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[logotip FAKRO]

KATALOG

Katalog: tavanske ljestve LWK, LWZ, LDK, LMS, LMK, LML, LMP, LST, LWL, LTK, LWT, LWF 60, LMF 60, LSF, LMF i kombinovana vrata DWK, DWT, DWF

Originalna oznaka dokumenta: FS/60s/GB/04.03.2022/E03A

Prevod uz katalog: tekst svake strane originala preveden je pored njene sličice. Fotografije i grafika nalaze se u originalu iza prevoda. Upućivanja na strane (npr. „strana 10“) odnose se na brojeve odštampane u katalogu; na primjer, strana 7 originala nosi odštampani broj 10.



STRANA 1 ORIGINALA

KOMPLETAN VODIČ ZA TAVANSKE LJESTVE

Širok izbor bezbjednih i udobnih tavanskih ljestava
2022

SKLOPIVE TAVANSKE LJESTVE

omogućavaju bezbjedan i lak pristup tavanskom prostoru bez potrebe za skupim stepeništima koja zauzimaju mnogo prostora. Ljestve FAKRO ispunjavaju sve tehničke zahtjeve i zahtjeve bezbjednosti, uz najveću moguću lakoću upotrebe i udobnost.

UŠTEDA PROSTORA

Ljestve FAKRO zahtijevaju malo „prostora za zamah“. Ljestve su montirane na poklopac tako da su, kada su sklopljene, njihove sekcije uredno sakrivene u tavanskom prostoru.

LAKOĆA RUKOVANJA

Inovativni mehanizam za otvaranje potpomognut oprugom (kod nekih modela i sekcije ljestava imaju oprugu) znatno olakšava upotrebu ljestava. Uz sve ljestve isporučuje se i šipka za otvaranje.

LAKOĆA MONTAŽE

Radi lakše montaže, „klik“ pričvršćivanje omogućava da neke ljestve FAKRO ugradi jedna osoba. Sve se, međutim, mogu lako montirati i mogu se prilagoditi visini plafona. **Ljestve se isporučuju potpuno sastavljene i ne zahtijevaju nikakve dodatne pripremne radove prije montaže.**

DODATNA OPREMA

Radi veće udobnosti i brže ugradnje tavanskih ljestava, na raspolaganju je dodatni pribor.

GARANCIJA

Tavanske ljestve FAKRO imaju **garanciju od 3 godine.**

Oznake na crtežima

TESTED / EN 14975 / LOFT LADDER / EUROPEAN STANDARD	ispitano / EN 14975 / tavanske ljestve / evropski standard

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VRSTE I IZBOR TAVANSKIH LJESTAVA

Grupa	Podgrupa	Materijal	Maksimalno opterećenje	U [W/m²K]	Vrsta	Model	Opis	Strana
IZOLOVANE	–	DRVENE	160 kg	U=1.1 W/m²K (poklopac)	–	LWK KOMFORT	UDOBNOST I FUNKCIONALNOST	10
IZOLOVANE	–	DRVENE	160 kg	U=1.1 W/m²K (poklopac)	–	LWZ PLUS	UDOBNOST, FUNKCIONALNOST I BRZA MONTAŽA	12
IZOLOVANE	–	DRVENE	160 kg	U=1.1 W/m²K (poklopac)	KLIZNE	LDK	KLIZNE LJESTVE	26
IZOLOVANE	–	METALNE	200 kg	U=1.1 W/m²K (poklopac)	SEKCIONE	LMS	STANDARDNE	32
IZOLOVANE	–	METALNE	200 kg	U=1.1 W/m²K (poklopac)	SEKCIONE	LMK	UDOBNOST I FUNKCIONALNOST	34
IZOLOVANE	–	METALNE	200 kg	U=1.1 W/m²K (poklopac)	SEKCIONE	LML	POBOLJŠANA UDOBNOST UPOTREBE	36
IZOLOVANE	–	METALNE	200 kg	U=1.1 W/m²K (poklopac)	SEKCIONE	LMP	ZA VISOKE PROSTORIJE (MAX 366cm)	38
IZOLOVANE	–	METALNE	200 kg	U=1.1 W/m²K (poklopac)	MAKAZASTE	LST	FUNKCIONALNOST I MALE DIMENZIJE KUTIJE	46
ENERGETSKI EFIKASNE	ENERGETSKI EFIKASNE	DRVENE	160 kg	U=0.74 W/m²K (tavanske ljestve)	SEKCIONE	LWL EXTRA	POBOLJŠANA UDOBNOST UPOTREBE	14
ENERGETSKI EFIKASNE	ENERGETSKI EFIKASNE	DRVENE	160 kg	U=0.68 W/m²K (tavanske ljestve)	SEKCIONE	LTK ENERGY	VRLO ENERGETSKI EFIKASNE	16
ENERGETSKI EFIKASNE	ENERGETSKI EFIKASNE	DRVENE	160 kg	U=0.51 W/m²K (tavanske ljestve)	SEKCIONE	LWT	NAJBOLJA IZOLACIJA	18
ENERGETSKI EFIKASNE	PASSIVE HOUSE (pasivna kuća)	DRVENE	160 kg	U=0.51 W/m²K (tavanske ljestve)	SEKCIONE	LWT PASSIVE HOUSE	PASSIVE HOUSE KOMPLET ZA IZOLACIJU	20
VATROOTPORNE	EI1/EI2 60 min	DRVENE	160 kg	U=0.64 W/m²K (tavanske ljestve)	SEKCIONE	LWF 60, LWF 60 SL	UDOBNOST I FUNKCIONALNOST	22, 24
VATROOTPORNE	EI1/EI2 60 min	METALNE	200 kg	U=0.64 W/m²K (tavanske ljestve)	SEKCIONE	LMF 60	DOSTUPNE I U VERZIJI ZA VISOKE PROSTORIJE (MAX 360cm)	40
VATROOTPORNE	EI2 60 min	METALNE	200 kg	U=1.8 W/m²K (poklopac)	MAKAZASTE	LSF	BRZA MONTAŽA I MALE DIMENZIJE KUTIJE	48
VATROOTPORNE	EI2 120 min	METALNE	200 kg	U=0.79 W/m²K (poklopac)	SEKCIONE	LMF	NAJBOLJA VATROOTPORNOST NA TRŽIŠTU	42



STRANA 3 ORIGINALA

KOMBINOVANA VRATA L-OBLIKA

VRSTE I IZBOR VRATA L-OBLIKA

Pored širokog asortimana tavanskih ljestava, FAKRO proizvodi i kombinovana tavanska vrata za ugradnju u zidove. Ona služe za pristup neiskorišćenom prostoru iza zida ili ispod stepeništa. Dostupna su tri modela: prvi i najosnovniji model, **DWF** izolaciona vrata sa krilom debljine 3.6cm. Za dodatnu toplotnu efikasnost i vazdušnu zaptivenost, **DWT** ima koeficijent U od 0.6 i postiže klasu 4 prema EN 12207. Tamo gdje je potrebna vatrootpornost, **DWF** nudi obostranu zaštitu (klasifikacija vatrootpornosti EI1 45 prema EN 13501-2), kao i izuzetnu vazdušnu zaptivenost i toplotnu izolaciju.

IZOLOVANA	VRLO ENERGETSKI EFIKASNA	VATROOTPORNA
DWK	DWT	DWF
U=1.1* W/m²K	U=0.6** W/m²K KLASA 4 EN12207 ***	U=0.64** W/m²K KLASA 4 EN12207 *** EN 13501-2 EI1 45
strana 50	strana 52	strana 54

* interna ispitivanja srednjeg dijela krila
** interna ispitivanja proizvođača za krilo
*** interno ispitivanje proizvođača



STRANA 4 ORIGINALA

SKLOPIVE TAVANSKE LJESTVE

Omogućite bezbjedan i lak pristup tavanskom prostoru bez potrebe za skupim stepeništima prevelikih dimenzija. Tavanske ljestve FAKRO ispunjavaju sve tehničke zahtjeve i zahtjeve bezbjednosti, uz najveću moguću lakoću upotrebe i udobnost.

UŠTEDA PROSTORA

Zahvaljujući promišljenoj konstrukciji, tavanske ljestve FAKRO zahtijevaju malo „prostora za zamah“. Ljestve su montirane na poklopac tako da su, kada su sklopljene, njihove sekcije uredno sakrivene u tavanskom prostoru.

LAKOĆA RUKOVANJA

Inovativni mehanizam za otvaranje potpomognut oprugom (kod nekih modela i sekcije ljestava imaju oprugu) znatno olakšava upotrebu ljestava. Uz sve ljestve isporučuje se i šipka za otvaranje.

LAKOĆA MONTAŽE

Radi brze i lake montaže, tavanske ljestve FAKRO imaju „klik“ pričvršćivanje, koje omogućava da neke ljestve ugradi jedna osoba. Osim toga, tavanske ljestve FAKRO mogu se prilagoditi bilo kojoj visini plafona.

DODATNA OPREMA

Radi veće udobnosti i brže ugradnje tavanskih ljestava, na raspolaganju je dodatni pribor.

GARANCIJA

Tavanske ljestve FAKRO imaju **garanciju od 3 godine.**



STRANA 5 ORIGINALA

SEKCIONE TAVANSKE LJESTVE

DRVENE SEKCIONE
TAVANSKE LJESTVE



STRANA 6 ORIGINALA

KUTIJA

Tavanske ljestve imaju ram od borovine ili metala integrisan u svoju kutiju. Isporučuju se zajedno sa oblogama koje, u kombinaciji sa sistemom za brzu montažu, omogućavaju da se posao završi brzo! Obodna zaptivka služi da otvor za ljestve ostane vazdušno zaptiven.

MEHANIZAM POKLOPCA

Primijenjeni mehanizam znatno pojednostavljuje rukovanje ljestvama. Nakon otključavanja poklopac se otvara sporo, bez opasnosti po korisnika. Pored toga, mehanizam drži poklopac u potpuno otvorenom položaju i sprječava njegovo spontano zatvaranje prilikom razvijanja i sklapanja ljestava.

OKOV

Patentirana ugaona šarka i opružni mehanizam daju kutiji dodatnu krutost i sprječavaju deformaciju.

POKLOPAC

Poklopac sendvič tipa može biti izolovan ili vatrootporan.

PREČKA

Žljebovi na površini prečke štite korisnika od slučajnog proklizavanja prilikom upotrebe ljestava.

LJESTVE

Ljestve su izrađene od visokokvalitetne borovine i sastoje se od tri ili četiri segmenta.

ZAVRŠECI BOČNIH NOSAČA

izrađeni od izdržljivog PVC-a, štite podnu površinu od grebanja, a istovremeno doprinose ukupnoj stabilnosti ljestava (odnosi se na ljestve sa 3 sekcije)



STRANA 7 ORIGINALA

DRVENE SKLOPIVE SEKCIONE TAVANSKE LJESTVE

DRVENE TAVANSKE LJESTVE
LWK KOMFORT

U (poklopac)	1.1 W/m²K
Standard	EN 14975

Inovativna konstrukcija ljestava **LWK Komfort** obezbjeđuje lakoću upotrebe, visoku izolacionu vrijednost i brzu montažu. Opremljene su estetski dopadljivom, glatkom bijelom završnom obradom poklopca i rukohvatom u standardnoj opremi.

- Izolovani bijeli poklopac i rukohvat.
- Kada se poklopac otvori, šarka ga udaljava od ljestava, čime se povećava prostor radi dodatne udobnosti.
- Mala težina poklopca i način „klik“ pričvršćivanja čine montažu veoma jednostavnom.
- završeci bočnih nosača (samo kod verzije sa 3 sekcije)
- rukohvat
- bijeli poklopac
- protivklizne prečke u ravni sa bočnim nosačima ljestava
- obodna zaptivka
- jednostavna montaža
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehničke specifikacije:

dozvoljeno opterećenje	160 kg
koeficijent prolaza toplote poklopca U	1.1 W/m²K
debljina izolacije	3 cm
debljina poklopca	3.6 cm

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- 3 godine garancije

Oznake na crtežima

CLICK	klik

STRANA 8 ORIGINALA

ŠEMA LJESTAVA LWK KOMFORT

Ljestve sa 3 segmenta mogu se opremiti mehanizmom za rasterećenje ljestava LXM (strana 58), tako da se njima može u potpunosti rukovati pomoću šipke.

DIMENZIJE TAVANSKIH LJESTAVA LWK Komfort

Dimenzije otvora u plafonu [cm]	AxB	55x111	60x94	60x100	60x111	60x120	60x130	70x94	70x100	70x111	70x120	70x130	70x140	80x120	60x130	60x140	70x130	70x140
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	280	280	280	280	280	280	280	280	305	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	232	250	250	232	232	232	250	250	232	232	232	232	232	246	246	246	246

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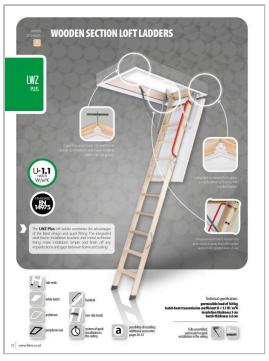
Dimenzije otvora u plafonu [cm]	AxB	55x111	60x94	60x100	60x111	60x120	60x130	70x94	70x100	70x111	70x120	70x130	70x140	80x120	60x130	60x140	70x130	70x140
Visina do koje treba dosegnuti radi rukovanja ljestvama [cm]	X	215	240	240	215	215	215	240	240	215	215	215	215	215	225	225	225	225
Spoljne dimenzije kutije [cm]		53x109.4	58x92.4	58x98.4	58x109.4	58x118.4	58x128.4	68x92.4	68x98.4	68x109.4	68x118.4	68x128.4	68x138.4	78x118,4	58x128.4	58x138.4	68x128.4	68x138.4
Unutrašnje dimenzije kutije [cm]		49x105	54x88	54x94	54x105	54x114	54x124	64x88	64x94	64x105	64x114	64x124	64x134	74x114	54x124	54x134	64x124	64x134
Visina sklopljenih ljestava [cm]	K	27	35	35	27	27	27	35	35	27	27	27	27	27	27	27	27	27
Prostor zamaha [cm]	R	153	128	128	153	156	156	128	128	153	156	156	156	156	175	175	175	175
Rastojanje nakon razvijanja ljestava [cm]	C	113	114	114	113	120	120	114	114	113	120	120	120	120	135	135	135	135
Uvlačenje poklopca nakon otvaranja [cm]	P	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Visina kutije [cm]		14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Broj segmenata		3	4	4	3	3	3	4	4	3	3	3	3	3	3	3	3	3
PARAMETRI LJESTAVA																		
Dužina prečke [cm]	E	30	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Širina prečke [cm]		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Razmak između prečki [cm]		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Debljina prečke [cm]		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

* za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu

DIMENZIJE TAVANSKIH LJESTAVA

Komercijalne dimenzije [cm]		55x111	60x94	60x100	60x111	60x120	60x130	70x94	70x100	70x111	70x120	70x130	70x140	80x120	60x130	60x140	70x130	70x140
Visina prostorije [cm]	H	280	280	280	280	280	280	280	280	280	280	280	280	280	305	305	305	305
Šifra		864521	864507	864506	864504	864501	864502	864502	864517	864516	864514	864511	864512	864593	864551	864552	864553	864554

Za nestandardne dimenzije ljestava LWK Komfort pogledajte stranu 24



STRANA 9 ORIGINALA

DRVENE SEKCIONE TAVANSKE LJESTVE

DRVENE TAVANSKE LJESTVE
LWZ PLUS

U (poklopac)	1.1 W/m²K
Standard	EN 14975

Tavanske ljestve **LWZ Plus** spajaju prednosti najnovijeg dizajna i brze ugradnje. Integrisani čelični ram, montažni nosači i metalna arhitrav obloga čine montažu jednostavnom i prikrivaju sve nepravilnosti i zazore između rama i plafona.

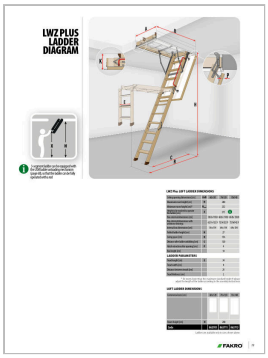
- Nosači za brzo postavljanje, ugrađeni u čelični ram, ubrzavaju montažu i olakšavaju niveliranje unutar plafona.
- Integrisana arhitrav obloga daje ugrađenim ljestvama veoma dopadljiv završni izgled.
- Šarka upravlja kretanjem poklopca i udaljava ga od sekcija ljestava, što olakšava upotrebu.
- završeci bočnih nosača
- bijeli poklopac
- arhitrav obloga
- obodna zaptivka
- rukohvat

- protivklizne prečke
- sistem za brzu ugradnju u plafon
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehničke specifikacije:

dozvoljeno opterećenje	160 kg
koeficijent prolaza toplote poklopca U	1.1 W/m²K
debljina izolacije	3 cm
debljina poklopca	3.6 cm

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- 3 godine garancije



STRANA 10 ORIGINALA

ŠEMA LJESTAVA LWZ PLUS

Ljestve sa 3 segmenta mogu se opremiti mehanizmom za rasterećenje ljestava LXM (strana 60), tako da se njima može u potpunosti rukovati pomoću šipke.

DIMENZIJE TAVANSKIH LJESTAVA LWZ Plus

Dimenzije otvora u plafonu [cm]	AxB	60x120	70x120	70x140
Maksimalna visina prostorije [cm]	H	280	280	280
Minimalna visina prostorije [cm]*	Hmin.	232	232	232
Visina do koje treba dosegnuti radi rukovanja ljestvama [cm]	X	215	215	215
Spoljne dimenzije kutije [cm]		58.8x118.8	68.8x118.8	68.8x138.8
Spoljne dimenzije kutije sa arhitrav oblogama [cm]		62.9x122.9	72.9x122.9	72.9x142.9
Unutrašnje dimenzije kutije [cm]		54x114	64x114	64x134
Visina sklopljenih ljestava [cm]	K	27	27	27
Prostor zamaha [cm]	R	156	156	156
Rastojanje nakon razvijanja ljestava [cm]	C	120	120	120
Uvlačenje poklopca nakon otvaranja [cm]	P	4	4	4
Visina kutije [cm]		14	14	14
PARAMETRI LJESTAVA				
Dužina prečke [cm]	E	34	34	34
Širina prečke [cm]		8	8	8
Razmak između prečki [cm]		25	25	25
Debljina prečke [cm]		2	2	2

* za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu

DIMENZIJE TAVANSKIH LJESTAVA

Komercijalne dimenzije [cm]		60x120	70x120	70x140
Visina prostorije [cm]	H	280	280	280
Šifra		865701	865711	865713

Ljestve su dostupne samo u dimenzijama prikazanim gore.



STRANA 11 ORIGINALA

DRVENE SEKCIONE TAVANSKE LJESTVE

DRVENE TAVANSKE LJESTVE

LWL EXTRA

U (tavanske ljestve)	0.74 W/m²K
Standard	EN 14975
Klasa	4 EN12207 *

Drvene tavanske ljestve **LWL Extra** u novom dizajnu sa **povećanim izolacionim parametrima**. Ljestve **LWL Extra**, radi **veće bezbjednosti** i **udobnosti upotrebe**, opremljene su **dodatnim rukohvatom** postavljenim na srednjoj sklopivoj sekciji i **mehanizmom za rasterećenje** koji pomaže pri sklapanju i razvijanju ljestava.

- dvostruki sistem „zaptivki“ obezbjeđuje savršenu zaptivenost
- Šarka upravlja kretanjem poklopca i pri otvaranju ga automatski udaljava od ljestava, čime se obezbjeđuju dodatna stabilnost i lakoća upotrebe.
- Mehanizam za rasterećenje olakšava sklapanje i razvijanje ljestava.
- Mala težina poklopca i način „klik“ pričvršćivanja čine montažu veoma jednostavnom.
- Dodatni rukohvat obezbjeđuje bezbjednost i udobnost upotrebe.
- Energetski efikasan poklopac debljine 5.6cm, opremljen bravom, savršeno sprječava gubitak toplote.
- završeci bočnih nosača
- bijeli poklopac
- dvije zaptivke
- dva rukohvata
- jednostavna montaža
- protivklizne prečke u ravni sa bočnim nosačima ljestava
- mehanizam za rasterećenje ljestava
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehničke specifikacije:

dozvoljeno opterećenje	160 kg
koeficijent prolaza toplote ljestava U	0.74 W/m²K
debljina izolacije	5cm
debljina poklopca	5.6

- potpuno sastavljene i spremne za brzu ugradnju u plafon

- 3 godine garancije

* interno istraživanje proizvođača

Oznake na crtežima

NEW!	NOVO!
CLICK	klik

STRANA 12 ORIGINALA

ŠEMA LJESTAVA LWL EXTRA

Ljestve LWL Extra standardno su opremljene mehanizmom za rasterećenje ljestava, tako da se njima može u potpunosti rukovati pomoću šipke za otvaranje.

DIMENZIJE TAVANSKIH LJESTAVA LWL EXTRA

Dimenzije otvora u plafonu [cm]	**AxB**	**60x120**	**70x120**	**70x130**	**70x140**	**60x130**	**70x130**	**70x140**
Maksimalna visina prostorije [cm]	H	280	280	280	280	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	260	260	260	260	280	280	280
Visina do koje treba dosegnuti radi rukovanja ljestvama [cm]	X	215	215	215	215	225	225	225
Spoljne dimenzije kutije [cm]		58x118.4	68x118.4	68x128.4	68x138.4	58x128.4	68x128.4	68x138.4
Unutrašnje dimenzije kutije [cm]		54x114	64x114	64x124	64x134	54x124	64x124	64x134
Visina sklopljenih ljestava [cm]	K	30	30	30	30	30	30	30
Uvlačenje poklopca nakon otvaranja [cm]	R	156	156	156	156	175	175	175
Rastojanje nakon razvijanja ljestava [cm]	C	120	120	120	120	135	135	135
Visina kutije [cm]		14	14	14	14	14	14	14
Uvlačenje poklopca nakon otvaranja [cm]		6	6	6	6	6	6	6
PARAMETRI LJESTAVA								
Dužina prečke [cm]	E	30	34	34	34	30	34	34
Širina prečke [cm]		8	8	8	8	8	8	8
Razmak između prečki [cm]		25	25	25	25	25	25	25
Debljina prečke [cm]		2	2	2	2	2	2	2

* za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu

Komercijalne dimenzije [cm]		**60x120**	**70x120**	**70x130**	**70x140**	**60x130**	**70x130**	**70x140**
Visina prostorije [cm]	H	280	280	280	280	305	305	305
Šifra		867901	867911	867912	867913	867951	867953	867954

Ljestve su dostupne samo u dimenzijama prikazanim gore.



STRANA 13 ORIGINALA

DRVENE SEKCIONE TAVANSKE LJESTVE

DRVENE TAVANSKE LJESTVE
LTK ENERGY

U (tavanske ljestve)	0.68 W/m²K
Standard	EN 14975
Klasa	4 EN12207 *

LTK Energy su visoko energetski efikasne tavanske ljestve nove generacije, namijenjene energetski efikasnim zgradama. Garantuju visok nivo udobnosti, odlične parametre toplotne izolacije i najvišu klasu 4 zaptivenosti.

- Kratko rastojanje između gornje prečke i poda tavana.
- Dvostruki sistem zaptivki obezbjeđuje savršenu zaptivenost.
- Mala težina poklopca i način „klik“ pričvršćivanja čine montažu veoma jednostavnom.
- Visoko energetski efikasan poklopac debljine 6.6cm sprječava gubitak toplote i donosi značajnu uštedu na računima za energiju.
- završeci bočnih nosača (samo kod verzije sa 3 sekcije)
- bijeli poklopac
- dvije zaptivke
- rukohvat
- protivklizne prečke u ravni sa bočnim nosačima ljestava
- jednostavna montaža
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehničke specifikacije:

maksimalno opterećenje	160 kg
koeficijent prolaza toplote ljestava U	0.68 W/m²K
debljina izolacije	6 cm
debljina poklopca	6.6 cm

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- 3 godine garancije

Oznake na crtežima

CLICK	klik

STRANA 14 ORIGINALA

ŠEMA LJESTAVA LTK ENERGY

Ljestve sa 3 segmenta mogu se opremiti mehanizmom za rasterećenje ljestava LXM (strana 60), tako da se njima može u potpunosti rukovati pomoću šipke.

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DIMENZIJE TAVANSKIH LJESTAVA LTK ENERGY

Dimenzije otvora u plafonu [cm]	A x B	55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	280	280	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	253	253	253	235	235	235	235	243	243	243
Visina do koje treba dosegnuti radi rukovanja ljestvama [cm]	X	230	230	230	210	210	210	210	230	230	230
Spoljne dimenzije kutije [cm]		53x98.4	58x98.4	68x98.4	58x118.4	68x118.4	68x128.4	68x138.4	58x128.4	68x128.4	68x138.4
Unutrašnje dimenzije kutije [cm]		49x94	54x94	64x94	54x114	64x114	64x124	64x134	54x124	64x124	64x134
Visina sklopljenih ljestava [cm]	K	42	42	42	35	35	35	35	35	35	35
Prostor zamaha [cm]	R	136	136	136	164	164	164	164	178	178	178
Rastojanje nakon razvijanja ljestava [cm]	C	123	123	123	129	129	129	129	139	139	139
Uvlačenje poklopca nakon otvaranja [cm]	P	3	3	3	3	3	3	3	3	3	3
Visina kutije [cm]		18	18	18	18	18	18	18	18	18	18
Broj segmenata		4	4	4	3	3	3	3	3	3	3
PARAMETRI LJESTAVA											
Dužina prečke [cm]	E	30	34	34	34	34	34	34	34	34	34
Širina prečke [cm]		8	8	8	8	8	8	8	8	8	8
Razmak između prečki [cm]		25	25	25	25	25	25	25	25	25	25
Debljina prečke [cm]		2	2	2	2	2	2	2	2	2	2

* za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Visina prostorije [cm]	H	280	280	280	280	280	280	280	305	305	305
Šifra		864720	864706	864716	864701	864711	864712	864713	864751	864753	864754

Ljestve su dostupne samo u dimenzijama prikazanim gore.



STRANA 15 ORIGINALA

DRVENE SEKCIONE TAVANSKE LJESTVE

DRVENE TAVANSKE LJESTVE
LWT

U (tavanske ljestve)	0.51 W/m²K
Standard	EN 14975
Klasa	4 EN12207 *

Veoma efikasne tavanske ljestve **LWT** preporučuju se za upotrebu u energetski efikasnim zgradama. Njihov odličan nivo izolacije znatno smanjuje gubitak toplote i račune za energiju.

- Trostruki sistem zaptivki obezbjeđuje savršenu zaptivenost.
- Kratko rastojanje između gornje prečke i poda tavana.
- Mala težina poklopca i način „klik“ pričvršćivanja čine montažu veoma jednostavnom.

- Poseban poklopac debljine 8cm ispunjen je polistirenskom izolacijom, što obezbjeđuje odličnu barijeru i smanjuje gubitak toplote.
- završeci bočnih nosača (samo kod verzije sa 3 sekcije)
- bijeli poklopac
- tri zaptivke
- rukohvat
- protivklizne prečke u ravni sa bočnim nosačima ljestava
- jednostavna montaža
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehničke specifikacije:

dozvoljeno opterećenje	160 kg
koeficijent prolaza toplote ljestava U	0.51 W/m²K
debljina izolacije	7.4 cm
debljina poklopca	8 cm

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- 3 godine garancije

Oznake na crtežima

CLICK	klik

STRANA 16 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LWT

Ljestve sa 3 segmenta mogu se opremiti mehanizmom za rasterećenje ljestava LXM (strana 60), tako da se njima može u potpunosti rukovati pomoću šipke.

DIMENZIJE TAVANSKIH LJESTAVA LWT

Dimenzije otvora u plafonu [cm]	**AxB**	**55x100**	**60x100**	**70x100**	**60x120**	**70x120**	**70x130**	**70x140**	**60x130**	**70x130**	**70x140**
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	280	280	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	253	253	253	234	234	234	234	242	242	242
Visina do koje treba dosegnuti radi rukovanja ljestvama [cm]	X	230	230	230	210	210	210	210	230	230	230
Spoljne dimenzije kutije [cm]		53x98.4	58x98.4	68x98.4	58x118.4	68x118.4	68x128.4	68x138.4	58x128.4	68x128.4	68x138.4
Unutrašnje dimenzije kutije [cm]		49x94	54x94	64x94	54x114	64x114	64x124	64x134	54x124	64x124	64x134
Visina sklopljenih ljestava [cm]	K	43.5	43.5	43.5	36	36	36	36	36	36	36
Prostor zamaha [cm]	R	136	136	136	164	164	164	164	178	178	178
Rastojanje nakon razvijanja ljestava [cm]	C	123	123	123	130	130	130	130	137	137	137
Uvlačenje poklopca nakon otvaranja [cm]	P	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Visina kutije [cm]		22	22	22	22	22	22	22	22	22	22
Broj segmenata		4	4	4	3	3	3	3	3	3	3
PARAMETRI LJESTAVA											
Dužina prečke [cm]	E	30	34	34	34	34	34	34	34	34	34
Širina prečke [cm]		8	8	8	8	8	8	8	8	8	8

Dimenzije otvora u plafonu [cm]	AxB	55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Razmak između prečki [cm]		25	25	25	25	25	25	25	25	25	25
Debljina prečke [cm]		2	2	2	2	2	2	2	2	2	2

* za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu

Komercijalne dimenzije [cm]		55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Visina prostorije [cm]	H	280	280	280	280	280	280	280	305	305	305
Šifra		863120	863106	863116	863101	863111	863112	863113	863151	863153	863154

Ljestve su dostupne samo u dimenzijama prikazanim gore.



STRANA 17 ORIGINALA

TAVANSKE LJESTVE SA DRVENOM SKLOPIVOM SEKCIJOM

DRVENE TAVANSKE LJESTVE
LWT PASSIVE HOUSE

U (tavanske ljestve)	0.51 W/m²K
Standard	EN 14975
Klasa	4 EN12207 *

Tavanske ljestve **LWT Passive House** tehnički su složeno rješenje, posebno razvijeno za zahtjeve takvih energetski efikasnih standarda gradnje. Ugrađuju se pomoću kompleta koji povezuje ljestve sa plafonom radi savršene zaptivenosti i izolacije bez toplotnih mostova. Isporučuju se sa sertifikatom Passive House.

- Komplet omogućava pravilnu izolaciju tavanskih ljestava u plafonu.
- Kratko rastojanje između gornje prečke i poda tavana.
- Trostruki sistem zaptivki obezbjeđuje savršenu zaptivenost.
- Poseban poklopac debljine 8cm ispunjen je polistirenskom izolacijom, što obezbjeđuje odličnu barijeru i smanjuje gubitak toplote.
- završeci bočnih nosača
- bijeli poklopac
- tri zaptivke
- rukohvat
- PASSIVE HOUSE komplet za izolaciju
- protivklizne prečke u ravni sa bočnim nosačima ljestava
- jednostavna montaža
- mogućnost ugradnje dodatnog pribora, strane 56-61

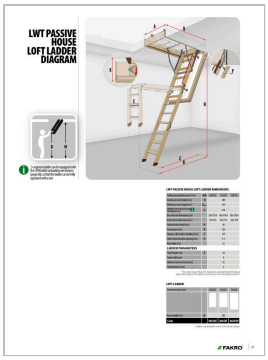
Tehničke specifikacije:

dozvoljeno opterećenje	160 kg
koeficijent prolaza toplote ljestava U	0.51 W/m²K
debljina izolacije	7.4 cm
debljina poklopca	8 cm

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- 3 godine garancije

Oznake na crtežima

cool, temperate climate	hladna, umjerena klima
CERTIFIED COMPONENT	SERTIFIKOVANA KOMPONENTA
Passive House Institute	Passive House Institute



STRANA 18 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LWT PASSIVE HOUSE

Ljestve sa 3 segmenta mogu se opremiti mehanizmom za rasterećenje ljestava LXM (strana 60), tako da se njima može u potpunosti rukovati pomoću šipke.

DIMENZIJE TAVANSKIH LJESTAVA LWT PASSIVE HOUSE

Dimenzije otvora u plafonu [cm]	AxB	62x122	72x122	72x142
Maksimalna visina prostorije [cm]	H	280	280	280
Minimalna visina prostorije [cm]*	Hmin.	234	234	234
Visina do koje treba dosegnuti radi rukovanja ljestvama [cm]	X	210	210	210
Spoljne dimenzije kutije [cm]		58x118.4	68x118.4	68x138.4
Unutrašnje dimenzije kutije [cm]		54x114	64x114	64x134
Visina sklopljenih ljestava [cm]	K	36	36	36
Prostor zamaha [cm]	R	164	164	164
Rastojanje nakon razvijanja ljestava [cm]	C	127	127	127
Uvlačenje poklopca nakon otvaranja [cm]	P	4.5	4.5	4.5
Visina kutije [cm]		22	22	22
PARAMETRI LJESTAVA				
Dužina prečke [cm]	E	34	34	34
Širina prečke [cm]		8	8	8
Razmak između prečki [cm]		25	25	25
Debljina prečke [cm]		2	2	2

* za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		62x122	72x122	72x142
Visina prostorije [cm]	H	280	280	280
Šifra		8665AE	8665AF	8665AH

Ljestve su dostupne samo u dimenzijama prikazanim gore.



STRANA 19 ORIGINALA

TAVANSKE LJESTVE SA DRVENOM SKLOPIVOM SEKCIJOM

DRVENE TAVANSKE LJESTVE
LWF 60 – VATROOTPORNE

U (tavanske ljestve)	0.64* W/m²K
Standard	EN 14975
EN 13501-2	EI1 60

LWF60, nova generacija vatrootpornih tavanskih ljestava sa drvenim ljestvama, koje savršeno spajaju **visok nivo zaštite od požara** sa udobnim i bezbjednim pristupom tavanu. Posebna konstrukcija poklopca i upotrijebljeni materijali obezbjeđuju 60-minutnu zaštitu od prodora požara iz prostora u kojem su tavanske ljestve ugrađene. Klasa vatrootpornosti **EI1 60/EI2 60**, klasifikacija prema EN 13501.

- Trostruki sistem zaptivki obezbjeđuje savršenu vazdušnu zaptivenost.
- Kratko rastojanje između gornje prečke i poda tavana.
- Šarka upravlja kretanjem poklopca i, kako se poklopac otvara, udaljava ga od prečki ljestava. Rezultat su veći prostor i jednostavno rukovanje.
- Poklopac je izolovan i obrađen u bijelo sa obje strane, a opremljen je i zaptivkom koja se širi. Kada je ova zaptivka izložena visokim temperaturama, ona se širi i sprječava da požar probije poklopac.
- završeci bočnih nosača (samo kod verzije sa 3 sekcije)
- rukohvat
- vatrootporni poklopac sa jedne strane
- protivklizne prečke u ravni sa bočnim nosačima ljestava
- tri zaptivke
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehničke specifikacije:

maksimalno opterećenje	160 kg
koeficijent prolaza toplote ljestava U	0.64 W/m²K*
klasa vatrootpornosti	EI1/EI2 = 60 minuta
debljina izolacije	7.9 cm
debljina poklopca	8.5 cm

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- 3 godine garancije

* interno istraživanje proizvođača

STRANA 20 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LWF 60

Ljestve sa 3 segmenta mogu se opremiti mehanizmom za rasterećenje ljestava LXM (strana 60), tako da se njima može u potpunosti rukovati pomoću šipke.

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DIMENZIJE TAVANSKIH LJESTAVA LWF 60

Dimenzije otvora u plafonu [cm]	AxB	55x100	55x120	60x100	70x100	60x120	70x120	70x130	70x140	86x130	55x130	70x130	70x140	86x130
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	280	280	280	280	305	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	253	253	253	253	234	234	234	234	234	242	242	242	242
Visina do koje treba dosegnuti radi rukovanja ljestvama [cm]	X	235	235	235	235	210	210	210	210	210	230	230	230	230
Spoljne dimenzije kutije [cm]		53x98	53x118	58x98	68x98	58x118	68x118	68x128	68x138	84x128	53x128	68x128	68x138	84x128
Unutrašnje dimenzije kutije [cm]		49x94	49x114	54x94	64x94	54x114	64x114	64x124	64x134	80x124	49x124	64x124	64x134	80x124
Visina sklopljenih ljestava [cm]	K	46	46	46	46	38	38	38	38	38	38	38	38	38
Prostor zamaha [cm]	R	138	138	138	138	164	164	164	164	164	178	178	178	178
Rastojanje nakon razvijanja ljestava [cm]	C	126	126	126	126	129	129	129	129	129	139	139	139	139
Uvlačenje poklopca nakon otvaranja [cm]	P	5	5	5	5	5	5	5	5	5	5	5	5	5
Visina kutije [cm]		22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Broj segmenata		4	4	4	4	3	3	3	3	3	3	3	3	3
PARAMETRI LJESTAVA														
Dužina prečke [cm]	E	30	30	34	34	34	34	34	34	34	30	34	34	34
Širina prečke [cm]		8	8	8	8	8	8	8	8	8	8	8	8	8
Razmak između prečki [cm]		25	25	25	25	25	25	25	25	25	25	25	25	25
Debljina prečke [cm]		2	2	2	2	2	2	2	2	2	2	2	2	2

* za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu

Komercijalne dimenzije [cm]		55x100	55x120	60x100	70x100	60x120	70x120	70x130	70x140	86x130	55x130	70x130	70x140	86x130
Visina prostorije [cm]	H	280	280	280	280	280	280	280	280	280	305	305	305	305
Šifra		869G20	869G22	869G06	869G16	869G01	869G11	869G12	869G13	869G96	869G57	869G53	869G54	869G97

Ljestve su dostupne samo u dimenzijama prikazanim gore.



STRANA 21 ORIGINALA

TAVANSKE LJESTVE SA DRVENOM SKLOPIVOM SEKCIJOM

DRVENE TAVANSKE LJESTVE
LWF 60 SL

U (tavanske ljestve)	0.64* W/m²K
Standard	EN 14975
EN 13501-2	EI1 60

LWF60 SL (sigurnosna brava), nova generacija vatrootpornih tavanskih ljestava sa drvenim ljestvama, koje savršeno spajaju visok nivo zaštite od požara sa udobnim i bezbjednim pristupom tavanu. Posebna konstrukcija poklopca i upotrijebljeni materijali obezbjeđuju 60-minutnu zaštitu od prodora požara iz prostora u kojem su tavanske ljestve ugrađene. Klasa vatrootpornosti EI1 60/EI2 60, klasifikacija prema EN 13501-2.

- Trostruki sistem zaptivki obezbjeđuje savršenu vazdušnu zaptivenost.
- Kratko rastojanje između gornje prečke i poda tavana.
- Šarka upravlja kretanjem poklopca i, kako se poklopac otvara, udaljava ga od prečki ljestava. Rezultat su veći prostor i jednostavno rukovanje.
- Poklopac je izolovan i obrađen u bijelo sa obje strane, a opremljen je i zaptivkom koja se širi. Kada je ova zaptivka izložena visokim temperaturama, ona se širi i sprječava da požar probije poklopac.
- završeci bočnih nosača (samo kod verzije sa 3 sekcije)
- vatrootporni poklopac sa jedne strane
- tri zaptivke

- rukohvat
- brava na ključ
- protivklizne prečke u ravni sa bočnim nosačima ljestava
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehničke specifikacije:

maksimalno opterećenje	160 kg
koeficijent prolaza toplote ljestava U	0.64 W/m²K*
klasa vatrootpornosti	EI1/EI2 = 60 minuta
debljina izolacije	7.9 cm
debljina poklopca	8.5 cm

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- 3 godine garancije

* interno istraživanje proizvođača

Oznake na crtežima

NEW! NOVO!

STRANA 22 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LWF 60 SL

Ljestve sa 3 segmenta mogu se opremiti mehanizmom za rasterećenje ljestava LXM (strana 60), tako da se ljestvama može potpuno rukovati šipkom.

DIMENZIJE TAVANSKIH LJESTAVA LWF 60 SL

Dimenzije otvora u plafonu [cm]	**AxB**	**55x100**	**60x100**	**70x100**	**60x120**	**70x120**	**70x130**	**70x140**	**86x130**	**70x130**	**70x140**	**86x130**
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	280	280	280			
Minimalna visina prostorije [cm]*	Hmin.	253	253	253	234	234	234	234	234			
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	235	235	235	210	210	210	210	210			
Spoljne dimenzije kutije [cm]		53 x 98	58 x 98	68 x 98	58 x 118	68 x 118	68 x 128	68 x 138	84 x 128	68 x 128	68 x 138	84 x 128
Unutrašnje dimenzije kutije [cm]		49 x 94	54 x 94	64 x 94	54 x 114	64 x 114	64 x 124	64 x 134	80 x 124	64 x 124	64 x 134	80 x 124
Visina sklopljenih ljestava [cm]	K	46	46	46	38	38	38	38	38	38	38	38
Prostor za rasklapanje [cm]	R	138	138	138	164	164	164	164	164			
Rastojanje nakon rasklapanja ljestava [cm]	C	126	126	126	129	129	129	129	129			
Uvlačenje poklopca nakon otvaranja [cm]	P	5	5	5	5	5	5	5	5	5	5	5
Visina kutije [cm]		22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Broj segmenata		4	4	4	3	3	3	3	3	3	3	3

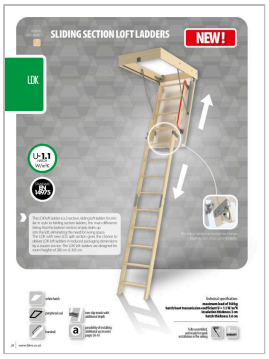
PARAMETRI LJESTAVA

Dužina prečke [cm]	E	30	34	34	34	34	34	34	34	34	34	34
Širina prečke [cm]		8	8	8	8	8	8	8	8	8	8	8
Razmak između prečki [cm]		25	25	25	25	25	25	25	25	25	25	25
Debljina prečke [cm]		2	2	2	2	2	2	2	2	2	2	2

* Za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu.

Komercijalne dimenzije [cm]		**55x100**	**60x100**	**70x100**	**60x120**	**70x120**	**70x130**	**70x140**	**86x130**	**70x130**	**70x140**	**86x130**
Visina prostorije [cm]	H	280	280	280	280	280	280	280	280			
Oznaka		869H20	869H06	869H16	869H01	869H11	869H12	869H13	869H96	869H53	869H54	869H97

Ljestve su dostupne samo u gore prikazanim dimenzijama.



STRANA 23 ORIGINALA

DRVENE TAVANSKE LJESTVE

TAVANSKE LJESTVE SA KLIZNOM SEKCIJOM

NOVO!

LDK

- U=1.1 W/m²K (poklopac)
- STANDARD EN 14975

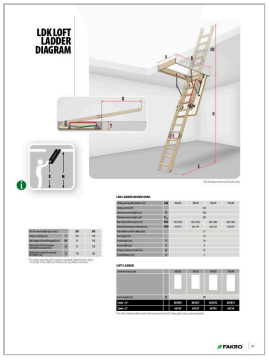
Tavanske ljestve LDK su klizne tavanske ljestve sa 2 sekcije. Po izgledu su slične ljestvama sa sklopivim sekcijama, a glavna razlika je u tome što se donja sekcija jednostavno uvlači na tavan, pa nije potreban prostor za rasklapanje. LDK sa novom podijeljenom sekcijom LDS omogućava isporuku tavanskih ljestava LDK u smanjenim dimenzijama pakovanja putem kurirske službe. Tavanske ljestve LDK namijenjene su za visine prostorije od 280 cm i 305 cm.

Klizni mehanizam ljestava ima dužu donju sekciju, koja mu daje stabilnost.

- bijeli poklopac
- obodna zaptivka
- rukohvat
- neklizajuće prečke sa dodatnom dubinom
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehnička specifikacija:

- maksimalno opterećenje 160 kg
- koeficijent prolaza toplote poklopca U = 1.1 W/m²K
- debljina izolacije 3 cm
- debljina poklopca 3.6 cm
- potpuno sastavljene i spremne za brzu ugradnju u plafon
- Garancija: 3 godine



STRANA 24 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LDK

Ljestve LDK sa novom podijeljenom sekcijom LDS

Za visinu prostorije do [cm]		205	305
Rastojanje spuštanja [cm]	C	105	140
Maksimalna potrebna visina tavana [cm]	H2	55	150
Maksimalna potrebna dužina tavana sa zatvorenim poklopcem [cm]	D	55	150
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	130	230

* Za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu.

DIMENZIJE LJESTAVA LDK

Dimenzije otvora u plafonu [cm]	AxB	60x120	70x120	70x130	70x140
Klizna sekcija LDS		LDS	LDS	LDS	LDS
Maksimalna visina prostorije [cm]	H	305	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	205	205	205	205
Spoljne dimenzije kutije [cm]	WxL	58 x 118,4	68 x 118,4	68 x 128,4	68 x 138,4
Unutrašnje dimenzije kutije [cm]	MxN	54 x 114	64 x 114	64 x 124	64 x 134
Maksimalna debljina plafona [cm]		35	35	35	35
Visina kutije [cm]		14	14	14	14
Dužina prečke [cm]	E	34	34	34	34
Širina prečke [cm]	S	8	8	8	8
Razmak između prečki [cm]	G	25	25	25	25
Debljina prečke [cm]	Z	2	2	2	2

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		60x120	70x120	70x130	70x140
Visina prostorije [cm]	H	305	305	305	305
Oznaka LDK*		861001	861011	861012	861013
Oznaka LDS*		66134	66134	66134	66134

* Kompletne ljestve LDK sastoje se od gornjeg elementa i podijeljene klizne sekcije LDS, koji se pakuju odvojeno.



STRANA 25 ORIGINALA

NESTANDARDNE DIMENZIJE TAVANSKIH LJESTAVA

Ako ugradnja standardnih tavanskih ljestava FAKRO nije moguća, mogu se izraditi sklopive drvene sekcije LWK KOMFORT po mjeri.

KUTIJA

Kutija tavanskih ljestava izrađena je od drveta i ima obodnu zaptivku smještenu u glodani utor. Kada je poklopac zatvoren, ova zaptivka obezbjeđuje potpunu vazdušnu nepropusnost, a posebna konstrukcija kutije nakon ugradnje omogućava brzo i jednostavno postavljanje obloge ili arhitrava.

MEHANIZAM ZA OTVARANJE POKLOPCA

Rukovanje tavanskim ljestvama znatno je poboljšano zahvaljujući jedinstvenom mehanizmu za rasterećenje kompanije Fakro. Nakon otključavanja, poklopac se otvara polako, bez ikakve opasnosti za korisnika. Kada se potpuno otvori, ovaj mehanizam takođe drži poklopac u tom položaju i sprječava njegovo naglo zatvaranje.

OKOV

Opružni zasun daje kutiji dodatnu krutost, sprječava deformaciju i obezbjeđuje da se ljestvama i dalje rukuje bez problema. Šarke koje spajaju pojedine sekcije ljestava takođe povećavaju čvrstoću spojeva pri kretanju.

POKLOPAC

Poklopac tavanskih ljestava izrađen je od drveta i može biti izolovan ili vatrootporan. Izolacija štiti od gubitka toplote, dok vatrootporni materijal štiti od nakupljanja toplote izazvanog širenjem plamena. Spoljna površina poklopca je glatka, bez vidljivih tačaka pričvršćivanja, tako da ne narušava vizuelni stil nijednog enterijera.

PREČKE

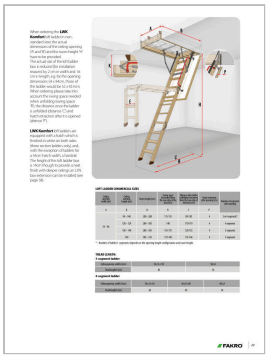
Žljebovi urezani u površinu prečki štite korisnika od slučajnog proklizavanja prilikom upotrebe ljestava.

NOŽICE

Nožice (samo za tavanske ljestve sa 3 sekcije) izrađene od PVC-a štite površinu poda od grebanja i povećavaju ukupnu stabilnost.

LJESTVE

Tavanske ljestve FAKRO pretežno imaju tri sekcije, a neke imaju četiri. One se pomjeraju od poklopca kako bi se stvorilo više prostora za stopala. Posebna konstrukcija ljestava i upotrijebljeni materijali obezbjeđuju najviši nivo trajnosti.



STRANA 26 ORIGINALA

Prilikom naručivanja tavanskih ljestava **LWK Komfort** u nestandardnim dimenzijama potrebno je navesti stvarne dimenzije otvora u plafonu ('A' i 'B') i visinu prostorije 'H'. Stvarna veličina kutije tavanskih ljestava smanjena je (zbog ugradnje) za 2 cm po širini i 1.6 cm po dužini; na primjer, za dimenzije otvora 54 x 94 cm, dimenzije ljestava bile bi 52 x 92.4 cm. Prilikom naručivanja uzmite u obzir prostor potreban za rasklapanje (prostor 'R'), rastojanje nakon rasklapanja ljestava (rastojanje 'C') i uvlačenje poklopca nakon otvaranja (rastojanje 'P').

Tavanske ljestve **LWK Komfort** opremljene su poklopcem koji je sa obje strane obrađen u bijeloj boji (samo ljestve sa tri sekcije) i, osim ljestava za širinu poklopca od 54 cm, rukohvatom. Visina kutije tavanskih ljestava je 14 cm, ali se radi uredne završne obrade kod debljih plafona može ugraditi produžetak kutije LXN (vidi stranu 58).

KOMERCIJALNE DIMENZIJE TAVANSKIH LJESTAVA

Širina otvora u plafonu [cm]	Dužina otvora u plafonu [cm]	Visina prostorije [cm]	Prostor za rasklapanje (mjereno od zadnje ivice kutije) [cm]	Rastojanje nakon rasklapanja ljestava (mjereno od zadnje ivice kutije) [cm]	Uvlačenje poklopca nakon otvaranja [cm]	Broj segmenata nakon otvaranja
A	B	H	R	C	P	
54 – 86	94 – 140	200 – 280	115-155	89-120	4	3 ili 4 segmenta*
54 – 86	120 – 129	280 – 305	140	110-119	4	4 segmenta
54 – 86	130 – 140	280 – 305	155-175	120-135	4	3 segmenta
54 – 86	140	305 – 335	175-184	135-146	4	3 segmenta

* - Broj segmenata ljestava zavisi od konfiguracije dužine otvora i visine prostorije.

DUŽINA PREČKE:

Ljestve sa 3 segmenta

Širina otvora u plafonu A [cm]	54≤ A <58	58≤A
Dužina prečke E [cm]	30	34

Ljestve sa 4 segmenta

Širina otvora u plafonu A [cm]	54≤ A<56	56≤A<60	60≤A
Dužina prečke E [cm]	28	30	34



STRANA 27 ORIGINALA

METALNE TAVANSKE LJESTVE SA SEKCIJAMA

TAVANSKE LJESTVE SA SEKCIJAMA



STRANA 28 ORIGINALA

KUTIJA

Kutija ljestava može biti od drveta, metala ili kombinacija drvene kutije i metalnog okvira. Konstruisana je tako da se arhitrav može lako ugraditi ako nije izabrana varijanta sa fabrički ugrađenim arhitravom. Obodne jednostruke ili dvostruke zaptivke obezbjeđuju dobar nivo vazdušne nepropusnosti.

MEHANIZAM ZA RASKLAPANJE POKLOPCA

Mehanizam za otvaranje poklopca omogućava da poklopac ostane u potpuno ili djelimično otvorenom položaju, čime se obezbjeđuje bezbjedno sklapanje i rasklapanje. Tavanske ljestve LML i LMF imaju i skriveni mehanizam u rukohvatu koji, zajedno sa mehanizmom za otvaranje poklopca, omogućava da se otvaraju ili zatvaraju jednom šipkom.

OKOV

Patentirana konstrukcija ugaone šarke povećava krutost kutije i sprječava deformaciju. Time se obezbjeđuje da se ljestvama i dalje rukuje bez problema.

POKLOPAC

Poklopac tavanskih ljestava izrađen je od drveta ili metala i može biti izolovan ili vatrootporan. Izolacija štiti od gubitka toplote, dok vatrootporni materijal štiti od nakupljanja toplote izazvanog širenjem plamena. Spoljna površina poklopca je glatka kako bi se skladno uklopila u vizuelni stil svakog enterijera.

PREČKA

Kružno reljefno utiskivanje na površini prečki sprječava klizanje, dok širina prečki (8 ili 13 cm) omogućava njihovu bezbjednu i laku upotrebu.

LJESTVE

Posebna konstrukcija metalnih ljestava i dvostruki spoj šarki ljestava garantuju visoku čvrstoću ljestava. Elementi ljestava bojeni su postupkom plastifikacije otpornim lakom u sivoj boji RAL 7022 ili srebrnoj boji RAL 9006. Kod nekih metalnih ljestava posljednje dvije prečke ostavljene su slobodne, što u kombinaciji sa teleskopskim nožicama omogućava podešavanje dužine ljestava bez potrebe za rezanjem.

NOŽICE

Izrađene od plastike, štite pod od ogrebotina i dodatno povećavaju ukupnu stabilnost ljestava.



STRANA 29 ORIGINALA

METALNE TAVANSKE LJESTVE

METALNE TAVANSKE LJESTVE SA SKLOPIVIM SEKCIJAMA

LMS SMART

- U=1.1 W/m²K (poklopac)
- STANDARD EN 14975

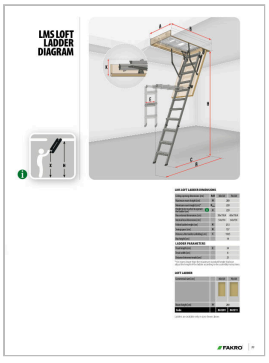
Ljestve LMS su tavanske ljestve sa 3 sekcije, kod kojih su poklopac i kutija izrađeni od borovine. Metalne ljestve su bojene postupkom plastifikacije u boji RAL 7022, dok je izolovani poklopac obrađen u bež boji.

Upotreba metalnih ljestava sa posebnom konstrukcijom šarki garantuje visoku trajnost – dozvoljeno opterećenje 200 kg.

- nožice
- bež poklopac
- obodna zaptivka
- neklizajuće prečke
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehnička specifikacija:

- dozvoljeno opterećenje 200 kg
- koeficijent prolaza toplote poklopca U = 1.1 W/m²K
- debljina izolacije 3 cm
- debljina poklopca 3.6 cm
- potpuno sastavljene i spremne za brzu ugradnju u plafon
- Garancija: 3 godine



STRANA 30 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LMS

DIMENZIJE TAVANSKIH LJESTAVA LMS

Dimenzije otvora u plafonu [cm]	AxB	60x120	70x120
Maksimalna visina prostorije [cm]	H	280	280
Minimalna visina prostorije [cm]*	Hmin.	220	220
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	220	220
Spoljne dimenzije kutije [cm]		58 x 118.4	68 x 118.4
Unutrašnje dimenzije kutije [cm]		54 x 114	64 x 114
Visina sklopljenih ljestava [cm]	K	25.5	25.5
Prostor za rasklapanje [cm]	R	157	157
Rastojanje nakon rasklapanja ljestava [cm]	C	118.5	118.5
Visina kutije [cm]		14	14

PARAMETRI LJESTAVA

Dužina prečke [cm]	E	34	34
Širina prečke [cm]		8	8
Razmak između prečki [cm]		25	25

* Za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu.

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		**60x120**	**70x120**
Visina prostorije [cm]	H	280	280
Oznaka		861201	861211

Ljestve su dostupne samo u gore prikazanim dimenzijama.



STRANA 31 ORIGINALA

METALNE TAVANSKE LJESTVE

METALNE TAVANSKE LJESTVE SA SKLOPIVIM SEKCIJAMA

LMK KOMFORT

- U=1.1 W/m²K (poklopac)
- STANDARD EN 14975

Za razliku od modela LMS, tavanske ljestve LMK imaju bijeli poklopac i crveni rukohvat. Rukohvat je pričvršćen za nosače ljestava, što znatno olakšava njegovu upotrebu.

Bijeli izolovani poklopac i rukohvat

- nožice
- bijeli poklopac
- obodna zaptivka
- rukohvat
- neklizajuće prečke
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehnička specifikacija:

- dozvoljeno opterećenje 200 kg
- koeficijent prolaza toplote poklopca U = 1.1 W/m²K
- debljina izolacije 3 cm
- debljina poklopca 3.6 cm
- potpuno sastavljene i spremne za brzu ugradnju u plafon
- Garancija: 3 godine

STRANA 32 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LMK

DIMENZIJE TAVANSKIH LJESTAVA LMK

Dimenzije otvora u plafonu [cm]	AxB	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Maksimalna visina prostorije [cm]	H	280	280	280	280	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	220	220	220	220	245	245	245
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	220	220	220	220	245	245	245
Spoljne dimenzije kutije [cm]		58 x 118.4	68 x 118.4	68 x 128.4	68 x 138.4	68 x 128.4	68 x 128.4	68 x 138.4
Unutrašnje dimenzije kutije [cm]		54 x 114	64 x 114	64 x 124	64 x 134	54 x 124	64 x 124	64 x 134
Visina sklopljenih ljestava [cm]	K	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Prostor za rasklapanje [cm]	R	157	157	157	157	175	175	175
Rastojanje nakon rasklapanja ljestava [cm]	C	118.5	118.5	118.5	118.5	127	127	127
Visina kutije [cm]		14	14	14	14	14	14	14

PARAMETRI LJESTAVA

Dužina prečke [cm]	E	34	34	34	34	34	34	34
Širina prečke [cm]		8	8	8	8	8	8	8
Razmak između prečki [cm]		25	25	25	25	25	25	25

* Za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu.

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		60x120	70x120	70x130	70x140	60x130	70x130	70x140
Visina prostorije [cm]	H	280	280	280	280	305	305	305
Oznaka		861401	861411	861412	861413	861451	861453	861454

Ljestve su dostupne samo u gore prikazanim dimenzijama.



STRANA 33 ORIGINALA

METALNE TAVANSKE LJESTVE

METALNE TAVANSKE LJESTVE SA SKLOPIVIM SEKCIJAMA

LML LUX

- U=1.1 W/m²K (poklopac)
- STANDARD EN 14975

Metalne tavanske ljestve sa sklopivim sekcijama LML projektovane su tako da obezbijede najviši nivo lakoće i udobnosti upotrebe, uz jednostavnu montažu i podešavanje visine.

Čelični okvir integrisan sa drvenom kutijom, metalna arhitrav obloga i nosači za brzu ugradnju.

Mehanizam skriven u rukohvatu pomaže pri sklapanju i rasklapanju ljestava.

Dodatna prečka skraćuje rastojanje između gornje prečke i poda tavana.

Teleskopske nožice omogućavaju brzo podešavanje dužine ljestava prema visini plafona.

- teleskopske nožice

- bijeli poklopac
- završne letvice obloge
- obodna zaptivka
- mehanizam za rasterećenje ljestava ugrađen u rukohvat
- sistem brze ugradnje u plafon
- neklizajuće prečke, širine 13 cm
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehnička specifikacija:

- dozvoljeno opterećenje 200 kg
- koeficijent prolaza toplote poklopca U = 1.1 W/m²K
- debljina izolacije 3 cm
- debljina poklopca 3.6 cm
- potpuno sastavljene i spremne za brzu ugradnju u plafon
- Garancija: 3 godine

STRANA 34 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LML LUX

Ljestve LML standardno su opremljene mehanizmom za rasterećenje ljestava, pa se njima može potpuno rukovati šipkom za otvaranje (otvaranje i zatvaranje poklopca, rasklapanje ljestava).

DIMENZIJE TAVANSKIH LJESTAVA LML LUX

Dimenzije otvora u plafonu [cm]	AxB	60x120	70x120	70x130	70x140	86x130	92x130	60x130	70x130	70x140	86x130	92x130
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	280	305	305	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	233	233	233	233	233	233	256	256	256	256	256
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	205	205	205	205	205	205	230	230	230	230	230
Spoljne dimenzije kutije [cm]		59.6 x 118.6	68.6 x 118.6	68.6 x 128.6	68.6 x 138.6	84.6 x 128.6	90.6 x 128.6	59.6 x 128.6	68.6 x 128.6	68.6 x 138.6	84.6 x 128.6	90.6 x 128.6
Spoljne dimenzije kutije sa arhitrav oblogom [cm]		63.6 x 122.6	72.6 x 122.6	72.6 x 132.6	72.6 x 142.6	88.6 x 132.6	94.6 x 132.6	63.6 x 132.6	72.6 x 132.6	72.6 x 142.6	88.6 x 132.6	94.6 x 132.6
Unutrašnje dimenzije kutije [cm]		54.7 x 113.7	63.7 x 113.7	63.7 x 123.7	63.7 x 133.7	79.7 x 123.7	85.7 x 123.7	54.7 x 123.7	63.7 x 123.7	63.7 x 133.7	79.7 x 123.7	85.7 x 123.7
Visina sklopljenih ljestava [cm]	K	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
Prostor za rasklapanje [cm]	R	167	167	167	167	167	167	178	178	178	178	178
Rastojanje nakon rasklapanja ljestava [cm]	C	120	120	120	120	120	120	130	130	130	130	130
Visina kutije [cm]		31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5

PARAMETRI LJESTAVA

Dužina prečke [cm]	E	35	35	35	35	35	35	35	35	35	35	35
Širina prečke [cm]		13	13	13	13	13	13	13	13	13	13	13
Razmak između prečki [cm]		25	25	25	25	25	25	25	25	25	25	25

* Za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu.

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		60x120	70x120	70x130	70x140	86x130	92x130	60x130	70x130	70x140	86x130	92x130
Visina prostorije [cm]	H	280	280	280	280	280	280	305	305	305	305	305
Oznaka		862401	862411	862412	862413	862496	862498	862451	862453	862454	862497	862499

Ljestve su dostupne samo u gore prikazanim dimenzijama.



STRANA 35 ORIGINALA

METALNE TAVANSKE LJESTVE

METALNE TAVANSKE LJESTVE SA SKLOPIVIM SEKCIJAMA

LMP

- U=1.1 W/m²K (poklopac)
- STANDARD EN 14975

Tavanske ljestve LMP nove generacije omogućavaju pristup tavanskom prostoru čak i u prostorijama sa veoma visokim plafonom (od 300 do 366 cm). Sistem rasterećenja ugrađen u ljestve omogućava udobno rukovanje uz maksimalan komfor i bezbjednost upotrebe.

Mali razmak između posljednje prečke i poda tavana povećava udobnost upotrebe.

Izolovani poklopac, bijel sa obje strane, debljine 3.6 cm, opremljen zasunom

Dodatna bezbjednost zahvaljujući bravi koja sprječava nenamjerno sklapanje.

Ljestve namijenjene za ugradnju u prostorijama sa visokim plafonom.

Izolovani poklopac, obrađen u bijeloj boji sa obje strane, opremljen je i zaptivkom koja se širi. Kada je ova zaptivka izložena visokim temperaturama, ona se širi i sprječava prodor vatre kroz poklopac.

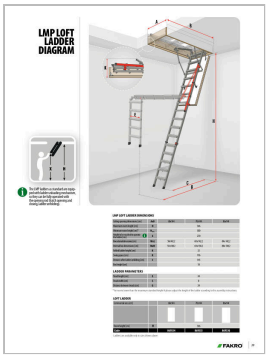
- nožice
- bijeli poklopac
- obodna zaptivka
- mehanizam za rasterećenje ljestava ugrađen u rukohvat
- neklizajuće prečke
- mogućnost ugradnje dodatnog pribora, strane 56-61
- za visoke prostorije (366 cm)

Oznake na crtežima

MAX 366cm	MAKS. 366 cm

Tehnička specifikacija:

- dozvoljeno opterećenje 200 kg
- koeficijent prolaza toplote poklopca U = 1.1 W/m²K
- debljina izolacije 3 cm
- debljina poklopca 3.6 cm
- potpuno sastavljene i spremne za brzu ugradnju u plafon
- Garancija: 3 godine



STRANA 36 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LMP

Ljestve LMP standardno su opremljene mehanizmom za rasterećenje ljestava, pa se njima može potpuno rukovati šipkom za otvaranje (otvaranje i zatvaranje poklopca, rasklapanje ljestava).

DIMENZIJE TAVANSKIH LJESTAVA LMP

Dimenzije otvora u plafonu [cm]	AxB	60x144	70x144	86x144
Maksimalna visina prostorije [cm]	H	366	366	366
Minimalna visina prostorije [cm]*	Hmin.	300	300	300
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	270	270	270
Spoljne dimenzije kutije [cm]	WxL	58 x 142.2	68 x 142.2	84 x 142.2
Unutrašnje dimenzije kutije [cm]	MxN	54 x 138.2	64 x 138.2	80 x 138.2
Visina sklopljenih ljestava [cm]	K	32	32	32
Prostor za rasklapanje [cm]	R	196	196	196
Rastojanje nakon rasklapanja ljestava [cm]	C	145	145	145
Visina kutije [cm]		18	18	18

PARAMETRI LJESTAVA

Dužina prečke [cm]	E	34	34	34
Širina prečke [cm]	S	8	8	8
Razmak između prečki [cm]	G	24	24	24

* Za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu.

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		60x144	70x144	86x144
Visina prostorije [cm]	H	366	366	366
Oznaka		869334	869335	869336

Ljestve su dostupne samo u gore prikazanim dimenzijama.



STRANA 37 ORIGINALA

METALNE TAVANSKE LJESTVE

METALNE TAVANSKE LJESTVE SA SKLOPIVIM SEKCIJAMA

NOVO!

LMF 60 VATROOTPORNE

- U=0.64 W/m²K (tavanske ljestve)
- STANDARD EN 14975
- EN 13501-2 EI1 60

LMF 60 je nova generacija vatrootpornih tavanskih ljestava sa metalnim ljestvama, koja savršeno spaja visok nivo zaštite od požara sa udobnim i bezbjednim pristupom tavanu. Upotrijebljeni materijali obezbjeđuju 60-minutnu zaštitu od prodora vatre iz prostora u kojem su tavanske ljestve ugrađene.

Mali razmak između posljednje prečke i poda tavana.

Trostruki sistem zaptivki garantuje savršenu zaptivenost.

Šarka kontroliše kretanje poklopca i prilikom otvaranja pomjera poklopac dalje od prečki ljestava. Rezultat je veći prostor i lako rukovanje.

samo kod tavanskih ljestava za visinu prostorije do 360 cm

Ljestve LMF 60 za visinu prostorije do 360 cm standardno su opremljene mehanizmom za rasterećenje ljestava, pa se njima može potpuno rukovati šipkom za otvaranje (otvaranje i zatvaranje poklopca, rasklapanje ljestava).

Poklopac, bijel sa obje strane i izolovan, opremljen je ekspandirajućom zaptivkom koja se pod uticajem toplote širi i sprječava prodor vatre u prostor u kojem nema požara.

- nožice
- poklopac vatrootporan sa jedne strane
- zaptivka x3
- rukohvat (kod tavanskih ljestava u izvedbi 280 i 305 cm)
- mehanizam za rasterećenje ljestava ugrađen u rukohvat (u izvedbi visine 360 cm)
- neklizajuće prečke
- mogućnost ugradnje dodatnog pribora, strane 56-61
- za visoke prostorije (360 cm)

Tehnička specifikacija:

- dozvoljeno opterećenje 200 kg
- koeficijent prolaza toplote tavanskih ljestava U = 0.64 W/m²K*
- klasa vatrootpornosti EI1/EI2 = 60 minuta
- debljina izolacije 7.8 cm
- debljina poklopca 8.5 cm

*interno ispitivanje proizvođača

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- Garancija: 3 godine

STRANA 38 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LMF 60

Ljestve LMF60 do visine od 360 cm standardno su opremljene mehanizmom za rasterećenje ljestava, pa se njima može potpuno rukovati šipkom za otvaranje (otvaranje i zatvaranje poklopca, rasklapanje ljestava).

DIMENZIJE TAVANSKIH LJESTAVA LMF 60

Dimenzije otvora u plafonu [cm]	AxB	60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130	60x144	70x144	86x144
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	305	305	305	360	360	360
Minimalna visina prostorije [cm]*	Hmin.	233	233	233	233	233	234	234	234	295	295	295
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	210	210	210	210	210	230	230	230	265	265	265
Spoljne dimenzije kutije [cm]		58 x 118	68 x 118	68 x 128	68 x 138	84 x 128	68 x 128	68 x 138	84 x 128	58 x 142.2	68 x 142.2	84 x 142.2
Unutrašnje dimenzije kutije [cm]		54 x 114	64 x 114	64 x 124	64 x 134	80 x 124	64 x 124	64 x 134	80 x 124	54 x 138.2	64 x 138.2	80 x 138.2
Visina sklopljenih ljestava [cm]	K	39	39	39	39	39	39	39	39	39	39	39
Prostor za rasklapanje [cm]	R	156	156	156	156	156	167	167	167	194	194	194
Rastojanje nakon rasklapanja ljestava [cm]	C	125	125	125	125	125	135	135	135	156	156	156
Uvlačenje poklopca nakon otvaranja	P	5	5	5	5	5	5	5	5	5	5	5
Visina kutije [cm]		22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Broj sekcija		3	3	3	3	3	3	3	3	3	3	3

PARAMETRI LJESTAVA

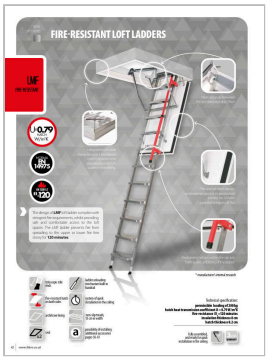
Dužina prečke [cm]	E	34	34	34	34	34	34	34	34	34	34	34
Širina prečke [cm]	S	8	8	8	8	8	8	8	8	8	8	8
Razmak između prečki [cm]	G	25	25	25	25	25	25	25	25	24	24	24

* Za prostorije niže od standardne maksimalne visine „H“ potrebno je prilagoditi dužinu ljestava u skladu sa uputstvom za ugradnju.

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130	60x144	70x144	86x144
Visina prostorije [cm]	H	280	280	280	280	280	305	305	305	360	360	360
Oznaka		869J01	869J11	869J12	869J13	869J96	869J53	869J54	869J97	869JAD	869JAE	869JAF

Ljestve su dostupne samo u gore prikazanim dimenzijama.



STRANA 39 ORIGINALA

METALNE TAVANSKE LJESTVE

VATROOTPORNE TAVANSKE LJESTVE

LMF VATROOTPORNE

- U=0.79 W/m²K (poklopac)
- NORMA EN 14975
- EN 13501-2 EI2 120

Konstrukcija tavanskih ljestava LMF ispunjava stroge zahtjeve u pogledu zaštite od požara, a istovremeno obezbjeđuje bezbjedan i udoban pristup tavanskom prostoru. Ljestve LMF sprječavaju širenje požara na gornji ili donji sprat u kojem nema požara tokom 120 minuta.

Mali razmak između posljednje prečke i poda tavana.

Sistem brze ugradnje, integrisan sa čeličnim okvirom, skraćuje vrijeme potrebno za ugradnju tavanskih ljestava u plafon.

Posebna konstrukcija poklopca i materijali upotrijebljeni u njegovoj izradi štite 120 min od prodora vatre.

Mehanizam skriven u rukohvatu pomaže pri sklapanju i rasklapanju ljestava.

- teleskopske nožice
- poklopac vatrootporan sa obje strane
- arhitrav obloga
- zaptivka x2
- mehanizam za rasterećenje ljestava ugrađen u rukohvat
- sistem brze ugradnje u plafon
- neklizajuće prečke, širine 13 cm
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehnička specifikacija:

- dozvoljeno opterećenje 200 kg
- koeficijent prolaza toplote poklopca U = 0.79 W/m²K
- vatrootpornost EI2=120 minuta
- debljina izolacije 8 cm
- debljina poklopca 8.2 cm

*interno ispitivanje proizvođača

- potpuno sastavljene i spremne za brzu ugradnju u plafon
- Garancija: 3 godine

STRANA 40 ORIGINALA

ŠEMA TAVANSKIH LJESTAVA LMF

Tavanske ljestve LMF standardno su opremljene mehanizmom za rasterećenje ljestava, pa se njima može potpuno rukovati šipkom za otvaranje (otvaranje i zatvaranje poklopca, rasklapanje ljestava).

DIMENZIJE TAVANSKIH LJESTAVA LMF

Dimenzije otvora u plafonu [cm]	AxB	60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130
Maksimalna visina prostorije [cm]	H	280	280	280	280	280	305	305	305
Minimalna visina prostorije [cm]*	Hmin.	233	233	233	233	233	256	256	256
Visina do koje treba dosegnuti za rukovanje ljestvama [cm]	X	220	220	220	220	220	235	235	235
Spoljne dimenzije kutije [cm]		59 x 118	68 x 118	68 x 128	68 x 138	84 x 128	68 x 128	68 x 138	84 x 128
Spoljne dimenzije kutije sa arhitrav oblogom [cm]		64.7 x 123.7	73.7 x 123.7	73.7 x 133.7	73.7 x 143.7	89.7 x 133.7	73.7 x 133.7	73.7 x 143.7	89.7 x 133.7
Unutrašnje dimenzije kutije [cm]		55 x 114	64 x 114	64 x 124	64 x 134	80 x 124	64 x 124	64 x 134	80 x 124
Visina sklopljenih ljestava [cm]	K	34	34	34	34	34	34	34	34
Prostor za rasklapanje [cm]	R	165	165	165	165	165	176	176	176
Rastojanje nakon rasklapanja ljestava [cm]	C	120	120	120	120	120	130	130	130
Visina kutije [cm]		16	16	16	16	16	16	16	16

PREVOD NA CRNOGORSKI JEZIK (NESLUŽBENI)
Ovo nije originalni dokument proizvođača. Mjerodavan je original, priložen iza prevoda: fakro-catalogue-loft-ladders-en.pdf.

PARAMETRI LJESTAVA

Dužina prečke [cm]	E	35	35	35	35	35	35	35	35
Širina prečke [cm]		13	13	13	13	13	13	13	13
Razmak između prečki [cm]		25	25	25	25	25	25	25	25

* Za prostorije niže od maksimalne standardne visine H prilagodite dužinu ljestava prema uputstvu za montažu.

TAVANSKE LJESTVE

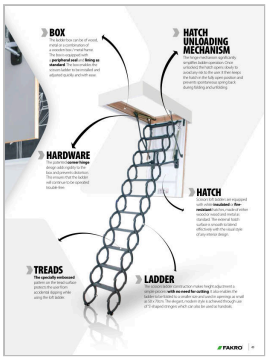
Komercijalne dimenzije [cm]		**60x120**	**70x120**	**70x130**	**70x140**	**86x130**	**70x130**	**70x140**	**86x130**
Visina prostorije [cm]	H	280	280	280	280	280	305	305	305
Oznaka		862501	862511	862512	862513	862596	862553	862554	862597

Ljestve su dostupne samo u gore prikazanim dimenzijama.



STRANA 41 ORIGINALA

MAKAZASTE TAVANSKE LJESTVE



STRANA 42 ORIGINALA

KUTIJA

Kutija ljestava može biti drvena, metalna ili kombinacija drvene kutije i metalnog okvira. Kutija je standardno opremljena **obimnom zaptivkom** i **oblogom**. Zahvaljujući kutiji, makazaste ljestve mogu se brzo i lako ugraditi i podesiti.

MEHANIZAM ZA RASTEREĆENJE POKLOPCA

Mehanizam sa šarkama znatno olakšava rukovanje ljestvama. Nakon otključavanja poklopac se otvara polako kako bi se izbjegao svaki rizik za korisnika. Zatim drži poklopac u potpuno otvorenom položaju i sprječava njegovo spontano vraćanje pri sklapanju i rasklapanju.

OKOV

Patentirano rješenje **ugaone šarke** daje kutiji dodatnu krutost i sprječava deformaciju. Time se obezbjeđuje da ljestve i dalje rade bez smetnji.

POKLOPAC

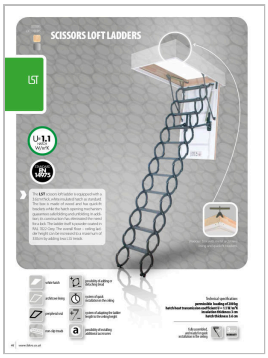
Makazaste tavanske ljestve standardno su opremljene bijelim **izolovanim** ili **vatrootpornim** poklopcima, izrađenim od drveta ili od drveta i metala. Spoljna površina poklopca je glatka, pa se skladno uklapa u izgled svakog enterijera.

PREČKE

Posebno reljefni uzorak na površini prečke štiti korisnika od slučajnog proklizavanja pri upotrebi tavanskih ljestava.

LJESTVE

Makazasta konstrukcija ljestava omogućava jednostavno podešavanje visine **bez potrebe za rezanjem**. Takođe omogućava da se ljestve sklope na manju dimenziju i koriste u otvorima veličine od samo 50 x 70 cm. Elegantan, moderan izgled postignut je bočnim nosačima u obliku slova 'S', koji se mogu koristiti i kao rukohvat.



STRANA 43 ORIGINALA

MAKAZASTE TAVANSKE LJESTVE

LST

U = 1.1 W/m²K (poklopac)
STANDARD EN 14975

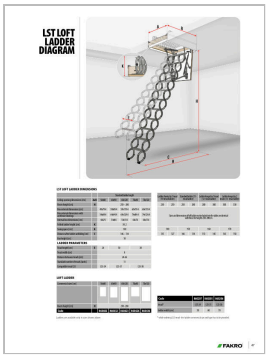
Makazaste tavanske ljestve **LST** standardno su opremljene bijelim izolovanim poklopcem debljine 3.6 cm. Kutija je drvena i ima nosače za brzu montažu, a mehanizam za otvaranje poklopca garantuje bezbjedno sklapanje i rasklapanje. Osim toga, zahvaljujući konstrukciji nije potrebna brava. Same ljestve su bojene postupkom plastifikacije u boji RAL 7022 Grey. Ukupna visina ljestava od poda do plafona može se povećati do najviše 330 cm dodavanjem dvije prečke LSS.

Drvena kutija sa metalnom arhitrav oblogom i nosačima za brzu montažu.

- bijeli poklopac
- arhitrav obloga
- obimna zaptivka
- protivklizne prečke
- mogućnost dodavanja ili skidanja prečke
- sistem za brzu ugradnju u plafon
- sistem za prilagođavanje dužine ljestava visini plafona
- mogućnost ugradnje dodatnog pribora

Tehnička specifikacija:

- dozvoljeno opterećenje od 200 kg
- koeficijent prolaza toplote poklopca U = 1.1 W/m²K
- debljina izolacije 3 cm
- debljina poklopca 3.6 cm
- potpuno sklopljene i spremne za brzu ugradnju u plafon
- 3 godine GARANCIJE



STRANA 44 ORIGINALA

DIJAGRAM TAVANSKIH LJESTAVA LST

DIMENZIJE TAVANSKIH LJESTAVA LST

Standardna dužina ljestava

Dimenzije otvora u plafonu [cm]	AxB	50x80	60x90	60x120	70x80	70x120
Visina prostorije [cm]	H	250 – 280	250 – 280	250 – 280	250 – 280	250 – 280
Spoljne dimenzije kutije [cm]		49x79.4	59x89.4	59x119.4	69x79.4	69x119.4
Spoljne dimenzije kutije sa arhitrav oblogom		54x84.4	64x94.4	64x124.4	74x84.4	74x124.4
Unutrašnje dimenzije kutije [cm]		44x74	54x84	54x114	64x74	64x114
Visina sklopljenih ljestava [cm]	K	38.2	38.2	38.2	38.2	38.2
Prostor za rasklapanje [cm]	R	150	150	150	150	150
Rastojanje nakon rasklapanja ljestava [cm]	C	146 – 134	146 – 134	146 – 134	146 – 134	146 – 134
Visina kutije [cm]		18	18	18	18	18
PARAMETRI LJESTAVA						
Dužina prečke [cm]	E	24	30	30	38	38
Širina prečke [cm]		8	8	8	8	8
Razmak između prečki [cm]		24-26	24-26	24-26	24-26	24-26
Standardni broj prečki [kom.]		11	11	11	11	11
Odgovarajuća prečka LSS		LSS-24	LSS-31	LSS-31	LSS-38	LSS-38

	Ljestve kraće za 1 prečku (ljestve sa 10 prečki)	Standardne ljestve (ljestve sa 11 prečki)	Ljestve duže za 1 prečku (ljestve sa 12 prečki)	Ljestve duže za 2 prečke (ljestve sa 13 prečki)
Visina prostorije [cm]	230 / 250	250 / 280	280 / 300	300 / 330
Prostor za rasklapanje [cm]	140	150	160	170
Rastojanje nakon rasklapanja ljestava [cm]	135 / 127	146 / 134	153 / 145	163 / 150

Dimenzije tavanskih ljestava koje nijesu obuhvaćene tabelom iste su kao za visine 250-280 cm.

TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		50x80	60x90	60x120	70x80	70x120
Visina prostorije [cm]	H	250 - 280	250 - 280	250 - 280	250 - 280	250 - 280
Oznaka		860402	860432	860423	860426	860436

Ljestve su dostupne samo u gore prikazanim dimenzijama.

Oznaka	860207	860205	860206
prečka*	LSS-24	LSS-31	LSS-38
širina ljestava [cm]	50	60	70

* Pri naručivanju prečke LSS potrebno je navesti komercijalnu dimenziju i tip ljestava.



STRANA 45 ORIGINALA

METALNE MAKAZASTE TAVANSKE LJESTVE

MAKAZASTE TAVANSKE LJESTVE

LSF
VATROOTPORNE
U = 1.8 W/m²K (poklopac)
STANDARD EN 14975
EN 13501-2 EI2 60

Vatrootporne tavanske ljestve **LSF** imaju vatrootpornost 60 minuta i djeluju kao barijera koja sprječava širenje plamena. Ukupna visina ljestava od poda do plafona može se povećati do najviše 320 cm dodavanjem jedne prečke LSS.

Poklopac tavanskih ljestava opremljen je zaptivkom koja se širi: pod uticajem visoke temperature ona povećava svoju zapreminu i sprječava širenje požara na sprat koji nije zahvaćen požarom.

*interno istraživanje proizvođača

- vatrootporni poklopac sa jedne strane
- arhitrav obloga
- protivklizne prečke
- mogućnost dodavanja ili skidanja prečke
- sistem za brzu ugradnju u plafon
- sistem za prilagođavanje dužine ljestava visini plafona
- mogućnost ugradnje dodatnog pribora, strane 56-61

Tehnička specifikacija:

- dozvoljeno opterećenje od 200 kg
- vatrootpornost EI2=60 minuta
- debljina izolacije 3 cm
- debljina poklopca 5.6 cm
- potpuno sklopljene i spremne za brzu ugradnju u plafon
- 3 godine GARANCIJE

PREVOD NA CRNOGORSKI JEZIK (NESLUŽBENI)
Ovo nije originalni dokument proizvođača. Mjerodavan je original, priložen iza prevoda: fakro-catalogue-loft-ladders-en.pdf.

DIJAGRAM TAVANSKIH LJESTAVA LSF

DIMENZIJE TAVANSKIH LJESTAVA LSF

Standardna dužina ljestava

Dimenzije otvora u plafonu [cm]	AxB	50x70	60x90	60x120	70x80	70x90	70x110	70x120
Visina prostorije [cm]	H	270 – 300	270 – 300	270 – 300	270 – 300	270 – 300	270 – 300	270 – 300
Spoljne dimenzije kutije [cm]		48x68.5	58x88.5	58x118.5	68x78.5	68x88.5	68x108.5	68x118.5
Spoljne dimenzije kutije sa arhitrav oblogom		54.8x75	64.8x95	64.8x125	74.8x85	74.8x95	74.8x115	74.8x125
Unutrašnje dimenzije kutije [cm]		44.8x64.8	54.8x84.8	54.8x114.8	64.8x74.8	64.8x84.8	64.8x104.8	64.8x114.8
Visina sklopljenih ljestava [cm]	K	46	46	46	46	46	46	46
Prostor za rasklapanje [cm]	R	170 – 180	170 – 180	170 – 180	170 – 180	170 – 180	170 – 180	170 – 180
Rastojanje nakon rasklapanja ljestava [cm]	C	165 – 130	165 – 130	165 – 130	165 – 130	165 – 130	165 – 130	165 – 130
Visina kutije [cm]		14	14	14	14	14	14	14
PARAMETRI LJESTAVA								
Dužina prečke [cm]	E	30	32	32	40	40	40	40
Širina prečke [cm]		8	8	8	8	8	8	8
Razmak između prečki [cm]		25 – 30	25 – 30	25 – 30	25 – 30	25 – 30	25 – 30	25 – 30
Standardni broj prečki [kom.]		10	10	10	10	10	10	10
Odgovarajuća prečka LSS		LSS-30	LSS-32	LSS-32	LSS-40	LSS-40	LSS-40	LSS-40

	Ljestve kraće za 1 prečku (ljestve sa 9 prečki)	Standardne ljestve (ljestve sa 10 prečki)	Ljestve duže za 1 prečku (ljestve sa 11 prečki)
Visina prostorije [cm]	240 / 270	270 / 300	300 / 320
Prostor za rasklapanje [cm]	165 / 165	170 / 180	185 / 210
Rastojanje nakon rasklapanja ljestava [cm]	100 / 140	165 / 130	120 / 140

Dimenzije tavanskih ljestava koje nijesu obuhvaćene tabelom iste su kao za visine 250-280 cm.

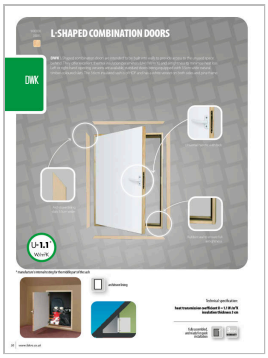
TAVANSKE LJESTVE

Komercijalne dimenzije [cm]		50x70	60x90	60x120	70x80	70x90	70x110	70x120
Visina prostorije [cm]	H	270 - 300	270 - 300	270 - 300	270 - 300	270 - 300	270 - 300	270 - 300
Oznaka		860101	860123	860126	860132	860133	860135	860136

Ljestve su dostupne samo u gore prikazanim dimenzijama.

Oznaka	860201	860202	860203
prečka*	LSS-30	LSS-32	LSS-40
širina ljestava [cm]	50	60	70

* Pri naručivanju prečke LSS potrebno je navesti komercijalnu dimenziju i tip ljestava.



STRANA 47 ORIGINALA

DRVENA VRATA

KOMBINOVANA VRATA L-OBLIKA

DWK

U = 1.1* W/m²K

Kombinovana vrata **DWK** L-oblika namijenjena su za ugradnju u zidove, kako bi omogućila pristup neiskorišćenom prostoru iza njih. Imaju odlične parametre toplotne izolacije (U=1.1 W/m²K) i vazdušnu nepropusnost, čime se gubici toplote svode na najmanju mjeru. Dostupne su verzije sa otvaranjem na lijevu ili desnu stranu, a standardna vrata opremljena su letvicama širine 3.5 cm u boji prirodnog drveta. Izolovano krilo debljine 3.6 cm izrađeno je od HDF-a, sa bijelim furnirom sa obje strane i okvirom od bora.

- Univerzalna ručka sa bravom.
- Letvice arhitrav obloge širine 3.5 cm.
- Gumena zaptivka obezbjeđuje potpunu vazdušnu nepropusnost.

* interno ispitivanje proizvođača za središnji dio krila

- arhitrav obloga

Tehnička specifikacija:

- koeficijent prolaza toplote U = 1.1 W/m²K
- debljina izolacije 3 cm
- potpuno sklopljena i spremna za brzu ugradnju
- 3 godine GARANCIJE

STRANA 48 ORIGINALA

DIJAGRAM VRATA DWK

DIMENZIJE VRATA L-OBLIKA DWK

Dimenzije otvora [cm]	AxB	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Dimenzije vrata [cm]	WxL	53.4 x 78.4	58.4 x 78.4	58.4 x 98.4	58.4 x 108.4	68.4 x 88.4	68.4 x 98.4	68.4 x 108.4
Unutrašnje dimenzije rama [cm]	MxN	48 x 73	53 x 73	53 x 93	53 x 103	63 x 83	63 x 93	63 x 103
Širina rama [cm]	S	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Debljina rama [cm]	Z	2.7	2.7	2.7	2.7	2.7	2.7	2.7

VRATA L-OBLIKA

Komercijalne dimenzije [cm]	55 x 80	60 x 80	60 x 100	60 x 110	70 x 90	70 x 100	70 x 110
Oznaka	869900	869922	869924	869925	869933	869934	869935

Vrata DWK dostupna su samo u gore prikazanim dimenzijama.



STRANA 49 ORIGINALA

DRVENA VRATA

VISOKOENERGETSKI EFIKASNA DRVENA VRATA

DWT
VISOKOENERGETSKI EFIKASNA
U = 0.6* W/m²K
KLASA 4 (**) EN12207

Visokoenergetski efikasna vrata **DWT** L-oblika projektovana su prvenstveno za ugradnju u zidove L-oblika, omogućavaju pristup prostoriji iza njih i istovremeno predstavljaju odličnu barijeru protiv gubitka toplote (koeficijent prolaza toplote U = 0.6 W / m²K *) i garantuju visok stepen nepropusnosti. Vrata se mogu ugraditi na desnu ili lijevu stranu. Standardno su opremljena drvenom arhitrav oblogom u prirodnoj boji.

- Univerzalna ručka sa bravom.
- Arhitrav obloga, širine 3.5 cm.
- Gumena zaptivka obezbjeđuje potpunu vazdušnu nepropusnost.
- Krilo vrata debljine 6.6 cm, bijelo sa obje strane.

*interno ispitivanje proizvođača za krilo vrata

** interno istraživanje proizvođača

- arhitrav obloga

Tehnička specifikacija:

- koeficijent prolaza toplote U = 0.6 W/m²K*
- debljina izolacije 6 cm
- potpuno sklopljena i spremna za brzu ugradnju
- 3 godine GARANCIJE

STRANA 50 ORIGINALA

DIJAGRAM VRATA DWT

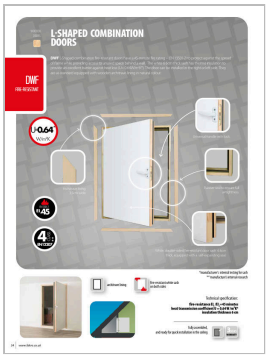
DIMENZIJE VRATA L-OBLIKA DWT

Dimenzije otvora [cm]	AxB	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Dimenzije vrata [cm]	WxL	53.4 x 78.4	58.4 x 78.4	58.4 x 98.4	58.4 x 108.4	68.4 x 88.4	68.4 x 98.4	68.4 x 108.4
Unutrašnje dimenzije rama [cm]	MxN	48 x 73	53 x 73	53 x 93	53 x 103	63 x 83	63 x 93	63 x 103
Širina rama [cm]	S	9	9	9	9	9	9	9
Debljina rama [cm]	Z	2.7	2.7	2.7	2.7	2.7	2.7	2.7

VRATA L-OBLIKA

Komercijalne dimenzije [cm]	55 x 80	60 x 80	60 x 100	60 x 110	70 x 90	70 x 100	70 x 110
Oznaka	869600	869622	869624	869625	869633	869634	869635

Vrata DWT dostupna su samo u gore prikazanim dimenzijama.



STRANA 51 ORIGINALA

DRVENA VRATA

KOMBINOVANA VRATA L-OBLIKA

DWF

VATROOTPORNA
U = 0.64* W/m²K
EN 13501-2 EI 45
KLASA 4 (**) EN12207

Kombinovana vatrootporna vrata **DWF** L-oblika imaju vatrootpornost 45 minuta – (EN 13501-2), što štiti od širenja plamena, a istovremeno omogućavaju pristup neiskorišćenom prostoru iza zida. Bijelo krilo debljine 6.6 cm ima toplotnu izolaciju koja predstavlja odličnu barijeru protiv gubitka toplote (U= 0.64 W/m²K*). Vrata se mogu ugraditi na desnu ili lijevu stranu. Standardno su opremljena drvenom arhitrav oblogom u prirodnoj boji.

- Arhitrav obloga širine 3.5 cm
- Univerzalna ručka sa bravom.
- Gumena zaptivka obezbjeđuje potpunu vazdušnu nepropusnost.
- Bijelo obostrano vatrootporno krilo vrata debljine 6.6 cm, opremljeno zaptivkom koja se sama širi.

*interno ispitivanje proizvođača za krilo vrata

** interno istraživanje proizvođača

- arhitrav obloga
- vatrootporno bijelo krilo sa obje strane

Tehnička specifikacija:

- vatrootpornost EI1/EI2=45 minuta
- koeficijent prolaza toplote U = 0.64 W/m²K*
- debljina izolacije 6 cm
- potpuno sklopljena i spremna za brzu ugradnju u plafon
- 3 godine GARANCIJE

STRANA 52 ORIGINALA

DIJAGRAM VRATA DWF

DIMENZIJE VRATA L-OBLIKA DWF

Dimenzije otvora [cm]	AxB	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Dimenzije vrata [cm]	WxL	53.4 x 78.4	58.4 x 78.4	58.4 x 98.4	58.4 x 108.4	68.4 x 88.4	68.4 x 98.4	68.4 x 108.4
Unutrašnje dimenzije rama [cm]	MxN	48 x 73	53 x 73	53 x 93	53 x 103	63 x 83	63 x 93	63 x 103
Širina rama [cm]	S	9	9	9	9	9	9	9
Debljina rama [cm]	Z	2.7	2.7	2.7	2.7	2.7	2.7	2.7

VRATA L-OBLIKA

Komercijalne dimenzije [cm]	55 x 80	60 x 80	60 x 100	60 x 110	70 x 90	70 x 100	70 x 110
Oznaka	869800	869822	869824	869825	869833	869834	869835

Vrata DWF dostupna su samo u gore prikazanim dimenzijama.



STRANA 53 ORIGINALA

PRIBOR ZA TAVANSKE LJESTVE

OGRADA LXB-P

NOVO!

UNIVERZALNA VELIČINA
bez potrebe za rezanjem

Ograda za potkrovlje izrađena je od borovog drveta, štiti otvor u plafonu u potkrovlju i olakšava i čini bezbjednijim silazak niz ljestve. Konstrukcija ograde i sistem pričvršćivanja za pod potkrovlja posebnim metalnim držačima povećavaju njenu krutost i time poboljšavaju udobnost upotrebe. Ograda odgovara svim veličinama tavanskih ljestava.

Ograda LXB-P	Dostupno za tavanske ljestve: sve tavanske ljestve FAKRO
Standardne dimenzije [cm]	92 x 140
Nestandardne dimenzije [cm]	za tavanske ljestve manje od 92x140 cm koristi se ograda standardne veličine
Visina ograde [cm]	110

Oznaka 66133

RUKOHVAT LXH-A

Rukohvat LXH-A povećava udobnost i bezbjednost pristupa potkrovlju. Montira se na pod pored otvora u plafonu i olakšava svako penjanje i silaženje u potkrovlje. Namijenjen je za ugradnju na desnoj i na lijevoj strani otvora.

Oznaka 869287*

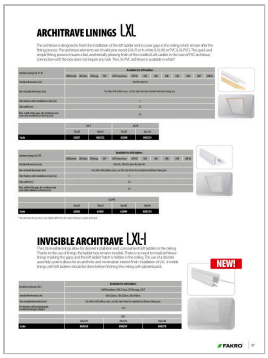
*dostupno u drugoj polovini 2021. godine

MONTAŽNI NOSAČI LXK

Montažni nosači olakšavaju ugradnju tavanskih ljestava u plafon. Ugrađuju se u uglove kutije, povećavaju njenu ukupnu krutost i obezbjeđuju jednake dužine dijagonala. Zavrtnji se uvrću u nosače, što garantuje brzo i tačno niveliranje tavanskih ljestava u plafonu.

Montažni nosači LXK: ugradnja u plafon, najveća debljina [cm]	Dostupno za tavanske ljestve
35	LWK Komfort, LWL Extra, LDK, LMS, LMK
39	LTK Energy, LMP
43	LWT, LWT Passive House, LWF 60, LMF 60

Oznaka 62085



STRANA 54 ORIGINALA

ARHITRAV OBLOGE LXL

Arhitrav obloga služi za završnu obradu ugradnje tavanskih ljestava i za prekrivanje procjepa u plafonu koji ostanu nakon montaže. Elementi obloge izrađeni su od masivnog borovog drveta (LXL-P), u bijeloj boji (LXL-W) ili od PVC-a (LXL-PVC). Ovaj brz i jednostavan postupak montaže obezbjeđuje brzu i estetski privlačnu završnu obradu ugrađenih tavanskih ljestava. Kod PVC obloge spajanje sa kutijom ne zahtijeva nikakve eksere. Obloga LXL-PVC dostupna je u bijeloj boji*.

Arhitrav obloge LXL-P/-W	Dostupno za tavanske ljestve: LWK Komfort, LWL Extra, LTK Energy, LWT, LWT Passive House, LWF 60, LDK, LMS, LMK, LMS, LMK, LMP, LMF 60
Standardne dimenzije [cm]	70x140, 86x144
Nestandardne dimenzije [cm]	Za ostale dimenzije tavanskih ljestava letvice se odsijecaju od arhitrav obloge standardne veličine.
Debljina letvica nakon ugradnje na kutiju [cm]	1
Širina letvica [cm]	3.5
Najveća širina procjepa koje letvice obloge prekrivaju nakon ugradnje na kutiju [cm]	2.5

	LXL-P	LXL-P	LXL-W	LXL-W
	70x140	86x144	70x140	86x144
Oznaka	62087	80AZ52	62088	80AZ54

Arhitrav obloge LXL-PVC	**Dostupno za tavanske ljestve: LWK Komfort, LWL Extra, LTK Energy, LWT, LWT Passive House, LWF 60, LDK, LMS, LMK, LMP, LMF 60**
Standardne dimenzije [cm]	60x120, 70x120, 86x140, 86x144
Nestandardne dimenzije [cm]	Za ostale dimenzije tavanskih ljestava letvice se odsijecaju od arhitrav obloge standardne veličine.
Debljina letvica nakon ugradnje na kutiju [cm]	1
Širina letvica [cm]	3.3
Najveća širina procjepa koje letvice obloge prekrivaju nakon ugradnje na kutiju [cm]	2.4

	LXL-PVC	**LXL-PVC**	**LXL-PVC**	**LXL-PVC**
	60x120	70x120	86x140	86x144
Oznaka	62082	62083	62084	80AZ 56

* boja arhitrav obloge može se neznatno razlikovati od boje obloge u uglovima i poklopca

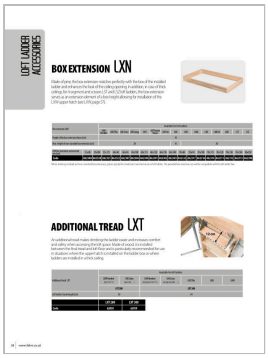
NEVIDLJIVA ARHITRAV OBLOGA LXL-I

NOVO!

Obloge LXL-Invisible omogućavaju diskretnu ugradnju i skrivanje tavanskih ljestava u plafonu. Zahvaljujući upotrebi obloga, kutija ljestava ostaje nevidljiva. Nije potrebno postavljati arhitrav obloge koje maskiraju procjepe, a poklopac tavanskih ljestava skriven je u plafonu. Primjena diskretnog montažnog sistema omogućava estetsku i minimalističku završnu obradu enterijera. Ugradnju obloga LXL-Invisible sa tavanskim ljestvama treba obaviti prije završne obrade plafona gipsanim pločama.

Nevidljiva arhitrav obloga LXL-I	**Dostupno za tavanske ljestve: LWK Komfort, LWL Extra, LTK Energy, LWT**
Standardne dimenzije [cm]	60x120cm, 70x120cm, 86x140cm
Nestandardne dimenzije [cm]	Za ostale dimenzije tavanskih ljestava letvice se odsijecaju od arhitrav obloge standardne veličine.
Debljina gipsanih ploča na koje je obloga prilagođena	12.5

	LXL-I	**LXL-I**	**LXL-I**
	60x120	70x120	86x140
Oznaka	80AZ68	80AZ69	80AZ70



STRANA 55 ORIGINALA

PRIBOR ZA TAVANSKE LJESTVE

PRODUŽETAK KUTIJE LXN

Produžetak kutije, izrađen od bora, savršeno se uklapa u kutiju ugrađenih ljestava i poboljšava izgled otvora u plafonu. Pored toga, kod debelih plafona, za 4-sekcijske ljestve i makazaste tavanske ljestve LST i LSZ, produžetak kutije služi kao element za povećanje visine kutije, što omogućava ugradnju gornjeg poklopca LXW (vidi LXW, strana 57).

Produžetak kutije LXN	**Dostupno za tavanske ljestve:** **LWK Komfort, LWZ Plus, LWL Extra, LTK Energy, LWT, LWT Passive House, LWF 60, LDK, LMS, LMK, LML, LMF 60, LMF, LST, LSZ**
Visina okvira produžetka kutije [cm]	10
Najveća visina nestandardnog produžetka kutije [cm]	20 (za LDK: 16)

Komercijalna dimenzija produžetka kutije LXN [cm]	**Oznaka**
51 x 80	862300
55x100	862320
55 x 111	862321
60 x 90	862322
60 x 94	862307
60 x 100	862306
60 x 111	862304
60 x 120	862301
60 x 130	862302
60 x 140	862303
70 x 80	862332
70 x 94	862317
70 x 100	862316
70 x 111	862314
70 x 120	862311
70 x 130	862312
70 x 140	862313
86x130	862396

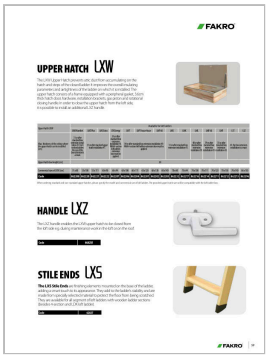
Pri naručivanju standardnih i nestandardnih produžetaka kutije navedite model i komercijalnu dimenziju tavanskih ljestava. Isporučeni produžetak kutije biće usklađen sa kutijom tavanskih ljestava.

DODATNA PREČKA LXT

Dodatna prečka olakšava penjanje uz ljestve i povećava udobnost i bezbjednost pri pristupu potkrovlju. Izrađena je od drveta, ugrađuje se između posljednje prečke i poda potkrovlja, a posebno se preporučuje u slučajevima kada je gornji poklopac ugrađen na kutiju ljestava ili kada su ljestve ugrađene u debeo plafon.

Mjera označena na fotografiji: 12 cm

Dodatna prečka LXT	Dostupno za tavanske ljestve	Dužina prečke tavanskih ljestava [cm]	Oznaka
LXT 280	LWK Komfort (veličina 55x111), LWL Extra (veličine 60x...)	30	62058
LXT 300	LWK Komfort (osim veličine 55x111), LWL Extra (osim veličina 60x...), LWZ Plus, LMS, LMK	34	62059



STRANA 56 ORIGINALA

GORNJI POKLOPAC LXW

Gornji poklopac LXW sprječava nakupljanje prašine iz potkrovlja na poklopcu i prečkama zatvorenih ljestava. Poboljšava ukupne izolacione parametre i vazdušnu nepropusnost ljestava na koje se ugrađuje. Gornji poklopac se sastoji od okvira opremljenog obimnom zaptivkom, krila poklopca debljine 3.6 cm, okova, montažnih nosača, gasnog klipa i obrtne ručke za zatvaranje. Da bi se gornji poklopac mogao zatvoriti sa strane potkrovlja, moguće je ugraditi dodatnu ručku LXZ.

Gornji poklopac LXW: tavanske ljestve	Najveća debljina plafona u koji se gornji poklopac može ugraditi [cm]
LWK Komfort	31 ili nakon ugradnje standardnog produžetka kutije 41. Kod ljestava sa 4 sekcije upotreba produžetka kutije je obavezna.
LWZ Plus, LWL Extra	31 ili nakon ugradnje standardnog gornjeg poklopca 41.
LTK Energy	35 ili nakon ugradnje standardnog produžetka kutije 45. Kod tavanskih ljestava sa 4 sekcije mora se primijeniti produžetak kutije.
LWT, LWT Passive House, LWF 60	39 ili nakon ugradnje standardnog produžetka kutije 49. Kod tavanskih ljestava sa 4 sekcije mora se primijeniti produžetak kutije.
LMS, LMK	31 ili nakon ugradnje standardnog produžetka kutije 41.
LML	48 ili nakon ugradnje standardnog produžetka kutije 58.
LMF 60	39 ili nakon ugradnje standardnog produžetka kutije 49.
LMF	33 ili nakon ugradnje standardnog produžetka kutije 43.
LST, LSZ	41, ugradnja produžetka kutije je obavezna

Visina kutije gornjeg poklopca [cm] 20

Komercijalna dimenzija LXW [cm]	Oznaka
51 x 80	862200

Komercijalna dimenzija LXW [cm]	Oznaka
55x 100	862220
55 x 111	862221
60 x 90	862222
60 x 94	862207
60 x 100	862206
60 x 111	862204
60 x 120	862201
60 x 130	862202
60 x 140	862203
70 x 80	862232
70 x 94	862217
70 x 100	862216
70 x 111	862214
70 x 120	862211
70 x 130	862212
70 x 140	862213
86 x 130	862296

Pri naručivanju standardnih i nestandardnih gornjih poklopaca navedite model i komercijalnu dimenziju tavanskih ljestava. Isporučena dimenzija gornjeg poklopca biće usklađena sa kutijom tavanskih ljestava.

RUČKA LXZ

Ručka LXZ omogućava da se gornji poklopac LXW zatvori sa strane potkrovlja, npr. tokom radova na održavanju u potkrovlju ili na krovu.

Oznaka 80AZ01

NOŽICE LXS

Nožice LXS su završni elementi koji se montiraju na dno ljestava i daju im otmjen izgled. Povećavaju stabilnost ljestava i izrađene su od posebno odabranog materijala koji štiti pod od ogrebotina. Dostupne su za sve tavanske ljestve sa drvenim sekcijama (osim 4-sekcijskih ljestava i tavanskih ljestava LDK).

Oznaka 62027



STRANA 57 ORIGINALA

MEHANIZAM ZA RASTEREĆENJE LXM

NOVO!

Mehanizam za rasterećenje pomaže pri sklapanju i rasklapanju ljestava i tako povećava udobnost i bezbjednost upotrebe tavanskih ljestava. Mehanizam LXM 3 namijenjen je za drvene tavanske ljestve sa 3 sekcije, a mehanizam LXM 4 za drvene tavanske ljestve sa 4 sekcije. Mehanizam LXM-M namijenjen je za tavanske ljestve sa metalnim sekcijama. Mehanizam LXM može se ugraditi na desnu ili lijevu stranu ljestava i montira se na suprotnoj strani od rukohvata LXH. Tabela kompatibilnosti nalazi se ispod.

Mehanizam za rasterećenje LXM	LXM 3 (3-sekcijski)	LXM 4 (4-sekcijski)	LXM-M
Dostupno za tavanske ljestve	LWS Plus, LWK Plus, LWZ Plus, LTK Energy, LWT, LWT PH, LWF60	LWS Plus, LWK Plus, LWZ Plus, LTK Energy, LWT, LWT PH, LWF60	LMS, LMK, LMF60 do visine 280
Oznaka	869373	869374	869297
Minimalna širina ljestava [cm]	60	60	60
Minimalna visina	260	260	Minimalna visina proizlazi iz tabele dimenzija ljestava

RUKOHVAT LXH

Metalni rukohvat LXH olakšava penjanje uz ljestve i povećava bezbjednost i udobnost korisnika. Montira se na gornju sekciju ljestava.

Rukohvat LXH (montira se na gornju sekciju ljestava)	Dostupno za tavanske ljestve	Oznaka
LXH *50/13	LWK Komfort, LWZ Plus, LTK Energy, LWT, LWT Passive House, LWF 60, LMS, LMK, LMF60	80AZ24
LXH *75/13	LWK Komfort, LWZ Plus, LTK Energy, LWT, LWT Passive House, LWF 60, LMS, LMK, LMF60	80AZ18
LXH 75/16	LDK	62065

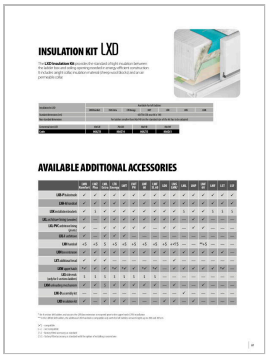
* Rukohvati LXH 50/13 ugrađuju se na ljestve sa kutijama dužine do 100 cm; rukohvati LXH 75/13 na ljestve sa kutijama dužine preko 100 cm.

Kod tavanskih ljestava LMF 60 dodatni rukohvat LXH odgovara samo izvedbama ljestava visine do 280 i 305 cm.

MONTAŽNI KOMPLET LXK-D

Montažni komplet LXK-D pojednostavljuje i poboljšava ugradnju tavanskih ljestava LML u plafon u koji je već ugrađen poklopac DRL. Ugradnja je moguća u plafone debljine najmanje 38 cm, a najviše 50 cm.

Oznaka 80AZ41


INSULATION KIT LXD

AVAILABLE ADDITIONAL ACCESSORIES

STRANA 58 ORIGINALA

KOMPLET ZA IZOLACIJU LXD

Komplet za izolaciju LXD obezbjeđuje standard zaptivene izolacije između kutije ljestava i otvora u plafonu, potreban u energetski efikasnoj gradnji. Obuhvata: vazdušno nepropusnu manžetnu, izolacioni materijal (blokove ovčije vune) i manžetnu propusnu za vazduh.

Komplet za ugradnju LXD	**Dostupno za tavanske ljestve: LWK Komfort, LWL Extra, LTK Energy, LWT, LDK, LMS, LMK**
Standardne dimenzije [cm]	60/70x120 i 86 x 140
Nestandardne dimenzije	Za ljestve manje od 86x140 cm standardna veličina kompleta mora se prilagoditi.

Komercijalne dimenzije LXD	**60x120**	**70x120**	**86x140**	**86x144**
Oznaka	80AZ13	80AZ14	80AZ15	80AZ61

DOSTUPAN DODATNI PRIBOR

Tavanske ljestve u zaglavlju originalne tabele (po redosljedu): LWK Komfort, LWZ Plus, LWL Extra, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LDK, LMS/LMK, LML, LMP, LMF 60, LMF, LST, LSF.

Pribor	**Kompatibilno [✓]**	**Fabrički ugrađeno [S]**	**Fabrički ugrađeno, uz mogućnost ugradnje drugog [S+]**	**Nije kompatibilno [—]**
LXB-P ograda	svi modeli	–	–	–
LXH-A rukohvat	svi modeli	–	–	–
LXK montažni nosači	LWK Komfort, LWL Extra, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LDK, LMS/LMK, LMP, LMF 60	LWZ Plus, LML, LMF, LST, LSF	–	–
LXL arhitrav obloga (drvena)	LWK Komfort, LWL Extra, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LDK, LMS/LMK, LMP, LMF 60	–	–	LWZ Plus, LML, LMF, LST, LSF
LXL-PVC arhitrav obloga (plastična)	LWK Komfort, LWL Extra, LTK Energy, LWT, LWT PH, LWF 60, LDK, LMS/LMK, LMP, LMF 60	–	–	LWZ Plus, LWF SL 60, LML, LMF, LST, LSF

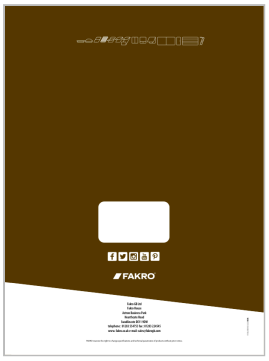
Pribor	Kompatibilno [✓]	Fabrički ugrađeno [S]	Fabrički ugrađeno, uz mogućnost ugradnje drugog [S+]	Nije kompatibilno [—]
LXL-I nevidljiva arhitrav obloga	LWK Komfort, LWL Extra, LTK Energy, LWT	–	–	LWZ Plus, LWT PH, LWF 60, LWF SL 60, LDK, LMS/LMK, LML, LMP, LMF 60, LMF, LST, LSF
LXH rukohvat	–	LWL Extra	LWK Komfort, LWZ Plus, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LDK, LMS/LMK (+✓/S), LMF 60 (**)	LML, LMP, LMF, LST, LSF
LXN produžetak kutije	LWK Komfort, LWZ Plus, LWL Extra, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LDK, LMS/LMK, LML, LMP, LMF 60, LMF, LST	–	–	LSF
LXT dodatna prečka	LWK Komfort, LWZ Plus, LWL Extra, LMS/LMK	–	–	LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LDK, LML, LMP, LMF 60, LMF, LST, LSF
LXW gornji poklopac	LWK Komfort (*), LWZ Plus, LWL Extra, LTK Energy (*), LWT (*), LWT PH, LWF 60 (*), LWF SL 60 (*), LMS/LMK, LML, LMP, LMF 60, LMF, LST (*)	–	–	LDK, LSF
LXS nožice (samo za ljestve sa 3 sekcije)	–	LWK Komfort, LWZ Plus, LWL Extra, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60	–	LDK, LMS/LMK, LML, LMP, LMF 60, LMF, LST, LSF
LXM mehanizam za rasterećenje	LWK Komfort, LWZ Plus, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LMS/LMK, LMF 60	LWL Extra	–	LDK, LML, LMP, LMF, LST, LSF

Pribor	Kompatibilno [✓]	Fabrički ugrađeno [S]	Fabrički ugrađeno, uz mogućnost ugradnje drugog [S+]	Nije kompatibilno [—]
LXK-D montažni komplet	LML	–	–	LWK Komfort, LWZ Plus, LWL Extra, LTK Energy, LWT, LWT PH, LWF 60, LWF SL 60, LDK, LMS/LMK, LMP, LMF 60, LMF, LST, LSF
LXD komplet za izolaciju	LWK Komfort, LWL Extra, LTK Energy, LWT, LDK, LMS/LMK, LMP	–	–	LWZ Plus, LWT PH, LWF 60, LWF SL 60, LML, LMF 60, LMF, LST, LSF

* za 4-sekcijske tavanske ljestve i makazaste ljestve produžetak kutije LXN montira se prije ugradnje gornjeg poklopca LXW

** Kod tavanskih ljestava LMF60 dodatni rukohvat LXH odgovara samo izvedbama ljestava visine do 280 i 305 cm

- [✓] – kompatibilno
- [—] – nije kompatibilno
- [S] – fabrički ugrađen pribor u standardnoj opremi
- [S+] – fabrički ugrađen pribor u standardnoj opremi, uz mogućnost ugradnje drugog



STRANA 59 ORIGINALA

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FAKRO zadržava pravo izmjene specifikacija i tehničkih parametara proizvoda bez prethodne najave.

FS/60s/GB/04.03.2022/E03A

COMPLETE GUIDE TO
LOFT LADDERS

Wide range
of safe and comfortable
loft ladders
2022

FAKRO®

FOLDING LOFT LADDERS

enable safe and easy access to loft spaces without the need for costly and space-consuming staircases. FAKRO ladders satisfy all technical and safety requirements whilst maximising ease of use and comfort.

TESTED
EN 14975
LOFT LADDER
EUROPEAN STANDARD



SPACE SAVINGS

FAKRO loft ladders require little 'swing space'. The ladder is mounted on the hatch so that, when folded, its sections are neatly concealed inside the loft space.

EASE OF OPERATION

The innovative spring-assisted opening mechanism (on some models ladder sections are also sprung) greatly eases ladder use. An opening rod is also supplied with every ladder.

EASE OF INSTALLATION

To make installation easier, 'click' fixings enable some FAKRO loft ladders to be fitted by a single person. All can be installed with ease, however and can be adjusted to suit ceiling height.
Ladders come fully assembled and do not require any additional pre-installation work.

ADDITIONAL EQUIPMENT

In order to maximise comfort and accelerate installation of the loft ladder, additional accessories are available.

WARRANTY

FAKRO loft ladders come with a **3-year warranty.**

TYPES AND CHOICE OF LOFT LADDER

INSULATED

WOODEN

MAXIMUM LOAD 160 kg

U=1.1 HATCH W/m²K

SLIDING

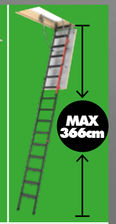
LWK KOMFORT	LWZ PLUS	LDK
COMFORT AND FUNCTIONALITY	COMFORT, FUNCTIONALITY AND QUICK INSTALLATION	SLIDING LADDER
		
Page 10	Page 12	Page 26

METAL

MAXIMUM LOAD 200 kg

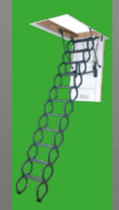
U=1.1 HATCH W/m²K

SECTION

LMS	LMK	LML	LMP
STANDARD	COMFORT AND FUNCTIONALITY	ENHANCED COMFORT OF USE	FOR HIGH ROOMS
			 MAX 366cm
Page 32	Page 34	Page 36	Page 38

U=1.1 HATCH W/m²K

SCISSORS

LST
FUNCTIONALITY AND SMALL BOX DIMENSIONS

Page 46

ENERGY-EFFICIENT

ENERGY-EFFICIENT

WOODEN

MAXIMUM LOAD 160 kg

U=0.74 LOFT LADDER W/m²K | U=0.68 LOFT LADDER W/m²K | U=0.51 LOFT LADDER W/m²K

SECTION

LWL EXTRA	LTK ENERGY	LWT
ENHENCED COMFORT OF USE	HIGHLY ENERGY EFFICIENT	BEST INSULATION
		
Page 14	Page 16	Page 18

PASSIVE HOUSE

WOODEN

MAXIMUM LOAD 160 kg

U=0.51 LOFT LADDER W/m²K

SECTION

LWT PASSIVE HOUSE
PASSIVE HOUSE INSULATION KIT

Page 20

FIRE-RESISTANT

EI_1/EI_2 60MIN

WOODEN

MAXIMUM LOAD 160 kg

U=0.64 LOFT LADDER W/m²K

SECTION

LWF 60 LWF 60 SL
COMFORT AND FUNCTIONALITY

Page 22, 24

METAL

MAXIMUM LOAD 200 kg

U=0.64 LOFT LADDER W/m²K

SECTION

LMF 60
AVAILABLE IN VERSION FOR HIGH ROOMS
MAX 360cm
Page 40

EI_2 60 MIN

METAL

MAXIMUM LOAD 200 kg

U=1.8 HATCH W/m²K

SCISSORS

LSF
QUICK INSTALLATION AND SMALL BOX DIMENSIONS

Page 48

EI_2 120 MIN

METAL

MAXIMUM LOAD 200 kg

U=0.79 HATCH W/m²K

SECTION

LMF
BEST FIRE RESISTANCE ON THE MARKET

Page 42

L-SHAPED COMBINATION DOORS

TYPES AND CHOICE OF L-SHAPED DOOR

In addition to having a wide range of loft ladders FAKRO also manufactures combination loft doors for installation in walls. These are used to provide access to unused space behind a wall or under stairs. Three models are available, the first and most basic model, the **DWF** insulating door having a 3.6cm thick sash. For added thermal efficiency and airtightness the **DWT** provides a U-value of 0.6 and offers Class 4: EN 12207 performance. Where fire resistance is required, the **DWF** offers double-sided protection (fire classification $EI_1$45 EN 13501-2), as well as exceptional airtightness and thermal insulation.

INSULATED	HIGHLY ENERGY EFFICIENT	FIRE-RESISTANT
DWK	DWT	DWF
U=1.1* W/m²K	U=0.6** W/m²K; 4 CLASS *** EN12207	U=0.64** W/m²K; 4 CLASS *** EN12207; EN 13501-2 EI_1 45
		
page 50	page 52	page 54

* internal tests of the middle part of the sash

** manufacturer's internal tests for the sash

*** manufacturer's internal testing

FOLDING LOFT LADDERS

Create safe and easy access to your loft space without the need for costly and oversized staircases. FAKRO loft ladders satisfy all technical and safety requirements whilst maximizing ease of use and comfort.



SPACE SAVINGS

Thanks to their clever design, FAKRO loft ladders require little "swing space". The ladder is mounted on the hatch so that, when folded, its sections are neatly concealed inside the loft space.

EASE OF OPERATION

The innovative spring-assisted opening mechanism (on some models ladder sections are also sprung) greatly eases ladder use. An opening rod is also supplied with every ladder.



EASE OF INSTALLATION

To make installation fast and easy, FAKRO loft ladders feature a "click" fixing, enabling some ladders to be fitted by a single person. Additionally, FAKRO loft ladders can be adjusted to suit any ceiling height.

ADDITIONAL EQUIPMENT

In order to maximise comfort and accelerate installation of the loft ladder, additional accessories are available.

WARRANTY

FAKRO loft ladders come with a **3-year warranty.**



SECTION LOFT LADDERS

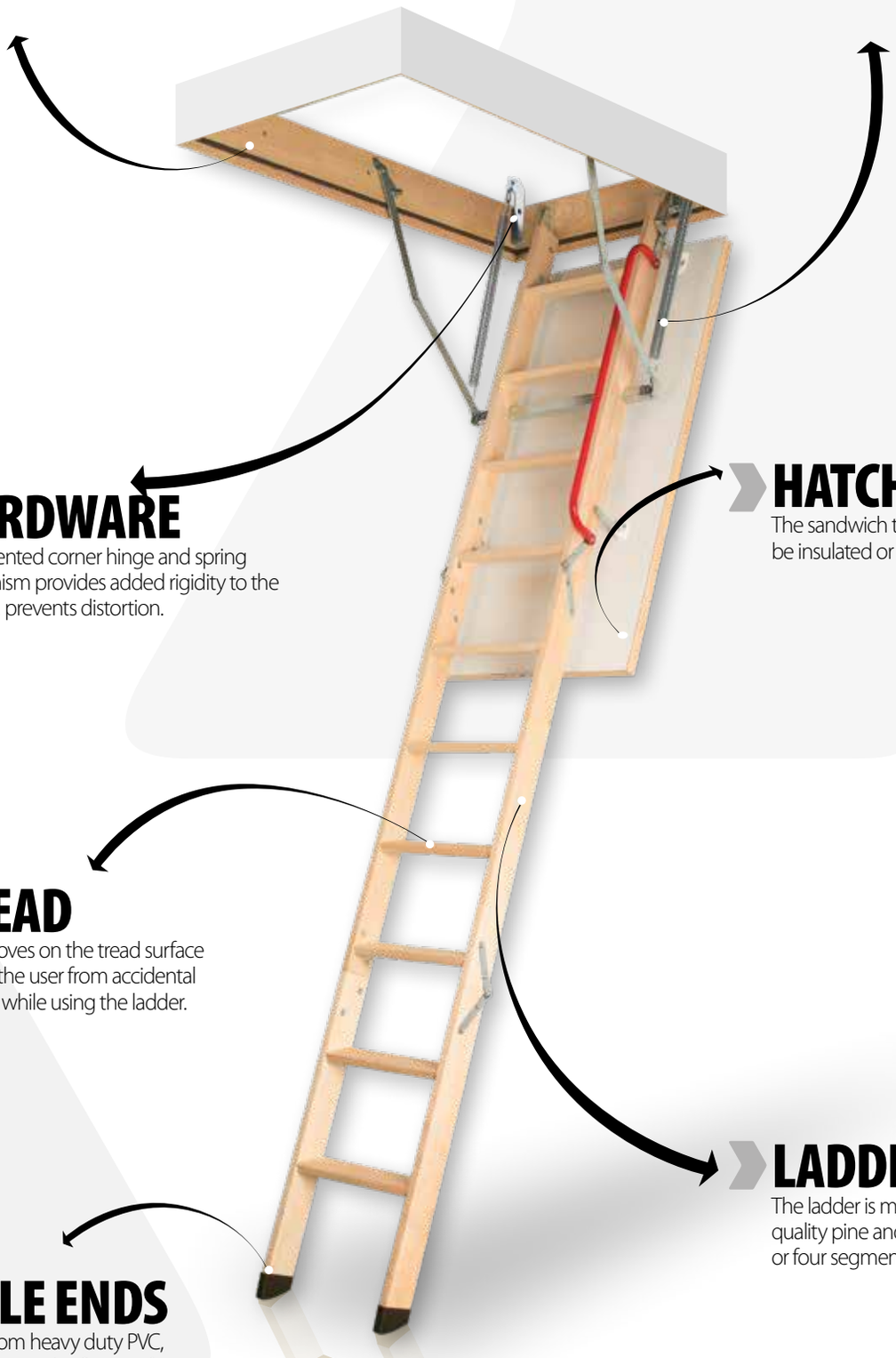
BOX

The loft ladder has a pine or metal frame integrated within its box. It comes complete with linings which, in combination with a quick installation system gets the job done fast! The peripheral seal is used to ensure the ladder aperture remains airtight.

HATCH MECHANISM

The used mechanism significantly simplifies ladder operation. The hatch after unlocking opens slowly without causing any hazard to the user. In addition, the mechanism maintains the hatch in fully open position, prevents it from spontaneous closing during unfolding and folding the ladder.





HARDWARE

The patented corner hinge and spring mechanism provides added rigidity to the box and prevents distortion.

HATCH

The sandwich type hatch can be insulated or fire-resistant.

TREAD

The grooves on the tread surface protect the user from accidental slipping while using the ladder.

LADDER

The ladder is made of high quality pine and consists of three or four segments.

STILE ENDS

made from heavy duty PVC, these protect the floor surface from scratching while also adding to the ladder's overall stability (refers to 3-section ladders)

WOODEN FOLDING SECTION LOFT LADDERS

LWK
KOMFORT



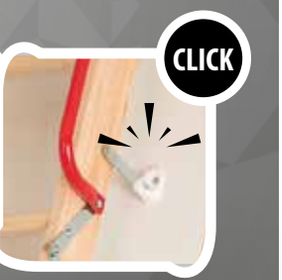
U=1.1
HATCH
W/m²K

STANDARD
EN
14975

Insulated white hatch and handrail.



As the hatch is opened the hinge moves it away from the ladder, thus increasing space for added convenience.



Light hatch weight and method of 'click fixing' makes installation very simple.

The **LWK Komfort** ladder's innovative design ensures ease of use, a high insulation value and quick installation. It is equipped with an aesthetically pleasing, smooth white finish to the hatch, and a handrail as standard.

- stile ends (only in 3-section version)
- handrail
- white hatch
- non-slip treads set flush with ladder strings
- peripheral seal
- easy installation
- possibility of installing additional accessories, pages 56-61

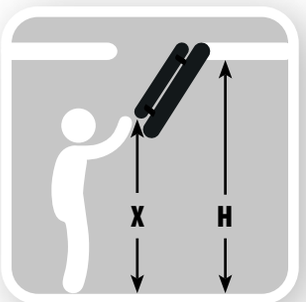
Technical specification:

permissible load of 160 kg
hatch heat transmission coefficient U = 1.1 W / m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

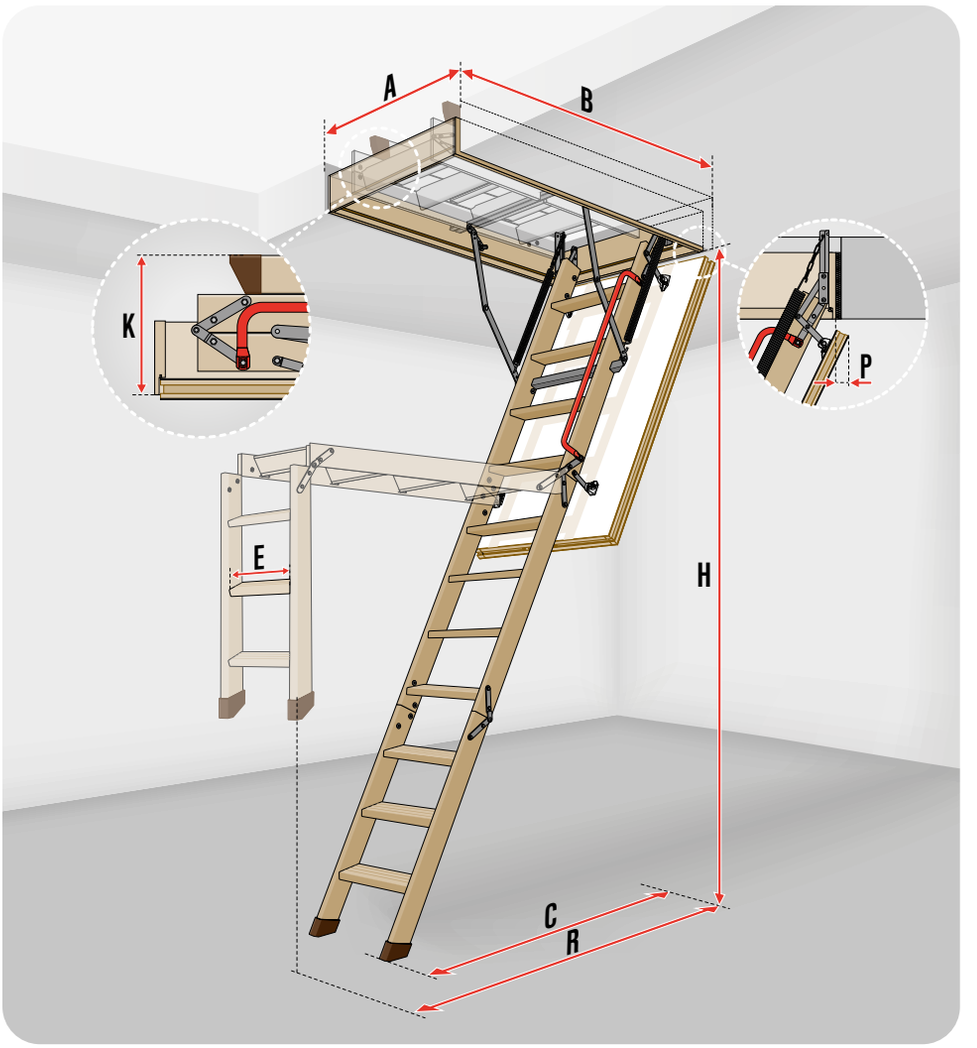
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LWK KOMFORT LADDER DIAGRAM



3-segment ladder can be equipped with the LXM ladder unloading mechanism (page 58), so that the ladder can be fully operated with a rod



LWK Komfort LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	55x111	60x94	60x100	60x111	60x120	60x130	70x94	70x100	70x111	70x120	70x130	70x140	80x120	60x130	60x140	70x130	70x140
Maximum room height [cm]	H	280													305			
Minimum room height [cm]*	$H_{min.}$	232	250		232			250		232					246			
Height to be reached to operate the ladder [cm]	X	215	240		215			240		215					225			
Box external dimensions [cm]		53x109.4	58x92.4	58x98.4	58x109.4	58x118.4	58x128.4	68x92.4	68x98.4	68x109.4	68x118.4	68x128.4	68x138.4	78x118.4	58x128.4	58x138.4	68x128.4	68x138.4
Internal box dimensions [cm]		49x105	54x88	54x94	54x105	54x114	54x124	64x88	64x94	64x105	64x114	64x124	64x134	74x114	54x124	54x134	64x124	64x134
Folded ladder height [cm]	K	27	35		27			35		27								
Swing space [cm]	R	153	128		153	156		128		153	156				175			
Distance after ladder unfolding [cm]	C	113	114		113	120		114		113	120				135			
Hatch retraction after opening [cm]	P	4																
Box height [cm]		14																
Number of segments		3	4		3			4		3								

LADDER PARAMETERS

Tread length [cm]	E	30	34
Tread width [cm]		8	
Distance between treads [cm]		25	
Tread thickness [cm]		2	

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER DIMENSIONS

Commercial sizes [cm]		55x111	60x94	60x100	60x111	60x120	60x130	70x94	70x100	70x111	70x120	70x130	70x140	80x120	60x130	60x140	70x130	70x140
Room height [cm]	H	280													305			
Code		**864521**	**864507**	**864506**	**864504**	**864501**	**864502**	**864502**	**864517**	**864516**	**864514**	**864511**	**864512**	**864593**	**864551**	**864552**	**864553**	**864554**

For LWK Komfort non-standard sizes page 24

WOODEN SECTION LOFT LADDERS

LWZ PLUS



Quick-fit brackets built into steel frame speeds up installation and makes levelling within the ceiling easy.

Integrated architrave lining gives a highly pleasing finish to the installed ladder.

Hinge controls hatch movement and moves it away from the ladder sections for greater ease of use.

U= 1.1 HATCH W/m²K

STANDARD EN 14975

The **LWZ Plus** loft ladder combines the advantages of the latest design and quick fitting. The integrated steel frame, installation brackets and metal architrave lining make installation simple and finish off any imperfections and gaps between frame and ceiling.

- stile ends
- white hatch
- architrave
- peripheral seal
- handrail
- non-slip treads
- system of quick installation in the ceiling

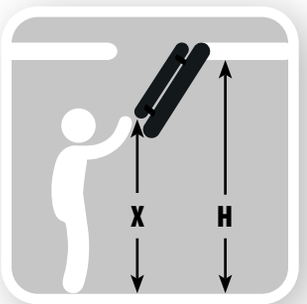
a possibility of installing additional accessories pages 56-61

Technical specification:
permissible load of 160 kg
hatch heat transmission coefficient U = 1.1 W / m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

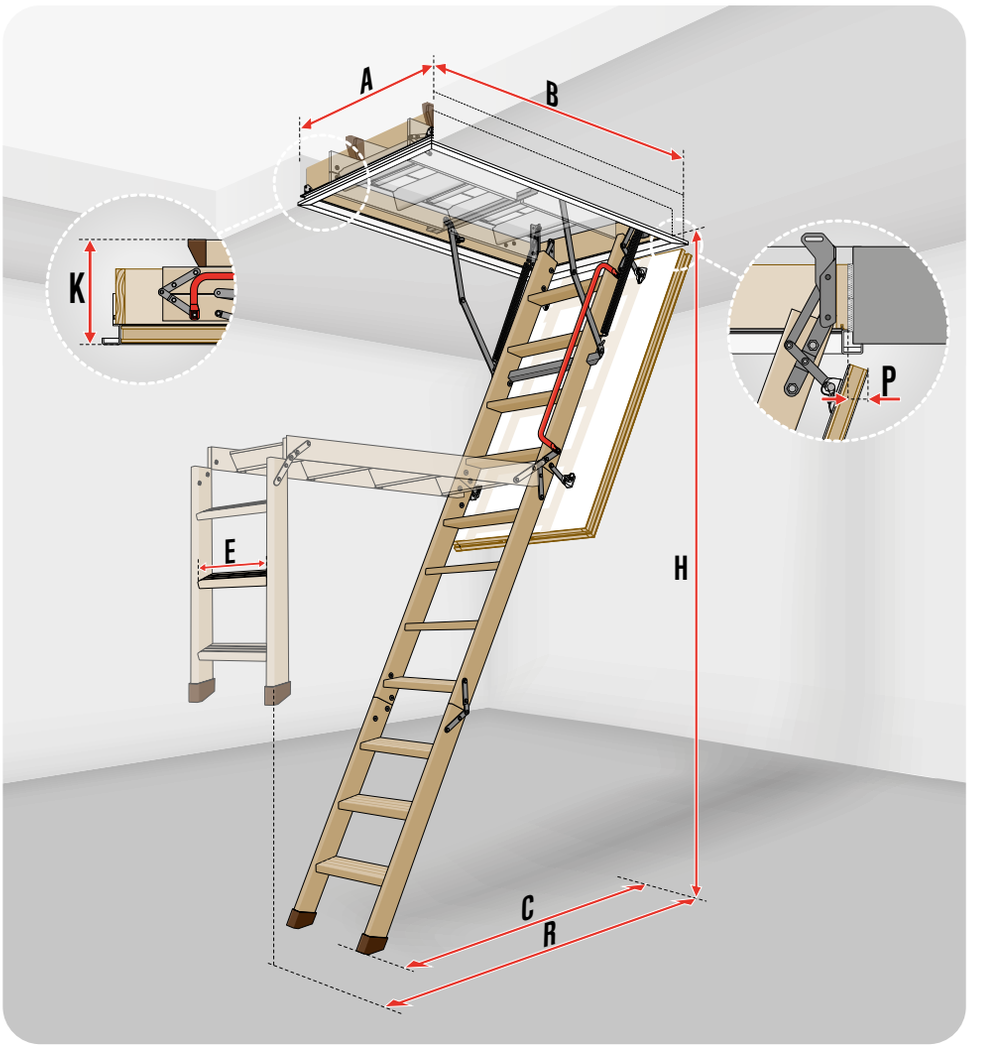
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LWZ PLUS LADDER DIAGRAM



3-segment ladder can be equipped with the LXM ladder unloading mechanism (page 60), so that the ladder can be fully operated with a rod



LWZ Plus LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120	70x140
Maximum room height [cm]	H	280		
Minimum room height [cm]*	$H_{min.}$	232		
Height to be reached to operate the ladder [cm]	X	215		
Box external dimensions [cm]		58.8 x 118.8	68.8 x 118.8	68.8 x 138.8
Box external dimensions with architrave lininings		62.9 x 122.9	72.9x122.9	72.9x142.9
Internal box dimensions [cm]		54 x 114	64 x 114	64 x 134
Folded ladder height [cm]	K	27		
Swing space [cm]	R	156		
Distance after ladder unfolding [cm]	C	120		
Hatch retraction after opening [cm]	P	4		
Box height [cm]		14		

LADDER PARAMETERS

Tread length [cm]	E	34
Tread width [cm]		8
Distance between treads [cm]		25
Tread thickness [cm]		2

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER DIMENSIONS

Commercial sizes [cm]		60 x 120	70 x 120	70 x 140
Room height [cm]	H	280		
Code		**865701**	**865711**	**865713**

Ladders are available only in sizes shown above.

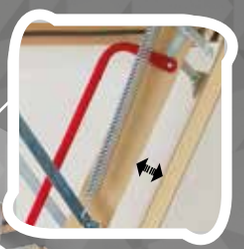
WOODEN SECTION LOFT LADDERS

NEW!

LWL EXTRA



double system of „seals" guarantees perfect tightness



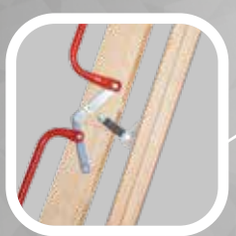
The hinge controls hatch movement and whilst opening, automatically moves away from the ladder providing added stability and ease of use.



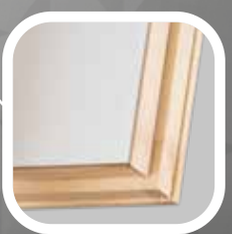
Unloading mechanism facilitates folding and unfolding the ladder.



Light hatch weight and method of 'click fixing' makes installation very simple.



Additional handrail ensures safety and comfort of use.



Energy-efficient, 5.6cm thick hatch equipped with lock perfectly prevents heat loss.

U=0.74 LOFT LADDER W/m²K

STANDARD EN 14975

4 CLASS* EN12207

LWL Extra wooden loft ladders in new design with **increased insulation parameters**. **LWL Extra** for **increased security** and **comfort of use** has been equipped with an **additional handrail** mounted on the middle folding section and **unloading mechanism** that supports folding and unfolding the ladder.



* manufacturer's internal research

- stile ends
- white hatch
- two seals x2
- two handrails x2
- easy installation
- non-slip treads set flush with ladder strings
- ladder unloading mechanism
- possibility of installing additional accessories pages 56-61

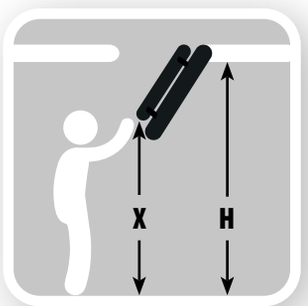
Technical specification:

permissible load 160 kg
loft ladder heat transmission coefficient U=0.74 W/m²K
insulation thickness 5cm
hatch thickness 5.6

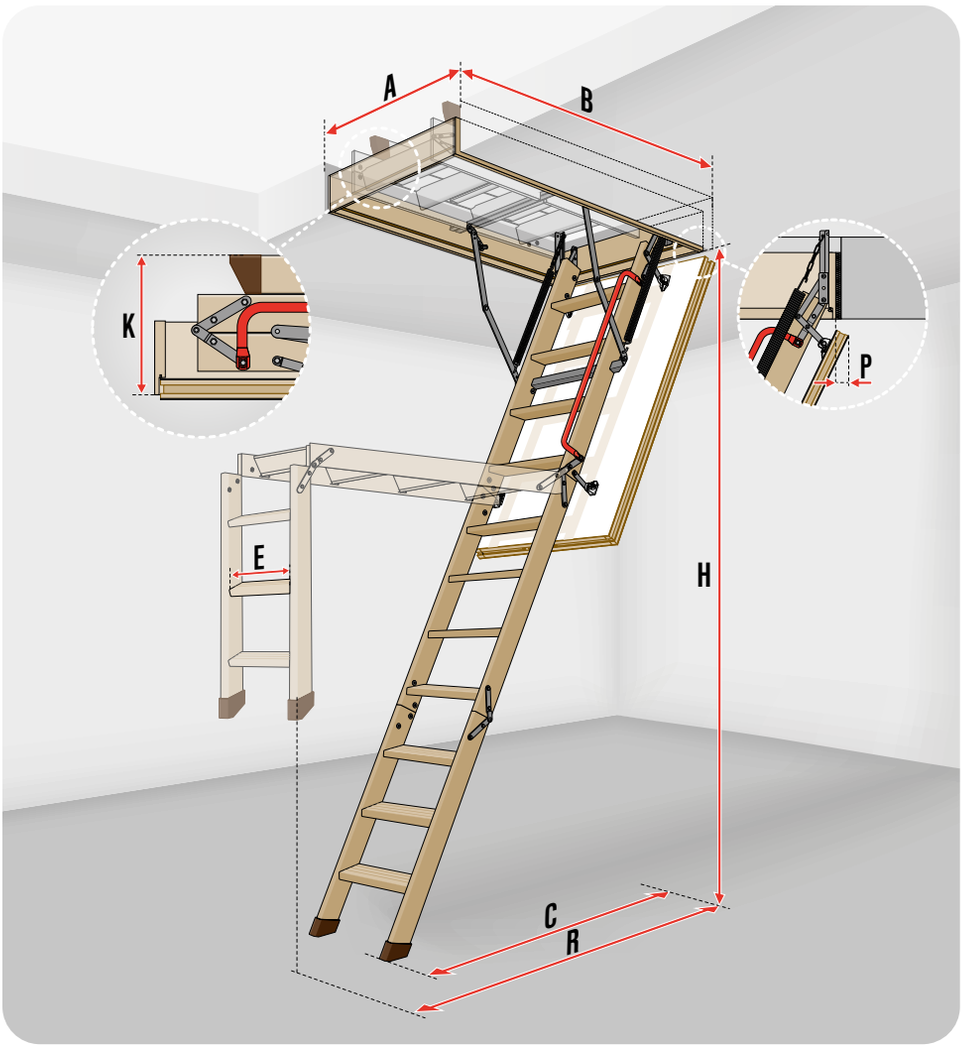
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LWL EXTRA LADDER DIAGRAM



The LWL Extra ladders are as standard equipped with ladder unloading mechanism, so they can be fully operated with the opening rod.



LWL EXTRA LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Maximum room height [cm]	H	280				305		
Minimum room height [cm]*	$H_{min.}$	260				280		
Height to be reached to operate the ladder [cm]	X	215				225		
Box external dimensions [cm]		58x118.4	68x118.4	68x128.4	68x138.4	58x128.4	68x128.4	68x138.4
Internal box dimensions [cm]		54x114	64x114	64x124	64x134	54x124	64x124	64x134
Folded ladder height [cm]	K	30						
Hatch retraction after opening [cm]	R	156				175		
Distance after ladder unfolding [cm]	C	120				135		
Box height [cm]		14						
Hatch retraction after opening [cm]		6						

LADDER PARAMETERS

Tread length [cm]	E	30	34			30	34	
Tread width [cm]		8						
Distance between treads [cm]		25						
Tread thickness [cm]		2						

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

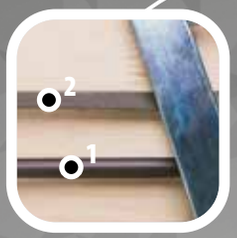
Commercial sizes [cm]		60x120	70x120	70x130	70x140	60x130	70x130	70x140
Room height [cm]	H	280				305		
Code		**867901**	**867911**	**867912**	**867913**	**867951**	**867953**	**867954**

Ladders are available only in sizes shown above.

WOODEN SECTION LOFT LADDERS

LTK
ENERGY





Double system of seals guarantees perfect tightness.



Short distance between the top tread and attic floor.

U=0.68
LOFT LADDER
W/m²K

STANDARD
EN
14975

4 CLASS*
EN12207

Light hatch weight and method of 'click fixing' makes installation very simple.



Highly energy-efficient, 6.6cm thick hatch prevents heat loss, making significant saving on energy bills.

The **LTK Energy** is highly energy efficient new generation loft ladder intended for energy-efficient buildings. They guarantee a high level of comfort, excellent thermal insulation parameters and the highest Class 4 tightness.

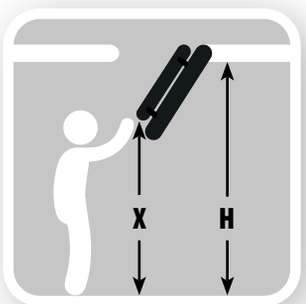
- stile ends (only in 3-section version)
- white hatch
- two seals
- handrail
- non-slip treads set flush with ladder strings
- easy installation
- possibility of installing additional accessories pages 56-61

Technical specification:
maximum load of 160 kg
loft ladder heat transmission coefficient U = 0.68 W / m²K
insulation thickness 6 cm
hatch thickness 6.6 cm

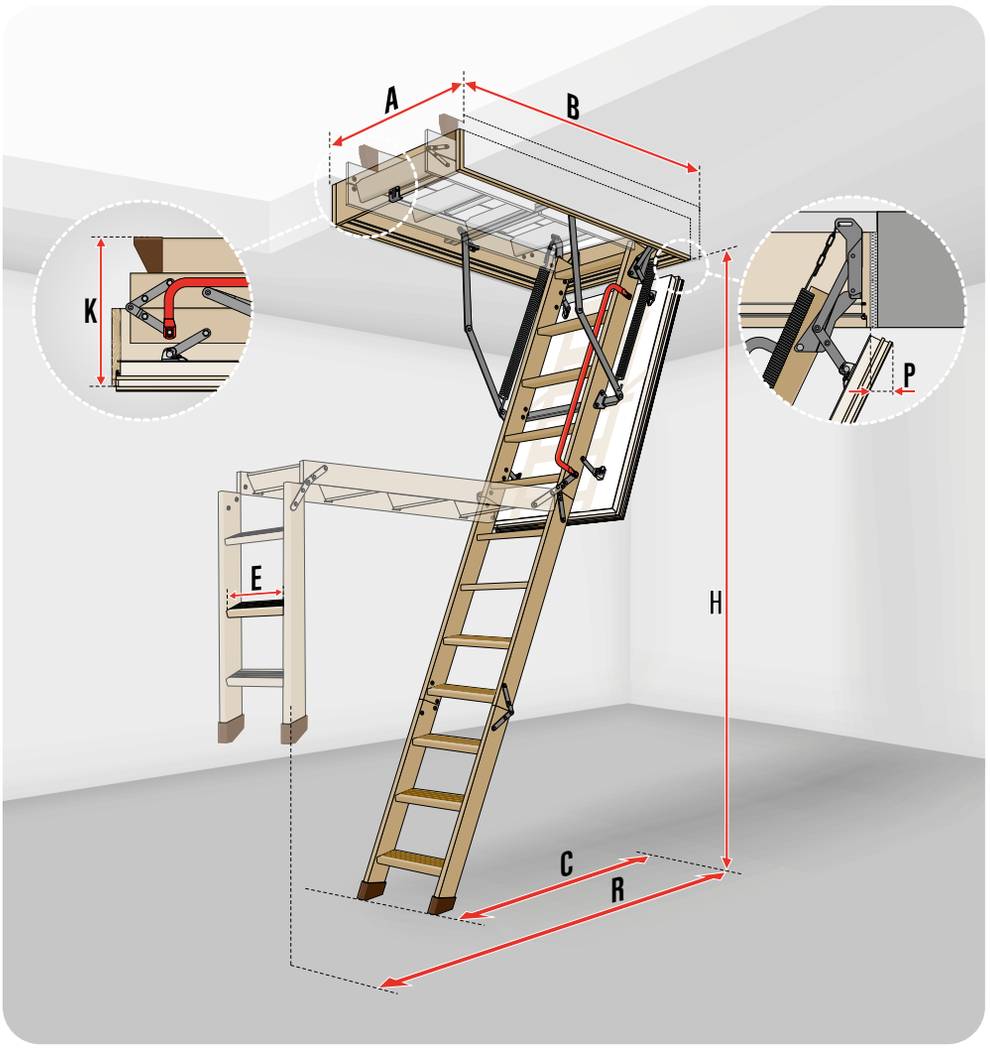
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LTK ENERGY LADDER DIAGRAM



3-segment ladder can be equipped with the LXM ladder unloading mechanism (page 60), so that the ladder can be fully operated with a rod



LTK ENERGY LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	A x B	55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Maximum room height [cm]	H	280							305		
Minimum room height [cm]*	$H_{min.}$	253			235				243		
Height to be reached to operate the ladder [cm]	X	230			210				230		
Box external dimensions [cm]		53x98.4	58x98.4	68x98.4	58 x 118.4	68 x 118.4	68 x 128.4	68 x 138.4	58 x 128.4	68 x 128.4	68 x 138.4
Internal box dimensions [cm]		49x94	54x94	64x94	54 x 114	64 x 114	64 x 124	64 x 134	54 x 124	64 x 124	64 x 134
Folded ladder height [cm]	K	42			35						
Swing space [cm]	R	136			164				178		
Distance after ladder unfolding [cm]	C	123			129				139		
Hatch retraction after opening [cm]	P	3									
Box height [cm]		18									
Number of segments		4			3						

LADDER PARAMETERS

Tread length [cm]	E	30	34
Tread width [cm]		8	
Distance between treads [cm]		25	
Tread thickness [cm]		2	

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER

Commercial sizes [cm]		55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Room height [cm]	H	280							305		
Code		**864720**	**864706**	**864716**	**864701**	**864711**	**864712**	**864713**	**864751**	**864753**	**864754**

Ladders are available only in sizes shown above.

WOODEN
LOFT LADDERS

WOODEN SECTION LOFT LADDERS

LWT



Triple system of seals guarantees perfect tightness.

Short distance between the top tread and attic floor.

Light hatch weight and method of 'click fixing' makes installation very simple.

Its special 8cm thick hatch is filled with polystyrene insulation to provide an excellent barrier and reduce heat loss.

U=0.51 LOFT LADDER W/m²K

STANDARD EN 14975

4 CLASS * EN12207

The highly efficient **LWT** loft ladder is recommended for use in energy-efficient buildings. Its excellent level of insulation significantly reduces heat loss and energy bills.

- stile ends (only in 3-section version)
- white hatch
- three seals
- handrail
- non-slip treads set flush with ladder strings
- easy installation
- possibility of installing additional accessories pages 56-61

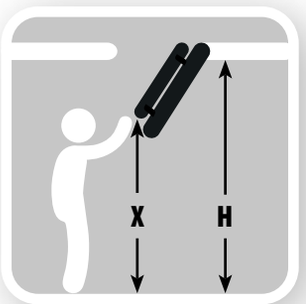
Technical specification:

permissible load of 160 kg
loft ladder heat transmission coefficient U = 0.51 W / m²K
insulation thickness 7.4 cm
hatch thickness 8 cm

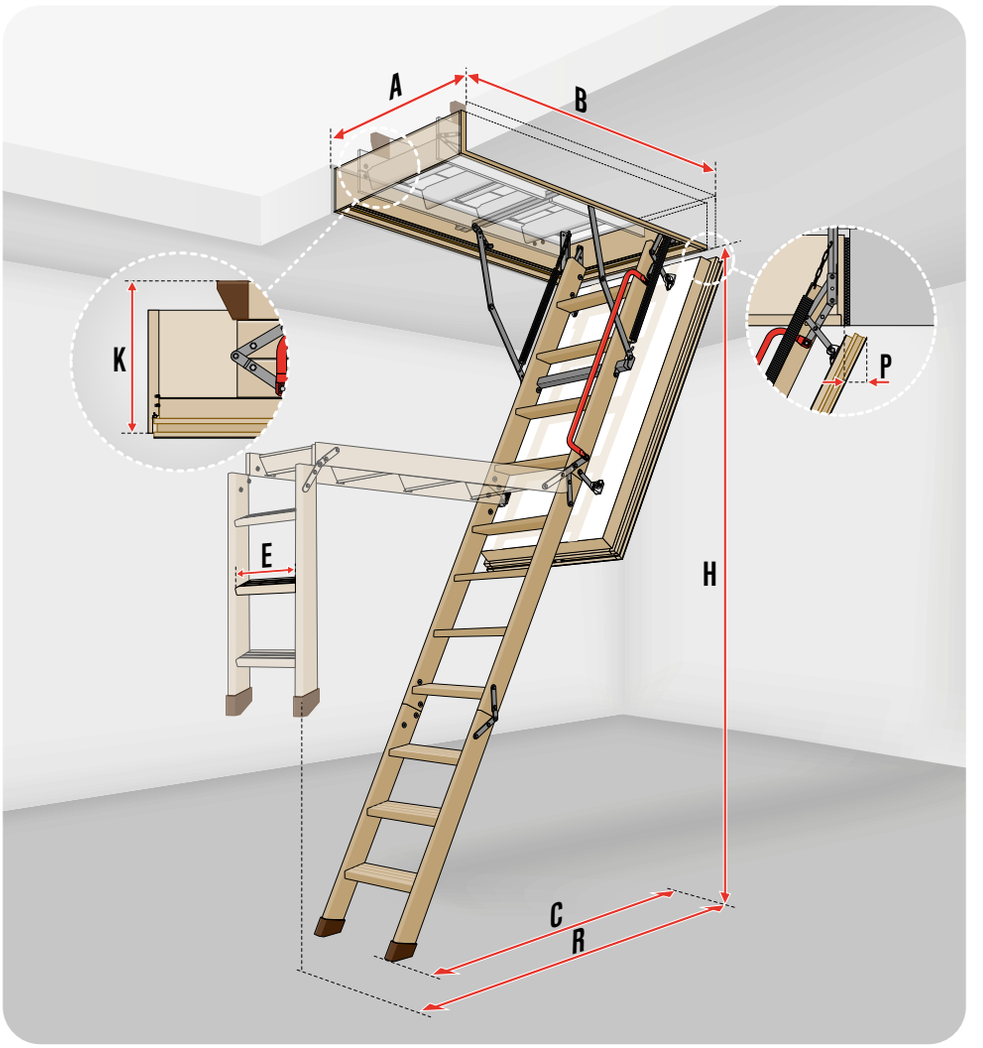
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LWT LOFT LADDER DIAGRAM



3-segment ladder can be equipped with the LXM ladder unloading mechanism (page 60), so that the ladder can be fully operated with a rod



LWT LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Maximum room height [cm]	H	280							305		
Minimum room height [cm]*	$H_{min.}$	253			234				242		
Height to be reached to operate the ladder [cm]	X	230			210				230		
Box external dimensions [cm]		53x98.4	58x98.4	68x98.4	58x118.4	68x118.4	68x128.4	68x138.4	58x128.4	68x128.4	68x138.4
Internal box dimensions [cm]		49x94	54x94	64x94	54x114	64x114	64x124	64x134	54x124	64x124	64x134
Folded ladder height [cm]	K	43.5			36				36		
Swing space [cm]	R	136			164				178		
Distance after ladder unfolding [cm]	C	123			130				137		
Hatch retraction after opening [cm]	P	4.5									
Box height [cm]		22									
Number of segments		4			3						

LADDER PARAMETERS

Tread length [cm]	E	30	34
Tread width [cm]		8	
Distance between treads [cm]		25	
Tread thickness [cm]		2	

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

Commercial sizes [cm]		55x100	60x100	70x100	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Room height [cm]	H	280							305		
Code		**863120**	**863106**	**863116**	**863101**	**863111**	**863112**	**863113**	**863151**	**863153**	**863154**

Ladders are available only in sizes shown above.

WOODEN
LOFT LADDERS

LOFT LADDERS WITH WOODEN FOLDING SECTION

LWT
PASSIVE
HOUSE



Kit allows for proper loft ladder insulation in the ceiling.



Short distance between the top tread and attic floor.



Triple system of seals guarantees perfect tightness.



Its special 8cm thick hatch is filled with polystyrene insulation to provide an excellent barrier and reduce heat loss.

U=0.51
LOFT LADDER
W/m²K

STANDARD
EN
14975

4 CLASS*
EN12207

cool, temperate climate
CERTIFIED
COMPONENT
Passive House Institute

The **LWT Passive House** loft ladder is a technically complex design specifically developed for the demands of such energy-efficient construction standards. It is installed with a kit which connects the ladder to the ceiling to guarantee a perfect seal and insulation without thermal bridges.It comes with Passive House certification.

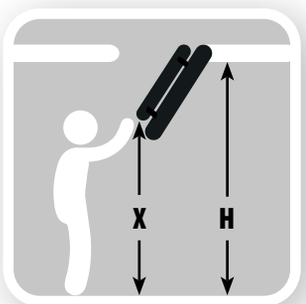
- stile ends
- white hatch
- three seals x3
- handrail
- PASSIVE HOUSE Insulation kit
- non-slip treads set flush with ladder strings
- easy installation
- possibility of installing additional accessories pages 56-61

Technical specification:
permissible load of 160 kg
loft ladder heat transmission coefficient U = 0.51 W / m²K
insulation thickness 7.4 cm
hatch thickness 8 cm

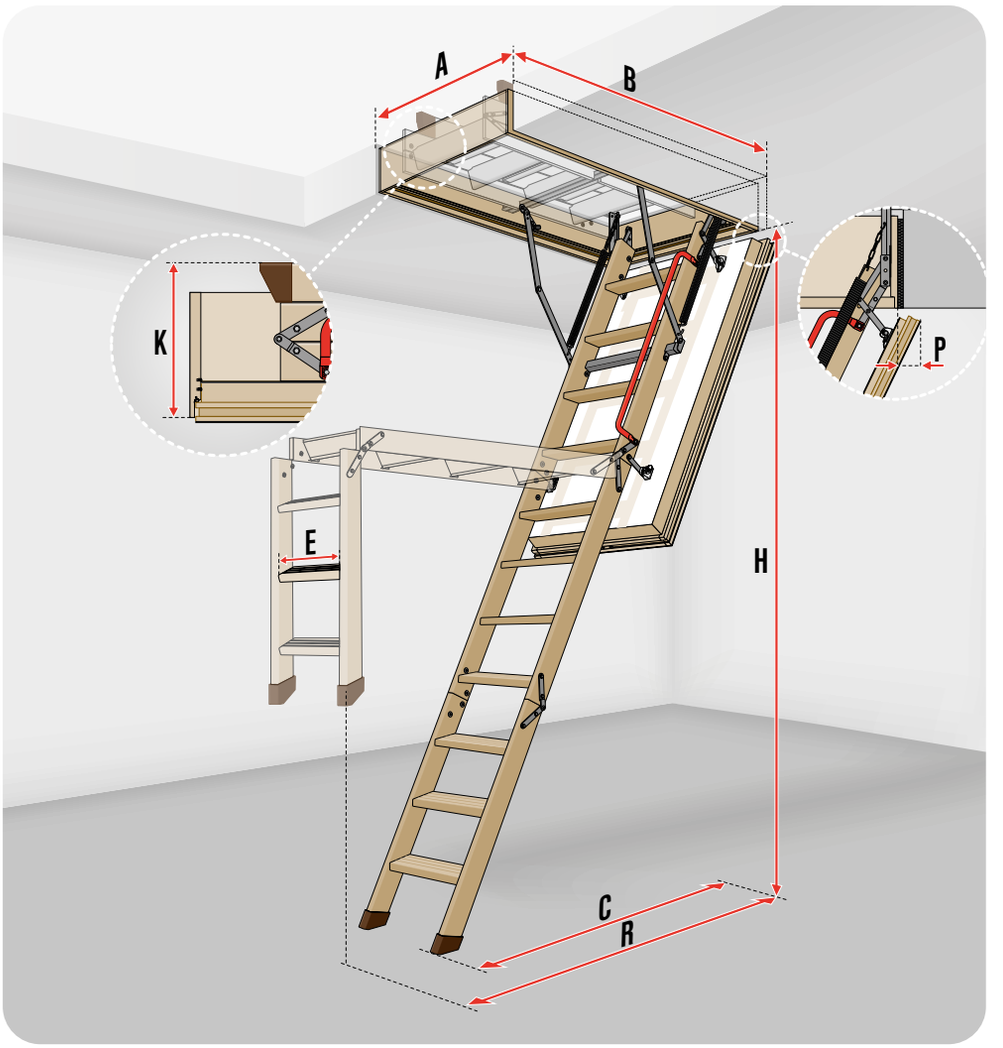
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LWT PASSIVE HOUSE LOFT LADDER DIAGRAM



3-segment ladder can be equipped with the LXM ladder unloading mechanism (page 60), so that the ladder can be fully operated with a rod



LWT PASSIVE HOUSE LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	62x122	72x122	72x142
Maximum room height [cm]	H	280		
Minimum room height [cm]*	$H_{min.}$	234		
Height to be reached to open the ladder [cm]	X	210		
Box external dimensions [cm]		58x118.4	68x118.4	68x138.4
Internal box dimensions [cm]		54x114	64x114	64x134
Folded ladder height [cm]	K	36		
Swing space [cm]	R	164		
Distance after ladder unfolding [cm]	C	127		
Hatch retraction after opening [cm]	P	4.5		
Box height [cm]		22		

LADDER PARAMETERS

Tread length [cm]	E	34
Tread width [cm]		8
Distance between treads [cm]		25
Tread thickness [cm]		2

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER

Commercial sizes [cm]		62x122	72x122	72x142
Room height [cm]	H	280		
Code		**8665AE**	**8665AF**	**8665AH**

Ladders are available only in sizes shown above.

WOODEN
LOFT LADDERS

LOFT LADDERS WITH WOODEN FOLDING SECTION

LWF 60
FIRE-RESISTANT

U=0.64* LOFT LADDER W/m²K

STANDARD EN 14975

EN 13501-2 EI₁60

The **LWF60**, a new generation of fire resistant loft ladders with wooden ladder which perfectly combines a **high level of fire protection** with comfortable and safe access to the loft. Special hatch design and materials used provide a 60-minute protection against fire penetration from the space where the loft ladder was installed.
Fire resistance class **EI$_1$ 60/EI$_2$ 60,** classification according to EN 13501.



Triple system of seals guarantees perfect airtightness.

Short distance between the top tread and loft floor.

The hinge controls hatch movement, and as its opened, moves the hatch away from the ladder's treads. Resulting in increased space and easy operation.

Insulated and finished in white on both sides, the hatch is also equipped with an expandable seal. When this seal is exposed to high temperatures, it expands and prevents fire from breaching the hatch.

* manufacturer's internal research

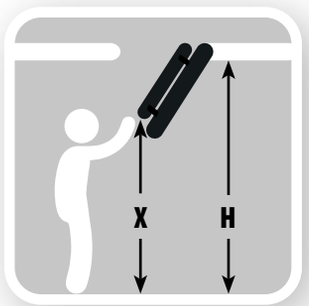
- stile ends (only in 3-section version)
- handrail
- fire resistant hatch on one side
- non-slip treads set flush with ladder strings
- three seals (x3)
- possibility of installing additional accessories pages 56-61

Technical specification:
maximum load of 160 kg
loft ladder heat transmission coefficient U = 0.64 W/m²K*
Fire resistance class EI$_1$/EI$_2$=60minutes
insulation thickness 7.9 cm
hatch thickness 8.5 cm

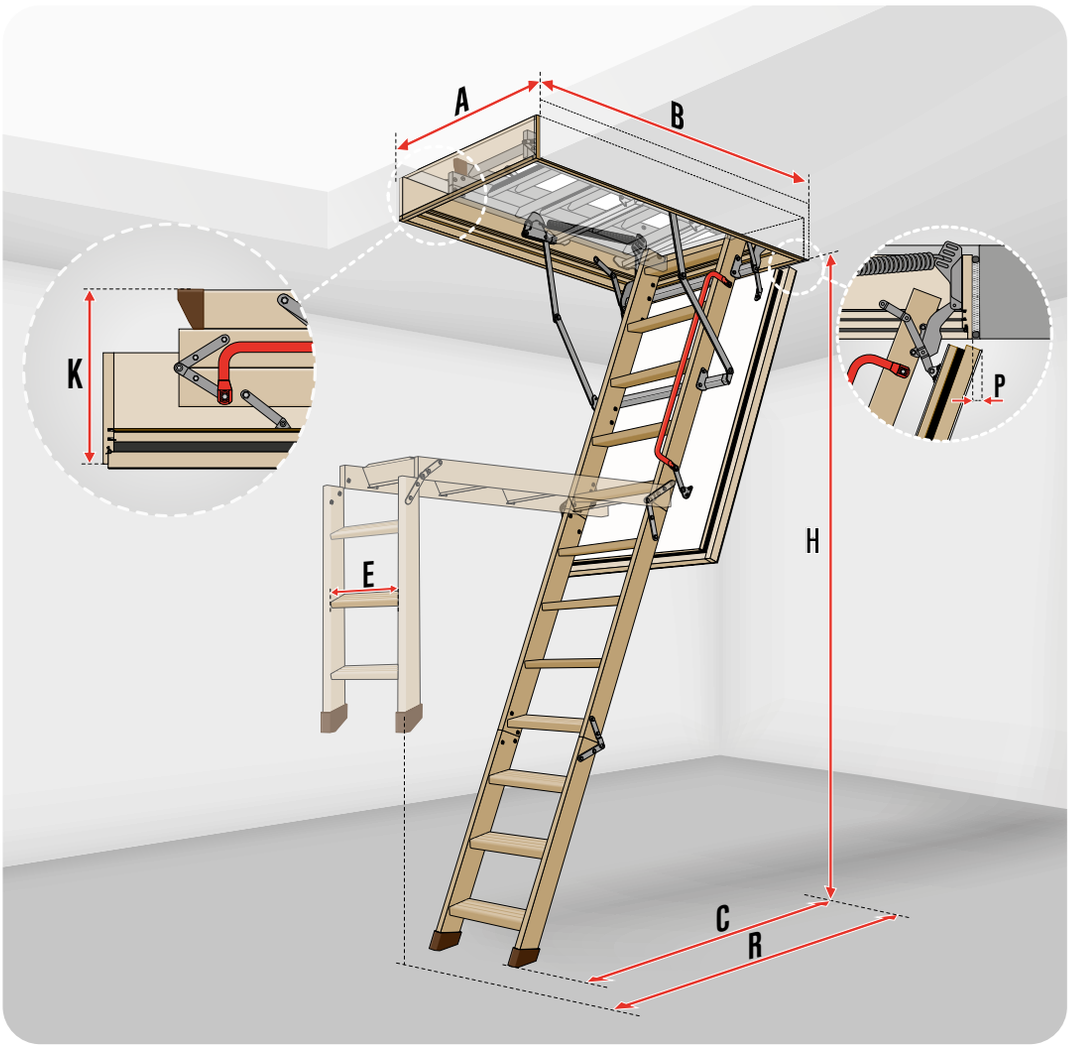
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LWF 60 LOFT LADDER DIAGRAM



3-segment ladder can be equipped with the LXM ladder unloading mechanism (page 60), so that the ladder can be fully operated with a rod



LWF 60 LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	55x100	55x120	60x100	70x100	60x120	70x120	70x130	70x140	86x130	55x130	70x130	70x140	86x130
Maximum room height [cm]	H	280									305			
Minimum room height [cm]*	$H_{min.}$	253				234					242			
Height to be reached to operate the ladder [cm]	X	235				210					230			
Box external dimensions [cm]		53x98	53x118	58x98	68x98	58x118	68x118	68x128	68x138	84x128	53x128	68x128	68x138	84x128
Internal box dimensions [cm]		49x94	49x114	54x94	64x94	54x114	64x114	64x124	64x134	80x124	49x124	64x124	64x134	80x124
Folded ladder height [cm]	K	46				38								
Swing space [cm]	R	138				164					178			
Distance after ladder unfolding [cm]	C	126				129					139			
Hatch retraction after opening [cm]	P	5												
Box height [cm]		22.5												
Number of segments		4				3								

LADDER PARAMETERS

Tread length [cm]	E	30			34						30	34		
Tread width [cm]		8												
Distance between treads [cm]		25												
Tread thickness [cm]		2												

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

Commercial sizes [cm]		55x100	55x120	60x100	70x100	60x120	70x120	70x130	70x140	86x130	55x130	70x130	70x140	86x130
Room height [cm]	H	280									305			
Code		**869G20**	**869G22**	**869G06**	**869G16**	**869G01**	**869G11**	**869G12**	**869G13**	**869G96**	**869G57**	**869G53**	**869G54**	**869G97**

Ladders are available only in sizes shown above.

WOODEN
LOFT LADDERS

LOFT LADDERS WITH WOODEN FOLDING SECTION

NEW!

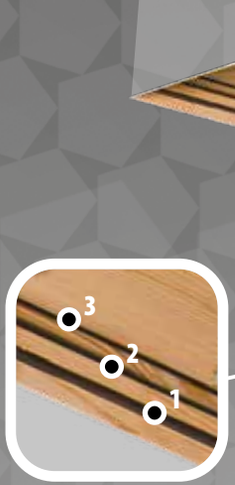
LWF 60
SL

U=0.64* LOFT LADDER W/m²K

STANDARD EN 14975

EN 13501-2 EI₁60

The **LWF60 SL (secutity lock)**, a new generation of fire resistant loft ladders with wooden ladder which perfectly combines a high level of fire protection with comfortable and safe access to the loft. Special hatch design and materials used provide a 60-minute protection against fire penetration from the space where the loft ladder was installed. Fire resistance class EI_1 60/EI_2 60, classification according to EN 13501-2.



Triple system of seals guarantees perfect airtightness.



Short distance between the top tread and loft floor.



The hinge controls hatch movement, and as its opened, moves the hatch away from the ladder's treads. Resulting in increased space and easy operation.



Insulated and finished in white on both sides, the hatch is also equipped with an expandable seal. When this seal is exposed to high temperatures, it expands and prevents fire from breaching the hatch.



* manufacturer's internal research

- stile ends (only in 3-section version
- fire resistant hatch on one side
- three seals (x3)
- handrail
- key lock
- non-slip treads set flush with ladder strings
- possibility of installing additional accessories pages 56-61

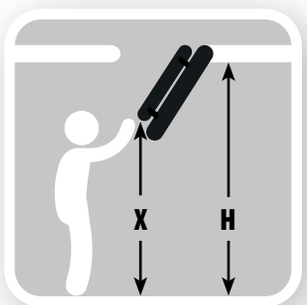
Technical specification:

maximum load of 160 kg
loft ladder heat transmission coefficient U = 0.64 W/m²K*
Fire resistance class EI_1/EI_2=60minutes
insulation thickness 7.9 cm
hatch thickness 8.5 cm

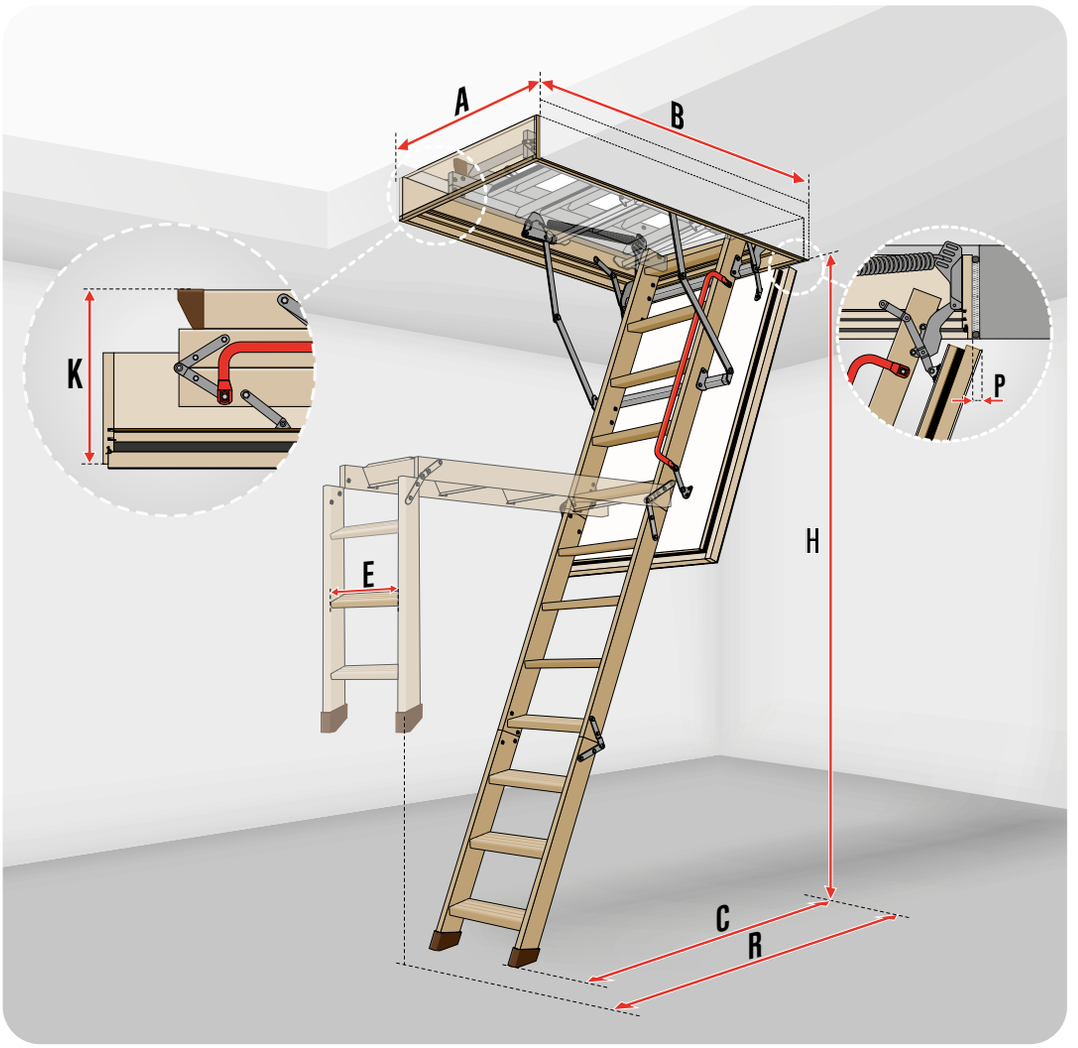
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LWF 60 SL LOFT LADDER DIAGRAM



3-segment ladder can be equipped with the LXM ladder unloading mechanism (page 60), so that the ladder can be fully operated with a rod



LWF 60 SL LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	55x100	60x100	70x100	60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130
Maximum room height [cm]	H	280										
Minimum room height [cm]*	$H_{min.}$	253			234							
Height to be reached to operate the ladder [cm]	X	235			210							
Box external dimensions [cm]		53x98	58x98	68x98	58x118	68x118	68x128	68x138	84x128	68x128	68x138	84x128
Internal box dimensions [cm]		49x94	54x94	64x94	54x114	64x114	64x124	64x134	80x124	64x124	64x134	80x124
Folded ladder height [cm]	K	46			38							
Swing space [cm]	R	138			164							
Distance after ladder unfolding [cm]	C	126			129							
Hatch retraction after opening [cm]	P	5										
Box height [cm]		22.5										
Number of segments		4			3							

LADDER PARAMETERS

Tread length [cm]	E	30	34							34		
Tread width [cm]		8										
Distance between treads [cm]		25										
Tread thickness [cm]		2										

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

Commercial sizes [cm]		55x100	60x100	70x100	60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130
Room height [cm]	H	280										
Code		**869H20**	**869H06**	**869H16**	**869H01**	**869H11**	**869H12**	**869H13**	**869H96**	**869H53**	**869H54**	**869H97**

Ladders are available only in sizes shown above.

SLIDING SECTION LOFT LADDERS

NEW!

LDK



U=1.1 HATCH W/m²K

STANDARD EN 14975

The LDK loft ladder is a 2-section, sliding loft ladder. It is similar in style to folding section ladders, the main difference being that the bottom section simply slides up into the loft, eliminating the need for swing space.
The LDK with new LDS split section gives the chance to deliver LDK loft ladders in reduced packaging dimensions by a courier service. The LDK loft ladders are designed for room heights of 280 cm & 305 cm.



The sliding ladder mechanism has a longer lower section which gives it stability.

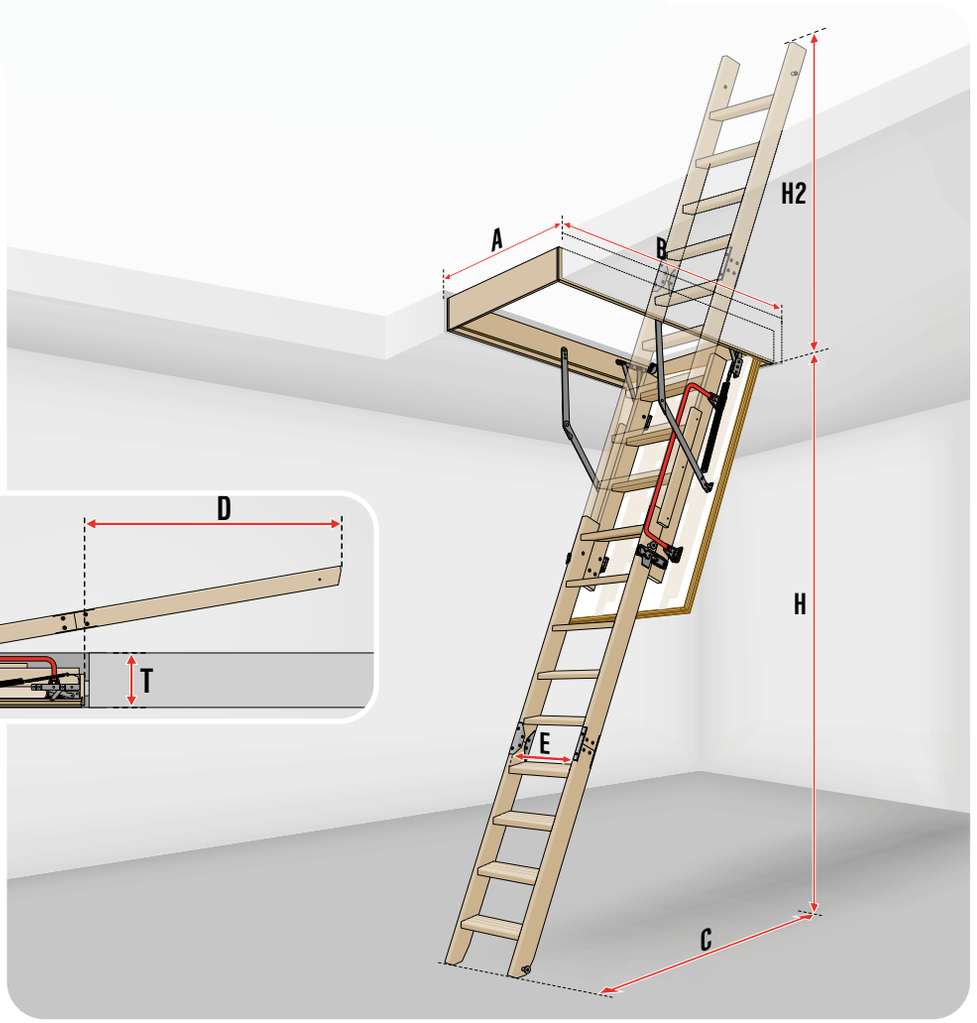
- white hatch
- peripheral seal
- handrail
- non-slip treads with additional depth
- possibility of installing additional accessories pages 56-61

Technical specification:
maximum load of 160 kg
hatch heat transmission coefficient U = 1.1 W /m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

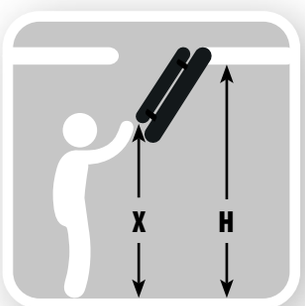
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LDK LOFT LADDER DIAGRAM



The LDK ladder with new LDS split section



For the room height up to [cm]		205	305
Distance of drop [cm]	C	105	140
Max height of the loft required [cm]	H2	55	150
Max length of the loft required with hatch door closed [cm]	D	55	150
Height to be reached to operate the ladder [cm]	X	130	230

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LDK LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120	70x130	70x140
Sliding section LDS		LDS			
Maximum room height [cm]	H	305			
Minimum room height [cm]*	$H_{min.}$	205			
Box external dimensions [cm]	WxL	58x118,4	68x118,4	68x128,4	68x138,4
Internal dimensions of the box [cm]	MxN	54x114	64x114	64x124	64x134
Max thickness of the ceiling [cm]		35			
Box height [cm]		14			
Tread length [cm]	E	34			
Tread width [cm]	S	8			
Distance between treads [cm]	G	25			
Tread thickness [cm]	Z	2			

LOFT LADDER

Commercial sizes [cm]		60x120	70x120	70x130	70x140
Room height [cm]	H	305			
Code LDK*		**861001**	**861011**	**861012**	**861013**
Code LDS*		**66134**	**66134**	**66134**	**66134**

* The LDK complete ladder consists of the top element and LDS sliding split section, packed separately.

NON-STANDARD LOFT LADDER SIZES

Where installation of a standard FAKRO loft ladder is not possible, bespoke timber folding sections of the LWK KOMFORT can be made.



BOX

The loft ladder box is made of wood and has a peripheral seal placed within a milled recess. Once the hatch is closed, this seal ensures full airtightness is provided and once installed the box's special design enables quick and easy fitting of either a lining or architrave.

HARDWARE

The spring catch provides added rigidity to the box, prevents distortion and ensures that the ladder will continue to be operated trouble-free. The hinges joining each section of the ladder also add strength to connections as they move.

TREADS

Grooves which are cut into the tread surface protect the user from accidental slipping while using the ladder.

STILE ENDS

Stile ends (for 3-section loft ladders only) made of PVC protect the floor surface from scratching and add to overall stability.

HATCH OPENING MECHANISM

Operation of the loft ladder is significantly improved because of Fakro's unique unloading mechanism. Once unlocked, the hatch opens slowly without any potential danger to the user. Once fully opened, this mechanism will also hold the hatch in position, preventing it from slamming shut.

HATCH

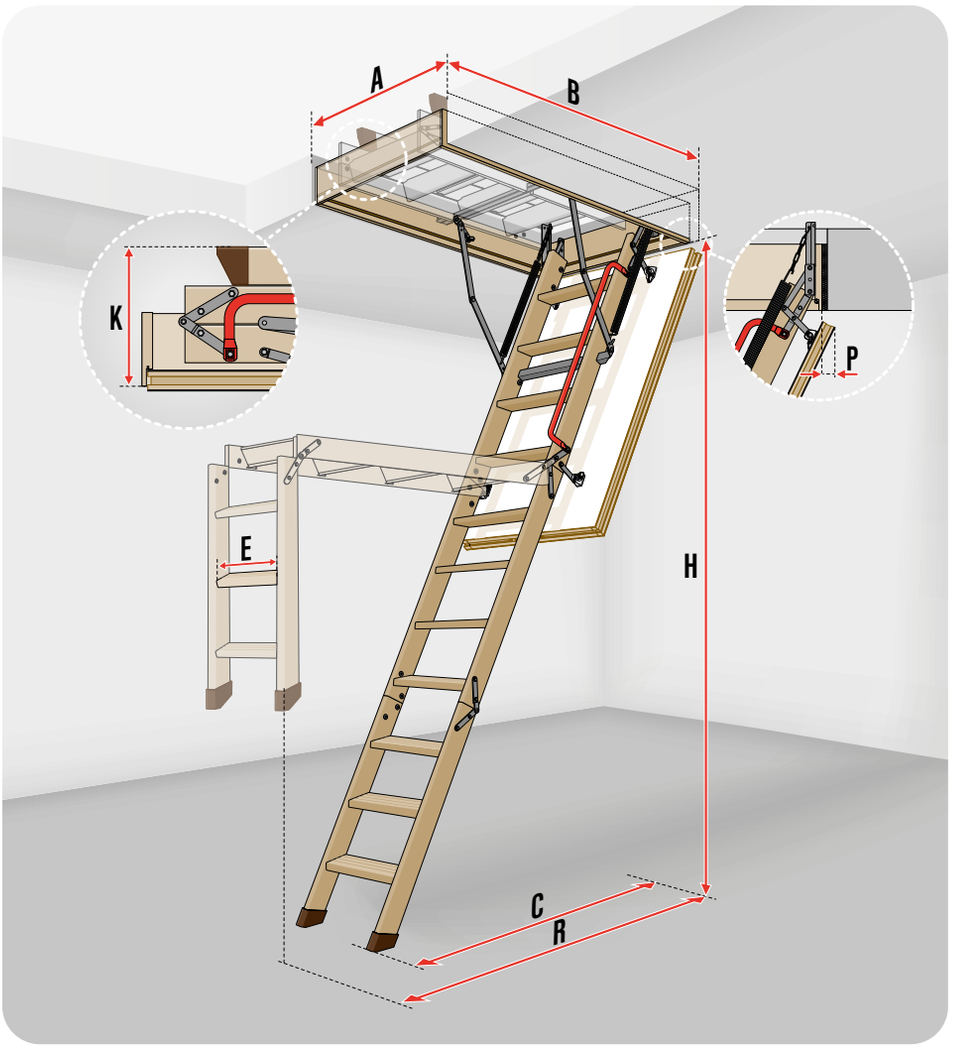
The loft ladder hatch is made of wood and can be either insulated or fire-resistant. The insulation protects against heat loss while fire-resistant material protects against heat build-up caused by spread of flame. The external hatch surface is smooth with no visible fixing points to detract from the visual style of any interior design.

LADDER

FAKRO loft ladders are predominantly of three sections, though some have four. These are moved away from the hatch in order to create more space for the feet. The special ladder structure and materials used ensure the highest standard of durability.

When ordering the **LWK Komfort** loft ladder in non-standard sizes the actual dimensions of the ceiling opening ('A' and 'B') and the room height 'H' have to be provided.
The actual size of the loft ladder box is reduced (for installation reasons) by 2 cm in width and 1.6 cm in length, e.g. for the opening dimensions 54 x 94cm, those of the ladder would be 52 x 92.4cm. When ordering please take into account the swing space needed when unfolding (swing space 'R'), the distance once the ladder is unfolded (distance 'C') and hatch retraction after it is opened (distnce 'P').

LWK Komfort loft ladders are equipped with a hatch which is finished in white on both sides (three section ladders only), and, with the exception of ladders for a 54cm hatch width, a handrail. The height of the loft ladder box is 14cm though to provide a neat finish with deeper ceilings an LXN box extension can be installed (see page 58).



LOFT LADDER COMMERCIAL SIZES

Ceiling opening width [cm]	Ceiling opening length [cm]	Room height [cm]	Swing space (measured from the rear edge of the box) [cm]	Distance after ladder unfolding (measured from the rear edge of the box) [cm]	Hatch retraction after opening [cm]	Number of segments after opening
A	B	H	R	C	P	
54 – 86	94 – 140	200 – 280	115-155	89-120	4	3 or 4 segments*
	120 – 129	280 – 305	140	110-119	4	4 segments
	130 – 140	280 – 305	155-175	120-135	4	3 segments
	140	305 – 335	175-184	135-146	4	3 segments

* - Number of ladder's segments depends on the opening length configuration and room height.

TREAD LENGTH:
3-segment ladder

Ceiling opening width A [cm]	54≤ A <58	58≤A
Tread length E [cm]	30	34

4-segment ladder

Ceiling opening width A [cm]	54≤ A<56	56≤A<60	60≤A
Tread length E [cm]	28	30	34



SECTION LOFT LADDERS

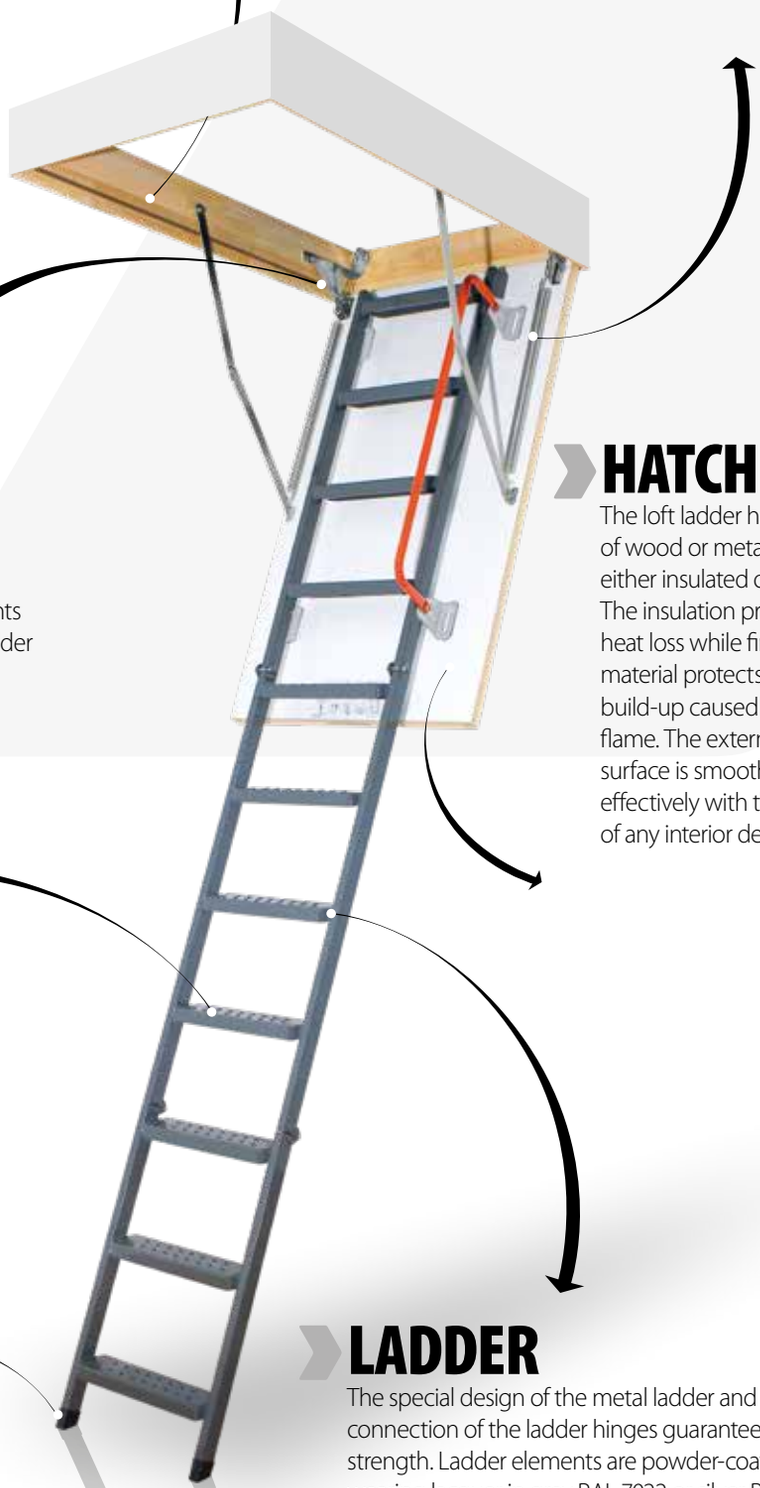
BOX

The ladder box can be of wood, metal or a combination of a wooden box / metal frame. It has been designed to enable architrave to be installed with ease if the ready-fitted option is not chosen. Peripheral single or double seals provide a good standard of airtightness.

HATCH UNFOLDING MECHANISM

The hatch opening mechanism enables it to be fully or partly open positions to ensure folding and unfolding are done in safety. LML and LMF loft ladders also have a hidden mechanism in the handrail which in conjunction with that of the hatch opening enables them to be opened or closed with a single rod.





HARDWARE

The patented corner hinge design adds rigidity to the box and prevents distortion. This ensures that the ladder will continue to be operated trouble-free.

HATCH

The loft ladder hatch is made of wood or metal and can be either insulated or fire-resistant. The insulation protects against heat loss while fire-resistant material protects against heat build-up caused by spread of flame. The external hatch surface is smooth to blend effectively with the visual style of any interior design.

TREAD

Circular embossing of the tread surface prevents slipping while the width of treads (8 or 13cm) enables them to be used safely and with ease.

LADDER

The special design of the metal ladder and a double connection of the ladder hinges guarantee high ladder strength. Ladder elements are powder-coated with hard wearing lacquer in grey RAL 7022 or silver RAL 9006. Some metal ladders have the final two treads left loose and with telescopic stile ends this enables adjustments of the ladder length to be made without the need for cutting.

STILE ENDS

Made from plastic, these protect the floor from scratches and in addition add to the overall ladder stability.

METAL FOLDING SECTION LOFT LADDERS

LMS
SMART



U=1.1 HATCH W/m²K

STANDARD EN 14975

The **LMS** is a 3-section loft ladder in which the hatch and box are made of pine. The metal ladder is powder-coated in RAL 7022 while the insulated hatch is finished in beige.



The use of metal ladder with special hinge structure guarantees high durability -permissible loading 200kg.

- stile ends
- beige hatch
- peripheral seal
- non-slip treads
- possibility of installing additional accessories pages 56-61

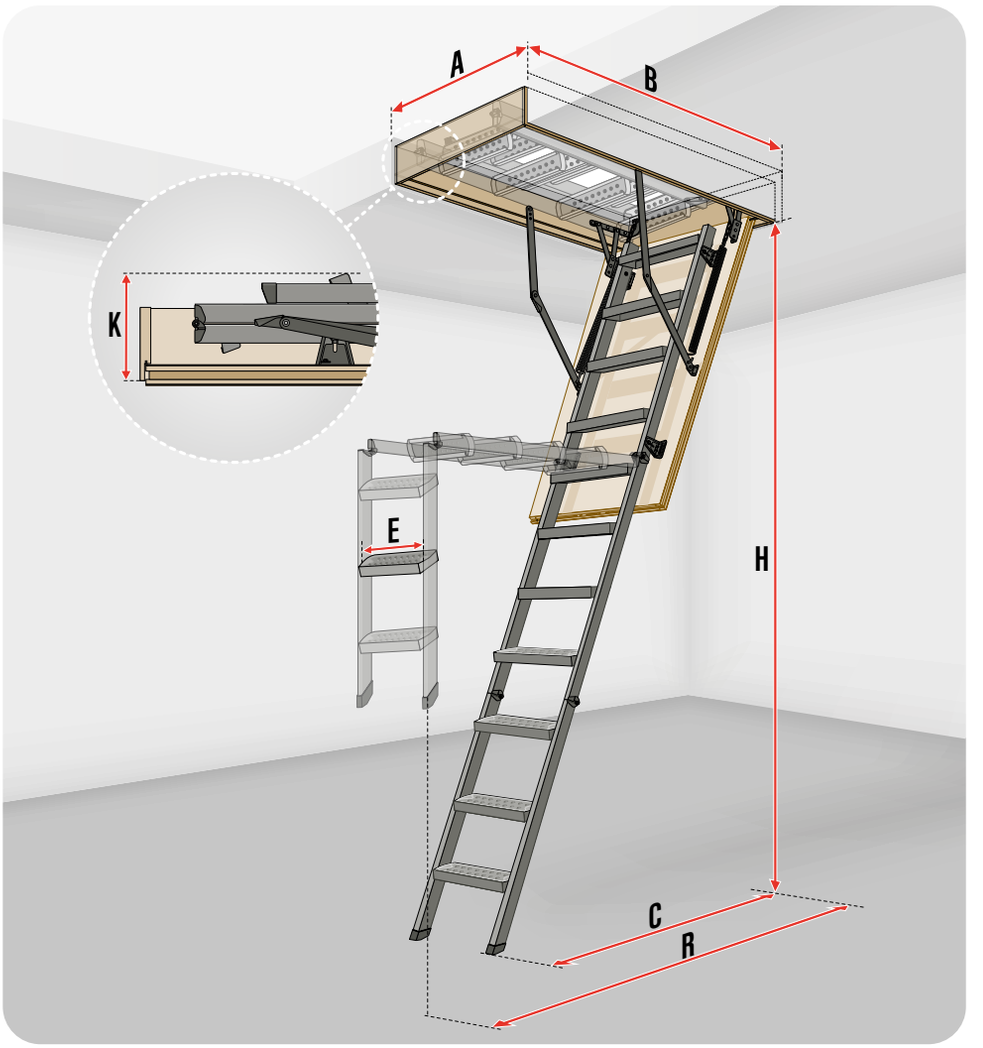
Technical specification:

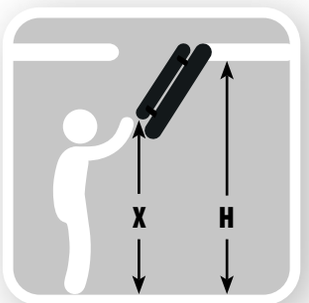
permissible loading of 200 kg
hatch heat transmission coefficient U = 1.1 W/m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LMS LOFT LADDER DIAGRAM





LMS LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120
Maximum room height [cm]	H	280	
Minimum room height [cm]*	$H_{min.}$	220	
Height to be reached to operate the ladder [cm]	X	220	
Box external dimensions [cm]		58x118.4	68x118.4
Internal box dimensions [cm]		54x114	64x114
Folded ladder height [cm]	K	25.5	
Swing space [cm]	R	157	
Distance after ladder unfolding [cm]	C	118.5	
Box height [cm]		14	

LADDER PARAMETERS

Tread length [cm]	E	34
Tread width [cm]		8
Distance between treads [cm]		25

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER

Commercial sizes [cm]		60x120	70x120
Room height [cm]	H	280	
Code		**861201**	**861211**

Ladders are available only in sizes shown above.

METAL FOLDING SECTION LOFT LADDERS

LMK
KOMFORT



White insulated hatch
and handrail

U=1.1 HATCH W/m²K

STANDARD EN 14975

Unlike the LMS the **LMK** loft ladder has a white hatch and red handrail. The handrail is fixed to the ladder brackets, making its use much easier.

- stile ends
- handrail
- white hatch
- non-slip treads
- peripherial seal
- possibility of installing additional accessories pages 56-61

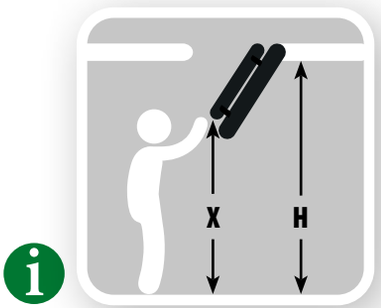
Technical specification:

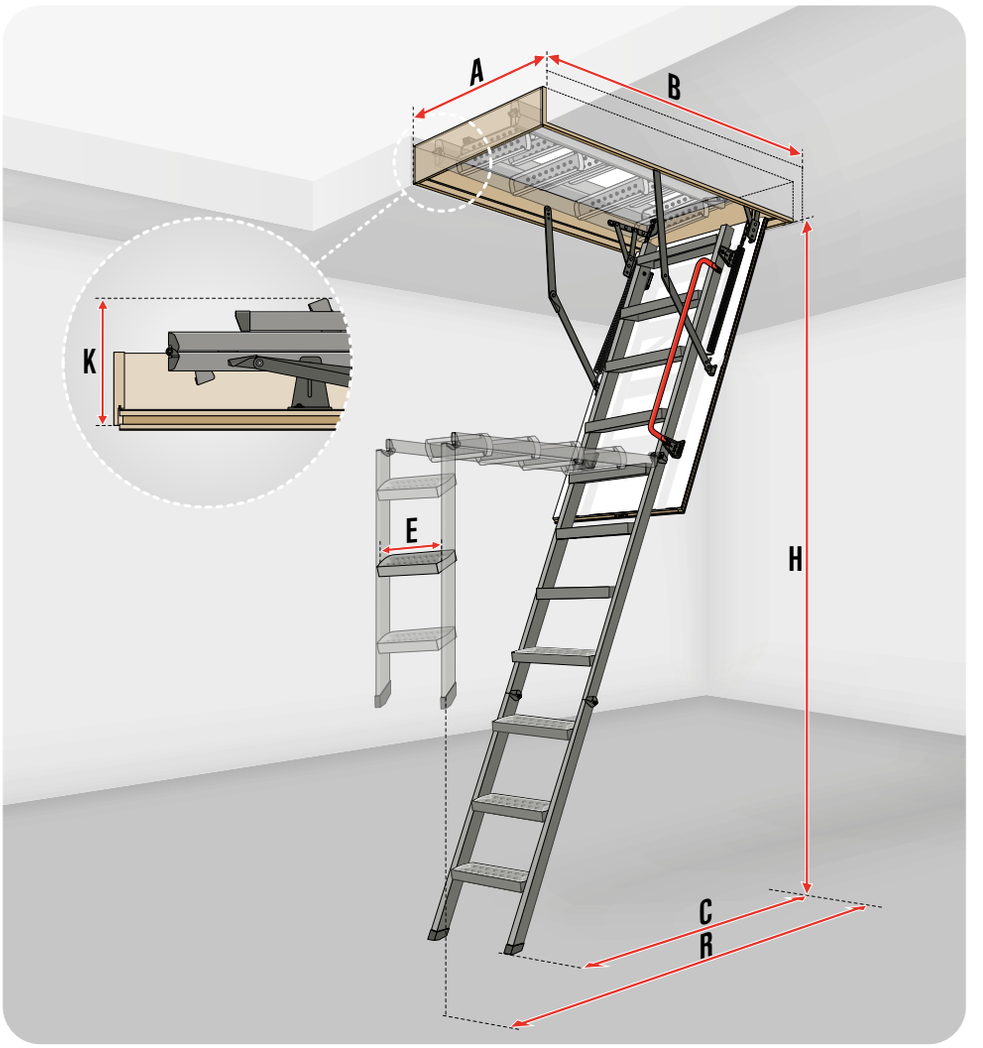
permissible loading of 200 kg
hatch heat transmission coefficient U = 1.1 W/m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

fully assembled,
and ready for quick
installation in the ceiling

3 years WARRANTY

LMK LOFT LADDER DIAGRAM





LMK LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120	70x130	70x140	60x130	70x130	70x140
Maximum room height [cm]	H	280				305		
Minimum room height [cm]*	$H_{min.}$	220				245		
Height to be reached to operate the ladder [cm]	X	220				245		
Box external dimensions [cm]		58x118.4	68x118.4	68x128.4	68x138.4	68x128.4	68x128.4	68x138.4
Internal box dimensions [cm]		54x114	64x114	64x124	64x134	54x124	64x124	64x134
Folded ladder height [cm]	K	25.5						
Swing space [cm]	R	157				175		
Distance after ladder unfolding [cm]	C	118.5				127		
Box height [cm]		14						

LADDER PARAMETERS

Tread length [cm]	E	34						
Tread width [cm]		8						
Distance between treads [cm]		25						

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER

Commercial sizes [cm]		60x120	70x120	70x130	70x140	60x130	70x130	70x140
Room height [cm]	H	280				305		
Code		**861401**	**861411**	**861412**	**861413**	**861451**	**861453**	**861454**

Ladders are available only in sizes shown above.

METAL FOLDING SECTION LOFT LADDERS

LML
LUX



Steel frame integrated with a wooden box, metal architrave lining and quick fit brackets.



Mechanism hidden within the rail aids folding and unfolding of the ladder.



Additional tread shortens distance between top tread and loft floor.

U= **1.1** HATCH W/m²K

STANDARD EN 14975

The **LML** folding section metal loft ladder has been designed to provide the highest standard of ease and convenience while offering simple assembly and height adjustment.



Telescopic stile ends enable quick adjustment of ladder length to suit ceiling height.

- telescopic stile ends
- white hatch
- finishing lining slats
- peripheral seal
- ladder unloading mechanism built in handrail
- system of quick installation in the ceiling
- non-slip treads, 13cm in width
- possibility of installing additional accessories pages 56-61

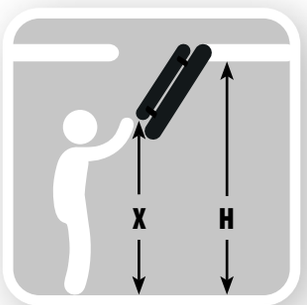
Technical specification:

permissible loading of 200 kg
hatch heat transmission coefficient U = 1.1 W/m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

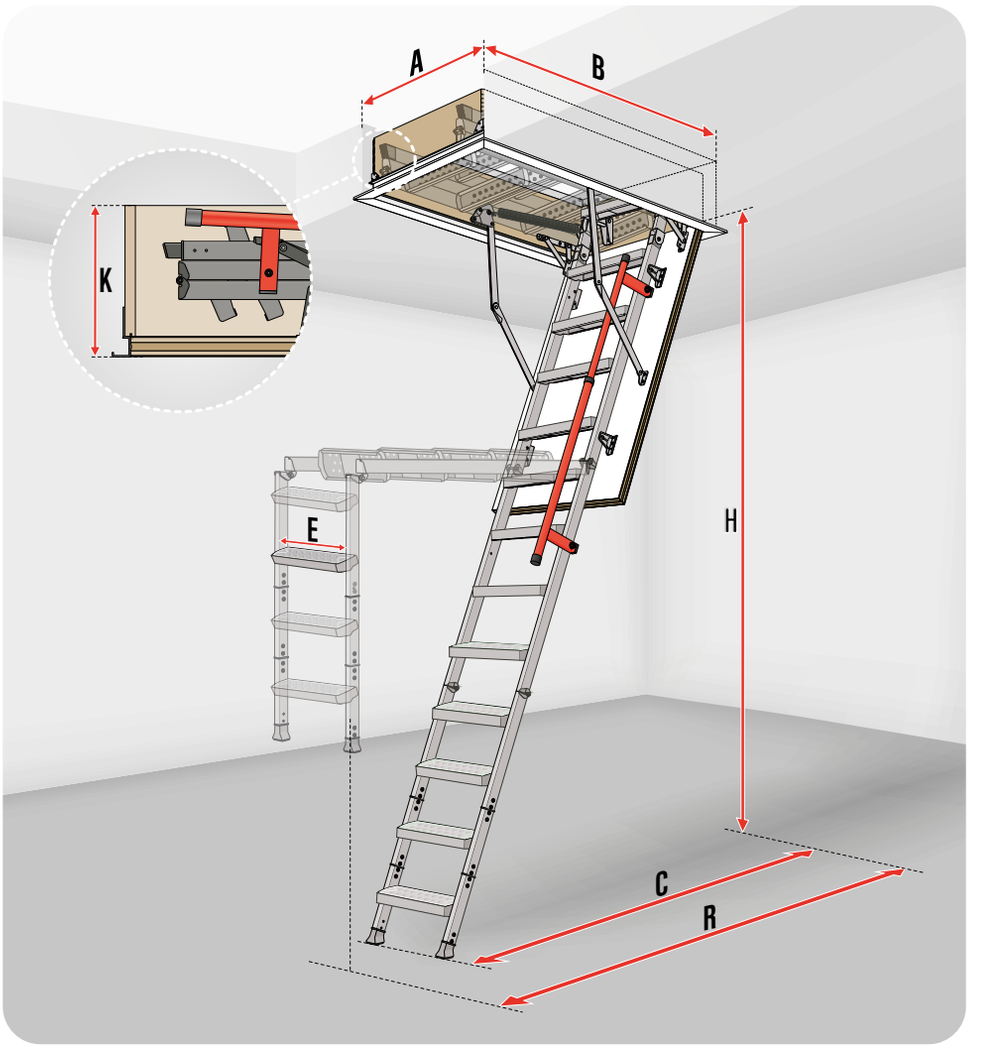
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LML LUX LOFT LADDER DIAGRAM



The LML ladders as standard are equipped with ladder unloading mechanism, so they can be fully operated with the opening rod (hatch opening and closing, ladder unfolding).



LML LUX LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120	70x130	70x140	86x130	92x130	60x130	70x130	70x140	86x130	92x130
Maximum room height [cm]	H	280						305				
Minimum room height [cm]*	$H_{min.}$	233						256				
Height to be reached to operate the ladder [cm]	X	205						230				
Box external dimensions [cm]		59.6 x 118.6	68.6 x 118.6	68.6 x 128.6	68.6 x 138.6	84.6x128.6	90.6x128.6	59.6 x 128.6	68.6 x 128.6	68.6 x 138.6	84.6x128.6	90.6x128.6
Box external dimensions with architrave linings [cm]		63.6x122.6	72.6x122.6	72.6x132.6	72.6x142.6	88.6x132.6	94.6x132.6	63.6x132.6	72.6x132.6	72.6x142.6	88.6x132.6	94.6x132.6
Internal box dimensions [cm]		54.7x113.7	63.7x113.7	63.7x123.7	63.7x133.7	79.7x123.7	85.7x123.7	54.7x123.7	63.7x123.7	63.7x133.7	79.7x123.7	85.7x123.7
Folded ladder height [cm]	K	31.5										
Swing space [cm]	R	167						178				
Distance after ladder unfolding [cm]	C	120						130				
Box height [cm]		31.5										

LADDER PARAMETERS

Tread length [cm]	E	35										
Tread width [cm]		13										
Distance between treads [cm]		25										

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

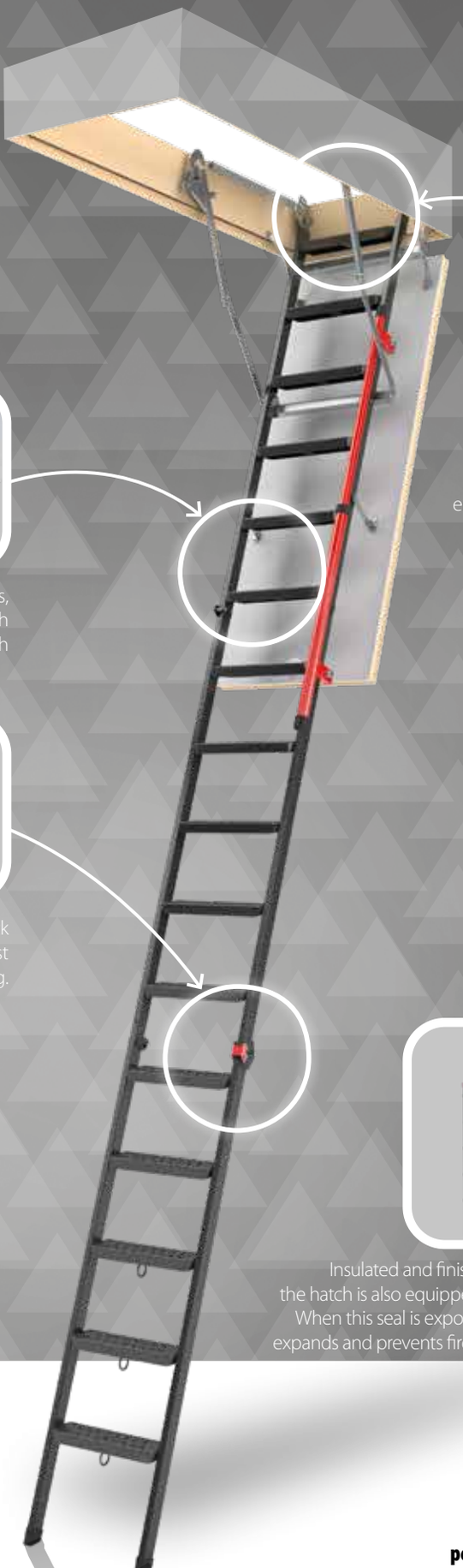
LOFT LADDER

Commercial sizes [cm]		60x120	70x120	70x130	70x140	86x130	92x130	60x130	70x130	70x140	86x130	92x130
Room height [cm]	H	280						305				
Code		**862401**	**862411**	**862412**	**862413**	**862496**	**862498**	**862451**	**862453**	**862454**	**862497**	**862499**

Ladders are available only in sizes shown above.

METAL FOLDING SECTION LOFT LADDERS

LMP





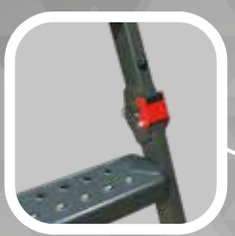
White on both sides, 3.6 cm thick, insulated hatch equipped with a latch



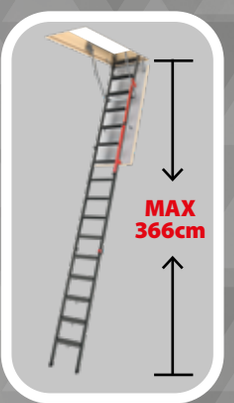
Short distance between the last tread and attic floor enhances the comfort of use.

U=1.1 HATCH W/m²K

STANDARD EN 14975

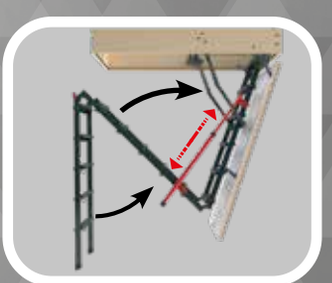


Added safety, thanks to lock which prevents against unintentional folding.



Ladders intended for installation in high ceiling rooms.

The LMP new generation loft ladder, allows access to attic space, even **in very high ceiling rooms** (from 300 to 366cm). The unloading system used in ladder allows for convenient operation while maintaining the maximum comfort and safety of use.



Insulated and finished in white on both sides, the hatch is also equipped with an expandable seal. When this seal is exposed to high temperatures, it expands and prevents fire from breaching the hatch.

- stile ends
- white hatch
- peripheral seal
- ladder unloading mechanism built in handrail
- non-slip treads
- possibility of installing additional accessories pages 56-61
- 366 cm — for high rooms

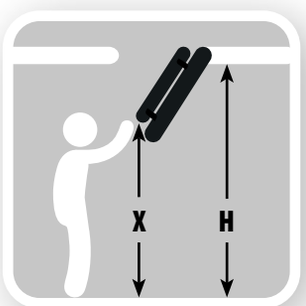
Technical specification:

permissible loading of 200 kg
hatch heat transmission coefficient U = 1.1 W /m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

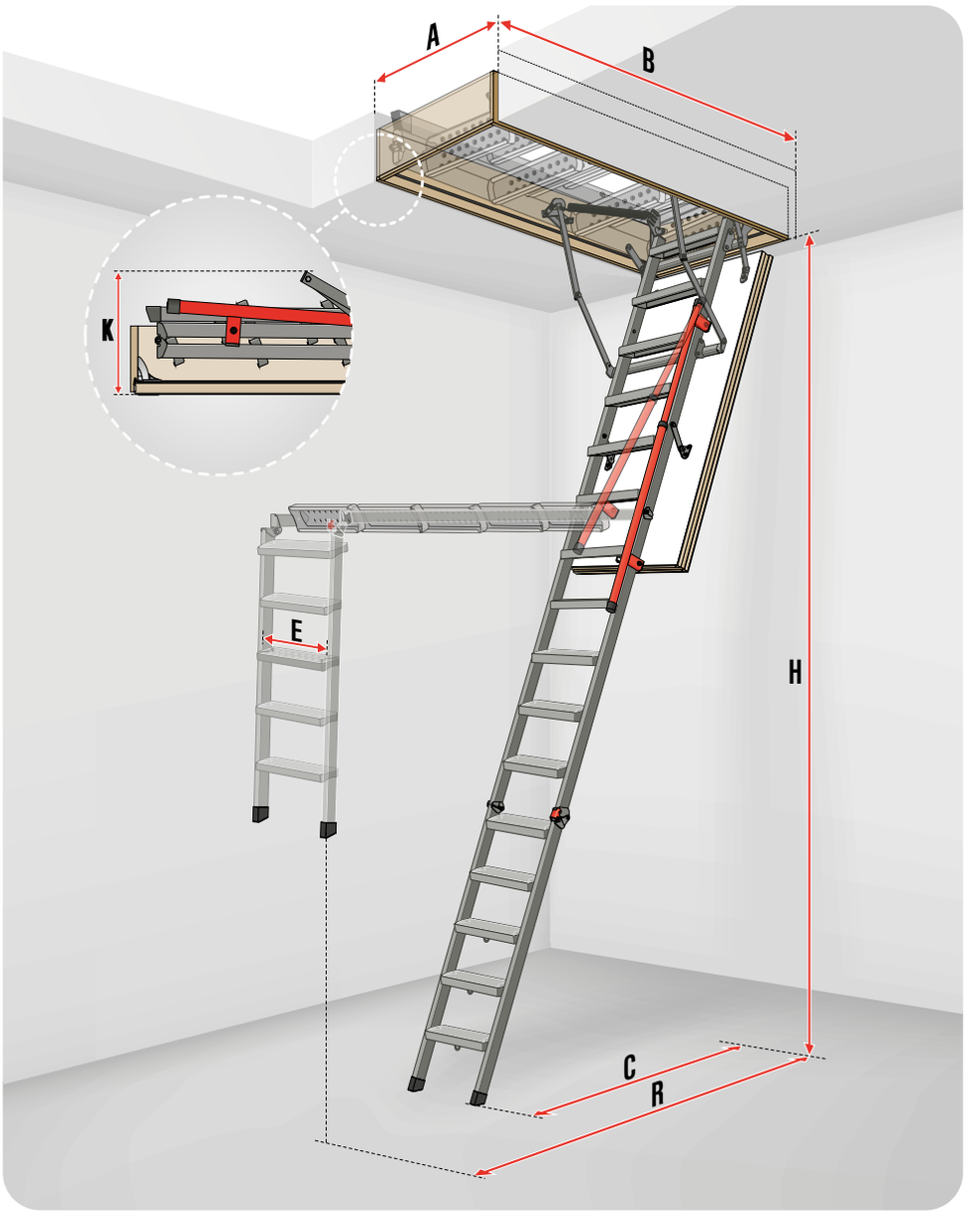
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LMP LOFT LADDER DIAGRAM



The LMP ladders as standard are equipped with ladder unloading mechanism, so they can be fully operated with the opening rod (hatch opening and closing, ladder unfolding).



LMP LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x144	70x144	86x144
Maximum room height [cm]	H	366		
Minimum room height [cm]*	$H_{min.}$	300		
Height to be reached to operate the ladder [cm]	X	270		
Box external dimensions [cm]	WxL	58x142.2	68 x 142.2	84 x 142.2
Internal box dimensions [cm]	MxN	54 x 138.2	64 x 138.2	80 x 138.2
Folded ladder height [cm]	K	32		
Swing space [cm]	R	196		
Distance after ladder unfolding [cm]	C	145		
Box height [cm]		18		

LADDER PARAMETERS

Tread length [cm]	E	34
Tread width [cm]	S	8
Distance between treads [cm]	G	24

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER

Commercial sizes [cm]		60x144	70x144	86x144
Room height [cm]	H	366		
Code		**869334**	**869335**	**869336**

Ladders are available only in sizes shown above.

METAL FOLDING SECTION LOFT LADDERS

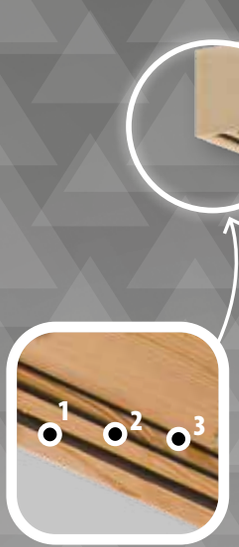
NEW!

LMF 60
FIRE-RESISTANT

U=0.64 LOFT LADDER W/m²K

STANDARD EN 14975

EN 13501-2 EI₁60



Triple system of seals guarantees perfect tightness.

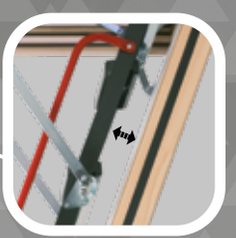


only in loft ladders to room height 360cm

The LMF 60 to room height 360cm as standard are equipped with ladder unloading mechanism, so they can be fully operated with the opening rod (hatch opening and closing, ladder unfolding).



Short distance between the last tread and attic floor.



The hinge controls hatch movement, and as its opened, moves the hatch away from the ladder's treads. Resulting in increased space and easy operation.



The white on both sides and insulated, the hatch is equipped with expandable seal which under the influence of heat expands and prevents entering the fire to the fire free space.

The LMF 60 a new generation of fire resistant loft ladders with metal ladder which perfectly combines a high level of fire protection with comfortable and safe access to the loft. The materials used provide 60-minute protection against fire penetration from the space where the loft ladder was installed.

- stile ends
- one - sidedly fire-resistant hatch
- seal x3
- handrail (in loft ladders in version 280 and 305cm)
- ladder unloading mechanism built in handrail (in version 360cm in height).
- non-slip treads
- possibility of installing additional accessories pages 56-61
- 360 cm ↑ for high rooms

*manufacturer's internal research

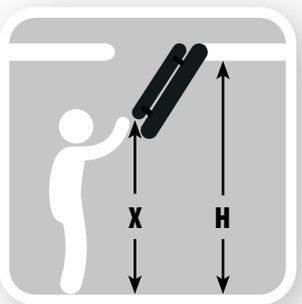
Technical specification:

permissible loading of 200 kg
loft ladder heat transmission coefficient U = 0.64 W/m²K*
Fire resistance class EI_1/EI_2 = 60 minutes
insulation thickness 7.8 cm
hatch thickness 8.5 cm

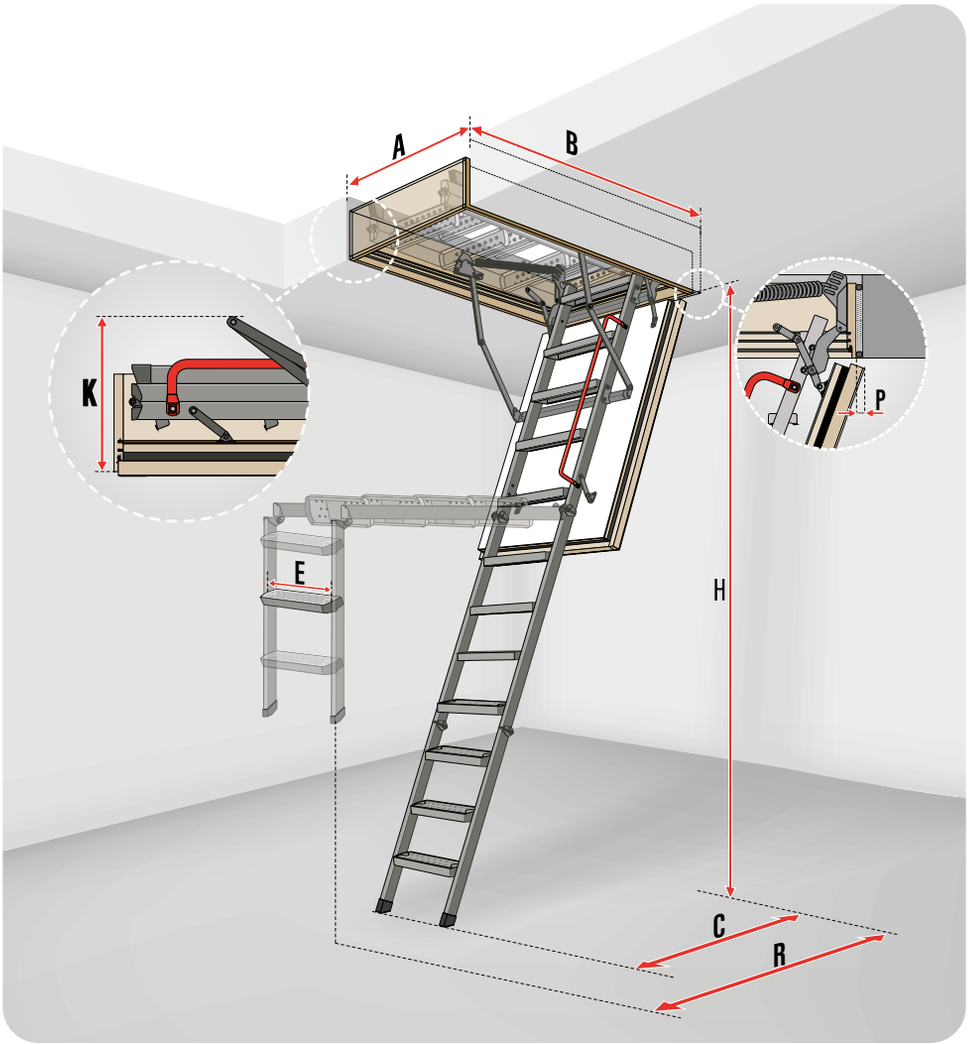
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LMF 60 LADDER DIAGRAM



The LMF60 ladders up to the height of 360 cm are as standard equipped with ladder unloading mechanism, so they can be fully operated with the opening rod (hatch opening and closing, ladder unfolding).



LMF 60 LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130	60x144	70x144	86x144
Maximum room height [cm]	H	280					305			360		
Minimum room height [cm]*	$H_{min.}$	233					234			295		
Height to be reached to operate the ladder [cm]	X	210					230			265		
Box external dimensions [cm]		58x118	68x118	68x128	68x138	84x128	68x128	68x138	84x128	58x142.2	68x142.2	84x142.2
Box Internal dimensions [cm]		54x114	64x114	64x124	64x134	80x124	64x124	64x134	80x124	54x138.2	64x138.2	80x138.2
Folded ladder height [cm]	K	39										
Swing space [cm]	R	156					167			194		
Distance after ladder unfolding [cm]	C	125					135			156		
Hatch retraction after opening	P	5										
Box height [cm]		22.5										
Number of sections		3										
LADDER PARAMETERS												
Tread length [cm]	E	34										
Tread width [cm]	S	8										
Distance between treads [cm]	G	25								24		

* For rooms lower than the standard maximum height "H", it is required to match the ladder length in accordance with the fitting instructions.

LOFT LADDER

Commercial sizes [cm]		60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130	60x144	70x144	86x144
Room height [cm]	H	280					305			360		
Code		**869J01**	**869J11**	**869J12**	**869J13**	**869J96**	**869J53**	**869J54**	**869J97**	**869JAD**	**869JAE**	**869JAF**

Ladders are available only in sizes shown above.

FIRE-RESISTANT LOFT LADDERS

LMF
FIRE-RESISTANT

U=0.79 HATCH W/m²K

NORMA EN 14975

EN 13501-2 EI₂120

The design of **LMF** loft ladder complies with stringent fire requirements, whilst providing safe and comfortable access to the loft spaces. The LMF ladder prevents fire from spreading to the upper or lower fire free storey for **120 minutes**.



Integrated with steel frame the quick installation system reduces time required to settle loft ladder in the ceiling.



Short distance between the last tread and attic floor.



The special hatch design and materials used in its production protect for 120 min against the ingress of fire.



Mechanism hidden within the rail aids folding and unfolding of the ladder.

* manufacturer's internal research

- telescopic stile ends
- fire-resistant hatch on both sides
- architrave lining
- seal x2
- ladder unloading mechanism built in handrail
- system of quick installation in the ceiling
- non-slip treads, 13 cm in width
- possibility of installing additional accessories pages 56-61

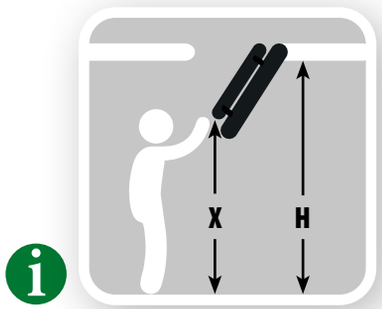
Technical specification:

permissible loading of 200 kg
hatch heat transmission coefficient U = 0.79 W/m²K
fire-resistance EI₂=120 minutes
insulation thickness 8 cm
hatch thickness 8.2 cm

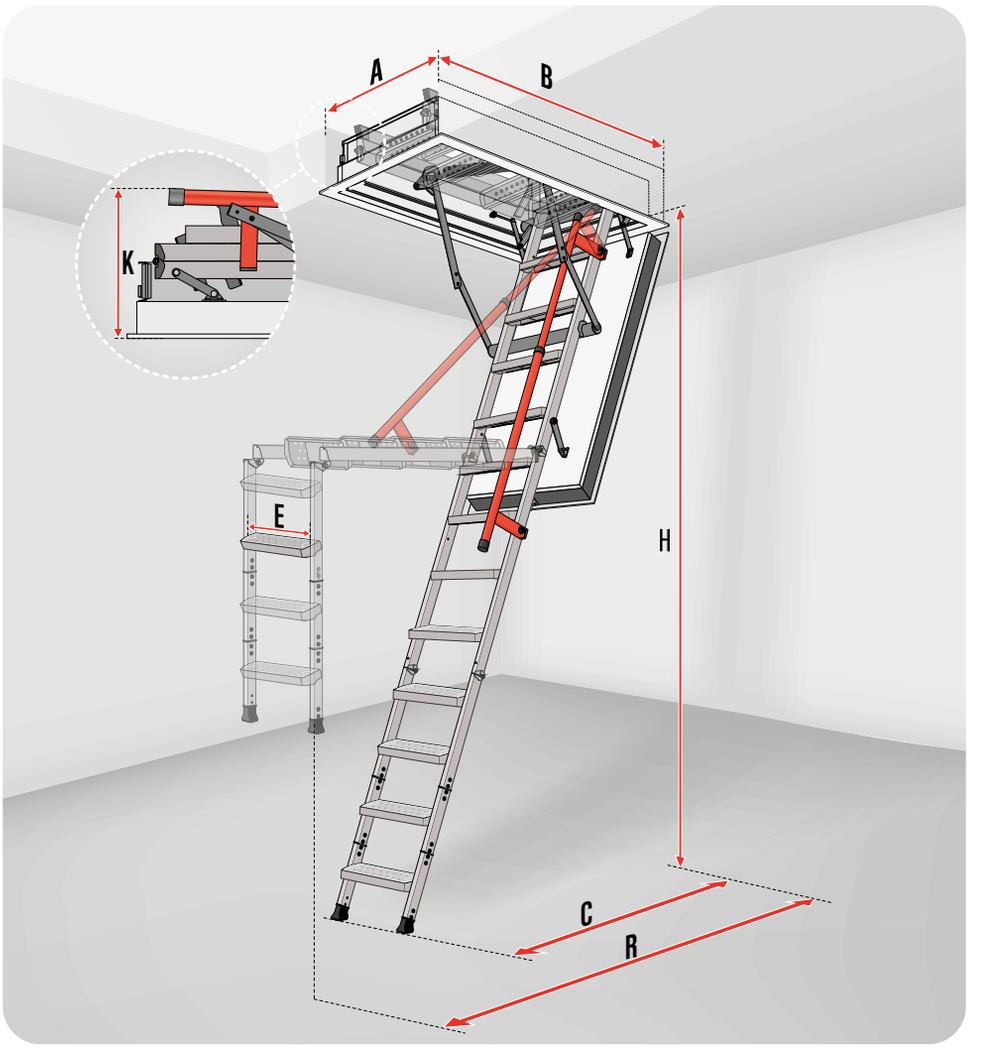
fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LMF LOFT LADDER DIAGRAM



The LMF loft ladders are as standard equipped with ladder unloading mechanism, so theycan be fully operated with the opening rod (hatch opening and closing, ladder unfolding).



LMF LOFT LADDER DIMENSIONS

Ceiling opening dimensions [cm]	AxB	60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130
Maximum room height [cm]	H	280					305		
Minimum room height [cm]*	$H_{min.}$	233					256		
Height to be reached to operate the ladder [cm]	X	220					235		
Box external dimensions [cm]		59x118	68x118	68x128	68x138	84x128	68x128	68x138	84x128
Box external dimensions with architrave liningss		64.7x123.7	73.7x123.7	73.7x133.7	73.7x143.7	89.7x133.7	73.7x133.7	73.7x143.7	89.7x133.7
Internal box dimensions [cm]		55x114	64x114	64x124	64x134	80x124	64x124	64x134	80x124
Folded ladder height [cm]	K	34							
Swing space [cm]	R	165					176		
Distance after ladder unfolding [cm]	C	120					130		
Box height [cm]		16							

LADDER PARAMETERS

Tread length [cm]	E	35							
Tread width [cm]		13							
Distance between treads [cm]		25							

* for rooms lower than the maximum standard height H please adjust the length of the ladder according to the assembly instructions

LOFT LADDER

Commercial sizes [cm]		60x120	70x120	70x130	70x140	86x130	70x130	70x140	86x130
Room height [cm]	H	280					305		
Code		**862501**	**862511**	**862512**	**862513**	**862596**	**862553**	**862554**	**862597**

Ladders are available only in sizes shown above.



SCISSORS LOFT LADDERS



BOX

The ladder box can be of wood, metal or a combination of a wooden box / metal frame. The box is equipped with a **peripheral seal** and **lining as standard**. The box enables the scissors ladder to be installed and adjusted quickly and with ease.

HATCH UNLOADING MECHANISM

The hinge mechanism significantly simplifies ladder operation. Once unlocked, the hatch opens slowly to avoid any risk to the user. It then keeps the hatch in the fully open position and prevents spontaneous spring back during folding and unfolding.



HARDWARE

The patented **corner hinge** design adds rigidity to the box and prevents distortion. This ensures that the ladder will continue to be operated trouble-free.

HATCH

Scissors loft ladders are equipped with white **insulated** or **fire-resistant** hatches, made of either wood or wood and metal as standard. The external hatch surface is smooth to blend effectively with the visual style of any interior design.

TREADS

The specially embossed pattern on the tread surface protects the user from accidental slipping while using the loft ladder.

LADDER

The scissors ladder construction makes height adjustment a simple process **with no need for cutting**. It also enables the ladder to be folded to a smaller size and used in openings as small as 50 x 70cm. The elegant, modern style is achieved through use of 'S'-shaped stringers which can also be used as handrails.

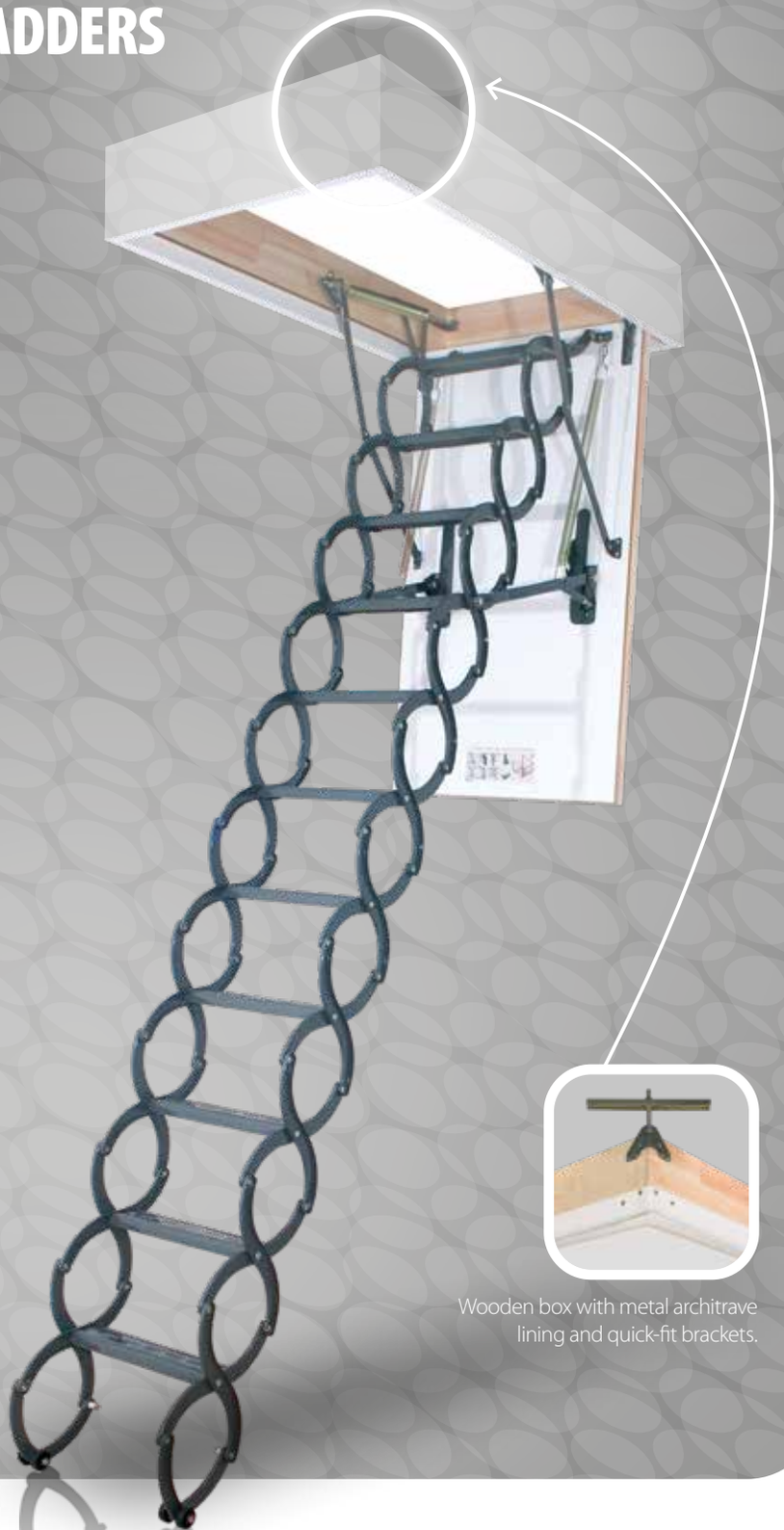
SCISSORS LOFT LADDERS

LST

U=1.1 HATCH W/m²K

STANDARD EN 14975

The **LST** scissors loft ladder is equipped with a 3.6cm thick, white insulated hatch as standard. The box is made of wood and has quick-fit brackets while the hatch opening mechanism guarantees safe folding and unfolding. In addition, its construction has eliminated the need for a lock. The ladder itself is powder-coated in RAL 7022 Grey. The overall floor – ceiling ladder height can be increased to a maximum of 330cm by adding two LSS treads.



Wooden box with metal architrave lining and quick-fit brackets.

- white hatch
- architrave lining
- peripheral seal
- non-slip treads
- possibility of adding or detaching tread
- system of quick installation in the ceiling
- system of adapting the ladder length to the ceiling height
- possibility of installing additional accessories

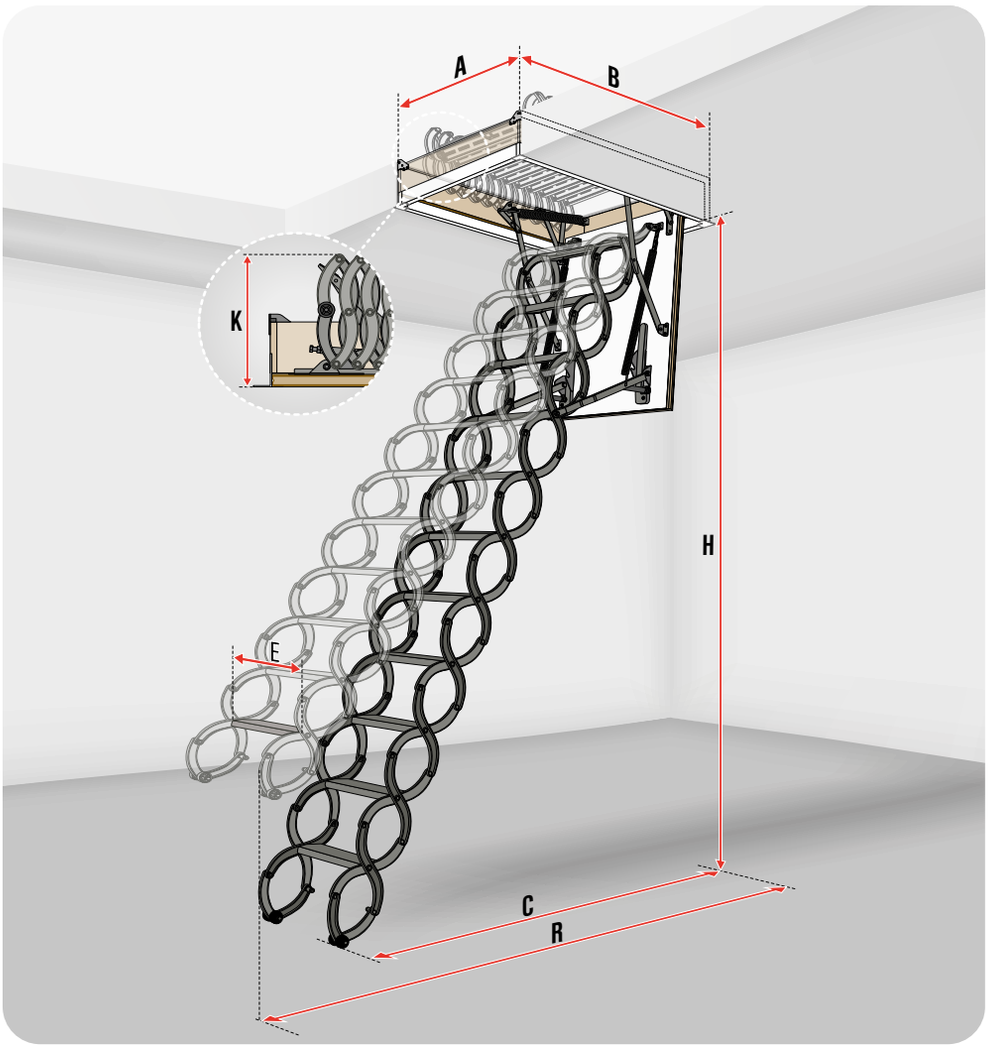
Technical specification:

permissible loading of 200 kg
hatch heat transmission coefficient U = 1.1 W/m²K
insulation thickness 3 cm
hatch thickness 3.6 cm

fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LST LOFT LADDER DIAGRAM



LST LOFT LADDER DIMENSIONS

		Standard ladder length				
Ceiling opening dimensions [cm]	**AxB**	50x80	60x90	60x120	70x80	70x120
Room height [cm]	**H**	250 – 280				
Box external dimensions [cm]		49x79.4	59x89.4	59x119.4	69x79.4	69x119.4
Box external dimensions with architrave lininings		54x84.4	64x94.4	64x124.4	74x84.4	74x124.4
Internal box dimensions [cm]		44x74	54x84	54x114	64x74	64x114
Folded ladder height [cm]	**K**	38.2				
Swing space [cm]	**R**	150				
Distance after ladder unfolding [cm]	**C**	146 – 134				
Box height [cm]		18				

LADDER PARAMETERS

Tread length [cm]	**E**	24	30	38
Tread width [cm]		8		
Distance between treads [cm]		24-26		
Standard number of treads [units]		11		
Compatible tread LSS		LSS-24	LSS-31	LSS-38

Ladder shorter by 1 tread (10-tread ladder)		Standard ladder (11-tread ladder)		Ladder longer by 1 tread (12- tread ladder)		Ladder longer by 2 treads (13- tread ladder)	
230	250	250	280	280	300	300	330
Sizes and dimensions of loft ladder not included into the table are identical with those for heights 250-280cm							
140		150		160		170	
135	127	146	134	153	145	163	150

LOFT LADDER

Commercial sizes [cm]		50x80	60x90	60x120	70x80	70x120
Room height [cm]	**H**	250 - 280				
Code		**860402**	**860432**	**860423**	**860426**	**860436**

Ladders are available only in sizes shown above.

Code	**860207**	**860205**	**860206**
tread*	LSS-24	LSS-31	LSS-38
ladder width [cm]	50	60	70

* while ordering LSS tread- the ladder commercial size and type has to be provided

METAL SCISSORS LOFT LADDERS

SCISSORS LOFT LADDERS

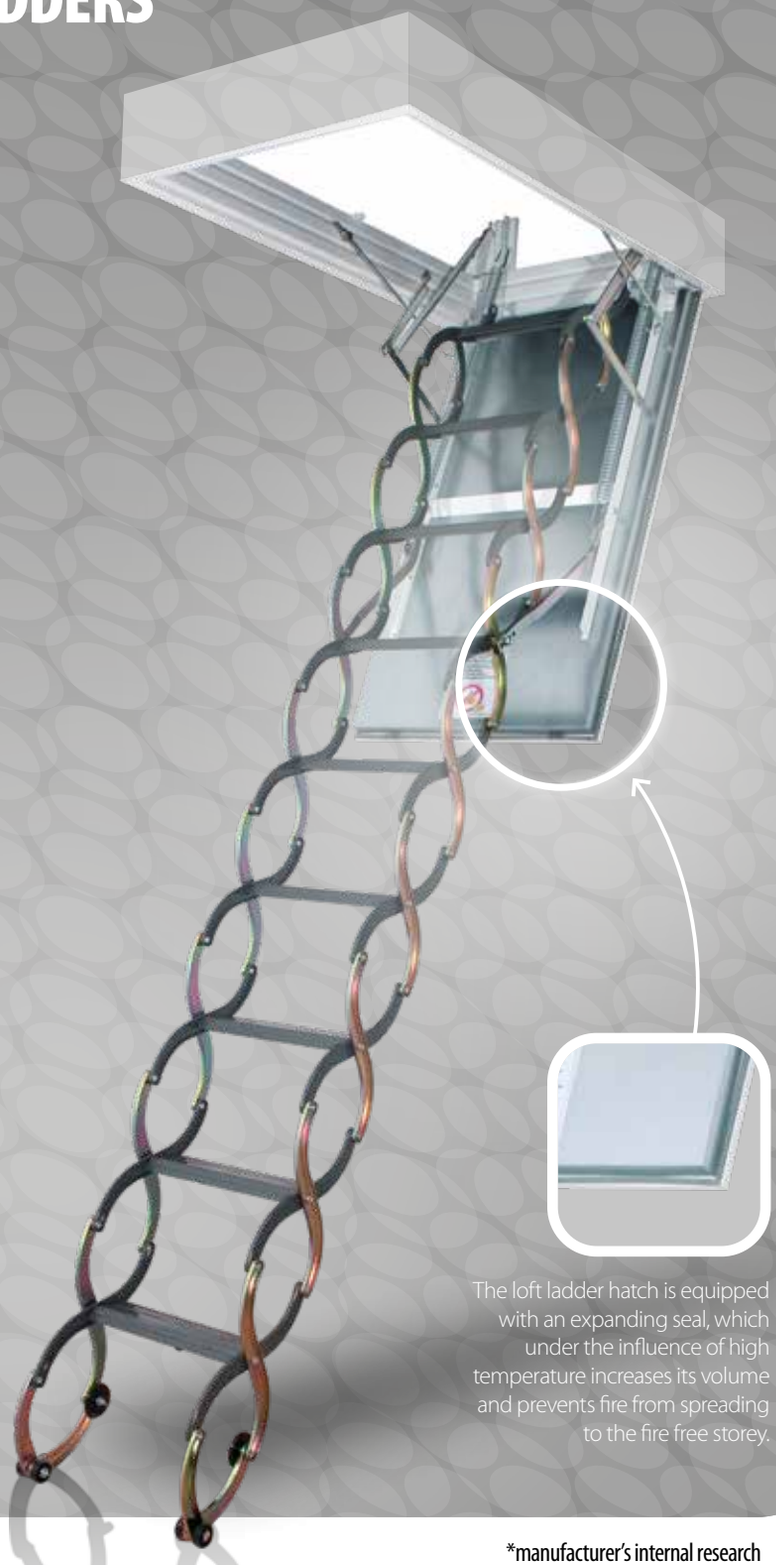
LSF
FIRE-RESISTANT

U=1.8 HATCH W/m²K

STANDARD EN 14975

EN 13501-2 EI₂60

The **LSF** fire-resistant loft ladder has a 60-minute fire rating and acts as a barrier to prevent spread of flame. The overall floor - ceiling ladder height can be increased to a maximum of 320cm by adding one LSS tread.



The loft ladder hatch is equipped with an expanding seal, which under the influence of high temperature increases its volume and prevents fire from spreading to the fire free storey.

- fire-resistant hatch on one side
- architrave lining
- non-slip treads
- possibility of adding or detaching tread
- system of quick installation in the ceiling
- system of adapting the ladder length to the ceiling height
- possibility of installing additional accessories pages 56-61

*manufacturer's internal research

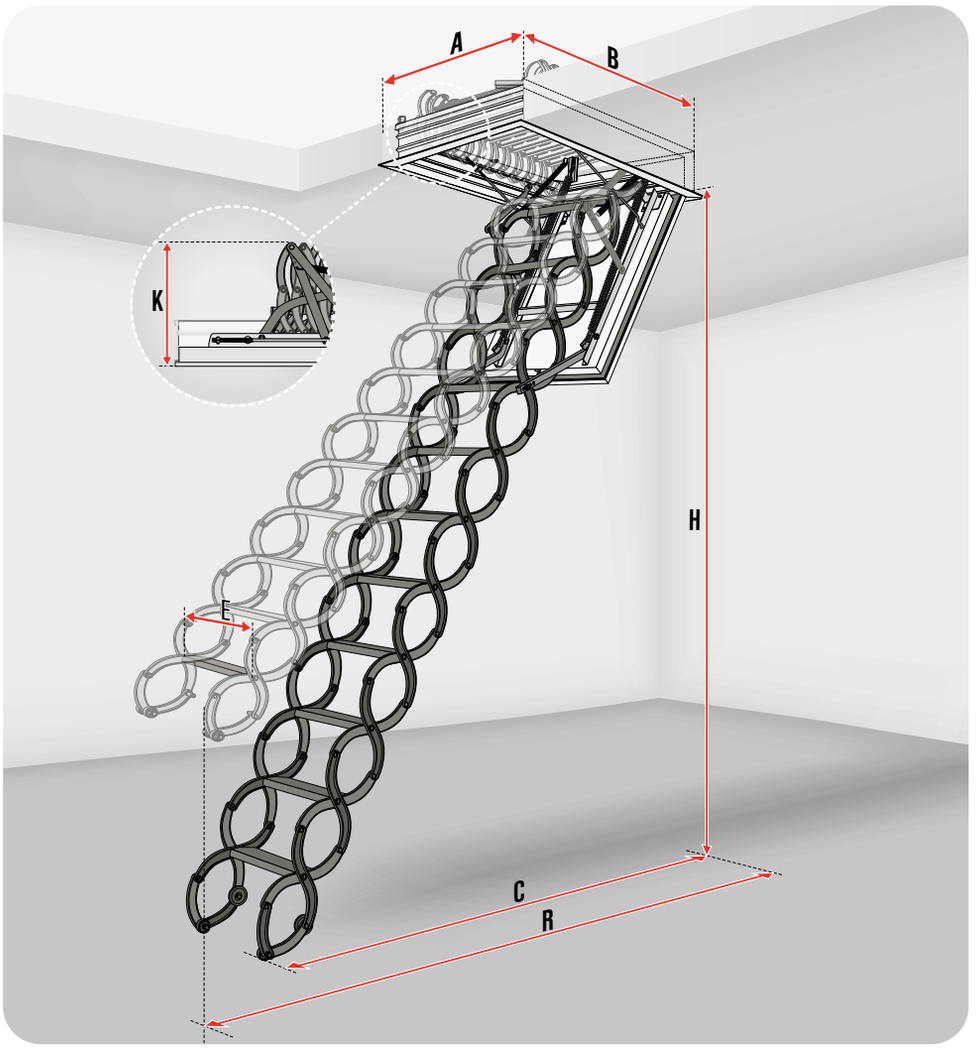
Technical specification:

permissible loading of 200 kg
fire-resistance EI₂=60 minutes
insulation thickness 3 cm
hatch thickness 5.6cm

fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

LSF LOFT LADDER DIAGRAM



LSF LOFT LADDER DIMENSIONS

		Standard ladder length						
Ceiling opening dimensions [cm]	AxB	50x70	60x90	60x120	70x80	70x90	70x110	70x120
Room height [cm]	H	270 – 300						
Box external dimensions [cm]		48x68.5	58x88.5	58x118.5	68x78.5	68x88.5	68x108.5	68x118.5
Box external dimensions with architrave lininings		54.8x75	64.8x95	64.8x125	74.8x85	74.8x95	74.8x115	74.8x125
Internal box dimensions [cm]		44.8x64.8	54.8x84.8	54.8x114.8	64.8x74.8	64.8x84.8	64.8x104.8	64.8x114.8
Folded ladder height [cm]	K	46						
Swing space [cm]	R	170 – 180						
Distance after ladder unfolding [cm]	C	165 – 130						
Box height [cm]		14						

LADDER PARAMETERS

Tread length [cm]	E	30	32	40
Tread width [cm]		8		
Distance between treads [cm]		25 – 30		
Standard number of treads [units]		10		
Compatible tread LSS		LSS-30	LSS-32	LSS-40

Ladder shorter by 1 tread (9-tread ladder)		Standard ladder (10- tread ladder)		Ladder longer by 1 tread (11- tread ladder)	
240	270	270	300	300	320
Sizes and dimensions of loft ladder not included into the table are identical with those for heights 250-280cm					
165	165	170	180	185	210
100	140	165	130	120	140

LOFT LADDER

Commercial sizes [cm]	50x70	60x90	60x120	70x80	70x90	70x110	70x120
Room height [cm]	270 - 300						
Code	**860101**	**860123**	**860126**	**860132**	**860133**	**860135**	**860136**

Ladders are available only in sizes shown above.

Code	860201	860202	860203
tread*	LSS-30	LSS-32	LSS-40
ladder width[cm]	50	60	70

* when ordering LSS tread- the ladder commercial size and type has to be provided

L-SHAPED COMBINATION DOORS

DWK

DWK L-Shaped combination doors are intended to be built into walls to provide access to the unused space behind. They offer excellent thermal insulation parameters (U=1.1W/m²K) and airtightness to minimise heat loss. Left or right-hand opening versions are available, standard doors being equipped with 3.5cm wide natural timber-coloured slats. The 3.6cm insulated sash is of HDF and has a white veneer on both sides and pine frame.



Universal handle with lock.

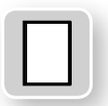
Architrave lining slats 3.5cm wide.

Rubber seal to ensure full airtightness.

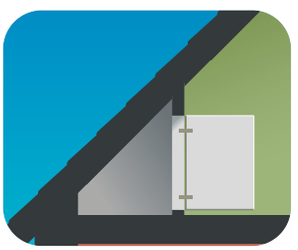
U= **1.1*** W/m²K

* manufacture's internal testing for the middle part of the sash





architrave lining



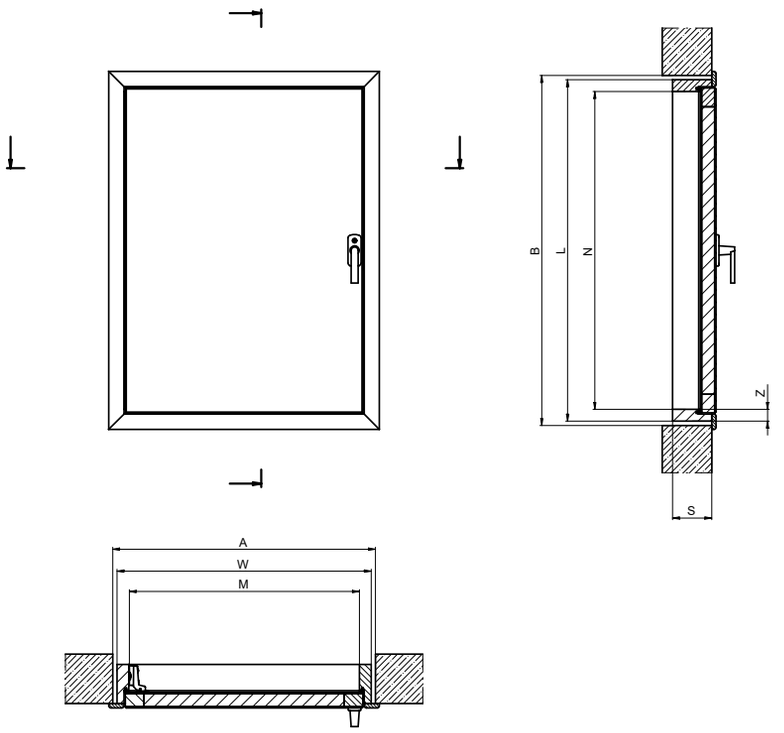
Technical specification:

heat transmission coefficient U = 1.1 W/m²K
insulation thickness 3 cm

fully assembled, and ready for quick installation

3 years WARRANTY

DWK DOOR DIAGRAM



DWK L-SHAPED DOORS DIMENSIONS

Opening dimensions [cm]	**AxB**	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Door dimensions [cm]	**WxL**	53.4x78.4	58.4x78.4	58.4x98.4	58.4x108.4	68.4x88.4	68.4x98.4	68.4x108.4
Frame internal dimensions [cm]	**MxN**	48x73	53x73	53x93	53x103	63x83	63x93	63x103
Frame width [cm]	**S**	8.5						
Frame thickness [cm]	**Z**	2.7						

L-SHAPED DOORS

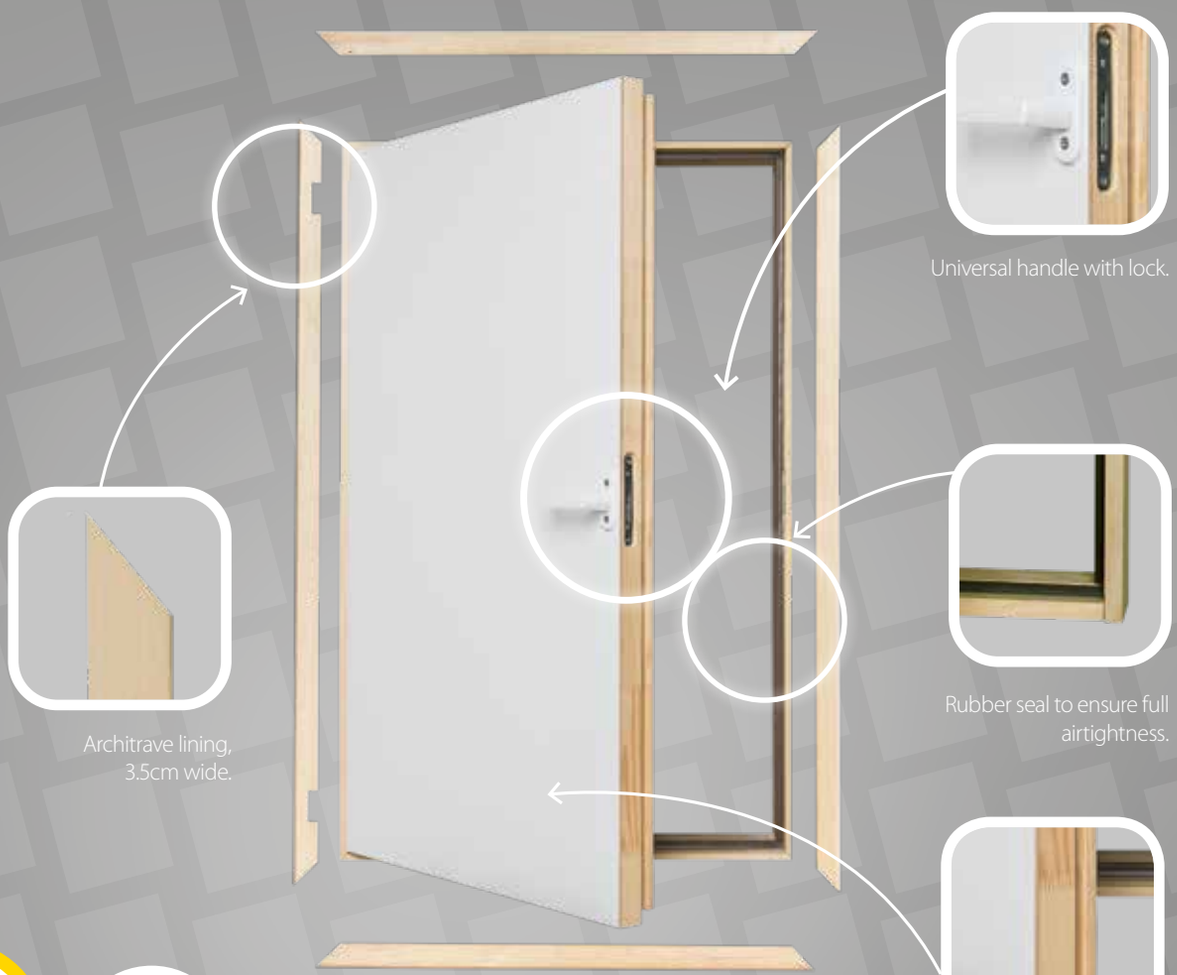
Commercial sizes [cm]	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Code	**869900**	**869922**	**869924**	**869925**	**869933**	**869934**	**869935**

DWK doors are available only in sizes shown above.

HIGHLY ENERGY-EFFICIENT WOODEN DOORS

DWT
HIGHLY ENERGY EFFICIENT

The **DWT** highly energy efficient L-shaped doors are designed primarily for installation in L-shaped walls, provide access to the room behind and at the same time constitute an excellent barrier against heat loss (heat transfer coefficient U = 0.6 W / m²K *) and guarantee high tightness. The door can be installed in the right or left side. They are as standard equipped with wooden architrave lining in natural colour.



Universal handle with lock.

Architrave lining, 3.5cm wide.

Rubber seal to ensure full airtightness.

6.6cm thick sash, white on both sides.

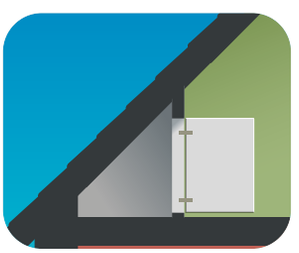
U=0.6* W/m²K

4 CLASS ** EN12207

*manufacturer's internal testing for sash
** manufacture's internal research



architrave lining



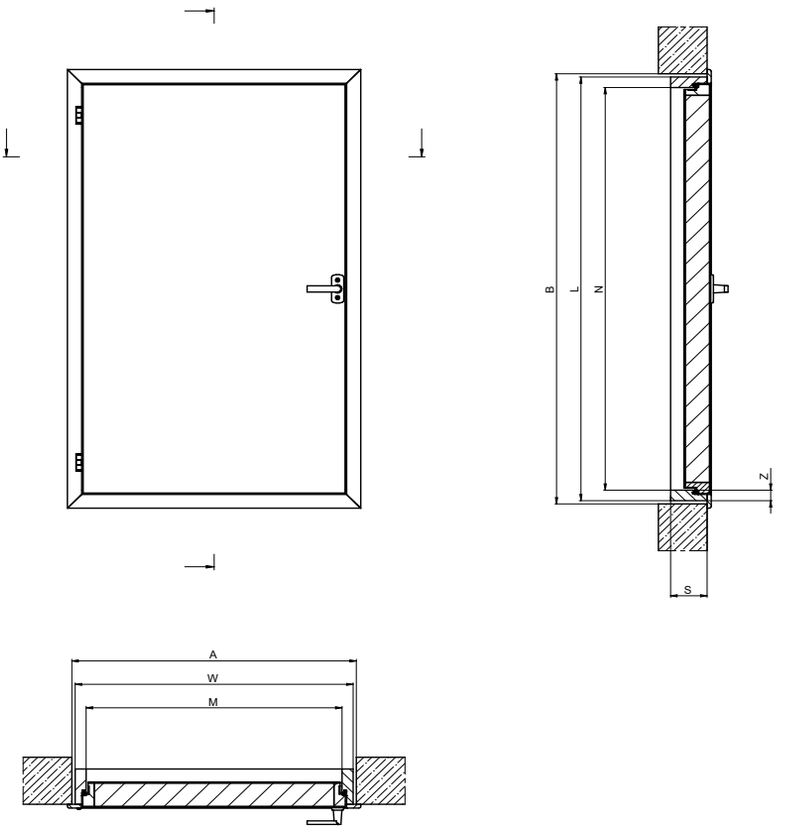
Technical specification:

heat transmission coefficient U = 0.6 W /m²K*
insulation thickness 6 cm

fully assembled, and ready for quick installation

3 years WARRANTY

DWT DOOR DIAGRAM



DWT L-SHAPED DOORS DIMENSIONS

Opening dimensions [cm]	AxB	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Door dimensions [cm]	WxL	53.4 x 78.4	58.4 x 78.4	58.4 x 98.4	58.4 x 108.4	68.4 x 88.4	68.4 x 98.4	68.4 x 108.4
Frame internal dimensions [cm]	MxN	48 x 73	53 x 73	53 x 93	53 x 103	63 x 83	63 x 93	63 x 103
Frame width [cm]	S	9						
Frame thickness [cm]	Z	2.7						

L-SHAPED DOORS

Commercial sizes [cm]	55 x 80	60 x 80	60 x 100	60 x 110	70 x 90	70 x 100	70x110
Code	**869600**	**869622**	**869624**	**869625**	**869633**	**869634**	**869635**

DWT doors are available only in sizes shown above.

L-SHAPED COMBINATION DOORS

DWF

FIRE-RESISTANT

DWF L-Shaped combination fire-resistant doors have a 45-minute fire rating – (EN 13501-2) to protect against the spread of flame while providing access to unused space behind a wall. The white 6.6cm thick sash has thermo insulation to provide an excellent barrier against heat loss (U= 0.64W/m^{2}K*). The door can be installed in the right or left side. They are as standard equipped with wooden architrave lining in natural colour.

U=0.64* W/m^{2}K



Universal handle with lock.

Architrave lining 3.5cm wide

Rubber seal to ensure full airtightness.

EN 13501-2 EI$_1$45

4 CLASS ** EN12207

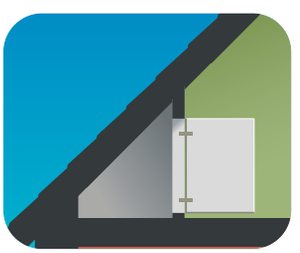
White, double-sided fire-resistant door sash 6.6cm thick, equipped with a self-expanding seal.

*manufacturer's internal testing for sash
** manufacture's internal research



architrave lining

fire-resistant white sash on both sides



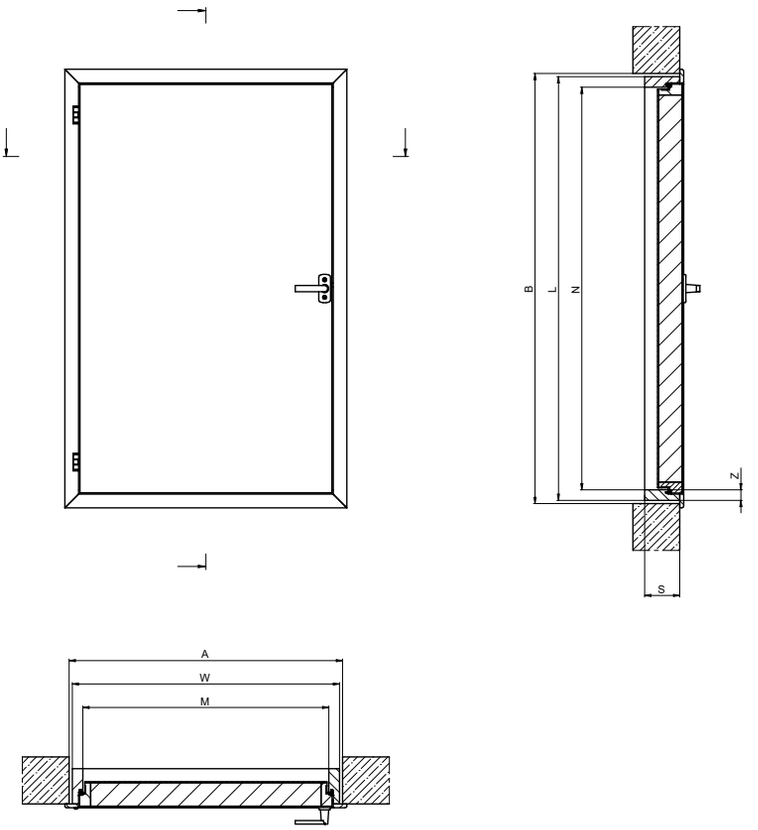
Technical specification:

fire-resistance EI$_1$/EI$_2$=45 minutes
heat transmission coefficient U = 0.64 W/m^{2}K*
insulation thickness 6 cm

fully assembled, and ready for quick installation in the ceiling

3 years WARRANTY

DWF DOOR DIAGRAM



DWF L-SHAPED DOORS DIMENSIONS

Opening dimensions [cm]	AxB	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Door dimensions [cm]	WxL	53.4x78.4	58.4x78.4	58.4x98.4	58.4x108.4	68.4x88.4	68.4x98.4	68.4x108.4
Frame internal dimensions [cm]	MxN	48x73	53x73	53x93	53x103	63x83	63x93	63x103
Frame width [cm]	S	9						
Frame thickness [cm]	Z	2.7						

L-SHAPED DOORS

Commercial sizes [cm]	55x80	60x80	60x100	60x110	70x90	70x100	70x110
Code	**869800**	**869822**	**869824**	**869825**	**869833**	**869834**	**869835**

DWF doors are available only in sizes shown above.

BALUSTRADE LXB-P

NEW!

The loft balustrade is made of pine wood, protects the ceiling opening in the attic and makes it easier and safer to descend the ladder.
The structure of the balustrade and system of fixing to the loft floor with special metal holders increase its stiffness, thus improving the comfort of use.
The balustrade is compatible with all sizes of loft ladders.



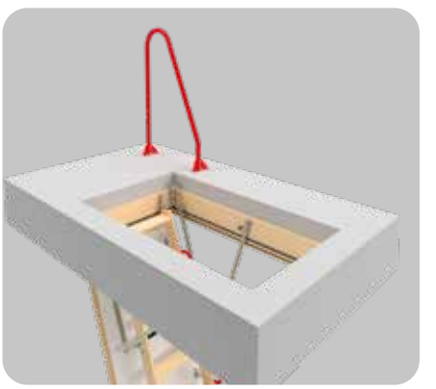
UNIVERSAL SIZE without necessity of cutting

LXB-P Balustrade	Available for loft ladders
	all FAKRO loft ladders
Standard dimensions [cm]	92x140
Non-standard dimesnions [cm]	for loft ladder sizes smaller than 92x140 cm, the standard size balustrade is applied
Balustrade height [cm]	110

Code	66133

HANDRAIL LXH-A

The LXH-A handrail improves the comfort and safety of access to the loft.
Mounted to the floor near the ceiling opening, makes every trip up and down the attic easier.
For installation on the right and on the left side of the opening.



Code	869287*

*available in second half of 2021

INSTALLATION BRACKETS LXK

Installation brackets facilitate loft ladder installation in the ceiling. Installed in the corners of the box, they add to its overall rigidity ensuring equal lengths of diagonals. Bolts are screwed into brackets guaranteeing quick and accurate levelling of the loft ladder in the ceiling.



Installation brackets	Available for loft ladders										
	LWK Komfort	LWL Extra	LTK Energy	LWT	LWT Passive House	LWF 60	LDK	LMS	LMK	LMP	LMF 60
Installation to the ceiling max. thickness [cm]	35		39	43			35			39	43

Code	62085

ARCHITRAVE LININGS LXL

The architrave is designed to finish the installation of the loft ladder and to cover gaps in the ceiling which remain after the fitting process. The architrave elements are of solid pine wood (LXL-P) or in white (LXL-W) or PVC (LXL-PVC). This quick and simple fitting process ensures a fast, aesthetically pleasing finish of the installed Loft Ladder. In the case of PVC architrave, connection with the box does not require any nails. The LXL-PVC architrave is available in white*.

Architrave linings LXL-P/-W	Available for loft ladders												
	LWK Komfort	LWL Extra	LTK Energy	LWT	LWT Passive House	LWF 60	LDK	LMS	LMK	LMS	LMK	LMP	LMF 60
Standard dimensions [cm]	70x140, 86x144												
Non-standard dimensions [cm]	For other loft ladders sizes , cut the slats from the standard architrave lining size.												
Slats thickness after installation on box [cm]	1												
Slats width [cm]	3.5												
Max. witdh of the gaps, the architrave slats cover after instllation on the box [cm]	2.5												





	LXL-P		LXL-W	
	70x140	86x144	70x140	86x144
Code	**62087**	**80AZ52**	**62088**	**80AZ54**

Architrave linings LXL-PVC	Available for loft ladders										
	LWK Komfort	LWL Extra	LTK Energy	LWT	LWT Passive House	LWF 60	LDK	LMS	LMK	LMP	LMF 60
Standard dimensions [cm]	60x120, 70x120, 86x140, 86x144										
Non-standard dimensions [cm]	For other loft ladders sizes, cut the slats from the standard architrave lining size.										
Slats thickness after installation on box [cm]	1										
Slats width [cm]	3.3										
Max. witdh of the gaps, the architrave slats cover after instllation on the box [cm]	2.4										





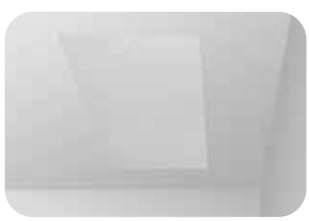
	LXL-PVC			
	60x120	70x120	86x140	86x144
Code	**62082**	**62083**	**62084**	**80AZ 56**

* the architrave lining colour may slightly differ from the colour of lining in angles and hatch

INVISIBLE ARCHITRAVE LXL-I

The LXL-Invisible linings allow for discreet installation and concealment loft ladders in the ceiling. Thanks to the use of linings, the ladder box remains invisible. There is no need to install architrave linings masking the gaps, and the loft ladder hatch is hidden in the ceiling. The use of a discrete assembly system allows for an aesthetic and minimalistic interior finish. Installation of LXL -Invisible linings with loft ladders should be done before finishing the ceiling with plasterboards.



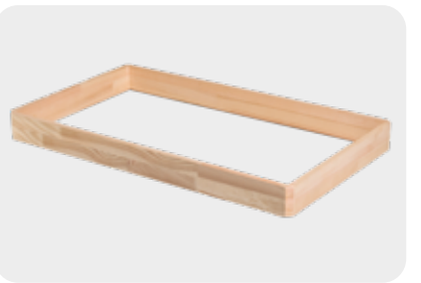


Invisible architrave LXL-I	Available for loft ladders
	LWK Komfort, LWL Extra, LTK Energy, LWT
Standard dimensions [cm]	60x120cm, 70x120cm, 86x140cm
Non-standard dimensions [cm]	For other loft ladders sizes, cut the slats from the standard architrave lining size.
The thickness of the plasterboards to which the lining is adapted	12.5

	LXL-I		
	60x120	70x120	86x140
Code	**80AZ68**	**80AZ69**	**80AZ70**

BOX EXTENSION LXN

Made of pine, the box extension matches perfectly with the box of the installed ladder and enhances the look of the ceiling opening. In addition, in case of thick ceilings, for 4-segment and scissors LST and LSZ loft ladders, the box extension serves as an extension element of a box height allowing for installation of the LXW upper hatch (see LXW, page 57).



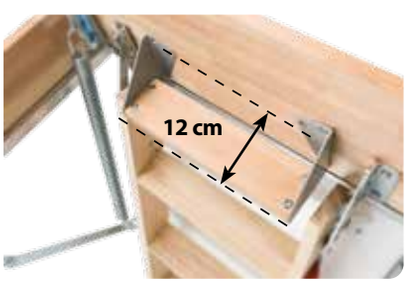
Box extension LXN	Available for loft ladders													
	LWK Komfort	LWZ Plus	LWL Extra	LTK Energy	LWT	LWT Passive House	LWF 60	LDK	LMS	LMK	LML	LMF 60	LMF	LST	LSZ
Height of the box extension frame [cm]	10														
Max. height of non-standard box extension [cm]	20							16	20						

LXN box extension commercial size [cm]	51x80	55x100	55x111	60x90	60x94	60x100	60x111	60x120	60x130	60x140	70x80	70x94	70x100	70x111	70x120	70x130	70x140	86x130
Code	**862300**	**862320**	**862321**	**862322**	**862307**	**862306**	**862304**	**862301**	**862302**	**862303**	**862332**	**862317**	**862316**	**862314**	**862311**	**862312**	**862313**	**862396**

When ordering standard and non-standard box extensions, please specify the model and commercial size of loft ladders. The provided box extension size will be compatibile with the loft ladder box.

ADDITIONAL TREAD LXT

An additional tread makes climbing the ladder easier and increases comfort and safety when accessing the loft space. Made of wood, it is installed between the final tread and loft floor and is particularly recommended for use in situations where the upper hatch is installed on the ladder box or where ladders are installed in a thick ceiling.



Additional tread LXT	Available for loft ladders						
	LWK Komfort (size 55x111)	LWL Extra (sizes 60x. . .)	LWK Komfort (except size 55x111)	LWL Extra (except sizes 60x. . .)	LWZ Plus	LMS	LMK
	LXT 280		**LXT 300**				
Loft ladder's tread length [cm]	30		34				

	LXT 280	LXT 300
Code	**62058**	**62059**

UPPER HATCH LXW

The LXW Upper Hatch prevents attic dust from accumulating on the hatch and steps of the closed ladder. It improves the overall insulating parameters and airtightness of the ladder on which it is installed. The upper hatch consists of a frame equipped with a peripheral gasket, 3.6cm thick hatch door, hardware, installation brackets, gas piston and rotational closing handle. In order to close the upper hatch from the loft side, it is possible to install an additional LXZ handle.



Upper hatch LXW	Available for loft ladders												
	LWK Komfort	LWZ Plus	LWL Extra	LTK Energy	LWT	LWT Passive House	LWF 60	LMS	LMK	LML	LMF 60	LMF	LST	LSZ
Max. thickness of the ceiling where the upper hatch can be installed [cm]	31 or after standard box extension instal-lation 41. For 4 section ladders the use of the box extension is a must.	31 or after standard upper hatch installation 41.		35 or after standard box extension installation 45. With 4-section loft ladders extension box must be applied.	39 or after standard box extension installation 49. With 4-section loft ladders extension box must be applied.			31 or after standard box extension installation 41.		48 or after standard box extension installation 58.	39 or after standard box extension installation 49.	33 or after standard box extension installation 43.	41, the box extension installation is a must	
Upper hatch box height [cm]	20													

Commercial sizes of LXW [cm]	51 x 80	55 x 100	55 x 111	60 x 90	60 x 94	60 x 100	60 x 111	60 x 120	60 x 130	60 x 140	70 x 80	70 x 94	70 x 100	70 x 111	70 x 120	70 x 130	70 x 140	86 x 130
Code	**862200**	**862220**	**862221**	**862222**	**862207**	**862206**	**862204**	**862201**	**862202**	**862203**	**862232**	**862217**	**862216**	**862214**	**862211**	**862212**	**862213**	**862296**

When ordering standard and non-standard upper hatches, please specify the model and commercial size of loft ladders. The provided upper hatch size will be compatibile with the loft ladder box.

HANDLE LXZ

The LXZ handle enables the LXW upper hatch to be closed from the loft side e.g. during maintenance work in the loft or on the roof.



Code	80AZ01

STILE ENDS LXS

The LXS Stile Ends are finishing elements mounted on the base of the ladder, adding a smart touch to its appearance. They add to the ladder's stability and are made from specially selected material to protect the floor from being scratched. They are available for all segment of loft ladders with wooden ladder sections (besides 4-section and LDK loft ladder).



Code	62027

UNLOADING MECHANISM LXM

The unloading mechanism assists in folding and unfolding the ladder thus increasing the comfort and safety of using loft ladders. The LXM 3 mechanism is designed for 3-section wooden loft ladders, the LXM 4 mechanism for 4-section wooden loft ladders. The LXM-M mechanism is intended for metal section loft ladders. The installation of the LXM mechanism is possible on the right or left side of the ladder and is mounted on the opposite side to the LXH handrail. Compatibility table below.



Unloading mechanism LXM	Available for loft ladders		
	LWS Plus, LWK Plus, LWZ Plus, LTK Energy, LWT, LWT PH, LWF60		LMS, LMK,LMF60 up to the height 280
	3- segment	4- segment	
	LXM 3	LXM 4	LXM-M
Code	**869373**	**869374**	**869297**
Minimum ladder width [cm]	60		
The minimum height	260	260	The minimum height resulting from the ladder dimension table

HANDRAIL LXH

The LXH Metal Handrail makes climbing the ladder easier and increases user's safety and comfort. It is mounted onto upper ladder section.



Handrail LXH	Available for loft ladders		
	LWK Komfort, LWZ Plus, LTK Energy, LWT, LWT Passive House, LWF 60, LMS, LMK, LMF60		LDK
Handrail is installed to the upper ladder section	LXH *50/13	LXH *75/13	LXH 75/16
Code	**80AZ24**	**80AZ18**	**62065**

* Handrails LXH 50/13 are installed to ladder with boxes up to 100cm in length; handrails LXH 75/13 to ladders with boxes over 100cm in length
In the LMF 60 loft ladders, the additional LXH handrail is compatible only with the loft ladders version heights up to 280 and 305cm

ASSEMBLY KIT LXK-D

The LXK-D assembly kit simplifies and improves the installation of LML loft ladders to the ceiling, on which the DRL hatch has already been installed. Installation in ceilings with a thickness of min. 38cm, maximum 50cm.

Code	**80AZ41**



INSULATION KIT LXD

The **LXD Insulation Kit** provides the standard of tight insulation between the ladder box and ceiling opening needed in energy-efficient construction. It includes: airight collar, insulation material (sheep wool blocks) and an air permeable collar.



Installation kit LXD	Available for loft ladders						
	LWK Komfort	LWL Extra	LTK Energy	LWT	LDK	LMS	LMK
Standard dimensions [cm]	60/70x120 oraz 86 x 140						
Non-standard dimensions	For ladders smaller then 86x140 cm the standard size of the kit has to be adapted						

Commercial sizes LXD	60x120	70x120	86x140	86x144
Code	**80AZ13**	**80AZ14**	**80AZ15**	**80AZ61**

AVAILABLE ADDITIONAL ACCESSORIES

	LWK Komfort	LWZ Plus	LWL Extra	LTK Energy	LWT	LWT PH	LWF 60	LWF SL 60	LDK	LMS LMK/	LML	LMP	LMF 60	LMF	LST	LSF
LXB-P balustrade	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LXH-A handrail	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LXK installation brackets	✓	S	✓	✓	✓	✓	✓	✓	✓	✓	S	✓	✓	S	S	S
LXL architrave lining (wooden)	✓	—	✓	✓	✓	✓	✓	✓	✓	✓	—	✓	✓	—	—	—
LXL-PVC architrave lining (plastic)	✓	—	✓	✓	✓	✓	✓	—	✓	✓	—	✓	✓	—	—	—
LXL-I architrave	✓	—	✓	✓	✓	—	—	—	—	—	—	—	—	—	—	—
LXH handrail	+S	+S	S	+S	+S	+S	+S	+S	+S	+✓/S	—	—	**+S	—	—	—
LXN box extension	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
LXT additional tread	✓	✓	✓	—	—	—	—	—	—	✓	—	—	—	—	—	—
LXW upper hatch	*✓	✓	✓	*✓	*✓	✓	*✓	*✓	—	✓	✓	✓	✓	✓	*✓	—
LXS stile ends (only for 3 sections ladders)	S	S	S	S	S	S	S	S	—	—	—	—	—	—	—	—
LXM unloading mechanism	✓	✓	S	✓	✓	✓	✓	✓	—	✓	—	—	✓	—	—	—
LXK-D assembly kit	—	—	—	—	—	—	—	—	—	—	✓	—	—	—	—	—
LXD insulation kit	✓	—	✓	✓	✓	—	—	—	✓	✓	—	✓	—	—	—	—

* for 4 section loft ladders and scissors the LXN box extension is mounted piror to the upper hatch LXW installation
** In the LMF60 loft ladders, the additional LXH handrail is compatible only with the loft ladders version heights up to 280 and 305cm

[✓] - compatible
[—] - not compatible
[S] - factory fitted accessory as standard
[S+] - factory fitted accessory as standard with the option of installing a second one



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FAKRO reserves the right to change specifications and technical parameters of products without prior notice.

Neslužbeni prevod na crnogorski jezik

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Dokument: „Katalog FAKRO tavanskih ljestava 2022 (ME)“

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Datum prevoda: 01.10.2026.