



TECHNICAL GUIDE

LX SERIES SPLIT SYSTEM AIR CONDITIONERS

17 SEER – R-410A – 1 PHASE

1.5 THRU 5 NOMINAL TONS

MODELS: TC7B18 THRU 60

FOR INSTALLATION IN ALL US REGIONS AND CANADA



■ Installation Allowed



ISO 9001
Certified Quality
Management System



Due to continuous product improvement, specifications are subject to change without notice.

Visit us on the web at

www.upgnet.com and www.luxaire.com

Additional rating information can be found at

www.ahridirectory.org

WARRANTY SUMMARY*

Extended 10-Years limited parts warranty.

Standard 10-year limited compressor warranty.

Extended 10-Years limited parts warranty requires online registration within 90 days of purchase for replacement or closing for new home construction.

*Does not apply to R-22 models, 3-Phase models, or internet sales.

See Limited Warranty certificate in User's Information Manual for details.

DESCRIPTION

The TC7B models are the newest addition to our successful LX Series split system air conditioner lineup. Optimized for tax credit and utility rebate efficiency levels, these ENERGY STAR labeled outdoor units are specifically designed to be matched with York indoor coils, furnaces, and air handlers to provide a complete system solution.

FEATURES

- **High System Efficiency** - Optimized system designs provide ENERGY STAR coil-only ratings in all tonnages. Targeted furnace and air handler matches meeting Federal Tax Credit efficiencies are available for almost all tonnages and markets.
- **Easier Installation** - Independent panels provide quick access for unit setup. Installation time is reduced by easy power and control wiring access. The factory installed filter-drier and factory charge for a 15-Ft lineset means less time spent brazing and charging the system.
- **Accessible Information** - QR code on unit provides quick access to technical documents and warranty information.
- **Durable Finish** - The coated steel wire fan guard, coated external fasteners, and pre-treated G90-equivalent galvanized steel chassis components resist corrosion and rust creep. Titanium colored powdercoat paint further protects external panels.
- **Quality Coils** - The high efficiency microchannel aluminum coil is manufactured using an improved material system providing reliable performance and smaller unit size.
- **Rugged Coil Protection** - Coils are protected from mechanical damage by a proven stamped steel coil guard design.
- **Protected Compressor** - Compressors are protected internally by a high pressure relief valve and a temperature sensor, and externally by the system high and low pressure switches. The liquid line filter-drier is factory installed to protect the compressor against moisture and debris.
- **Reliable Operation** - ECM ball bearing fan motors provide superior performance in extreme temperatures.
- **Environmentally Friendly** - CFC-free R-410A refrigerant delivers environmentally friendly performance with zero ozone depletion.
- **Top Discharge** - Warm air is blown up, away from the structure and any landscaping and allows compact location on multi-unit applications.
- **Low Operating Sound Levels** - Specific sound and vibration development tests provide a design sound performance of 74 dBA or lower. Swept-wing fan blades are featured on units 2.5-Tons and higher. Compatible accessories for further sound reduction are also available.
- **Better Service Access** - Diagonal base valves with open access for low-loss fittings, single panel access to the electrical controls, swing out control box for full corner access, and removable fan guard allow easy access for unit maintenance.
- **Agency Listed** - Safety certified by CSA to UL 1995 / CSA 22.2. Performance certified to ANSI/AHRI Standard 210/240 in accordance with the Unitary Small Equipment certification program.

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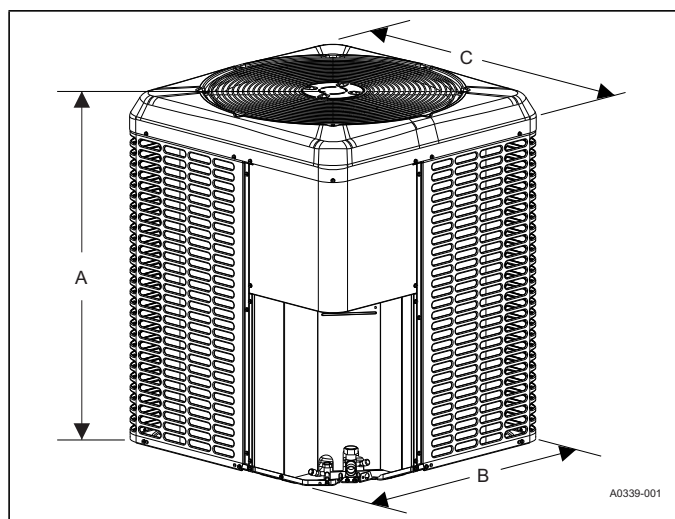
NOMENCLATURE

BRAND	T	T = Factory Branded	
PRODUCT TYPE	C	C = Air Conditioner (US Northern or Southeast Region)	
NOMINAL SERIES EFFICIENCY AND STAGING	7	7 = 17 SEER / 1-Stage	
REFRIGERANT	B	B = R-410A	
NOMINAL UNIT CAPACITY (MBH)	36	18 = 1.5 Ton 24 = 2 Ton 30 = 2.5 Ton 36 = 3 Ton	42 = 3.5 Ton 48 = 4 Ton 60 = 5 Ton
VOLTAGE (Voltage-Phase-Hertz)	2	2 = 208/230-1-60	
GENERATION (MAJOR REVISION)	1	1 = 1st Gen 2 = 2nd Gen etc	
FACTORY OPTION	S	S = Standard (No Options)	
STYLE LETTER (Minor Revision) Not Used for Ordering	A	A = Style A B = Style B	

PHYSICAL AND ELECTRICAL DATA

MODEL		TC7B1821S	TC7B2421S	TC7B3021S	TC7B3621S	TC7B4221S	TC7B4821S	TC7B6021S
Unit Supply Voltage		208-230V, 1 ϕ , 60Hz						
Normal Voltage Range ¹		187 to 252						
Minimum Circuit Ampacity		14.0	16.4	18.8	22.0	23.6	25.9	32.4
Max. Overcurrent Device Amps ²		20	25	30	35	40	40	50
Min. Overcurrent Device Amps ³		15	20	20	25	25	30	35
Compressor Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Compressor Amps	Rated Load	9.0	10.9	12.8	15.4	16.6	18.5	23.7
	Locked Rotor	47.5	62.9	67.8	83.9	109.0	124.0	152.5
Crankcase Heater		No	No	No	No	No	No	No
Factory External Discharge Muffler		No	No	No	No	No	No	No
HS Kit Required with TXV		No	No	No	No	No	No	No
Fan Diameter Inches		22	22	24	24	26	26	26
Fan Motor	Rated HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Rated Load Amps	2.80	2.80	2.80	2.80	2.80	2.80	2.80
	Nominal RPM	917	917	682	682	875	875	834
	Nominal CFM	2575	2575	3000	3000	4100	4100	4275
Coil	Face Area Sq. Ft.	13.83	13.83	21.06	21.06	25.28	25.28	27.40
	Rows Deep	1	1	1	1	1	1	1
	Fins / Inch	23	23	23	23	23	23	23
Liquid Line Set OD (Field Installed)		3/8	3/8	3/8	3/8	3/8	3/8	3/8
Vapor Line Set OD (Field Installed) ⁴		3/4	3/4	3/4	3/4	7/8	7/8	1-1/8 [‡]
Unit Charge (Lbs. - Oz.) ⁵		3 - 10	3 - 10	4 - 11	4 - 9	6 - 6	6 - 11	7 - 14
Charge Per Foot, Oz.		0.62	0.62	0.62	0.62	0.67	0.67	0.75
Operating Weight Lbs.		150	150	165	175	220	220	265

1. Rated in accordance with AHRI Standard 110-2012, utilization range "A".
2. Dual element fuses or HACR circuit breaker. Maximum allowable overcurrent protection.
3. Dual element fuses or HACR circuit breaker. Minimum recommended overcurrent protection.
4. For applications with non-standard vapor line sizes, see the "Applications & Accessories" section of this Technical Guide.
5. The Unit Charge is correct for the outdoor unit, smallest matched indoor unit, and 15 feet of refrigerant tubing. For tubing lengths other than 15 feet, add or subtract the amount of refrigerant, using the difference in actual lineset length (not the equivalent length) multiplied by the per foot value.



DIMENSIONS

Unit Model	Dimensions (Inches)			Refrigerant Connection Service Valve Size	
	A	B	C	Liquid	Vapor
TC7B1821S	30	29-1/4	29-1/4	3/8	3/4
TC7B2421S	30	29-1/4	29-1/4		
TC7B3021S	36-1/4	35-1/4	31-3/4		
TC7B3621S	36-1/4	35-1/4	31-3/4		
TC7B4221S	39-1/2	38	34-1/4	3/8	7/8
TC7B4821S	39-1/2	38	34-1/4		
TC7B6021S	42-3/4	38	34-1/4		

‡ Adapter fitting must be field installed for the required 1-1/8" line set.
 All dimensions are in inches and are subject to change without notice.
 Overall height is from bottom of base pan to top of fan guard.
 Overall length and width include screw heads.

SYSTEM CHARGE FOR VARIOUS MATCHED SYSTEMS

Outdoor Unit	TC7B1821S	TC7B2421S	TC7B3021S	TC7B3621S	TC7B4221S	TC7B4821S	TC7B6021S
Required TXV ^{1,2}	BA1	BA1	BH1	BA1	BB1	BC1	BG1
Indoor Unit ^{3,4,5}	Additional Charge, oz						
AP18B	0	—	—	—	—	—	—
AP24B	3	0	—	—	—	—	—
AP30B	10	7	2	—	—	—	—
AP36B	10	7	2	0	—	—	—
AP36C	—	11	2	2	—	—	—
AP42C	—	11	4	2	0	—	—
AP48(C,D)	—	—	—	6	5	0	—
AP60(C,D)	—	—	—	10	9	4	0
AE18B	0	—	—	—	—	—	—
AE24B	3	0	—	—	—	—	—
AE30B	8	5	0	—	—	—	—
AE36(B,C)	10	7	4	0	—	—	—
AE42C	—	—	—	6	5	—	—
AE48(C,D)	—	—	—	6	5	0	—
AE60C	—	—	—	10	9	4	0
AE60D	—	—	—	—	29	22	16
AVC18B	0	—	—	—	—	—	—
AVC24B	3	0	—	—	—	—	—
AVC30B	8	5	0	—	—	—	—
AVC36(B,C)	10	7	4	0	—	—	—
AVC42C	—	—	—	6	5	—	—
AVC48(C,D)	—	—	—	6	5	0	—
AVC60C	—	—	—	10	9	4	0
AVC60D	—	—	—	—	29	22	16
CF/CM/CU18(A,B)	0	—	—	—	—	—	—
CF/CM/CU24(A,B)	3	0	—	—	—	—	—
CF/CM/CU30(A,B,C)	8	5	0	—	—	—	—
CF/CM/CU36(A,B,C,D)	10	7	2	0	—	—	—
CF/CM/CU42(B,C,D)	—	11	4	2	0	—	—
CF/CM/CU48(C,D)	—	—	—	6	5	0	—
CF/CM/CU60(C,D)	—	—	—	10	9	4	0
CF/CM64D	—	—	—	—	29	22	16

Some of the combinations shown in the above System Charge table require Advanced Main Air Circulating Fan indoor product. For approved coil only matches, please see the "COOLING CAPACITY - Upflow, Downflow & Horizontal Furnaces and Coils" table.

FOOTNOTES:

1. For applications requiring a TXV, use S1-1TVM*** series kit.
2. A TXV kit must be used with these indoor units to obtain system performance.
3. Systems matched with furnaces or air handlers not equipped with blower-off delays may require blower Time Delay Kit S1-2FD06700224.
4. CF coils cannot be used in horizontal applications.
5. Charge adders shown above do not indicate that coils are rated for every application. Refer to Performance Data Tables for actual performance for specified system matches. Obtain certified system ratings from www.ahridirectory.org.

CHARGING PROCEDURES:

1. Check the Factory Unit Charge listed on the unit nameplate to verify the refrigerant charge for the outdoor unit, the smallest matched indoor unit, and the 15 feet of interconnecting lineset.
2. Verify the indoor metering device and additional charge required for the specific matched indoor unit in the system using the above table.
3. Add additional charge for the amount of interconnecting lineset tubing greater than 15 feet at the rate specified in Physical and Electrical Data Table.
4. For installations requiring additional charge, weigh in refrigerant for the specific matching indoor unit and actual lineset length.
5. Once the charge adders for matched indoor unit and for lineset have been weighed in, verify the system operation against the temperatures and pressures in the Charging Chart for the outdoor unit. Locate Charging Charts on the outdoor unit and also in the Service Data Application Guide on www.upgnet.com. Follow the Subcool or Superheat charging procedure in the Installation Manual according to the type of indoor metering device in the system, and allow ten minutes after each charge adjustment for the system operation to stabilize. Record the charge adjustment made to match the Charging Chart.
6. Permanently stamp the unit nameplate with the TOTAL SYSTEM CHARGE defined as follows: TOTAL SYSTEM CHARGE = Base Charge (as shipped) + charge adder for matched indoor unit + charge adder for actual lineset length + charge adjustments to match the Charging Chart.

APPLICATIONS AND ACCESSORIES

Refer to Price Manual for specific model numbers.

Standard Application Limits*		
Maximum Lineset Equivalent Length		80 Ft
Outdoor Ambient Temperature Limits		
Cooling Operation	Maximum DB	125°F
	Minimum DB	55°F

* For Low Ambient and/or Long Lineset Applications, please see the accessories listed below.

Non-Standard Lineset Applications - For installations with reduced diameter or long linesets, refer to the current version of the Piping Application Guide P/N 247077, available in the Application Bulletins section on www.upgnet.com.

OD Unit Anti Short Cycle Kit (10 Pack) S1-2TD08700124BK: A time delay that prevents rapid compressor restarting as a result of power interruption, limit switch operation, or thermostat resetting. Not required for HP models, or for AC models with factory electronic controls.

Standard Low Ambient Control Kit S1-2LA06700424: Allows the use of air conditioning at low outdoor ambient temperatures down to +20°F (-7°C). For use with all R-410A single stage AC & HP models.

Low Pressure Switch Kit S1-2PS06700524: Provides field installed low pressure (loss of charge) protection. Not required for HP models, or for AC models with factory electronic controls.

Outdoor Communicating Board Kit (S1-33102952310): Electronic control upgrade for standard AC & HP units to provide compatibility with the Residential Touch Screen Communicating Control.

Start Assist Kit S1-2SA067**:** Provides increased compressor starting torque for areas with low supply voltage. Required for units with recip compressors when applied with indoor TXV, and for all units when applied with long linesets or low ambient kits. May be factory installed on select AC & HP units (see Physical & Electrical Table). See Price Pages or Source1 SmartSearch for the correct kit for each application.

Compressor Crankcase Heater Kit (S1-025-***):** A wrap-around electrical resistance heater that warms the compressor sump, reducing the chance of liquid slugging on startup. Required on all long lineset and low ambient applications. See Price Pages or Source1 SmartSearch for the correct part for each application.

Indoor Blower-Off Delay Kit S1-2FD06700224: Provides a 1-minute blower-off delay at the end of the cooling cycle. May be required for retrofits with non-Johnson Controls Unitary Products indoor units. This feature is factory-provided on all JCUP indoor products.

Support Feet S1-HPRKIT:** Kit of 5 support feet to raise unit above snow or landscaping. Available in heights of 3", 6" or 12".

Anchor Bracket Kit S1-1HK0401: Firmly anchors unit to pad or support structure. When properly installed, approved for ground-mounted or roof-mounted applications.

Indoor TXV Kit S1-1TVM*:** Thermal expansion valves precisely meter refrigerant for optimum performance over a wide range of conditions. See System Charge Table, Price Pages, or Source1 Smart Search for TXV part number for each AC & HP model.

Wall Mount Kit (S1-ACB-):** Includes two brackets to allow outdoor unit to be securely mounted to a vertical wall. Mounting hardware is field sourced according to the specific application.

Winter Cover Kit S1-CCVRE*:** Custom fit winter cover protects AC condensing unit from debris during the off-season. Must be removed prior to unit operation. See Price Pages or Source1 SmartSearch for the correct cover for each application.

Cold Weather Charging Tent S1-CHGTENT01: Provides warm environment to accurately service AC & HP systems in ambient conditions 55°F (13°C) or colder.

Touch-up Paint S1-5130153**:** Color matched aerosol paint for touching up unit chassis and panels. See Price Pages or Source1 SmartSearch for the correct color for each application.

Compressor Sound Blanket S1-010-07xxx-000: A field installed dense foam cover that provides 2dBA sound level reduction. See Price Pages or Source1 SmartSearch for the correct blanket for each application.

Thermostat: Compatible thermostat controls are available through accessory sourcing. For optimum performance, these outdoor units are fully compatible with our Luxaire Hx™ Touchscreen Thermostats available through Source1. For more information, see the thermostat section of the Product Equipment Catalog.

SOUND POWER RATINGS

Cooling	Octave Band Sound Power Level (db re. 1-pW)									
Model Number	63	125	250	500	1000	2000	4000	8000	dBA	SQI
TC7B1821S	71	70	67	68	70	64	58	56	72	19.1
TC7B2421S	70	70	66	70	70	63	58	55	72	19.1
TC7B3021S	67	69	65	66	67	62	54	50	72	19.2
TC7B3621S	66	69	62	68	68	68	56	53	72	19.0
TC7B4221S	69	73	69	71	70	63	56	53	73	19.1
TC7B4821S	72	74	72	71	71	63	56	55	74	19.1
TC7B6021S	71	74	73	71	69	63	58	57	74	19.1

Rated in accordance with ARI Standard 270.

PERFORMANCE DATA - 4 TON

CONDENSER-ONLY DATA (OUTDOOR UNIT)																		
MODEL	SATURATED SUCTION @ COMPRESSOR		Outdoor Ambient Temperature															
			55 °F		65 °F		75 °F		85 °F		95 °F		105 °F		115 °F		125 °F	
	T (°F)	P (PSIG)	MBH	KW	MBH	KW	MBH	KW	MBH	KW	MBH	KW	MBH	KW	MBH	KW	MBH	KW
TC7B4821S	35	107	43.3	2.60	41.2	2.81	39.0	3.06	36.9	3.36	34.7	3.72	32.3	4.14	29.8	4.61	27.1	5.15
	40	118	47.6	2.58	45.3	2.79	43.0	3.05	40.6	3.35	38.2	3.70	35.7	4.12	33.0	4.61	30.1	5.13
	45	130	52.3	2.57	49.7	2.77	47.2	3.03	44.7	3.33	42.1	3.68	39.4	4.10	36.4	4.59	33.3	5.11
	50	142	57.3	2.55	54.5	2.75	51.8	3.00	49.1	3.31	46.3	3.66	43.3	4.08	40.2	4.57	36.8	5.09
	55	156	62.6	2.52	59.7	2.73	56.8	2.98	53.8	3.28	50.7	3.63	47.5	4.05	44.1	4.54	40.5	5.06

Notes:

- For Outdoor Unit (Condenser) performance only. Data does not include the effects of air handler power or heat.
- Performance based on 15°F subcooling and 15°F superheat at the Outdoor Unit base valves.
 - Increase capacity by 1% for each 2°F increase in subcooling.
 - Decrease capacity by 1% for each 2°F decrease in subcooling.
- Maximum recommended condensing temperature is 140°F.

COOLING PERFORMANCE DATA																
OUTDOOR UNIT MODEL NO.			TC7B4821S													
INDOOR COIL MODEL NO.			CF60CXA1													
AIR TEMP. ENTERING OUTDOOR UNIT (°F)	ID CFM	1300					1500					1700				
	ID DB (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	ID WB (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
55	T.C.	43.4	46.5	45.6	48.0	47.9	44.7	47.2	46.6	48.4	48.1	46.1	47.9	47.6	48.8	48.3
	S.C.	43.4	39.0	32.7	31.3	23.8	44.7	40.7	34.3	32.5	24.5	46.1	42.4	35.9	33.7	25.2
	KW	2.33	2.34	2.34	2.35	2.36	2.40	2.41	2.41	2.43	2.43	2.48	2.49	2.49	2.51	2.51
65	T.C.	41.9	45.3	44.8	48.0	49.5	43.5	46.2	45.8	48.7	49.9	45.1	47.1	46.9	49.5	50.3
	S.C.	41.9	38.6	32.4	31.7	24.2	43.5	40.8	34.3	33.3	25.1	45.1	43.0	36.1	34.8	26.0
	KW	2.56	2.58	2.57	2.59	2.59	2.64	2.66	2.65	2.67	2.66	2.71	2.73	2.72	2.74	2.74
75	T.C.	40.4	44.1	44.0	47.9	51.1	42.3	45.2	45.1	49.0	51.7	44.1	46.2	46.2	50.1	52.2
	S.C.	40.4	38.2	32.1	32.0	24.7	42.3	40.8	34.2	34.0	25.8	44.1	43.5	36.4	36.0	26.9
	KW	2.80	2.83	2.81	2.83	2.82	2.88	2.91	2.88	2.91	2.90	2.95	2.98	2.95	2.98	2.97
85	T.C.	39.1	42.3	42.2	46.2	49.7	40.8	43.4	43.2	47.3	50.4	42.5	44.4	44.2	48.3	51.1
	S.C.	39.1	37.2	31.3	31.3	24.2	40.8	39.9	33.4	33.4	25.3	42.5	42.6	35.6	35.5	26.5
	KW	3.14	3.16	3.14	3.16	3.14	3.21	3.24	3.22	3.24	3.22	3.29	3.31	3.29	3.31	3.30
95	T.C.	37.7	40.4	40.3	44.4	48.4	39.3	41.5	41.3	45.5	49.2	40.8	42.7	42.3	46.6	49.9
	S.C.	37.7	36.2	30.4	30.5	23.7	39.3	39.0	32.6	32.8	24.9	40.8	41.7	34.8	35.1	26.2
	KW	3.48	3.50	3.48	3.50	3.47	3.55	3.57	3.55	3.57	3.55	3.63	3.64	3.63	3.64	3.63
105	T.C.	35.7	37.9	38.0	41.9	45.9	37.2	39.0	38.9	42.9	46.6	38.7	40.1	39.8	43.8	47.4
	S.C.	35.7	34.7	29.3	29.4	22.7	37.2	37.2	31.4	31.6	24.0	38.7	39.6	33.5	33.8	25.3
	KW	4.00	4.01	3.99	4.00	3.96	4.07	4.08	4.07	4.07	4.04	4.14	4.15	4.14	4.13	4.12
115	T.C.	33.8	35.5	35.7	39.5	43.4	35.2	36.5	36.6	40.3	44.2	36.6	37.6	37.4	41.1	44.9
	S.C.	33.8	33.3	28.2	28.4	21.8	35.2	35.4	30.2	30.5	23.1	36.6	37.6	32.3	32.6	24.4
	KW	4.51	4.51	4.49	4.48	4.44	4.57	4.58	4.56	4.55	4.51	4.63	4.64	4.63	4.61	4.59
125	T.C.	31.9	33.1	33.5	37.1	40.9	33.2	34.1	34.2	37.8	41.7	34.5	35.1	35.0	38.5	42.5
	S.C.	31.9	31.8	27.1	27.4	20.9	33.2	33.7	29.0	29.4	22.2	34.5	35.1	31.0	31.4	23.5
	KW	5.01	5.01	4.99	4.96	4.91	5.07	5.07	5.06	5.03	4.99	5.13	5.14	5.13	5.10	5.06
NOTE: ALL CAPACITIES INCLUDE INDOOR FAN HEAT. KW VALUES ARE FOR THE SYSTEM (OUTDOOR + INDOOR).																
Green shaded cells are ACCA (TVA) conditions.																
Blue shaded cells are AHRI conditions.																

Multipliers for determining the performance with other indoor sections.

NOTE: For dry bulb temperatures different than those listed (between 73-87 °F), sensible capacity increases by 1060 BTUH per 1000 CFM per degree above the listed temperature and decreases by 1060 BTUH per 1000 CFM per degree below the listed temperature.