surfaces

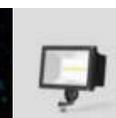


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Light efficiency is a question of light distribution. The targeted use of indirect light is an option where the architecture to be illuminated has reflective surfaces in the roof area. Roof areas illuminated from below can therefore be used to illuminate surrounding ground areas.

On the ground, the positioning of the light sources can be flexible. The different light distributions of the BEGA luminaires allow for exact alignment of the light – in other words: the illumination precisely aligned with the building.

The reflected light of the staged surfaces also gently illuminates paths and squares in the immediate vicinity. There will be no need for additional light sources for that task. What's more, the night sky will not be brightened – which protects insects.



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77 486



Volksbank Krefeld · Germany



Convenient control over your light staging – anywhere

BEGA Connect is the easy to use, independent platform for light management in sophisticated architecture



Projects, especially at remote locations – for example the Kaiser Wilhelm Monument in Porta Westfalica – inspired us to develop BEGA Connect. The Air Connector offers a self-contained online access via Narrowband-IoT.

Easy, convenient, ready for use in no time at all: BEGA Connect facilitates light management online in the cloud – completely independently and even without an available Internet connection.

BEGA Connect combines uncomplicated light staging and light control for illumination: A perfect stage for architecture at night. Light control, automation and overnight shut-down can be handled easily and from anywhere – no additional hardware components are needed, while unnecessary brightening of the night sky is avoided, and relevant regulations are complied with at low cost and very little installation outlay. BEGA Connect simplifies complex

tasks – for beginners and professionals. Where previously complex DALI installations had to be planned and implemented, BEGA Connect enables a quick and uncomplicated start.

Uncomplicated commissioning, control and automation of the lighting system from anywhere and completely independent of an Internet connection – these are the stand-out features of BEGA Connect. The system is super easy to commission, operate and monitor via the BEGA Connect app – without any previous technical experience with the handling of DALI light controls.





For locations, where an IP infrastructure is not available, the Air Connector offers a self-contained online access via Narrowband IoT. Simply switch it on – and the light installation is online. Where Internet access is available, the lighting system connects to the BEGA Connect cloud via the DALI connector. ■

More on the topic: connect.bega.com



Luminaires for any application



Compact floodlights

Connected wattage 4.1 to 77 W
Luminaire luminous flux 351 to 7761 lm



Performance floodlights

Connected wattage 10.2 to 77.2 W
Luminaire luminous flux 383 to 8146 lm



High-performance floodlights

Connected wattage 106 to 326 W
Luminaire luminous flux 3802 to 41 151 lm



Surface floodlights

Connected wattage 12 to 71 W
Luminaire luminous flux 1109 to 8060 lm



Surface floodlights

Connected wattage 13.3 to 22.2 W
Luminaire luminous flux 1339 to 2516 lm



Performance floodlights

Connected wattage 26 to 105 W
Luminaire luminous flux 1098 to 9869 lm

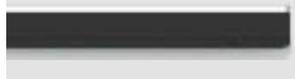


High-performance floodlights

Connected wattage 190 to 378 W
Luminaire luminous flux 11 069 to 38 135 lm



The BEGA Floodlight portfolio offers architects, installers and lighting designers a complete range for any project size. In addition to suitable light outputs and light distributions, the integration into light management systems, like our independent, cloud-based platform BEGA Connect, is a special performance feature. The prevention of too much blue light (insect protection) and efficient light shielding are quality standards. ■

	<p>Façade floodlights</p>	<p>Connected wattage 15.5 to 30 W Luminaire luminous flux 485 to 2766 lm</p>	
	<p>Drive-over in-ground floodlights</p>	<p>Connected wattage 0.5 to 76 W Luminaire luminous flux 32 to 7439 lm</p>	
	<p>Drive-over wall washers</p>	<p>Connected wattage 27 W Luminaire luminous flux 2626 lm</p>	
	<p>Drive-over in-ground floodlights</p>	<p>Connected wattage 0.8 to 35.3 W Luminaire luminous flux 26 to 3292 lm</p>	
	<p>In-ground floodlights</p>	<p>Connected wattage 3.6 to 53.4 W Luminaire luminous flux 47 to 5723 lm</p>	
	<p>On-ground luminaire wall washers</p>	<p>Connected wattage 26.6 to 33.2 W Luminaire luminous flux 1909 to 4085 lm</p>	
	<p>Underwater floodlights</p>	<p>Connected wattage 13.9 to 62 W Luminaire luminous flux 1427 to 3745 lm</p>	

Floodlights for applications in the private
sphere from the BEGA program
“Light for the house and the garden”



BEGA also offers an extensive range for illumination in the private sphere. “Light for the house and the garden” presents a selection of luminaires from our overall range including floodlights and in-ground luminaires – for many lighting design options in private environments.

We have compiled all the information for you here:
bega.com/house

We are continuously working on the further improvement of our luminaires and technologies. The product IDs in this customer magazine in the context of projects or lighting applications reflect the relevantly latest development versions.

Title: Benidorm Beach Promenade · Spain

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