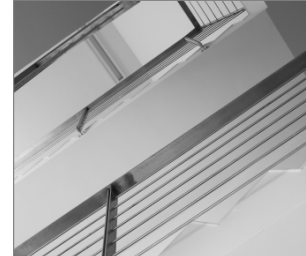


R-LX-HF-ZP Zinc plated Hex with Flange Concrete Screw Anchor

Self-tapping concrete screwbolt



Approvals and Reports

- ETA 17/0806
- UKTA-22//6199



Product information

Features and benefits

- Time-efficient through-fixing installation with 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
- 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
- Suitable for standard and reduced embedment depth

Applications

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

Base materials

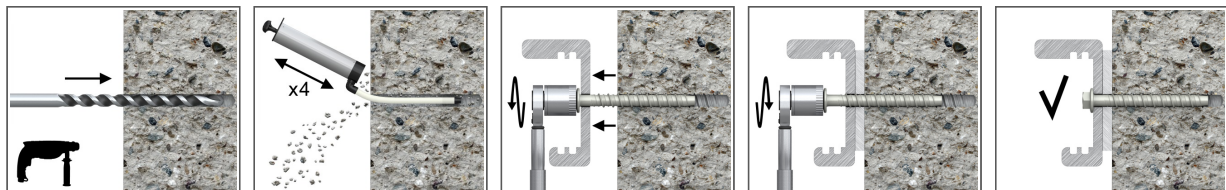
Approved for use in:

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

Also suitable for use in:

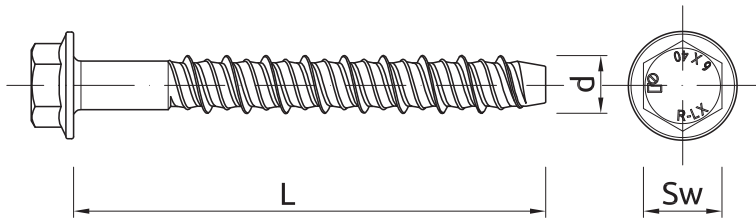
- Natural Stone (after site testing)

Installation guide



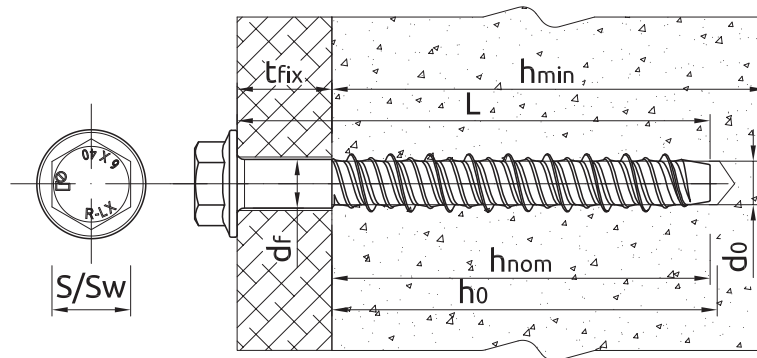
1. Drill the hole with rotary hammer drilling machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

Product information



Size	Product Code	Approval type	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]	
8	R-LX-08X060-HF-ZP	ETA-17/0806	9.9	60	10	-	12
	R-LX-08X075-HF-ZP	ETA-17/0806	9.9	75	25	5	12
	R-LX-08X090-HF-ZP	ETA-17/0806	9.9	90	40	20	12
	R-LX-08X100-HF-ZP	ETA-17/0806	9.9	100	50	30	12
	R-LX-08X120-HF-ZP	ETA-17/0806	9.9	120	70	50	12
	R-LX-08X130-HF-ZP	ETA-17/0806	9.9	130	80	60	12
	R-LX-08X150-HF-ZP	ETA-17/0806	9.9	150	100	80	12
10	R-LX-10X065-HF-ZP	ETA-17/0806	12.4	65	10	-	14
	R-LX-10X075-HF-ZP	ETA-17/0806	12.4	75	20	-	14
	R-LX-10X085-HF-ZP	ETA-17/0806	12.4	85	30	-	14
	R-LX-10X090-HF-ZP	ETA-17/0806	12.4	90	35	5	14
	R-LX-10X100-HF-ZP	ETA-17/0806	12.4	100	45	15	14
	R-LX-10X110-HF-ZP	ETA-17/0806	12.4	110	55	25	14
	R-LX-10X120-HF-ZP	ETA-17/0806	12.4	120	65	35	14
	R-LX-10X130-HF-ZP	ETA-17/0806	12.4	130	75	45	14
	R-LX-10X140-HF-ZP	ETA-17/0806	12.4	140	85	55	14
12	R-LX-12X075-HF-ZP	ETA-17/0806	14.9	75	15	-	16
	R-LX-12X100-HF-ZP	ETA-17/0806	14.9	100	40	-	16
	R-LX-12X130-HF-ZP	ETA-17/0806	14.9	130	70	30	16
	R-LX-12X150-HF-ZP	ETA-17/0806	14.9	150	90	50	16
	R-LX-14X080-HF-ZP	ETA-17/0806	17.4	80	5	-	18
14	R-LX-14X105-HF-ZP	ETA-17/0806	17.4	105	30	-	18
	R-LX-14X115-HF-ZP	ETA-17/0806	17.4	115	40	-	18
	R-LX-14X135-HF-ZP	ETA-17/0806	17.4	135	60	15	18
	R-LX-14X160-HF-ZP	ETA-17/0806	17.4	160	85	40	18
6	R-LX-06X050-HF-ZP	ETA-17/0806	7.5	50	7	-	9

Installation data



Size			8	10	12	14	6
Thread diameter	d	[mm]	9.9	12.4	14.9	17.4	7.5
Hole diameter in substrate	d ₀	[mm]	8	10	12	14	6
Wrench size	Sw	[mm]	13	15	16	19	10
External diameter of washer		[mm]	18	22	27	32	14
Max. torque for impact screw driver	T _{imp,max}	[Nm]	900	950	950	950	400
STANDARD EMBEDMENT DEPTH							
Min. hole depth in substrate	h _{0,s}	[mm]	80	95	110	130	65
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,s}	[mm]	70	85	100	120	55
Min. substrate thickness	h _{min,s}	[mm]	110	130	155	190	100
Min. spacing	s _{min,s}	[mm]	50	60	80	100	45
Min. edge distance	c _{min,s}	[mm]	50	60	80	100	45
REDUCED EMBEDMENT DEPTH							
Min. hole depth in substrate	h _{0,r}	[mm]	60	65	70	85	50
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]	50	55	60	75	43
Min. substrate thickness	h _{min,r}	[mm]	100	100	110	110	100
Min. spacing	s _{min,r}	[mm]	50	60	80	100	45
Min. edge distance	c _{min,r}	[mm]	50	60	80	100	45

Mechanical properties

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

Basic performance data

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

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

Basic performance data

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

Design performance data

(-) failure is not decisive

Size			6	8	10	12	14					
Min. installation depth	h_{nom} [mm]		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]		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]		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	1.50	1.50
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25												
Characteristic resistance	$N_{Rk,p}$ [kN]		-	12.00	-	-	-	-	-	-	-	-
PULL-OUT FAILURE; CRACKED CONCRETE C20/25												
Characteristic resistance	$N_{Rk,p}$ [kN]		-	7.00	7.00	13.00	8.00	-	7.00	-	13.00	-
PULL-OUT FAILURE												
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
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
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
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
CONCRETE CONE FAILURE												
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
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
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
Spacing	$s_{cr,N}$ [mm]		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	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}	-	1.00	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	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	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]		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
Characteristic resistance with lever arm	$M_{Rk,s}$ [Nm]		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
CONCRETE PRY-OUT FAILURE												
Factor	k	-	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
CONCRETE EDGE FAILURE												
Effective length of anchor	ℓ_f [mm]		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]		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

Design performance data

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

Size			6	8	10	12	14					
R (for EI) = 30 min												
Effective embedment depth	h_{ef}	[mm]	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]	0.28	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]	1.38	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]	0.28	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]	0.25	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]	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]	0.25	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]	1.38	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]	0.25	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]	0.23	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]	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	0.20	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]	1.38	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	0.20	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]	0.18	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]	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	0.14	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]	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]	0.14	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]	0.13	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-08X060-HF-ZP ₁₎	60	100	100	25600	3.4	3.4	892.7	5906675119212
R-LX-08X075-HF-ZP ₁₎	75	100	100	25600	3.9	3.9	1028.4	5906675119236
R-LX-08X090-HF-ZP ₁₎	90	100	100	19200	4.5	4.5	899.8	5906675119243
R-LX-08X100-HF-ZP ₁₎	100	100	100	19200	4.9	4.9	974.6	5906675119250
R-LX-08X120-HF-ZP ₁₎	120	50	50	12800	2.9	2.9	773.4	5906675442389
R-LX-08X130-HF-ZP ₁₎	130	50	50	12800	3.0	3.0	808.2	5906675119267
R-LX-08X150-HF-ZP ₁₎	150	50	50	12800	3.4	3.4	903.0	5906675119274
R-LX-10X065-HF-ZP ₁₎	65	50	50	14400	2.8	2.8	829.2	5906675119281
R-LX-10X075-HF-ZP ₁₎	75	50	50	12800	3.1	3.1	817.2	5906675119304
R-LX-10X085-HF-ZP ₁₎	85	50	50	12800	3.4	3.4	895.3	5906675119311
R-LX-10X090-HF-ZP ₁₎	90	50	50	12800	3.6	3.6	951.6	5906675442341
R-LX-10X100-HF-ZP ₁₎	100	50	50	12800	3.8	3.8	1010.5	5906675119335
R-LX-10X110-HF-ZP ₁₎	110	25	25	6400	2.2	2.2	580.4	5906675442358
R-LX-10X120-HF-ZP ₁₎	120	25	25	6400	2.2	2.2	597.0	5906675119342

Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-10X130-HF-ZP ₁₎	130	25	25	7200	2.4	2.4	731.3	5906675442365
R-LX-10X140-HF-ZP ₁₎	140	25	25	7200	2.5	2.5	758.6	5906675119410
R-LX-10X150-HF-ZP ₁₎	150	25	25	7200	2.7	2.7	820.3	5906675442372
R-LX-12X075-HF-ZP ₁₎	75	50	50	9600	4.6	4.6	903.6	5906675431895
R-LX-12X100-HF-ZP ₁₎	100	50	50	6400	5.6	5.6	746.8	5906675431901
R-LX-12X130-HF-ZP ₁₎	130	50	50	6400	6.9	6.9	913.2	5906675431918
R-LX-12X150-HF-ZP ₁₎	150	50	50	6400	7.8	7.8	1028.4	5906675423746
R-LX-14X080-HF-ZP ₁₎	80	20	20	5120	2.7	2.7	731.4	5906675292861
R-LX-14X105-HF-ZP ₁₎	105	20	20	5120	3.3	3.3	879.9	5906675119953
R-LX-14X115-HF-ZP ₁₎	115	20	20	5120	3.6	3.6	941.4	5906675312118
R-LX-14X135-HF-ZP ₁₎	135	20	20	5120	4.0	4.0	1059.1	5906675119977
R-LX-14X160-HF-ZP ₁₎	160	15	15	3840	3.6	3.6	955.7	5906675442419
R-LX-06X050-HF-ZP ₁₎	50	100	100	38400	1.59	1.59	640.6	5906675112978

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