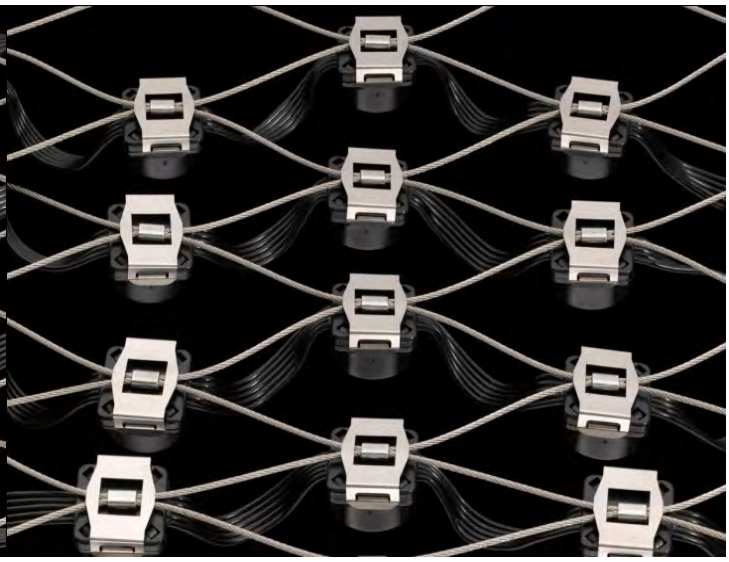
X-LED MESH 7.5

Carl Stahl®

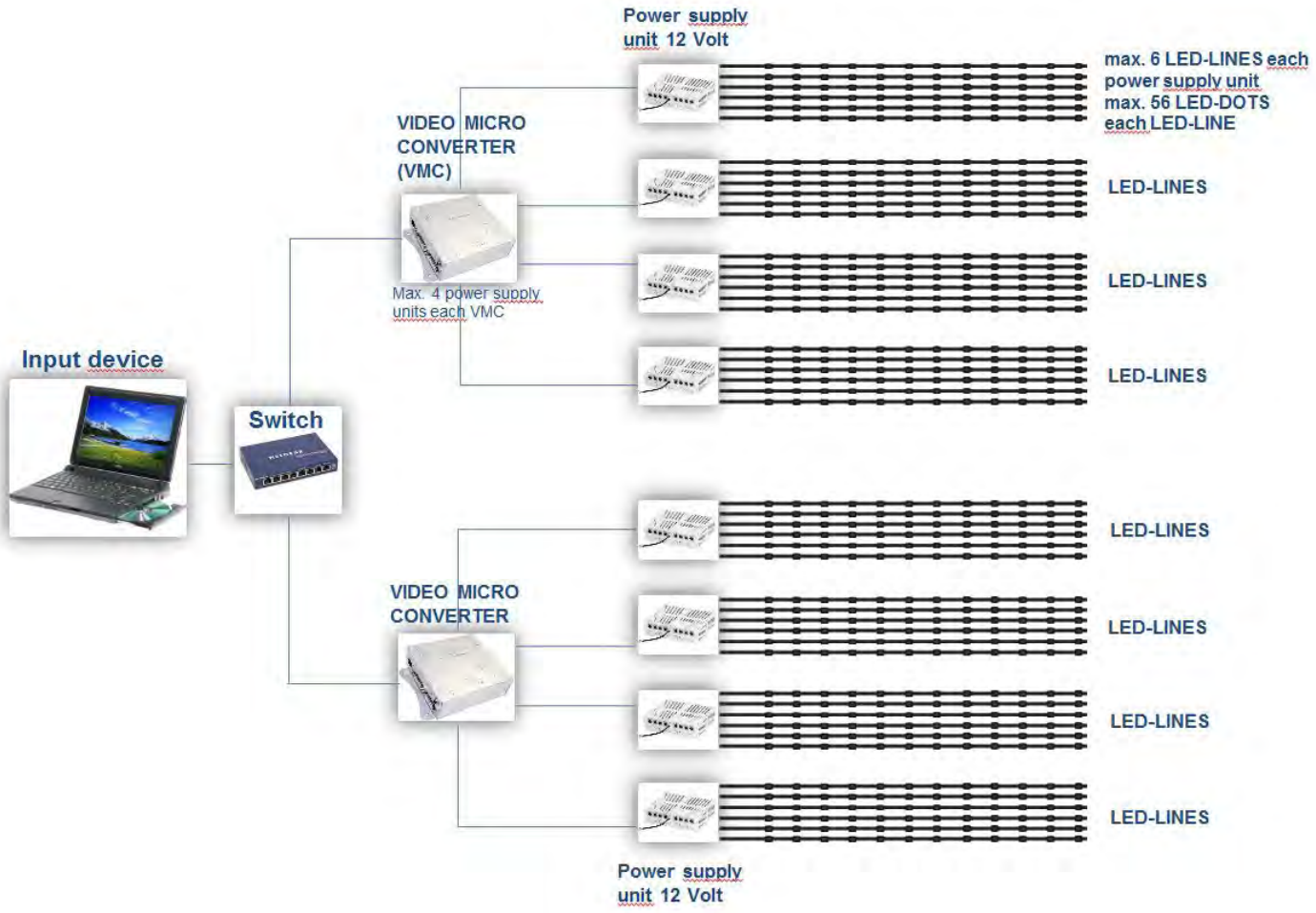
www.x-led.de

System description



Single LED-LINES (max. 56 single LED-DOTS on ribbon cable) are fixed with stainless steel clamps on a stainless steel mesh with rope-Ø 2,0mm. The mesh width can vary between 60 and 300mm. The size of the X-LED MESH is not limited, because several mesh parts can be connected smoothly together.
The X-LED MESH needs on all sides a linear fixation. This fixation can be realized by a solid round tube structure or border cables with regular fixing points. For the design of the sub-structure wind loads, snow loads, self-weight of the material and an internal stress of the stainless steel mesh of approx. 0,4 kN per running meter has to be considered.

System architecture

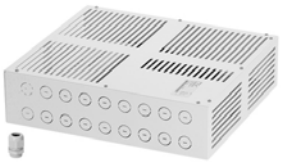


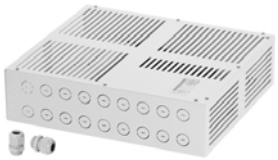
Control protocol: DMX 512 (DIN56930 / USITT-Standard)

Operating voltage: 12 VDC

power consumption: max. 0,95 W / LED-DOT

Power supply units



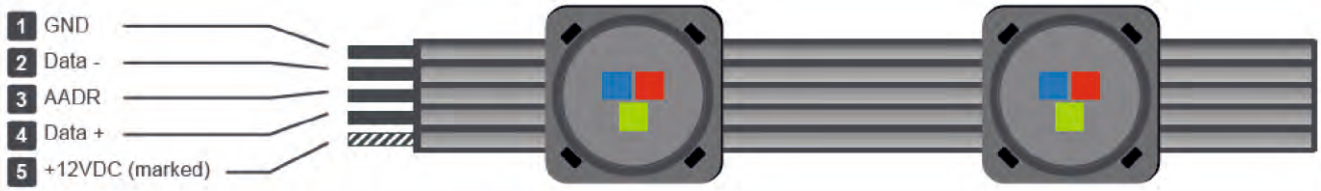


PS 180/3	PS 360/6	PS 180/3 XLR CON	PS 360/6 XLR CON
Power supply block for direct power supply with one single customized cable connector for X-LED-LINE. Housing comes fixed with three screws 2.9 x 6.5 T10. Eleven more screws are supplied inside housing.	Power supply block for direct power supply with two customized cable connectors for X-LED-LINE. Housing comes fixed with three screws 2.9 x 6.5 T10. Eleven more screws are supplied inside housing.	Power supply block with three integrated connectors (XLR 5-pin female), one etherCon receptacle and pre-installed power cable (L / N / PE).	Power supply block with six integrated connectors (XLR 5-pin female), two etherCon receptacles and pre-installed power cable (L / N / PE).

device	PS 180/3 | PS 180/3 XLR CON	PS 360/6 | PS 360/6 XLR CON
connector groups	3 groups with 2 terminals each	2 x 3 groups with 2 terminals each
connector secondary	max. 56 Dots per group	max 56 Dots per group
group fuses	one fuse per each group (TR5)	one fuse per each group (TR5)
main power	110 – 230 VAC (L/N/PE, max. 4 mm2)	110 – 230 VAC (L/N/PE, max. 4 mm2)
power input	max. 180 Watts	max. 360 Watts
frequency	50-60 Hertz	50-60 Hertz
PF	< 0.9	<0.9 each
output voltage	12 V	12 V
inrush	max. 75 A	max. 75 A
operating temperature	-20° to +40° C	-20° to +40° C
protection level	indoor – IP20	INDOO – IP20
dimensions (LxWxH)	350 x 320 x 90 mm	350 x 320 x 90 mm
weight	5.7 kg 6.1 kg	7.5 kg 8.1 kg
control	1 x DMX 512	2 x DMX 512

X-LED LINE 7.5

Wiring



Use X-LED series power supply units only.

4 Technical Specification

color resolution	14 bit native
color range	R, G, B
control protocol	DMX 512 (DIN-Norm: DIN 56930 | USITT-Standard)
programming	X-LED programmer / Standard DMX-Adr.: 1
operating voltage	12 VDC
power consumption	max. 0,95 W / Pixel
beam angle	40° (lateral) x 100° (longitudinal)
light output	7,5 cd/Pixel
number of LED-Dots	max. 56 X-LED DOTs
LED-Dot dimensions	24 mm x 24 mm x 16 mm (W x L x H)
LED-Dot weight	ca. 8 g
LED-Dot housing color	black
cable length	max. 35 m (random LED-Dot distribution, min. spacing 40 mm)
cable dimensions	9,25 x 1,85 mm (W x H)
cable weight	ca. 45 g/lfm
cable color	black (similar to RAL 9008)
protection level	IP65
protection category	III
environment temperature	operation: -30 °C / +50 °C | storage: -20 °C / +90 °C
certification	CE / FCC / ROHS compliant
fire protection	UL 94 HB

Questionary

Which scope of supply is requested ?
Planning (substructure, quantity determination, etc.)
Static calculation (mesh forces, wind loads, design of substructure)
Assembly or supervision (complete assembly of the X-LED MESH and substructure or only instruction and supervision on site)
Electrification (not part of our services, execution by local electrician)
Bringing into service (instruction and hand over of X-LED system)

Which dimensions of X-LED are requested ?
Height x width

Which content should be shown with X-LED ?
Color dynamic illumination (of buildings, areas, rooms, ceilings, etc.)
Text or graphic
Video and animation

How far is the average distance to the X-LED installation (in meter) ?

Where is X-LED installed ?
Indoor or outdoor
Horizontal (e.g. light ceiling) or vertical (e.g. façade cladding)
Geographical location (evaluation of wind- or snow loads, temperature influences)

Are there geometrical specialties ?
Curved areas, 3-dimensional shapes, partial areas or cut-outs.

Accessibility to assembly site
Cherry picker, scaffolding, moving facade platform, façade walkway, etc.

Properties of assembly site
Reinforced concrete, steel beams, external thermal composite insulation system, etc.

Services

X-LED MESH 7.5 scope of supply:
- stainless steel wire mesh (rope-Ø 2,0mm)
- stainless steel clamps to fix LED-LINES on the wire mesh
- LED-LINES (LED-DOTS on ribbon cable assembled)
- power supply units (PS…)
- control unit (VMC)

Additional services:
(prices for below mentioned services on request)

Planning:
- system configuration
- mesh size
- Mapping LED-DOTS
- connection details
- quantity determination

Static analysis:
- steel wire mesh and rope forces
- design of sub-structure

Supervision on site:
- support of local fitter regarding X-LED installation

Assembly:
- assembling of X-LED and bringing into service
- Design and programming of contents

Not included in Carl Stahl offers:
(we will be happy to support you regarding below mentioned services)

- Approvals and permissions from building authority

- Electrification

- Housing (cabin) for hardware components

- Scaffolding, cherry pickers, cranes

- Storage of material on site (lockable container)

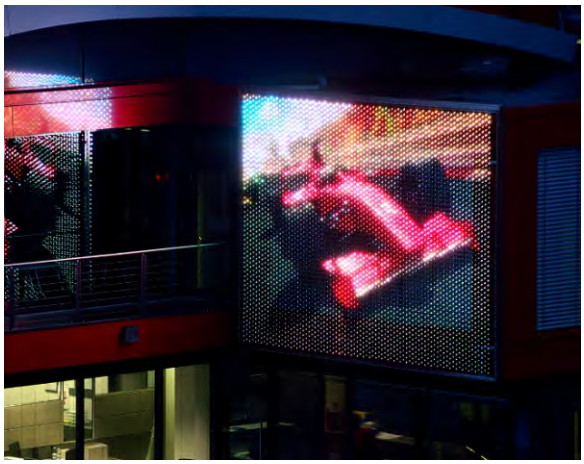
Resolution

Illumination

Resolution:
Depends on the requested brightness and uniformity

Lettering

Resolution:
Min. 24 pixel in the height, width depends on length of lettering



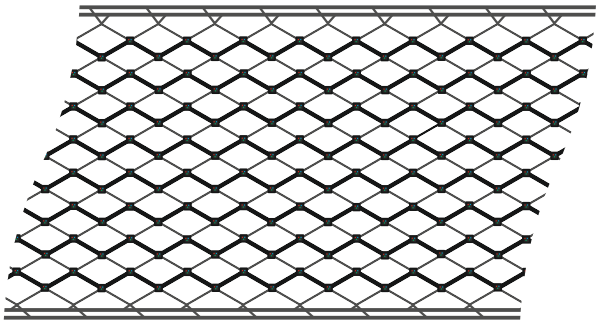
Pictures, video, animation

Resolution:
Format 4:3 = 150 x 200 pixel
Format 16:9 = 150 x 270 pixel

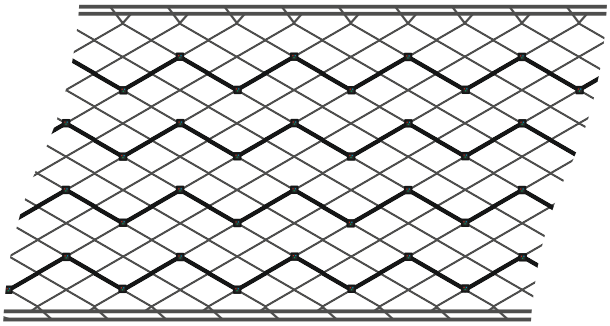
Viewing distance

The optimum distance to the screen is to switch the mesh width in millimeter into distance in meter, that means in case of a mesh width of 90mm an optimum distance of 90 mtr.

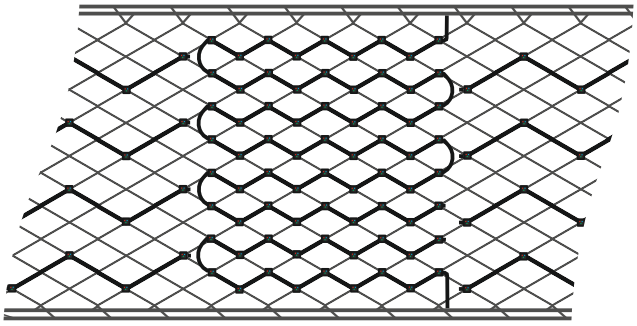
Configuration



Number of mesh ferrules comply with number of LED-DOTS.

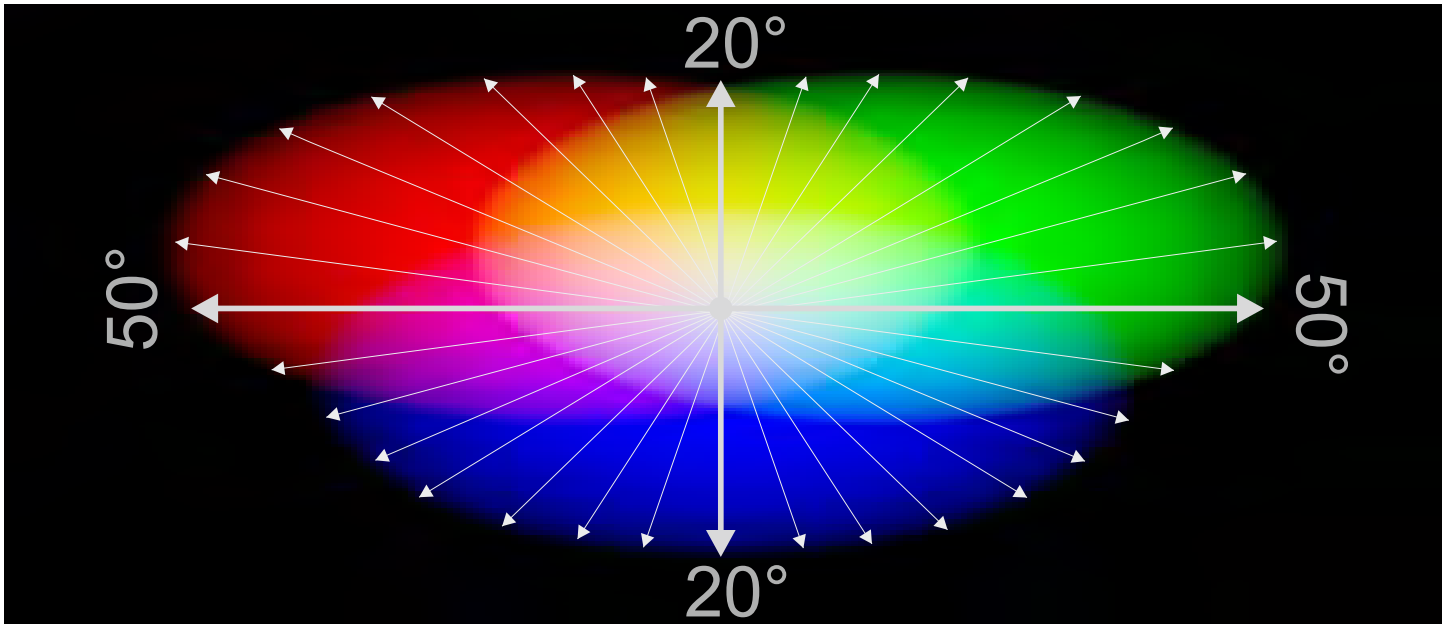


Close-meshed net fitted with LED-spots partially.



According to the resolution requirements the assembly of the LED-spots can be different within the same area.

Angle of radiation / color / output



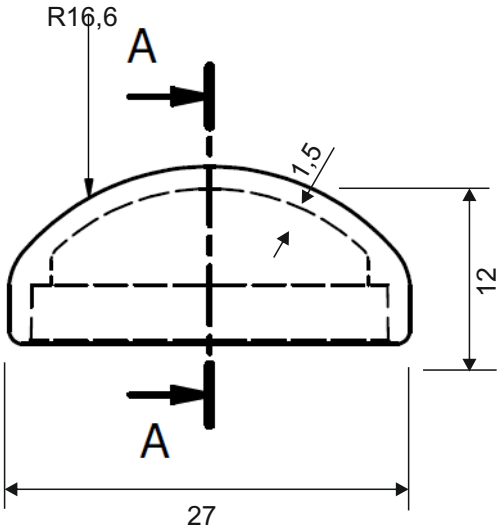
Angle of radiation: 40° lateral x 100° longitudinal

Color: R, G, B - 14 bit native (16,5 Mio. colors)

Light output: 7,5 cd / LED-DOT

Light dome

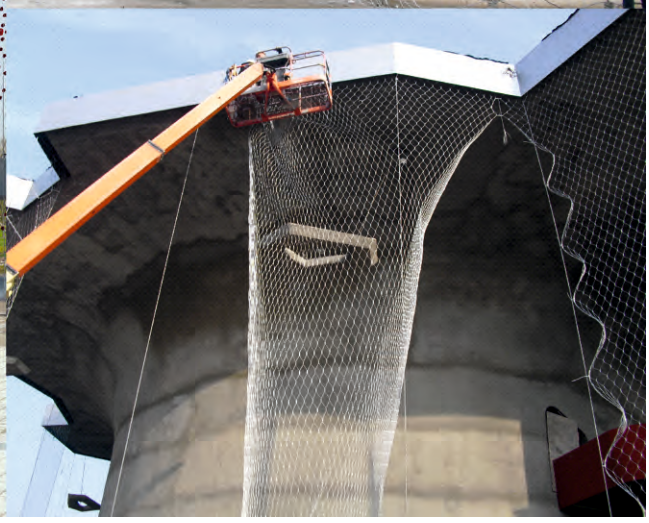
Material:	Polycarbonate
Haze:	99 %
Transmission:	67,5 %
Diffusion (DLD):	47,1



Transparency

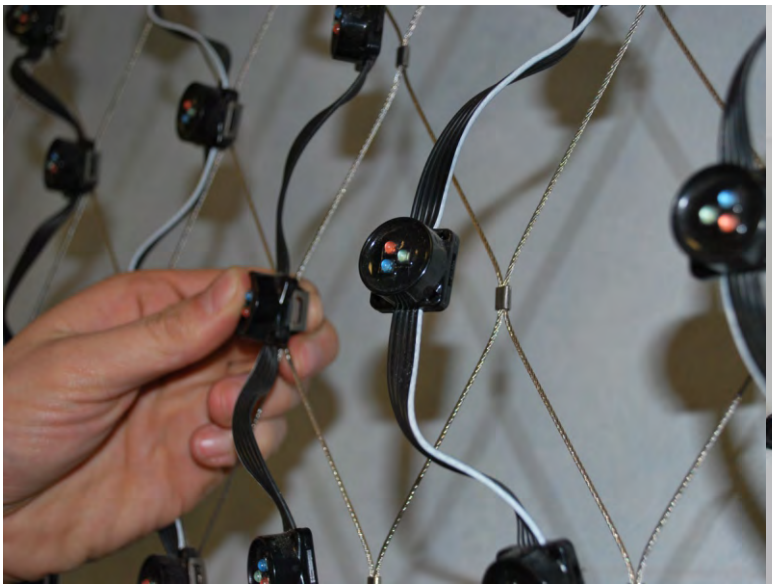
X-TEND CXE, rope-Ø 2mm, mesh width in mm	60	70	80	90	100	120	140	160	180	200
Weight X-LED pro m² in kg	5	3,93	3,2	2,7	2,27	1,74	1,4	1,15	1,01	0,9
Number of LED's per m²	321	236	180	143	115	80	59	45	36	29
Transparency X-LED in %	**71**	**76**	**81**	**84**	**86**	**88**	**90**	**92**	**93**	**94**

Sub-structure / assembly



Several mesh stripes can be fixed together without any visible seam. This allows an easy installation of huge areas. After assembly of the stainless steel mesh, the LED-DOTS can be fixed with a stainless steel clamp by hand.

Sub-structure / handling



= 20 m²

X-TEND CXE, rope-Ø 2mm, mesh width in mm	60	70	80	90	100	120	140	160	180	200
Weight X-LED pro m² in kg	**5**	**3,93**	**3,2**	**2,7**	**2,27**	**1,74**	**1,4**	**1,15**	**1,01**	**0,9**
Number of LED's per m²	321	236	180	143	115	80	59	45	36	29
Transparency X-LED in %	71	76	81	84	86	88	90	92	93	94

- Low self-weight
- Easy handling on scaffolding and cherry picker.
- Space-saving delivery
- Short assembly time

Warranty

Warranty period on functionality for designated use: 5 years

All LED-DOTS have to run during acceptance. Within the warranty period 0,3 % of the LED-DOTS could turn out. This failure is no claim for warranty. The replacement of several LED-DOTS is possible.

Certificates

CERTIFICATE

EQ ZERT

The European Institute for the Certification of Management Systems and Personnel
An Institute of the Steinbeis Foundation for Economic Promotion

hereby certifies that the company

Carl Stahl GmbH
Division X-LED
Tobelstraße 2
73079 Süßen

has initiated and adopted a

Quality Management System

for the scope of application

Development, Construction, Production, Confectioning, Installation, Distribution and After-sales-service: LED light module system for presentation of moving pictures, animations, video content and illumination of buildings, hardware components, control units, sub-structure

which meets the following international standard:

ISO 9001:2008

(identical with DIN EN ISO 9001:2008 and EN ISO 9001:2008)

The demonstration was provided by a certification audit, Report No. 6096107.
The condition for maintaining the certification is the execution of annual surveillance audits.

This confirmation is binding only with Certificate No. QM 96 0107 of Carl Stahl GmbH, Tobelstraße 2, 73079 Süßen

Registration No.: QM 96 0107/1d
Validity until: 13.07.2017
Recertification: 11.07.2014

Jürgen G. Kerner, Certification committee
Bernd Kirchner, Expert group

EQ ZERT is accredited by the German Association for Accreditation as a certification body for quality management systems in accordance with Certificate No. D-ZM-11200-01-00.
This certificate is property of EQ ZERT, Karlstraße 3, D-89073 Ulm

DAkkS

IEC | IECEE CB SCHEME

Ref. Certif. No. **SE-70737**

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME
SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE — CERTIFICAT D'ESSAI OC

Product / Produit	LED Video System
Name and address of the applicant / Nom et adresse du demandeur	Carl Stahl GmbH, Tobelstrasse 2, D-73079 Süssen, GERMANY
Name and address of the manufacturer / Nom et adresse du fabricant	Same as above
Name and address of the factory / Nom et adresse de l'usine (Note: When more than one factory, please report on page 2 / Note: Lorsque il y plus d'une usine, veuillez utiliser la 2ème page)	Same as applicant
Ratings and principal characteristics / Valeurs nominales et caractéristiques principales	110-230Vac, 4A, 50-60Hz, Class I
Trademark (if any) / Marque de fabrique (si elle existe)	Carl Stahl
Type of Manufacturer's Testing Laboratories used / Type de programme du laboratoire d'essais constructeur	-
Model / Type Ref. / Ref. De type	X-LED PS ***/***, X-LED LINE
Additional information (if necessary may also be reported on page 2) / Les informations complémentaires (si nécessaire, peuvent être indiqués sur le 2ème page)	See page 2
A sample of the product was tested and found to be in conformity with / Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005
As shown in the Test Report Ref. No. which forms part of this Certificate / Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	2217257KAU-001

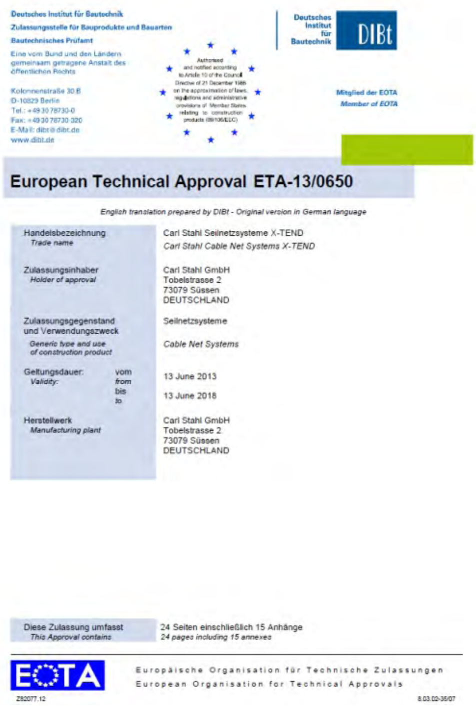
This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

Intertek Semko AB
Box 1103
SE-164 22 Kista, Sweden
Int +46 8 750 00 00

Intertek

Signature: Bo Berglöf

Date: 24 October 2012



Deutsches Institut für Bautechnik
Zulassungsstelle für Bauprodukte und Bauarten
Bautechnisches Prüfamt
Eine vom Bund und den Ländern gemeinsam getragene Anstalt des öffentlichen Rechts

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Authorised and notified according to Article 10 of the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products (89/106/EEC)

Deutsches Institut für Bautechnik — DIBt

Mitglied der EOTA
Member of EOTA

European Technical Approval ETA-13/0650

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung *Trade name*	Carl Stahl Seilnetzsysteme X-TEND *Carl Stahl Cable Net Systems X-TEND*
Zulassungsinhaber *Holder of approval*	Carl Stahl GmbH, Tobelstrasse 2, 73079 Süssen, DEUTSCHLAND
Zulassungsgegenstand und Verwendungszweck *Generic type and use of construction product*	Seilnetzsysteme *Cable Net Systems*
Geltungsdauer: *Validity:* vom *from*	13 June 2013
bis *to*	13 June 2018
Herstellwerk *Manufacturing plant*	Carl Stahl GmbH, Tobelstrasse 2, 73079 Süssen, DEUTSCHLAND
Diese Zulassung umfasst *This Approval contains*	24 Seiten einschließlich 15 Anhänge *24 pages including 15 annexes*

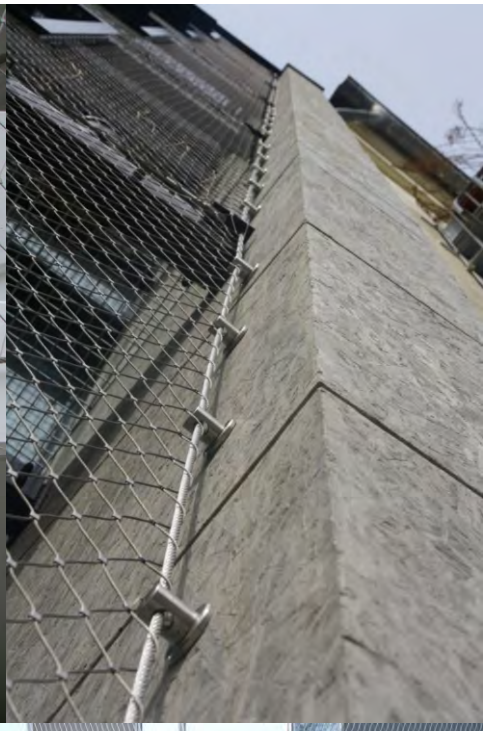
EOTA

Europäische Organisation für Technische Zulassungen
European Organisation for Technical Approvals

Z82077.12 8.03.02-35/07

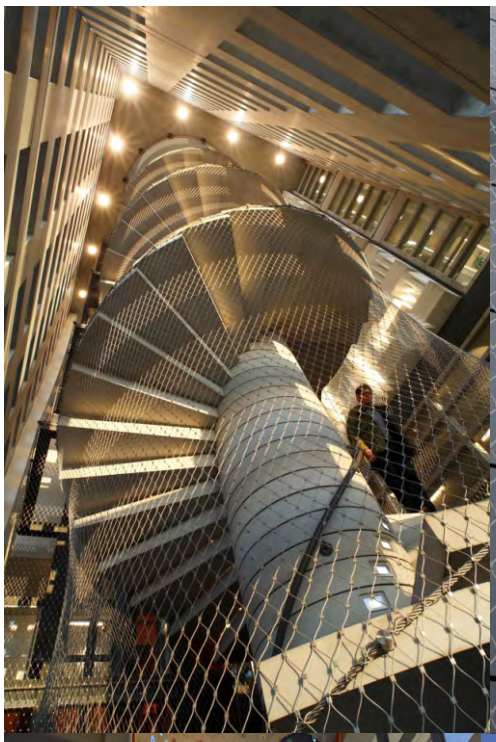
Certification: ISO 9001:2008, CE, FCC, RoHS, WEE

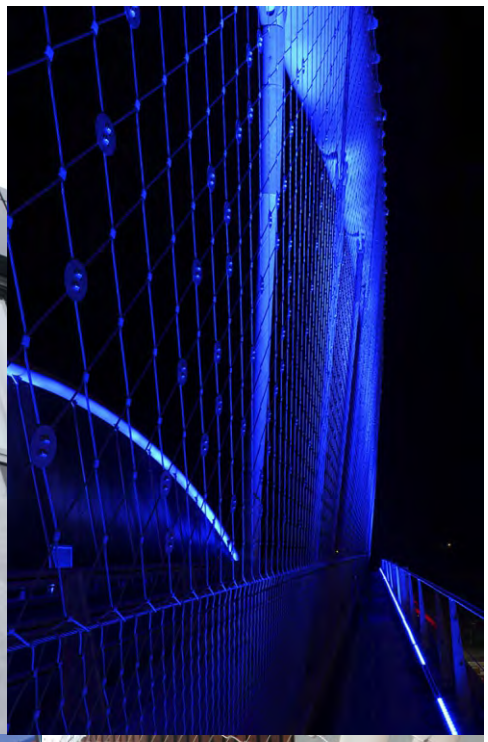
3D shapes

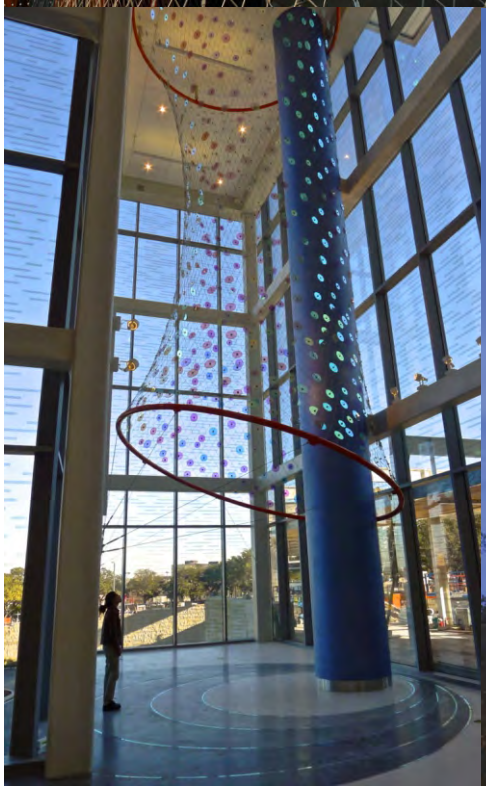


Sub-structure / details

Sub-structure / options







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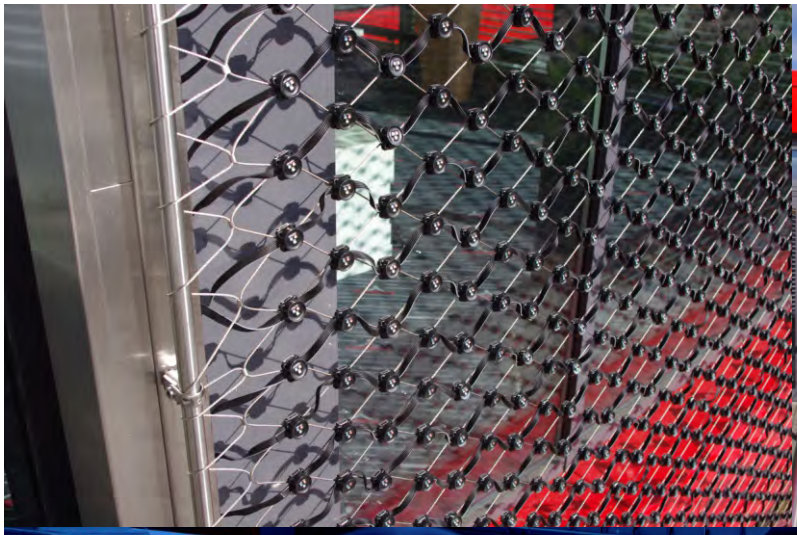

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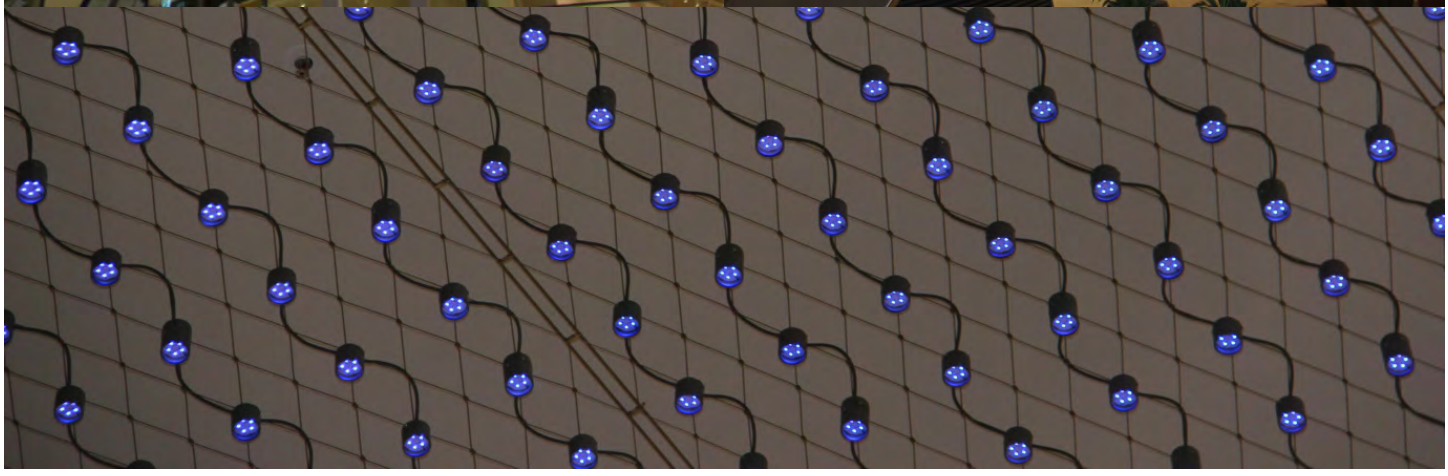

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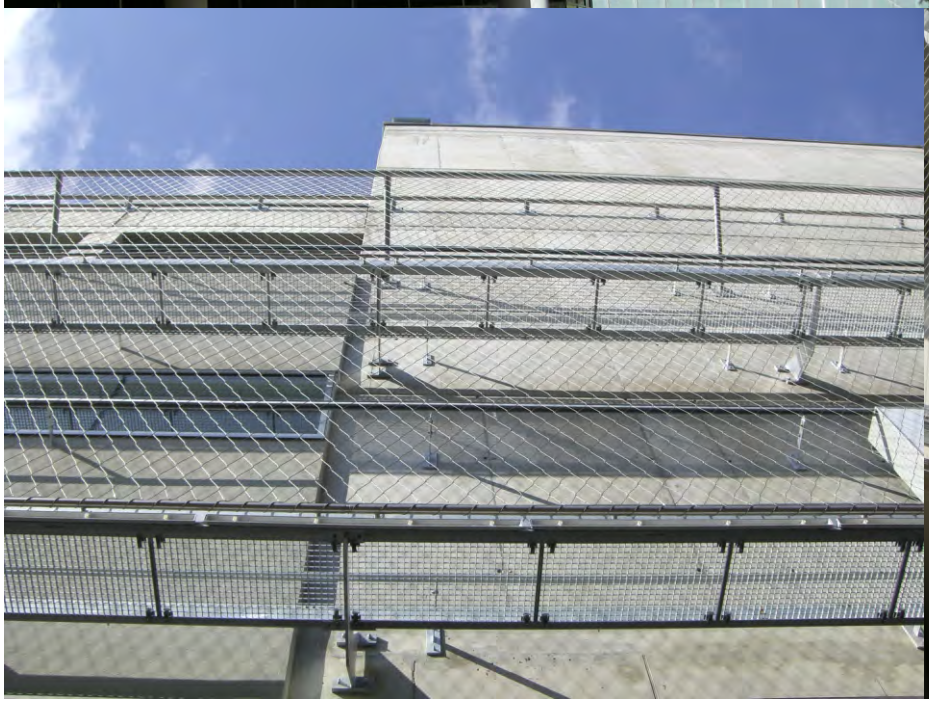

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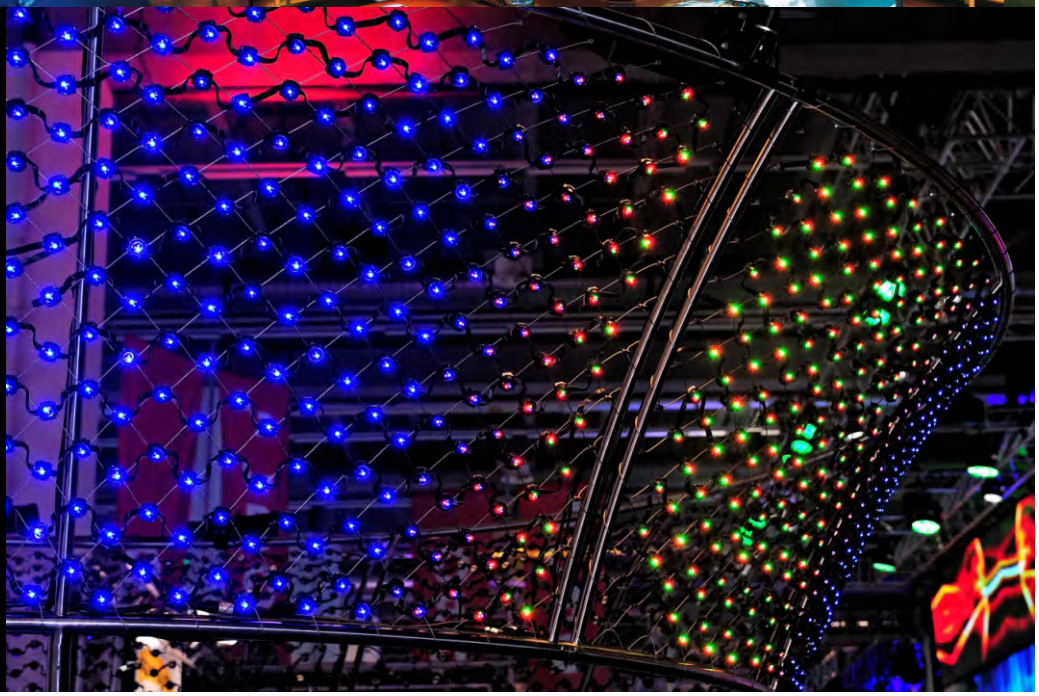

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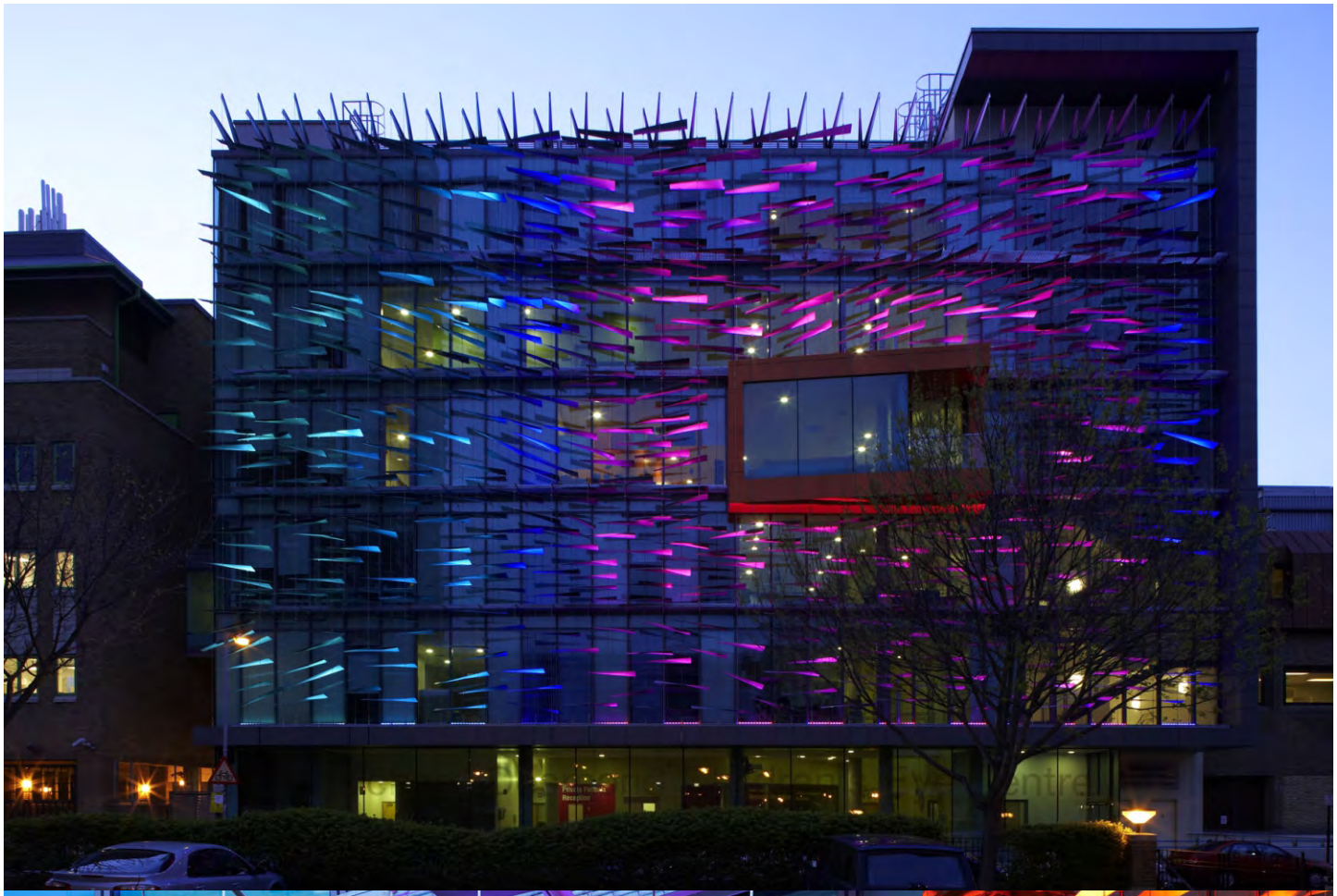

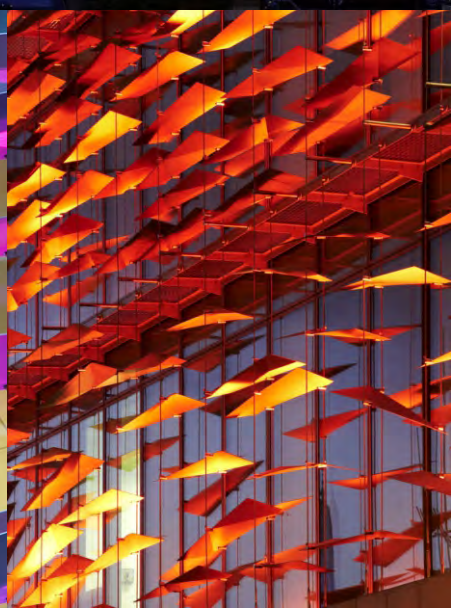

Technical summary

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