

R-LX-HF-ZF Zinc flake coated Hex with Flange Concrete Screw Anchor

Self-tapping concrete screwbolt



Product information

Features and benefits

- Time-efficient installation through streamlined procedure - simply drill and drive
- Completely removable with possibility of reuse
- Unique design with patented threadform ensures high performance for relatively small hole diameter
- Non-expansion functioning ensures low risk of damage to base material and makes R-LX ideal for installation near edges and adjacent anchors
- Special zinc flake corrosion-resistant coating
- High performance in both uncracked and cracked concrete
- Different head types for any application
- Oversize head for fixtures with elongated holes
- Excellent product for temporary fixing

Applications

- Through-fixing
- Temporary anchorages
- Formwork support systems
- Balustrading & handrails
- Fencing & gates manufacturing and installation
- Racking systems
- Public seating
- Scaffolding

Base materials

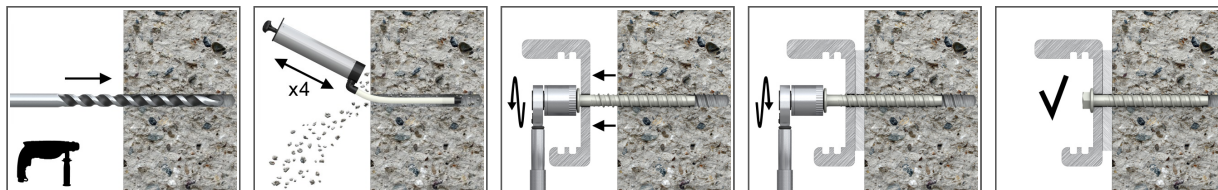
Approved for use in:

- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Reinforced concrete
- Unreinforced concrete

Also suitable for use in:

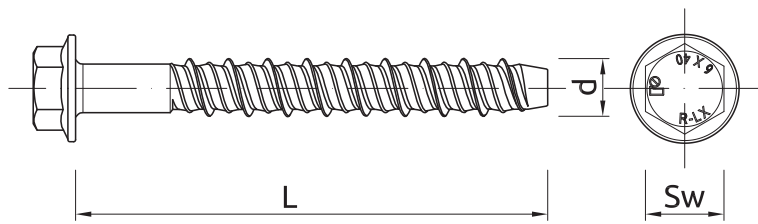
- Natural Stone (after site testing)

Installation guide



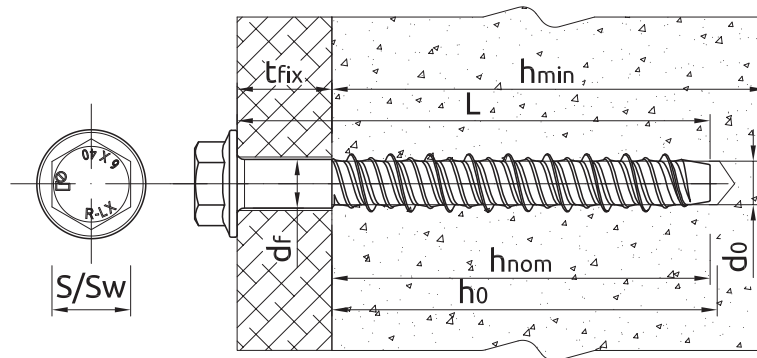
1. Drill the hole with rotary hammer drilling machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

Product information



Size	Product Code	Anchor		Fixture		
		Diameter	Length	Max. thickness t_{fix} for:		Hole diameter
		d	L	$h_{nom,red}$	$h_{nom,std}$	d_f
		[mm]	[mm]	[mm]	[mm]	[mm]
5	R-LX-05X050-HF-ZF	6.3	50	-	7	7
	R-LX-05X075-HF-ZF	6.3	75	-	32	7
6	R-LX-06X050-HF-ZF	7.5	50	7	-	9
	R-LX-06X075-HF-ZF	7.5	75	32	20	9
	R-LX-06X100-HF-ZF	7.5	100	57	45	9
	R-LX-06X130-HF-ZF	7.5	130	87	75	9
	R-LX-06X150-HF-ZF	7.5	150	107	95	9
8	R-LX-08X060-HF-ZF	10	60	10	-	12
	R-LX-08X075-HF-ZF	10	75	25	5	12
	R-LX-08X090-HF-ZF	10	90	40	20	12
	R-LX-08X100-HF-ZF	10	100	50	30	12
	R-LX-08X130-HF-ZF	10	130	80	60	12
10	R-LX-10X065-HF-ZF	12.5	65	10	-	14
	R-LX-10X075-HF-ZF	12.5	75	20	-	14
	R-LX-10X085-HF-ZF	12.5	85	30	-	14
	R-LX-10X100-HF-ZF	12.5	100	45	15	14
	R-LX-10X120-HF-ZF	12.5	120	65	35	14
12	R-LX-12X075-HF-ZF	14.9	75	15	-	16
	R-LX-12X100-HF-ZF	14.9	100	40	-	16
	R-LX-12X130-HF-ZF	14.9	130	70	30	16
	R-LX-12X150-HF-ZF	14.9	150	90	50	16
	14	R-LX-14X080-HF-ZF	17	80	5	-
R-LX-14X105-HF-ZF		17	105	30	-	18
R-LX-14X115-HF-ZF		17	115	40	-	18
R-LX-14X135-HF-ZF		17	135	60	15	18
R-LX-14X135-HF-ZF		17	135	60	15	18

Installation data



Size			5	6	8	10	12	14
Thread diameter	d	[mm]	6.3	7.5	10	12.5	14.9	17
Hole diameter in substrate	d ₀	[mm]	5	6	8	10	12	14
Wrench size	Sw	[mm]	8	10	13	15	16	19
External diameter of washer		[mm]	12	14	18	22	27	32
Max. torque for impact screw driver	T _{imp,max}	[Nm]	200	400	900	950	950	950
STANDARD EMBEDMENT DEPTH								
Min. hole depth in substrate	h _{0,s}	[mm]	50	65	80	95	110	130
Real hole depth in substrate	h ₀	[mm]	L + 10 - t _{fix}	L + 10 - t _{fix}	L + 10 - t _{fix}	L + 10 - t _{fix}	L + 10 - t _{fix}	L + 10 - t _{fix}
Min. installation depth	h _{nom,s}	[mm]	43	55	70	85	100	120
Min. substrate thickness	h _{min,s}	[mm]	100	100	110	130	155	190
Min. spacing	s _{min,s}	[mm]	40	45	50	60	80	100
Min. edge distance	c _{min,s}	[mm]	40	45	50	60	80	100
REDUCED EMBEDMENT DEPTH								
Min. hole depth in substrate	h _{0,r}	[mm]	-	50	60	65	70	85
Real hole depth in substrate	h ₀	[mm]	-	L + 10 - t _{fix}	L + 10 - t _{fix}	L + 10 - t _{fix}	L + 10 - t _{fix}	L + 10 - t _{fix}
Min. installation depth	h _{nom,r}	[mm]	-	43	50	55	60	75
Min. substrate thickness	h _{min,r}	[mm]	-	100	100	100	110	110
Min. spacing	s _{min,r}	[mm]	-	45	50	60	80	100
Min. edge distance	c _{min,r}	[mm]	-	45	50	60	80	100

Mechanical properties

Size			5	6	8	10	12	14
Nominal ultimate tensile strength - tension	F _{uk}	[N/mm ²]	1300	1250	1200	1050	1000	1020
Nominal yield strength - tension	F _{yk}	[N/mm ²]	1150	1100	1050	950	900	800
Cross sectional area - tension	A _s	[mm ²]	19.6	28.3	50.3	78.5	113	153.9
Elastic section modulus	W _{el}	[mm ³]	12.2	21.2	50.3	98.1	169.4	269.3
Characteristic bending resistance	M ⁰ _{Rk,s}	[Nm]	19	31.8	72.4	123.6	203.3	329.6
Design bending resistance	M	[Nm]	12.7	21.2	48.3	82.4	135.5	219.7

Basic performance data

Performance data for single anchor without influence of edge distance and spacing

Size		5	6	8	10	12	14
NON-CRACKED CONCRETE C20/25							
Standard embedment depth h _{nom}	[mm]	43.00	55.00	70.00	85.00	100.00	120.00
Reduced embedment depth h _{nom}	[mm]	-	35.00	50.00	55.00	60.00	75.00
CRACKED CONCRETE C20/25							
Standard embedment depth h _{nom}	[mm]	43.00	55.00	70.00	85.00	100.00	120.00
Reduced embedment depth h _{nom}	[mm]	-	35.00	50.00	55.00	60.00	75.00

Basic performance data

Size		5	6	8	10	12	14
MEAN ULTIMATE LOAD							
TENSION LOAD $N_{Ru,m}$							
NON-CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	10.10	14.80	26.04	35.37	44.72	59.96
Reduced embedment depth	[kN]	-	12.22	14.58	17.08	18.37	26.79
CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	7.10	11.10	16.10	24.89	31.47	41.92
Reduced embedment depth	[kN]	-	8.60	10.10	10.70	10.80	17.40
SHEAR LOAD $V_{Ru,m}$							
NON-CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	14.66	18.37	26.04	51.91	71.19	98.91
Reduced embedment depth	[kN]	-	12.22	14.58	17.08	18.37	26.79
CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	10.32	12.93	18.33	49.78	62.94	83.83
Reduced embedment depth	[kN]	-	8.60	10.26	12.02	12.93	18.85
CHARACTERISTIC LOAD							
TENSION LOAD N_{Rk}							
NON-CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	7.00	12.00	18.98	25.78	32.59	43.41
Reduced embedment depth	[kN]	-	8.90	10.63	12.45	13.39	19.52
CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	4.50	7.00	13.00	18.05	22.82	30.39
Reduced embedment depth	[kN]	-	6.23	7.00	8.00	7.00	13.00
SHEAR LOAD V_{Rk}							
NON-CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	8.90	13.39	18.98	41.20	57.00	78.50
Reduced embedment depth	[kN]	-	8.90	10.63	12.45	13.39	19.52
CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	6.23	9.37	13.29	36.09	45.63	60.77
Reduced embedment depth	[kN]	-	6.23	7.44	8.71	9.37	13.66
DESIGN LOAD							
TENSION LOAD N_{Rd}							
NON-CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	3.89	8.00	12.65	17.19	21.73	28.94
Reduced embedment depth	[kN]	-	5.94	7.08	8.30	8.93	13.01
CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	2.50	4.67	8.67	12.03	15.21	20.26
Reduced embedment depth	[kN]	-	4.16	4.67	5.33	4.67	8.67
SHEAR LOAD V_{Rd}							
NON-CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	5.94	8.93	12.65	27.47	38.00	52.33
Reduced embedment depth	[kN]	-	5.94	7.08	8.30	8.93	13.01
CRACKED CONCRETE C20/25							
Standard embedment depth	[kN]	4.16	6.25	8.86	24.06	30.42	40.52
Reduced embedment depth	[kN]	-	4.16	4.96	5.81	6.25	9.11

Design performance data

(-) failure is not decisive

Size			5	6		8		10		12		14	
Min. installation depth	h_{nom}	[mm]	43.00	35.00	55.00	50.00	70.00	55.00	85.00	60.00	100.0	75.00	120.0
Effective embedment depth	h_{ef}	[mm]	32.00	24.70	42.00	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD													
STEEL FAILURE													
Characteristic resistance	$N_{Rk,s}$	[kN]	25.50	35.40	35.40	60.40	60.40	82.40	82.40	113.0	113.0	157.0	157.0
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.50	1.50
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25													
Characteristic resistance	$N_{Rk,p}$	[kN]	7.00	-	12.00	-	-	-	-	-	-	-	-
PULL-OUT FAILURE; CRACKED CONCRETE C20/25													
Characteristic resistance	$N_{Rk,p}$	[kN]	4.50	-	7.00	7.00	13.00	8.00	-	7.00	-	13.00	-
PULL-OUT FAILURE													
Installation safety factor	γ_{inst}	-	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	ψ_c	-	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	ψ_c	-	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	ψ_c	-	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
CONCRETE CONE FAILURE													
Installation safety factor	γ_{inst}	-	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Factor for cracked concrete	$k_{cr,N}$	-	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Spacing	$s_{cr,N}$	[mm]	90.00	90.00	126.0	112.0	160.0	120.0	196.0	126.0	228.0	165.0	276.0
Edge distance	$c_{cr,N}$	[mm]	45.00	45.00	63.00	56.00	80.00	60.00	98.00	63.00	114.0	83.00	138.0
CONCRETE SPLITTING FAILURE													
Installation safety factor	γ_{inst}	-	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Spacing	$s_{cr,sp}$	[mm]	90.00	90.00	126.0	112.0	160.0	136.0	222.0	126.0	228.0	188.0	312.0
Edge distance	$c_{cr,sp}$	[mm]	45.00	45.00	63.00	56.00	80.00	68.00	111.0	63.00	114.0	94.00	156.0
SHEAR LOAD													
STEEL FAILURE													
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	12.70	17.70	17.70	30.20	30.20	41.20	41.20	57.00	57.00	78.50	78.50
Ductility factor	k_γ	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	19.00	31.80	31.80	72.40	72.40	123.6	123.6	203.3	203.3	329.6	329.6
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
CONCRETE PRY-OUT FAILURE													
Factor	k	-	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.00	2.00
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CONCRETE EDGE FAILURE													
Effective length of anchor	ℓ_f	[mm]	43.00	43.00	35.00	50.00	70.00	55.00	85.00	60.00	100.0	75.00	120.0
Anchor diameter	d_{nom}	[mm]	5.00	6.00	6.00	8.00	8.00	10.00	10.00	12.00	12.00	14.00	14.00
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Design performance data

Characteristic Resistance under fire exposure in concrete C20/25 to C50/60

Size			5	6	8	10	12	14					
R (for EI) = 30 min													
Effective embedment depth	h_{ef}	[mm]	32.00	24.70	42.00	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD													
STEEL FAILURE													
Characteristic resistance	$N_{Rk,s}$	[kN]	0.20	0.28	0.28	0.75	0.75	1.57	1.57	2.26	2.26	3.08	3.08
PULL-OUT FAILURE													
Characteristic resistance	$N_{Rk,p}$	[kN]	1.13	1.38	1.75	1.88	3.25	2.00	4.75	1.75	6.50	3.25	8.50
SHEAR LOAD													
STEEL FAILURE													
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.20	0.28	0.28	0.75	0.75	1.57	1.57	2.26	2.26	3.08	3.08
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.15	0.25	0.25	0.90	0.90	2.36	2.36	4.07	4.07	6.47	6.47
R (for EI) = 60 min													
Effective embedment depth	h_{ef}	[mm]	32.00	24.70	42.00	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD													
STEEL FAILURE													
Characteristic resistance	$N_{Rk,s}$	[kN]	0.18	0.25	0.25	0.65	0.65	1.18	1.18	1.70	1.70	2.31	2.31
PULL-OUT FAILURE													
Characteristic resistance	$N_{Rk,p}$	[kN]	1.13	1.38	1.75	1.88	3.25	2.00	4.75	1.75	6.50	3.25	8.50
SHEAR LOAD													
STEEL FAILURE													
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.18	0.25	0.25	0.65	0.65	1.18	1.18	1.70	1.70	2.31	2.31
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.13	0.23	0.23	0.78	0.78	1.77	1.77	3.05	3.05	4.85	4.85
R (for EI) = 90 min													
Effective embedment depth	h_{ef}	[mm]	32.00	24.70	42.00	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD													
STEEL FAILURE													
Characteristic resistance	$N_{Rk,s}$	[kN]	0.14	0.20	0.20	0.50	0.50	1.02	1.02	1.47	1.47	2.00	2.00
PULL-OUT FAILURE													
Characteristic resistance	$N_{Rk,p}$	[kN]	1.13	1.38	1.75	1.88	3.25	2.00	4.75	1.75	6.50	3.25	8.50
SHEAR LOAD													
STEEL FAILURE													
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.14	0.20	0.20	0.50	0.50	1.02	1.02	1.47	1.47	2.00	2.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.10	0.18	0.18	0.60	0.60	1.53	1.53	2.65	2.65	4.20	4.20
R (for EI) = 120 min													
Effective embedment depth	h_{ef}	[mm]	32.00	24.70	42.00	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD													
STEEL FAILURE													
Characteristic resistance	$N_{Rk,s}$	[kN]	0.10	0.14	0.14	0.40	0.40	0.79	0.79	1.13	1.13	1.54	1.54
PULL-OUT FAILURE													
Characteristic resistance	$N_{Rk,p}$	[kN]	0.90	1.10	1.40	1.50	2.60	1.60	3.80	1.40	5.20	2.60	6.80
SHEAR LOAD													
STEEL FAILURE													
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.10	0.14	0.14	0.40	0.40	0.79	0.79	1.13	1.13	1.54	1.54
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.07	0.13	0.13	0.48	0.48	1.18	1.18	2.04	2.04	3.23	3.23

Design performance data

Allowable values for resistance in case of Seismic performance category C1

Size			8	10	14
Effective embedment depth	h_{ef}	[mm]	53.00	65.00	92.00
TENSION LOAD, STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	60.40	82.40	157.00
Partial safety factor	$\gamma_{MsN,seisC1}$	-	1.40	1.40	1.50
TENSION LOAD, PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	5.40	13.50	19.20
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00
SHEAR LOAD, STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	15.10	27.40	52.30
Partial safety factor	$\gamma_{MsV,seisC1}$	-	1.50	1.50	1.50

Allowable values for resistance in case of Seismic performance category C2

Size			8	10	14
Effective embedment depth	h_{ef}	[mm]	53.00	65.00	92.00
TENSION LOAD, STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	60.40	82.40	157.00
Partial safety factor	$\gamma_{MsN,seisC2}$	-	1.40	1.40	1.50
TENSION LOAD, PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	1.57	4.91	14.87
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00
SHEAR LOAD, STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	9.90	20.60	35.10
Partial safety factor	$\gamma_{MsV,seisC2}$	-	1.50	1.50	1.50

Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-05X050-HF-ZF	50	100	100	38400	1.02	1.02	421.7	5906675129570
R-LX-05X075-HF-ZF	75	100	100	38400	1.17	1.17	479.3	5906675129587
R-LX-06X050-HF-ZF	50	100	100	38400	1.62	1.62	651.7	5906675129594
R-LX-06X075-HF-ZF	75	100	100	38400	2.2	2.2	869.4	5906675129600
R-LX-06X100-HF-ZF	100	100	100	25600	2.7	2.7	716.1	5906675129617
R-LX-06X130-HF-ZF	130	100	100	25600	3.3	3.3	882.5	5906675129624
R-LX-06X150-HF-ZF	150	100	100	25600	3.8	3.8	1009.2	5906675129631
R-LX-08X060-HF-ZF	60	100	100	25600	3.4	3.4	892.7	5906675129648
R-LX-08X075-HF-ZF	75	100	100	25600	4.0	4.0	1041.2	5906675129655
R-LX-08X090-HF-ZF	90	100	100	19200	4.5	4.5	899.8	5906675129662
R-LX-08X100-HF-ZF	100	100	100	19200	4.9	4.9	974.6	5906675129679
R-LX-08X130-HF-ZF	130	50	50	12800	3.1	3.1	823.3	5906675129686
R-LX-08X150-HF-ZF	150	50	50	12800	3.4	3.4	903.0	5906675129693
R-LX-10X065-HF-ZF	65	50	50	14400	2.8	2.8	841.6	5906675129709

Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-10X075-HF-ZF	75	50	50	12800	3.1	3.1	817.2	5906675129716
R-LX-10X085-HF-ZF	85	50	50	12800	3.4	3.4	894.0	5906675129723
R-LX-10X100-HF-ZF	100	50	50	12800	3.8	3.8	1010.5	5906675129730
R-LX-10X120-HF-ZF	120	25	25	6400	2.3	2.3	620.8	5906675129747
R-LX-10X140-HF-ZF	140	25	25	7200	2.5	2.5	757.2	5906675129754
R-LX-12X075-HF-ZF	75	50	50	9600	4.6	4.6	921.6	5906675431925
R-LX-12X100-HF-ZF	100	50	50	6400	5.8	5.8	772.3	5906675431932
R-LX-12X130-HF-ZF	130	50	50	6400	6.9	6.9	913.2	5906675431949
R-LX-12X150-HF-ZF	150	50	50	6400	8.0	8.0	1048.4	5906675423753
R-LX-14X080-HF-ZF	80	20	20	5120	2.7	2.7	731.4	5906675292854
R-LX-14X105-HF-ZF	105	20	20	5120	3.4	3.4	910.1	5906675129839
R-LX-14X115-HF-ZF	115	20	20	5120	3.6	3.6	941.4	5906675271668
R-LX-14X135-HF-ZF	135	20	20	5120	4.1	4.1	1088.3	5906675129853
R-LX-14X135-HF-ZF	135	20	20	5120	4.1	4.1	1088.3	5906675129853