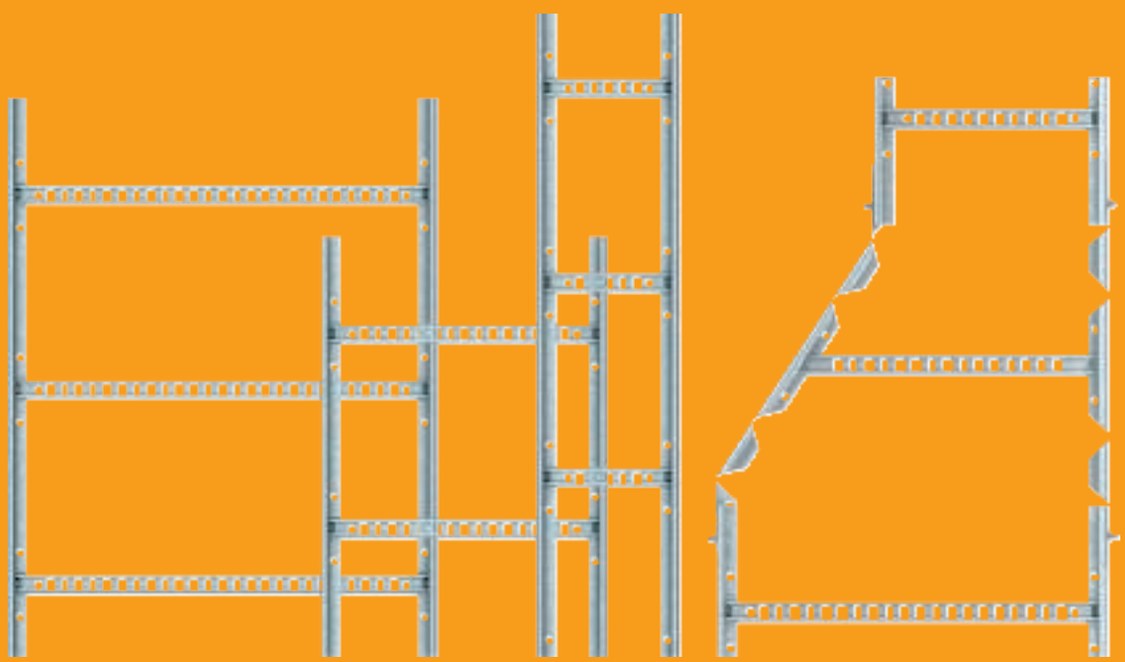
Welded cable ladder system



System information

OBO BETTERMANN

Pure OBO cable ladder competence

Electricians have placed their trust in OBO Bettermann cable ladders for decades. The range stretches from riveted connections, through clinched connections, to welded connections of cable ladders, which are used in countless industrial plants around the world. Customers can always rely on the robust and easy-to-mount structure of each individual component.

OBO BETTERMANN

04 KTS Broschüre_Geschweißtes Kabelleiter System / en / 22/02/2016 (LLExport_04352) / 22/02/2016

Welded cable ladders

Now, OBO has reinvented the welded cable ladder. Thanks to its special shape and intelligent rungs, it can offer outstanding technical properties and benefits during mounting. The range of materials stretches from strip galvanised and hot-dip galvanised through to A2 and A4 stainless steel. In addition, the new ladders can be powder-coated.

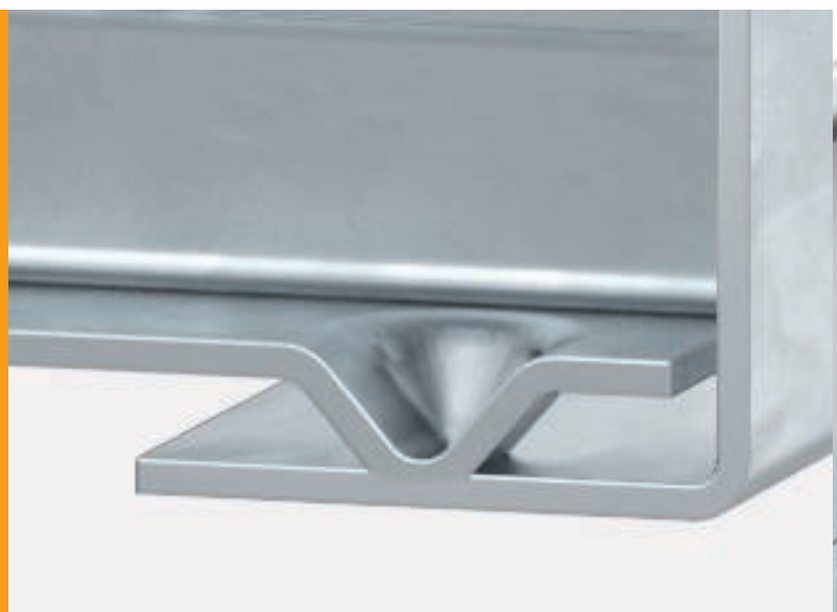
FS FT A2 A4

Stable welding - 100 per cent supportive

The highest level of stability, combined with the optimum space for vertical and horizontal cable assignment - that was what we strived for when developing the new generation of welded cable ladders. Here is the result.

Highly resistant

The rungs are welded to the lower flange. The flush connection is highly resistant and can also withstand the greatest loads. The flush connection of the rung with the lower flange guarantees optimum force transmission.



Practical covers

For horizontal installation, a cover on top offers protection against dust and dirt.

Volume

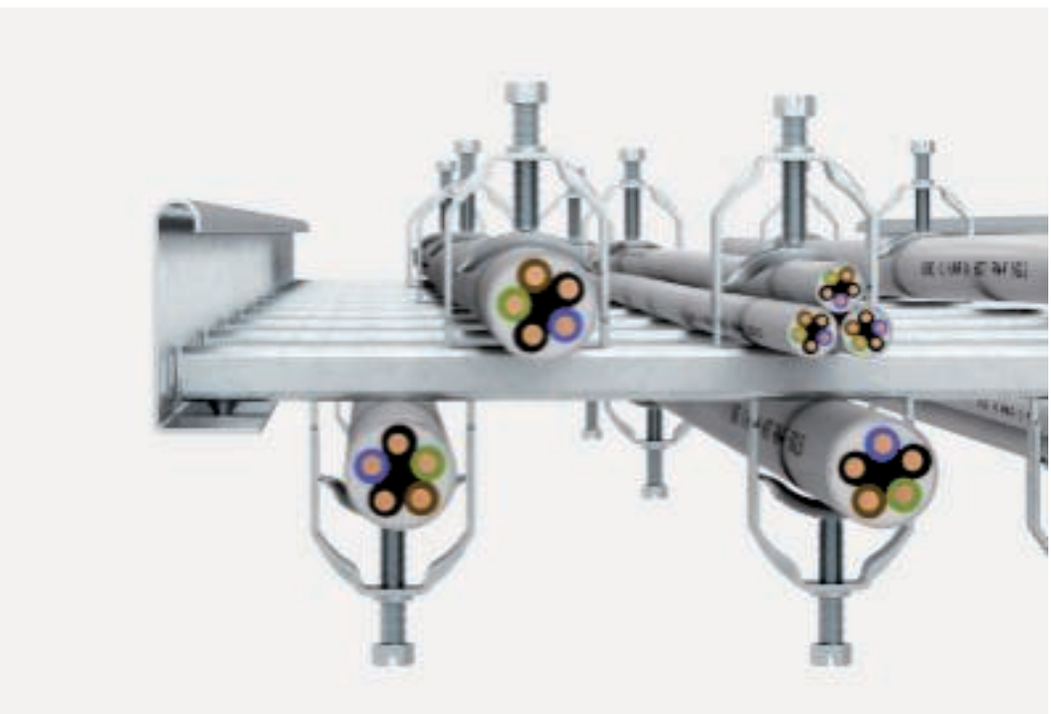
An additional benefit of welding to the lower flange is provided by the position of the rung. Thanks to the rung beneath, the ladder offers additional installation space for cables.

Tested

Stability and reliable corrosion protection - also at the welding points: Both of these were checked in comprehensive testing in our own BET Test Centre. The ladders have passed both salt spray tests and load testing.

The intelligent rung

OBO has reinvented the rung and patented it. Its well-thought-out hole pattern is perfectly tailored to the requirements of all kinds of industrial installations. The special feature: The rungs can be filled on both sides. This means that the ladder can be equipped flexibly whilst its carrying capacity can be used to the optimum. The result: Smaller ladder widths are often sufficient during mounting.



Rungs – reimagined

The double-sided filling of the rungs allows flexible installation and offers the maximum of installation space. The rungs are perfectly matched to the fastening elements (e.g. the U clamp, type 2056).

One rung for all

The intelligent rung is used in the whole system up to a width of 600 mm.

Perfectly matched wall mounting

The welded cable ladder offers major advantages in horizontal and free-standing mounting. However, it is also extremely practical when it is mounted directly on the wall.

Free space

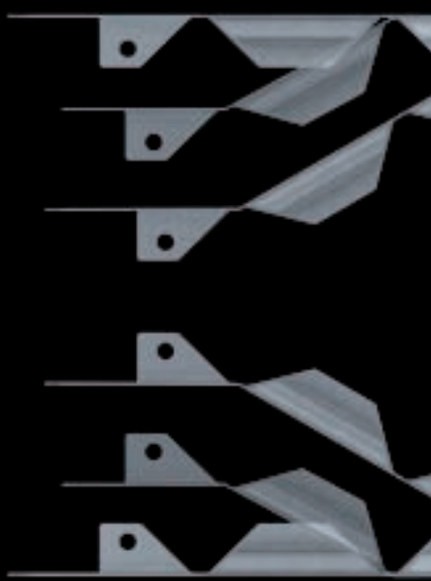
With wall mounting, the well-thought-out construction of the cable ladders ensures a spacing of approx. 5 millimetres between the rung and the wall. This provides space during the installation.

U clamps

Thanks to the wide range of OBO U clamps, the right fastening element is available for every installation situation. Thus, for example, clamp can be used with a metal sleeve in areas with special requirements.

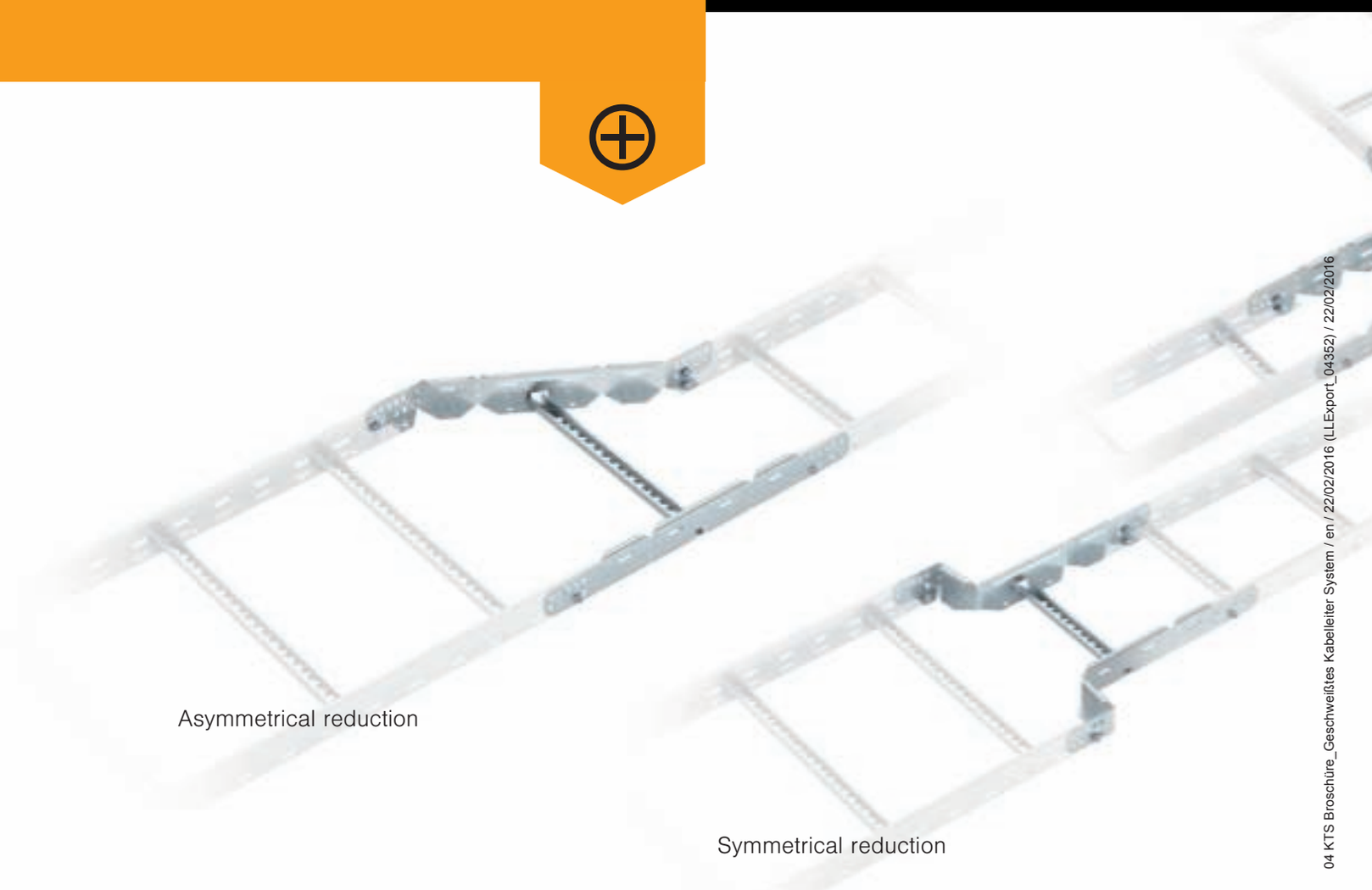
One for all - the multifunctional connector

This connector is truly multifunctional. The new OBO component allows flexible implementation of shape or direction changes.



Endlessly flexible

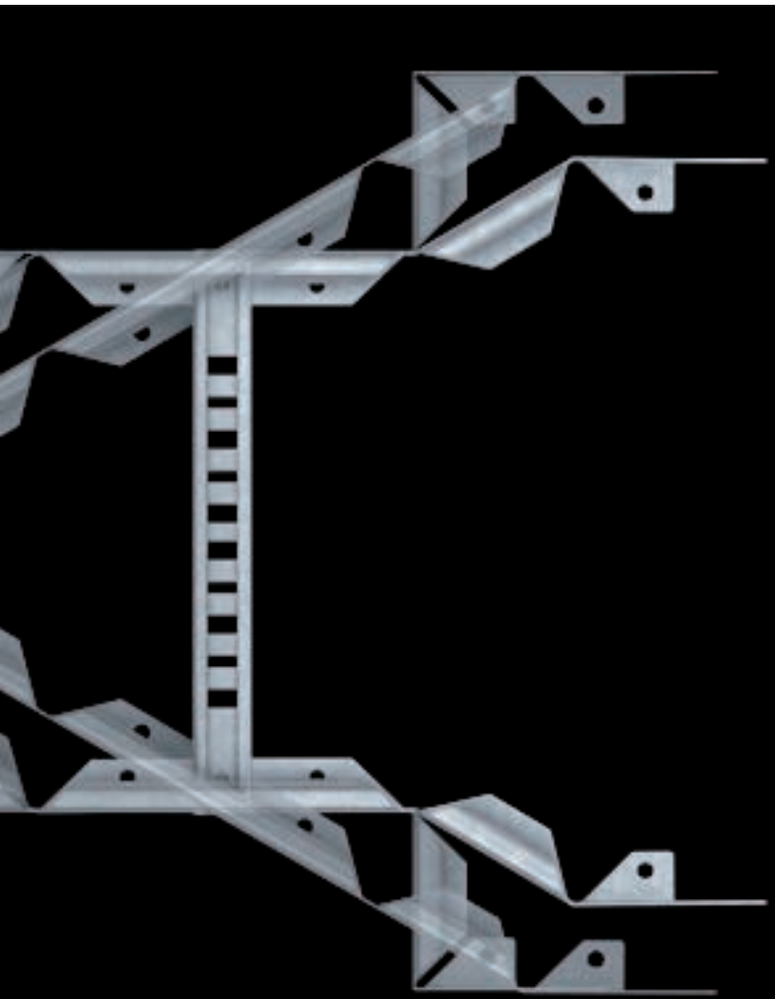
The side rails of the connector can be adjusted to any angle and any installation situation. This means that both symmetrical and also asymmetrical reductions are possible.

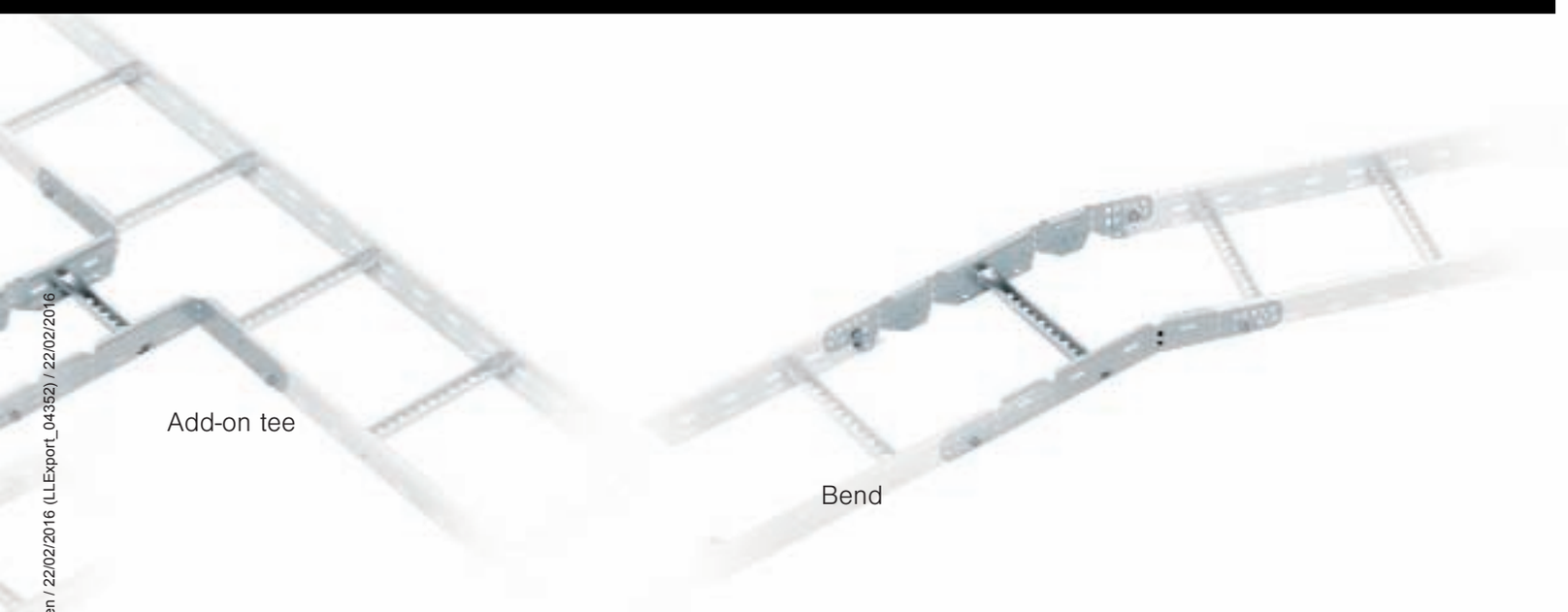


Asymmetrical reduction

Symmetrical reduction

04 KTS Broschüre_Geschweißtes Kabelleiter System / en / 22/02/2016 (LLExport_04352) / 22/02/2016





Add-on tee

Bend

Connection of adjustable bend elements

Tested safety

The BET Test Centre
In our in-house BET Test Centre, OBO simulates the loads which the welded cable ladder systems have constantly to withstand. We determine the maximum load capacity and carrying capacity of the system, as well as its resistance to corrosion. We are able to prove standardised testing of EMC properties using test reports. This means that, as a systems provider, OBO places paramount importance on safety.

KTS testing system
The KTS testing system was specially constructed for the testing of OBO Bettermann cable support systems. Thanks to its continuous further development and adaptation to the latest requirements, it can offer comprehensive testing options. For example, the tests required by DIN EN 61537 can be carried out. They can prove a safe working load (SWL) - the reliable carrying capacity of the systems.

Local around the world.
3,000 employees. Over 60 countries.
40 subsidiaries.

The values of our company are supported by continuous proximity to our customers. For us, customer proximity means that whenever borders open and new markets are created, we will be there. This regional proximity has proved its worth: OBO is present on every continent – with more than 3,000 employees in over 60 countries.

04 KTS Broschüre_Geschweißtes Kabelleiter System / en / 22/02/2016 (LLExport_04352) / 22/02/2016

Production location

Subsidiary

Representative office

OBO BETTERMANN

Certified safety
Our high-quality range of products and services is globally certified and fulfils all the key international standards. This simplifies the planning and execution of deployments around the world and ensures cost optimisation. Efficient processes at OBO ensure that products are available at the right time. It doesn't matter where our customers are erecting or operating systems.

Experience with major projects
When the building size and the challenge of use increases, the complexity of the electrical infrastructure also increases. For decades, our electrical systems have contributed to the success of major projects. The comprehensive product range allows precise matching to the appropriate deployment location. Our customers can profit from the matching service process, which stretches from project planning through to delivery and consultation on the construction site.

Cable ladder LCIS

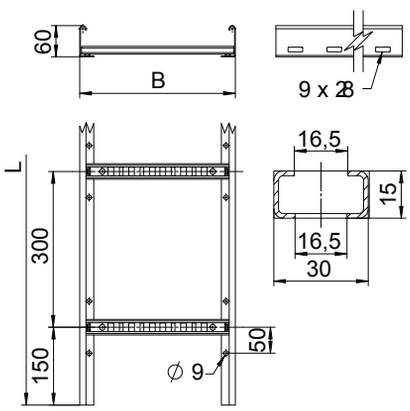
Type	Width mm	Rail thickness mm	Pack. m	Weight kg/100 m	Item No.
LCIS 620 6 FS	200	1.5	6	267,170	**6209 63 0**
LCIS 630 6 FS	300	1.5	6	288,840	**6209 63 2**
LCIS 640 6 FS	400	1.5	6	310,670	**6209 63 4**
LCIS 650 6 FS	500	1.5	6	332,340	**6209 63 6**
LCIS 660 6 FS	600	1.5	6	354,000	**6209 63 8**
LCIS 620 3 FT	200	1.5	3	283,000	**6209 72 1**
LCIS 630 3 FT	300	1.5	3	306,000	**6209 72 3**
LCIS 640 3 FT	400	1.5	3	329,340	**6209 72 5**
LCIS 650 3 FT	500	1.5	3	352,340	**6209 72 7**
LCIS 660 3 FT	600	1.5	3	375,340	**6209 72 9**
LCIS 620 6 FT	200	1.5	6	283,170	**6209 64 3**
LCIS 630 6 FT	300	1.5	6	306,170	**6209 64 5**
LCIS 640 6 FT	400	1.5	6	329,170	**6209 64 7**
LCIS 650 6 FT	500	1.5	6	352,340	**6209 64 9**
LCIS 660 6 FT	600	1.5	6	375,340	**6209 65 1**

St Steel /m
FS Strip-galvanised FT Hot-dip galvanised

Cable ladder with 60 mm side height with welded C30 profile rungs which are open in an upwards direction. Rolled side rail for reinforcement and as edge protection. Fastening to the bracket takes place using clamps, type LKS 40. The slot dimension of the frame is 16.5 mm and the appropriate clamp clip is type 2056.

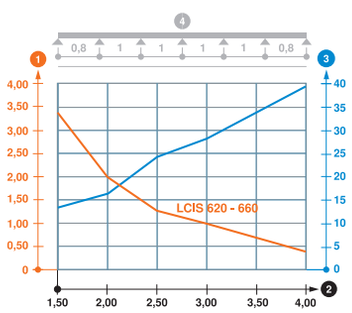
Magnetic shield insulation without cover 10 dB, with cover 15 dB.

Dimensions



Type	Length mm	Width mm	Useful cross-section cm²	Frame distance mm
LCIS 620 6 FS	6000	200	80	300
LCIS 630 6 FS	6000	300	120	300
LCIS 640 6 FS	6000	400	160	300
LCIS 650 6 FS	6000	500	200	300
LCIS 660 6 FS	6000	600	240	300

Load



Type	1.5 m kN/m	2.0 m kN/m	2.5 m kN/m	3.0 m kN/m	4.0 m kN/m
LCIS 620 6 FS	3.3	2	1.3	1	0.4
LCIS 630 6 FS	3.3	2	1.3	1	0.4
LCIS 640 6 FS	3.3	2	1.3	1	0.4
LCIS 650 6 FS	3.3	2	1.3	1	0.4
LCIS 660 6 FS	3.3	2	1.3	1	0.4

Load diagram LCIS 60

1. Permitted cable tray/ladder load in kN/m without man load
2. Support width in m
3. Rail bend in mm at permitted kN/m
4. Load scheme during testing

— Load curve with cable tray/ladder width in mm

— Strut bend curve according to support width

Cable ladder LCIS

Type	Width mm	Rail thickness mm	Pack. m	Weight kg/100 m	Item No.
LCIS 620 6 A2	200	1.5	6	267,000	**6207 25 2**
LCIS 630 6 A2	300	1.5	6	288,840	**6207 25 4**
LCIS 640 6 A2	400	1.5	6	310,500	**6207 25 6**
LCIS 650 6 A2	500	1.5	6	332,340	**6207 25 8**
LCIS 660 6 A2	600	1.5	6	354,000	**6207 26 0**
LCIS 620 6 A4	200	1.5	6	267,000	**6207 20 2**
LCIS 630 6 A4	300	1.5	6	288,840	**6207 20 4**
LCIS 640 6 A4	400	1.5	6	310,500	**6207 20 6**
LCIS 650 6 A4	500	1.5	6	332,340	**6207 20 8**
LCIS 660 6 A4	600	1.5	6	354,000	**6207 21 0**

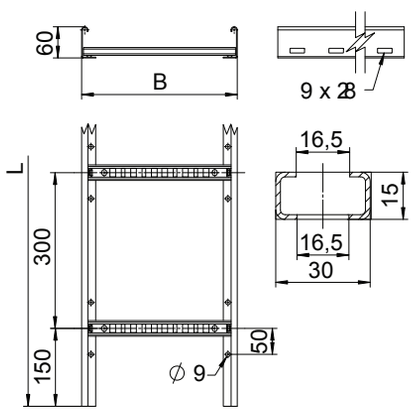
V2A Stainless steel, A2 V4A Stainless steel, A4 /m

Cable ladder with 60 mm side height with welded C30 profile rungs which are open in an upwards direction. Rolled side rail for reinforcement and as edge protection. Fastening to the bracket takes place using clamps, type LKS 40. The slot dimension of the frame is 16.5 mm and the appropriate clamp clip is type 2056.

Magnetic shield insulation without cover 10 dB, with cover 15 dB.

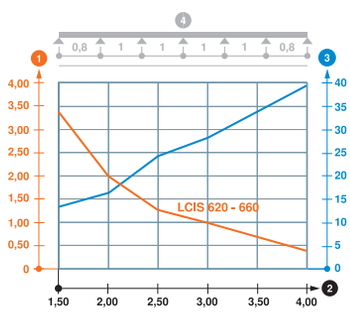
Dimensions

Type	Length mm	Width mm	Useful cross-section cm²	Frame distance mm
LCIS 620 6 A2	6000	200	80	300
LCIS 630 6 A2	6000	300	120	300
LCIS 640 6 A2	6000	400	160	300
LCIS 650 6 A2	6000	500	200	300
LCIS 660 6 A2	6000	600	240	300



Load

Type	1.5 m kN/m	2.0 m kN/m	2.5 m kN/m	3.0 m kN/m	4.0 m kN/m
LCIS 620 6 A2	3.3	2	1.3	1	0.4
LCIS 630 6 A2	3.3	2	1.3	1	0.4
LCIS 640 6 A2	3.3	2	1.3	1	0.4
LCIS 650 6 A2	3.3	2	1.3	1	0.4
LCIS 660 6 A2	3.3	2	1.3	1	0.4



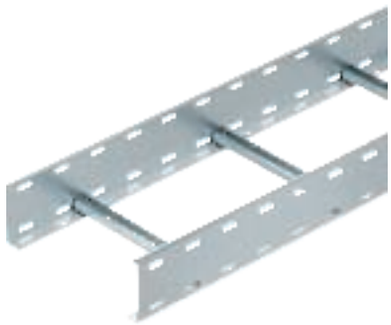
Load diagram LCIS 60

1. Permitted cable tray/ladder load in kN/m without man load
2. Support width in m
3. Rail bend in mm at permitted kN/m
4. Load scheme during testing

— Load curve with cable tray/ladder width in mm

— Strut bend curve according to support width

Cable ladder LCIS



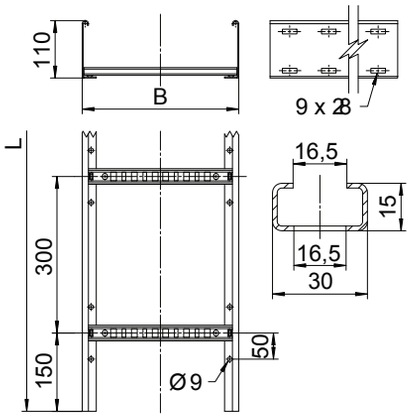
Type	Width mm	Rail thickness mm	Pack. m	Weight kg/100 m	Item No.
LCIS 1120 6 FT	200	1.5	6	399,500	**6209 82 0**
LCIS 1130 6 FT	300	1.5	6	422,500	**6209 82 2**
LCIS 1140 6 FT	400	1.5	6	445,670	**6209 82 4**
LCIS 1150 6 FT	500	1.5	6	468,670	**6209 82 6**
LCIS 1160 6 FT	600	1.5	6	491,670	**6209 82 8**

St Steel /m
FT Hot-dip galvanised

Cable ladder with 110 mm side height with welded C30 profile rungs which are open in an upwards direction. Rolled side rail for reinforcement and as edge protection. Fastening to the bracket takes place using clamps, type LKS 40. The slot dimension of the frame is 16.5 mm and the appropriate clamp clip is type 2056.

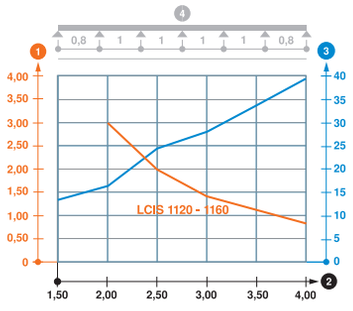
Magnetic shield insulation without cover 10 dB, with cover 15 dB.

Dimensions



Type	Length mm	Width mm	Useful cross-section cm²	Frame distance mm
LCIS 1120 6 FT	6000	200	180	300
LCIS 1130 6 FT	6000	300	270	300
LCIS 1140 6 FT	6000	400	360	300
LCIS 1150 6 FT	6000	500	450	300
LCIS 1160 6 FT	6000	600	540	300

Load



Type	2.0 m kN/m	2.5 m kN/m	3.0 m kN/m	4.0 m kN/m
LCIS 1120 6 FT	3	2	1.4	0.8
LCIS 1130 6 FT	3	2	1.4	0.8
LCIS 1140 6 FT	3	2	1.4	0.8
LCIS 1150 6 FT	3	2	1.4	0.8
LCIS 1160 6 FT	3	2	1.4	0.8

Load diagram, cable ladder, type LCIS 110

1. Permitted cable tray/ladder load in kN/m without man load
2. Support width in m
3. Rail bend in mm at permitted kN/m
4. Load scheme during testing

— Load curve with cable tray/ladder width in mm
— Strut bend curve according to support width

Cable ladder SLCS

Type	Width mm	Rail thickness mm	Pack. m	Weight kg/100 m	Item No.
SLCS 1120 3 FT	200	2	3	529,670	**6207 30 2**
SLCS 1130 3 FT	300	2	3	563,670	**6207 30 4**
SLCS 1140 3 FT	400	2	3	597,170	**6207 30 6**
SLCS 1145 3 FT	450	2	3	614,170	**6207 30 8**
SLCS 1150 3 FT	500	2	3	630,670	**6207 31 0**
SLCS 1160 3 FT	600	2	3	664,670	**6207 31 2**
SLCS 1175 3 FT	750	2	3	715,670	**6207 31 4**
SLCS 1180 3 FT	800	2	3	731,840	**6207 31 6**
SLCS 1190 3 FT	900	2	3	765,670	**6207 31 8**
SLCS 11100 3 FT	1000	2	3	799,340	**6207 32 0**
SLCS 11120 3 FT	1200	2	3	866,840	**6207 32 2**

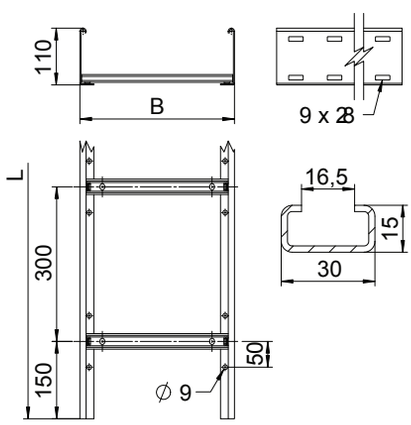
St Steel /m
FT Hot-dip galvanised

Cable ladder with 110 mm side height with welded C profile rungs which are open in an upwards direction. Rolled side rail for reinforcement and as edge protection. Fastening to the bracket takes place using clamps, type LKS 40. The slot dimension of the frame is 16.5 mm and the appropriate clamp clip is type 2056.

Magnetic shield insulation without cover 10 dB, with cover 15 dB.

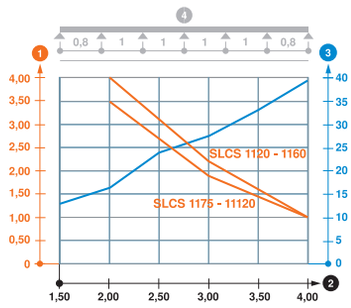
Dimensions

Type	Length mm	Width mm	Useful cross-section cm^2	Frame distance mm
SLCS 1120 3 FT	3000	200	180	300
SLCS 1130 3 FT	3000	300	270	300
SLCS 1140 3 FT	3000	400	360	300
SLCS 1145 3 FT	3000	450	405	300
SLCS 1150 3 FT	3000	500	450	300
SLCS 1160 3 FT	3000	600	540	300
SLCS 1175 3 FT	3000	750	675	300
SLCS 1180 3 FT	3000	800	720	300
SLCS 1190 3 FT	3000	900	810	300
SLCS 11100 3 FT	3000	1000	900	300
SLCS 11120 3 FT	3000	1200	1180	300



Load

Type	2.0 m kN/m	3.0 m kN/m	4.0 m kN/m
SLCS 1120 3 FT	4	2.3	1
SLCS 1130 3 FT	4	2.3	1
SLCS 1140 3 FT	4	2.3	1
SLCS 1145 3 FT	4	2.3	1
SLCS 1150 3 FT	4	2.3	1
SLCS 1160 3 FT	4	2.3	1
SLCS 1175 3 FT	3.5	1.9	1
SLCS 1180 3 FT	3.5	1.9	1
SLCS 1190 3 FT	3.5	1.9	1
SLCS 11100 3 FT	3.5	1.9	1
SLCS 11120 3 FT	3.5	1.9	1



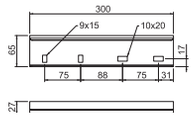
Load diagram, cable ladder, type SLCS 110

1. Permitted cable tray/ladder load in kN/m without man load
2. Support width in m
3. Rail bend in mm at permitted kN/m
4. Load scheme during testing

— Load curve with cable tray/ladder width in mm

— Strut bend curve according to support width

Connector for expansion



CE 60

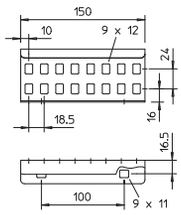
Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LDVG 60 FT	60	2	61,700	**6208 97 0**

St Steel
FT Hot-dip galvanised

/pc.

Connector for expansion for compensation of linear thermal expansion.

Straight connector



CE 60

Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LVG 60 FS	60	10	20,000	**6208 84 0**
LVG 60 FT	60	10	22,000	**6208 84 3**

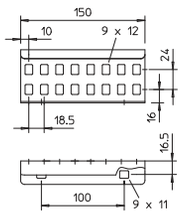
St Steel
FS Strip-galvanised FT Hot-dip galvanised

/pc.

The bolt fastening ensures the continuity of the equipotential bonding.

Straight connector as external connector to connect cable ladders and fittings with a side height of 60 mm and continuous rail perforation.

Straight connector



CE 60

Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LVG 60 VA4301	60	10	22,000	**6208 84 6**
LVG 60 VA4571	60	10	22,000	**6208 83 5**

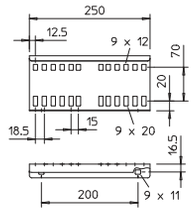
V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 Ti

/pc.

The bolt fastening ensures the continuity of the equipotential bonding.

Straight connector as external connector to connect cable ladders and fittings with a side height of 60 mm and continuous rail perforation.

Straight connector



CE 110

Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LVG 110 FS	110	10	41,600	**6216 54 5**
LVG 110 FT	110	10	44,900	**6216 54 8**

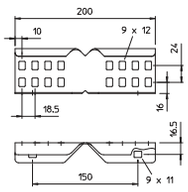
St Steel
FS Strip-galvanised FT Hot-dip galvanised

/pc.

The bolt fastening ensures the continuity of the equipotential bonding.

Straight connector as external connector to connect cable ladders and fittings with a side height of 110 mm and continuous rail perforation.

Angle connector



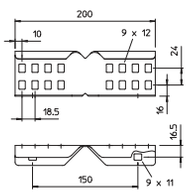
Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LWVG 60 FS	60	10	24,000	**6208 89 5**
LWVG 60 VA4301	60	10	24,000	**6208 89 8**

St Steel V2A Stainless steel, grade 304 /pc.
FS Strip-galvanised

The bolt fastening ensures the continuity of the equipotential bonding.

Angle connector as external connector to join cable ladders and fittings with a side height of 60 mm and continuous rail perforation.

Angle connector



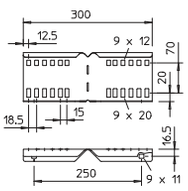
Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LWVG 60 VA4301	60	10	24,000	**6208 89 8**
LWVG 60 VA4571	60	10	22,000	**6208 89 1**

V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 Ti /pc.

The bolt fastening ensures the continuity of the equipotential bonding.

Angle connector as external connector to join cable ladders and fittings with a side height of 60 mm and continuous rail perforation.

Angle connector



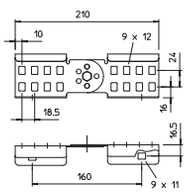
Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LWVG 110 FS	110	10	48,800	**6216 58 7**
LWVG 110 VA4301	110	10	48,800	**6216 59 0**

St Steel V2A Stainless steel, grade 304 /pc.
FS Strip-galvanised

The bolt fastening ensures the continuity of the equipotential bonding.

Angle connector as external connector to join cable ladders and fittings with a side height of 110 mm and continuous rail perforation.

Adjustable connector



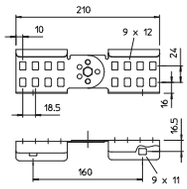
Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LGVG 60 FS	60	10	27,000	**6208 94 1**
LGVG 60 FT	60	10	29,000	**6208 94 4**

St Steel /pc.
FS Strip-galvanised FT Hot-dip galvanised

The bolt fastening ensures the continuity of the equipotential bonding.

Adjustable connector as external connector to join cable ladders and fittings with a side height of 60 mm and continuous rail perforation. Angle can be adjusted vertically.

Adjustable connector



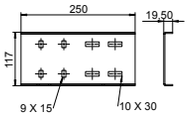
Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LGVG 60 VA4301	60	10	29,000	**6208 94 7**
LGVG 60 VA4571	60	10	29,000	**6208 93 2**

V2A Stainless steel, grade 304 V4A Stainless steel, grade 316 Ti /pc.

The bolt fastening ensures the continuity of the equipotential bonding.

Adjustable connector as external connector to join cable ladders and fittings with a side height of 60 mm and continuous rail perforation. Angle can be adjusted vertically.

Connector for expansion

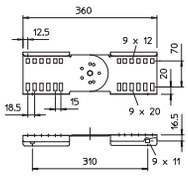


Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
SLDV 110 FT	110	2	102,000	**6091 10 0**

St Steel /pc.
FT Hot-dip galvanised

Connector for expansion for compensation of linear thermal expansion.

Adjustable connector



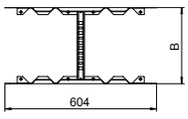
Type	Side height mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LGVG 110 FS	110	10	61,000	**6216 65 0**
LGVG 110 FT	110	10	65,000	**6216 65 3**

St Steel /pc.
FS Strip-galvanised FT Hot-dip galvanised

The bolt fastening ensures the continuity of the equipotential bonding.

Adjustable connector as external connector to join cable ladders and fittings with a side height of 110 mm and continuous rail perforation. Angle can be adjusted vertically.

Multifunctional connector



Type	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LMFV 620 FS	200	1	123,200	**6225 71 0**
LMFV 630 FS	300	1	129,700	**6225 71 2**
LMFV 640 FS	400	1	136,200	**6225 71 4**
LMFV 650 FS	500	1	142,800	**6225 71 6**
LMFV 660 FS	600	1	149,300	**6225 71 8**
LMFV 620 FT	200	1	130,600	**6225 73 0**
LMFV 630 FT	300	1	137,500	**6225 73 2**
LMFV 640 FT	400	1	144,400	**6225 73 4**
LMFV 650 FT	500	1	151,300	**6225 73 6**
LMFV 660 FT	600	1	158,200	**6225 73 8**

St Steel /pc.
FS Strip-galvanised FT Hot-dip galvanised

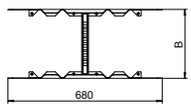
Multifunctional connector for joining cable ladders with a side height of 60 mm. Symmetric and asymmetric reductions, bends and add-on tees can be created.

Multifunctional connector

Type	Dimension B mm	Pack. pcs	Weight kg/100 pcs.	Item No.
LMFV 1120 FS	200	1	208,100	**6225 75 0**
LMFV 1130 FS	300	1	214,600	**6225 75 2**
LMFV 1140 FS	400	1	221,100	**6225 75 4**
LMFV 1150 FS	500	1	227,600	**6225 75 6**
LMFV 1160 FS	600	1	234,000	**6225 75 8**
LMFV 1120 FT	200	1	221,300	**6225 77 0**
LMFV 1130 FT	300	1	228,200	**6225 77 2**
LMFV 1140 FT	400	1	235,100	**6225 77 4**
LMFV 1145 FT	450	1	238,500	**6225 77 6**
LMFV 1150 FT	500	1	241,900	**6225 77 8**
LMFV 1160 FT	600	1	248,800	**6225 78 0**

St Steel /pc.
FS Strip-galvanised FT Hot-dip galvanised

Multifunctional connector for joining cable ladders with a side height of 60 mm. Symmetric and asymmetric reductions, bends and add-on tees can be created.



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