

OptiMity IEC Asynchronous Motors



LEROY-SOMERTM

THREE PHASE OPTA-F ALUMINIUM FRAME MOTORS

Features:

- Light & Compact
- Efficient cooling, low temperature rise
- Flexible mounting-indexible terminal Box
- B5 & B14 Mountings on Request (flexible kits)
- Low Noise & vibration levels
- Double Sealed Ball Bearings
- IP55 Enclosure as a standard
- Performance as per IEC60034-1 & dimensions as per IEC60072-1
- Enamelled highly optimized wire designs (Variable speed)

For Pumps – Compressors – Blowers – HVAC and many more ...

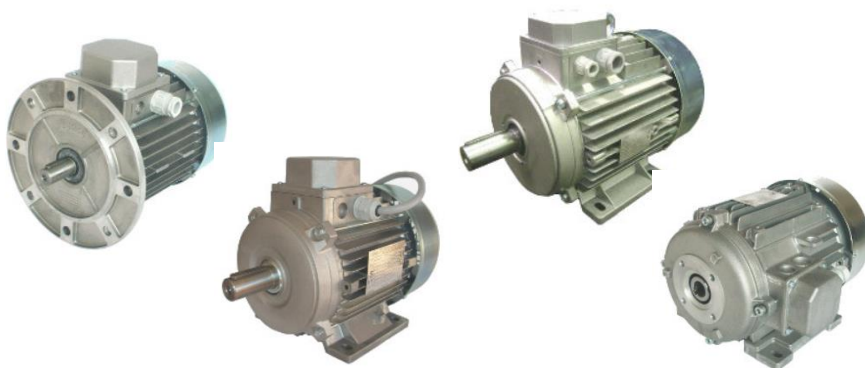
LEROY-SOMERTM

Three Phase, IP55 Aluminum frame

IEC Totally Enclosed Induction Motors

- Frame : Aluminum
- Motor type : OPTAF (IE1/IE2) , OPTAFP (IE3)
- Power range : From **0.09** to **22kW**
- Frame size : From **56** to **160**
- Speed : Single & Multi **2, 4** pole
- Operating voltages : AC 115-240/380-400V
- Frequency : 50/60Hz
- Efficiency : IE1 /IE2 /IE3
- Duty : S1 ... S2 -S10
- Insulation class : F
- Temperature rise : 80°C (K) at rated voltage
- Service Factor : 1.0 at insulation class (F) temperature rise
- Ambient Temperature : -20°C +40°C
- Altitude : 0-1000m
- Protection : IP55 by superior sealing and lip seal on the shaft
- Varnish treatment : VPI (Vacuum pressure impregnation)
- Variable speed suitability : Un peak to peak up to 2600V depending dv/dt
- Winding protection : PTO/PTC150 in winding (1*3 phases)
- Hardware : Corrosion treated
- Paint : Non-painted or RAL6000 (Green)
- Terminal box : Adaptable to all orientation and positions. Mounted on B3 (IM1001) position on the top of the motor orientation A1 as a standard.
- End shields : Aluminum
- Bearing : C&U Auto-lubricated with Polytex-EM grease
- Mechanical mounting : B3, B5, V1, B35, B14, B34
- Conversion Kits : FF and FT Flange available for field conversion

OPTA-F® Standard and Customized 3 phase Motors



Bearing Size

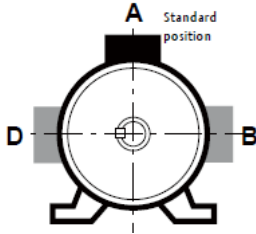
Frame Size	Poles	Drive End	Non-Drive End
56	2~4	6201 C3	6201 C3
63	2~4	6202 C3	6202 C3
71	2~4	6202 C3	6202 C3
80	2~4	6204 C3	6204 C3
90	2~4	6205 C3	6205 C3
100	2~4	6206 C3	6206 C3
112	2~4	6207 C3	6207 C3
132	2~4	6208 C3	6208 C3
160	2~4	6309 C3	6309 C3

Main Data For Terminal Box

Placed as standard on the top of the motor near the drive end , it is IP55 protection and fitted with plastic cable glands.

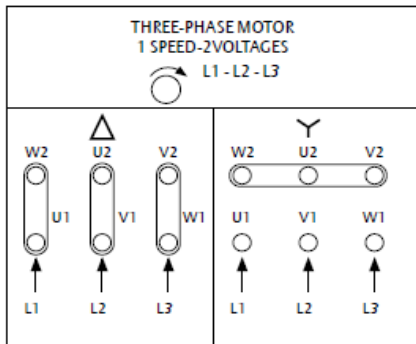
Frame Size	Entry hole size (Cable glands /Plug)
56-71	2*M16*1.5
80-112	2*M20*1.5
132	2*M25*1.5
160	2*M32*1.5

Positions of the terminal box in relation to the drive end (motor in IM 1001 position)



Wiring Diagram

All standard motors are supplied with a wiring diagram in the Terminal box.



Nameplate

LEROY-SOMER™							CE
Leroy Somer Electro-Technique (FuZhou) Co., Ltd.							3~OPTAFP90S 2P B5
IP55	IK08	I cl.F	-16~40°C	S1	13.6kg		
V	Hz	r/min	kW	cosφ	A		
Y 400	50	2888	1.5	0.812	3.2		
Δ 230	50	2887	1.5	0.815	5.5		
Y2020 IE3 50Hz-84.2%							
IEC60034-1							
DE:6205-2Z/C3				NDE:6205-2Z/C3			
SN							
I3RB0051-002							

- MOT: Code No.
- kW: Rated Power
- SN: Serial No.
- Cos: Power Factor
- IP&IK: Protection Level
- A: Rated Current
- cl: Insulation Class
- IE: Efficiency lever
- °C: Ambient operating temperature
- %: Efficiency value
- S: Duty-Duty factor
- DE: Drive End Bearing
- V: Supply Voltage
- NDE: Non Drive End Bearing
- Hz: Supply frequency
- r/min: Rated Speed

OPTA-F 3-phase induction motors

Electrical characteristics IE1 Motors

Type	400V 50Hz							400V/60Hz	
	Rated Power	Rated Current	Rated Speed	Rated Torque	Efficiency	Power Factor	Weight	Rated Current	Rated Speed
	Pn/kW	In/A	r/min	Mn	%	cosφ	Kg	In/A	r/min
2P									
OPTAF 56-2P	0.09	0.4	2680	0.33	50.0	0.67	2.50	0.40	3240
OPTAF 56-2P	0.12	0.5	2740	0.42	53.6	0.62	2.80	0.40	3260
OPTAF 63-2P	0.18	0.56	2780	0.62	52.8	0.81	3.80	0.52	3340
OPTAF 63-2P	0.25	0.72	2810	0.85	58.2	0.75	4.00	0.64	3370
OPTAF 71-2P	0.37	1.00	2800	1.26	63.9	0.80	5.50	0.90	3360
OPTAF 71-2P	0.55	1.60	2710	1.94	69.0	0.80	6.00	1.40	3300
OPTAF 80-2P	0.75	1.90	2810	2.55	72.1	0.82	8.00	1.80	3370
OPTAF 80-2P	1.1	2.70	2800	3.75	75.0	0.81	10.00	2.50	3380
OPTAF 90S-2P	1.5	3.40	2800	5.12	77.2	0.83	12.00	3.20	3380
OPTAF 90L-2P	2.2	5.90	2800	7.50	79.7	0.84	14.50	4.70	3360
OPTAF 100-2P	3	6.40	2850	10.05	81.5	0.84	19.50	6.10	3420
OPTAF112-2P	4	8.40	2870	13.31	83.1	0.85	24.00	8.00	3440
OPTAF 132S-2P	5.5	11.30	2900	18.11	84.7	0.85	36.00	9.42	3480
OPTAF 132S-2P	7.5	15.30	2910	24.61	86.0	0.82	42.50	14.20	3480
OPTAF 160M-2P	11	20.40	2930	33.85	87.6	0.88	75.00	19.80	3510
OPTAF 160M-2P	15	27.40	2920	49.05	88.7	0.87	82.00	26.80	3500
OPTAF 160L-2P	18.5	37.00	2910	60.71	89.3	0.83	89.50	34.70	3490
4P									
OPTAF 56-4P	0.09	0.55	1340	0.6	50.0	0.55	3.00	0.45	1610
OPTAF 63-4P	0.12	0.60	1350	0.8	50.0	0.64	3.50	0.50	1640
OPTAF 63-4P	0.18	0.80	1350	1.3	57.0	0.65	4.00	0.60	1700
OPTAF 71-4P	0.25	0.78	1370	1.7	61.5	0.78	5.00	0.65	1630
OPTAF 71-4P	0.37	1.10	1370	2.6	66.0	0.78	5.50	1.00	1650
OPTAF 80-4P	0.55	1.56	1380	3.8	70.0	0.77	8.00	1.40	1650
OPTAF 80-4P	0.75	2.00	1380	5.2	72.1	0.77	9.00	1.80	1650
OPTAF 90S-4P	1.1	2.80	1400	7.5	75.0	0.76	12.50	2.60	1670
OPTAF 90L-4P	1.5	3.60	1410	10.2	77.2	0.78	14.50	3.30	1680
OPTAF 100-4P	2.2	5.30	1410	14.9	79.7	0.78	18.50	4.90	1690
OPTAF100-4P	3	6.70	1410	20.3	81.5	0.80	20.50	6.30	1690
OPTAF 112-4P	4	10.10	1430	26.7	83.1	0.70	29.00	8.42	1700
OPTAF 132S-4P	5.5	10.90	1430	36.7	84.7	0.84	41.00	9.08	1710
OPTAF 132M-4P	7.5	16.40	1440	49.7	86.0	0.78	49.00	13.67	1720
OPTAF 160M-4P	11	22.50	1450	72.4	87.6	0.82	78.00	22.00	1730
OPTAF 160L-4P	15	29.10	1450	98.8	88.7	0.85	91.50	28.50	1730

OPTA-F 3-phase induction motors

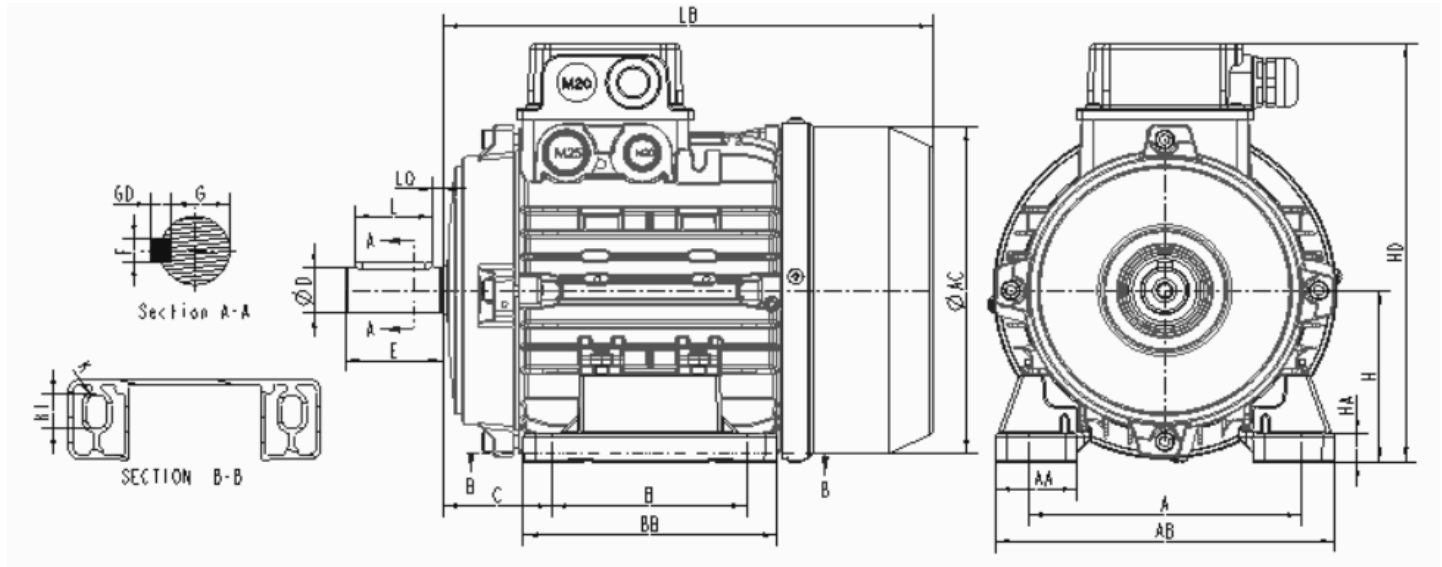
Electrical characteristics IE3 Motors

Type	400V 50Hz					
	Rated Power	Rated Current	Rated Speed	Rated Torque	Efficiency	Power Factor
	Pn	In/A	r/min	Mn	%	cosφ
2P						
OPTAFP 80-2P	0.75	1.8	2865	2.5	80.7	0.76
OPTAFP 80-2P	1.1	2.5	2875	3.7	82.7	0.80
OPTAFP 90S-2P	1.5	3.4	2885	5.0	84.2	0.78
OPTAFP 90L-2P	2.2	4.8	2905	7.2	85.9	0.78
OPTAFP 100-2P	3	6.2	2925	9.8	87.1	0.80
OPTAFP 112-2P	4	8.6	2940	13.0	88.1	0.76
OPTAFP 132S-2P	5.5	10.2	2930	17.9	89.2	0.88
OPTAFP 132L-2P	7.5	14.9	2940	24.4	90.1	0.81
OPTAFP 160M-2P	11	20.4	2950	35.6	91.2	0.85
OPTAFP 160M-2P	15	27.4	2955	48.5	91.9	0.86
OPTAFP 160L-2P	18.5	35.0	2955	59.8	92.4	0.82
4P						
OPTAFP 80-4P	0.75	2.0	1425	5.0	82.5	0.66
OPTAFP 90L-4P	1.1	2.9	1440	7.3	84.1	0.66
OPTAFP 90XL-4P	1.5	3.7	1435	10.0	85.3	0.70
OPTAFP 100-4P	2.2	5.7	1450	14.5	86.7	0.65
OPTAFP 100XL-4P	3	7.3	1435	20.0	87.7	0.72
OPTAFP 112XL-4P	4	10.0	1460	26.2	88.6	0.65
OPTAFP 132S-4P	5.5	11.9	1440	36.5	89.6	0.76
OPTAFP 132L-4P	7.5	16.1	1460	49.1	90.4	0.74
OPTAFP 160M-4P	11	23.2	1465	71.7	91.4	0.75
OPTAFP 160L-4P	15	31.9	1465	97.8	92.1	0.74

OPTA-F 3-phase induction motors

Mechanical characteristics IE1/IE3 Motors

B3

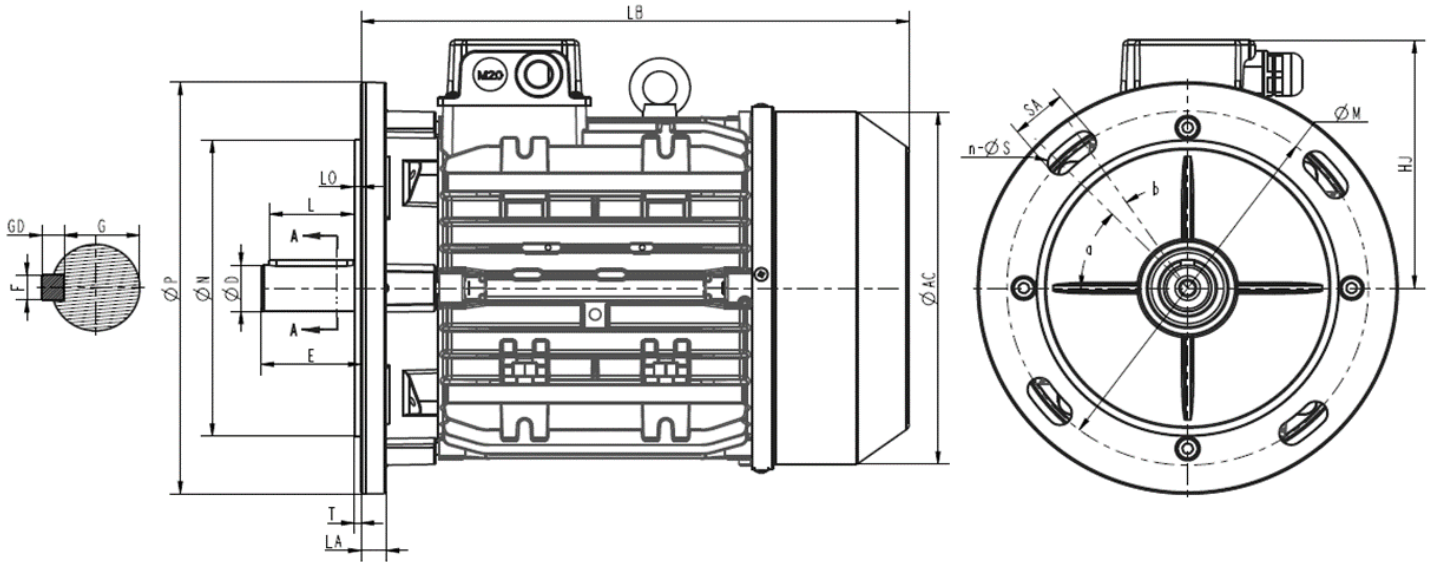


Frame	Pole	Eff	Main dimensions(mm)																			
			A	AA	AB	AC	B	BB	C	D	E	F	G	GD	H	HA	HD	L	LO	LB	K	K1
56	2/4	IE1	90	21	108	110	71	90	35	9	20	3	7.2	3	56	10	151	12	4	168	R3	11
63	2/4	IE1	100	28	120	118	80	105	43	11	23	4	8.5	4	63	10	163	15	4	191	R3.5	12
71	2/4	IE1	112	30	136	135	90	108	46	14	30	5	11	5	71	11	181	25	3	213	R3.5	12
80	2/4	IE1/IE3	125	32	154	155	100	125	51	19	40	6	15.5	6	80	13	206	35	2	241	R4.75	17
80L	2/4	IE3					125	155	57	24	50	8	20	7	90	15	220	40	5	282		
90S	2/4	IE1/IE3	140	42	174	171	100	130	56	24	50	8	20	7	90	15	220	40	5	252	R5	18
90L		IE1/IE3					125	155	57											305		
90XL	4	IE3	160	37	192	187	140	175	62	28	60	8	24	7	100	16	240	50	5	305	R6	22
100	2/4	IE1/IE3					140	175	63											348		
100XL	4	IE3	190	40	224	214	140	177	69	28	60	8	24	7	112	16	262	50	5	326	R6	22
112	2/4	IE1/IE3					140	177	69											388		
112XL	4	IE3	212	58	258	253	140	180	89	38	80	10	33	8	132	18	309	70	5	381	R6	28
132S	2/4	IE1/IE3					140	180												89		
132L	2/4	IE1/IE3	254	73	318	303	178	218	108	42	110	12	37	8	160	22.5	403	90	10	486	R7.25	30
132L SA	4	IE3					178	218												108		
160M	2/4	IE1/IE3	254	73	318	303	210	264	108	42	110	12	37	8	160	22.5	403	90	10	495	R7.25	30
160S	4	IE1/IE3					210	264								108				42		

OPTA-F 3-phase induction motors

Mechanical characteristics IE1/IE3 Motors

B5

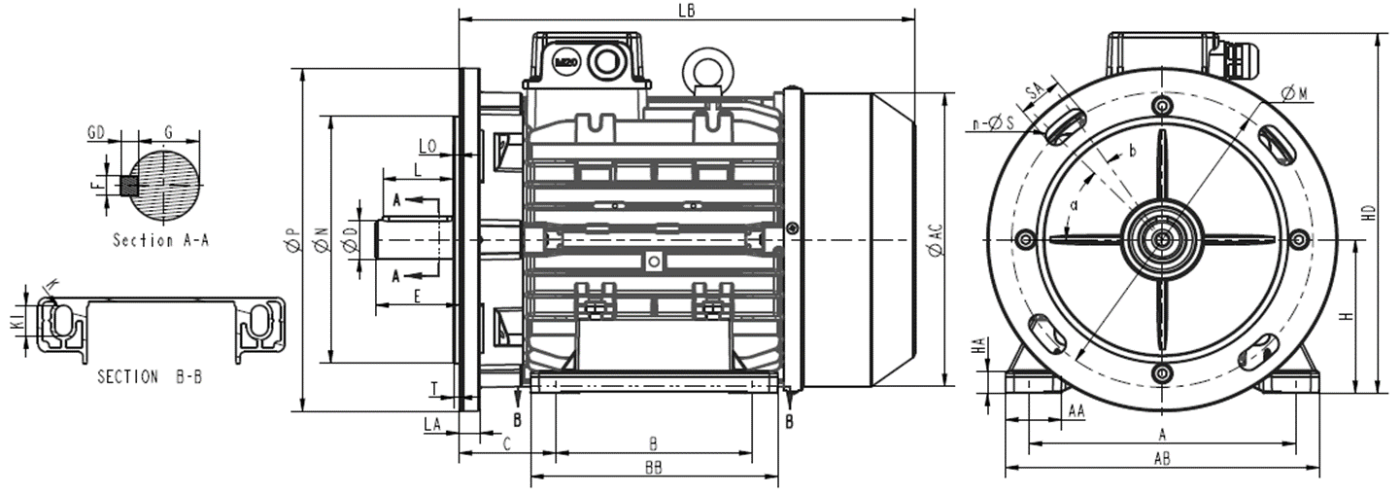


Frame	Pole	Eff	Main dimensions(mm)																		a	b	n
			AC	D	E	F	G	GD	HJ	L	LA	LO	LB	M	N	P	S	SA	T				
56	2/4	IE1	110	9	20	3	7.2	3	95	12	8	4	168	100	80	120	7	7	3	45°	0	4	
63	2/4	IE1	118	11	23	4	8.5	4	102	15	10	4	190	115	95	140	9.5	9.5	3		0		
71	2/4	IE1	135	14	30	5	11	5	112	25	10	3	213	130	110	160	9.5	9.5	4		0		
80	2/4	IE1/IE3	155	19	40	6	15.5	6	126	35	12	2	241	165	130	200	12	12	4		0		
80L	2/4	IE3											282										
90S	2/4	IE1/IE3	171	24	50	8	20	7	130	40	11	5	252	165	130	200	12	12	4		0		
90L		IE1/IE3											278										
90XL		IE3											305										
100	2/4	IE1/IE3	187	28	60	8	24	7	142	50	15	5	306	215	180	250	14	14	4		0		
100XL	IE3	348																					
112	2/4	IE1/IE3	214	28	60	8	24	7	151	50	15	5	326	215	180	250	14	33	4	10			
112XL	IE3	388																					
132S	2/4	IE1/IE3	253	38	80	10	33	8	177	70	20	5	382	265	230	300	14	37	4	10			
132L	2/4	IE1/IE3											421										
132L SA	IE3	487																					
160M	2/4	IE1/IE3	303	42	110	12	37	8	243	90	14	10	495	300	250	350	18	18	5	0			
160L	IE1/IE3	538																					

OPTA-F 3-phase induction motors

Mechanical characteristics IE1/IE3 Motors

B35



Frame	Pole	Eff	Main dimensions(mm)																													
			A	AA	AB	AC	B	BB	C	D	E	F	G	GD	H	HA	HD	L	LA	LO	LB	M	N	P	S	SA	T	K	K1	a	b	n
56	2/4	IE1	90	21	108	110	71	90	35	9	20	3	7.2	3	56	10	151	12	8	4	168	100	80	120	7	7	2.5	R3	11	0	0	0
63	2/4	IE1	100	28	120	118	80	105	43	11	23	4	8.5	4	63	10	163	15	10	4	190	115	95	140	9.5	9.5	3	R3.5	12	0	0	0
71	2/4	IE1	112	30	136	135	90	108	46	14	30	5	11	5	71	11	181	25	10	2.5	213	130	110	160	9.5	9.5	3.5	R3.5	12	0	0	0
80	2/4	IE1/IE3	125	32	154	155	100	125	51	19	40	6	15.5	6	80	13	206	35	12	2	241	165	130	200	12	12	3.5	R4.75	16.5	0	0	0
80L	2/4	IE3																			282											
90S	2/4	IE1/IE3	140	42	174	171	100	130	56	24	50	8	20	7	90	15	220	40	11	5	252	165	130	200	12	12	3.5	R5	17.5	0	0	0
90L		IE1/IE3																			278											
90XL		IE3																			305											
100	2/4	IE1/IE3	160	37	192	187	140	175	62	28	60	8	24	7	100	16	240	50	15	5	306	215	180	250	14	14	4	R6	22	0	0	0
100XL	4	IE3							63												348											
112	2/4	IE1/IE3	190	40	224	214	140	177	69	28	60	8	24	7	112	16	262	50	15	5	326	215	180	250	14	32.7	4	R6	22	10	0	0
112XL	4	IE3																			388											
132S	2/4	IE1/IE3	212	58	258	253	140	180	89	38	80	10	33	8	132	18	309	70	20	5	382	265	230	300	14	37	4	R6	28	10	0	0
132L	2/4	IE1/IE3																			421											
132L SA	4	IE3																			487											
160M	2/4	IE1/IE3	254	73	318	303	210	264	108	42	##	12	37	8	160	22.5	403	90	14	10	495	300	250	350	18	18	5	R7.25	30	0	0	0
160L	4	IE1/IE3																			538											



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