

LCA/LGA

300H and 360 Models

25 and 30 Ton (87.9 and 105.5 kW)

(See Bulletin #210081 for LCA/LGA300S Standard Efficiency Unit Data)

“LCA” Packaged Cooling and Electric Heat

“LGA” Packaged Cooling and Gas Heat

Cooling Capacity - 284,000 to 336,000 Btuh (83.2 to 98.4 kW)

Gas Input Heating Capacity - 260,000 to 470,000 (76.2 to 137.7 kW)

Optional Electric Heat - 30 to 120 kW

Bulletin No. 210087

April 1999

Supersedes November 1996



LCA360
(Cooling & Electric Heat)



LGA360
(Cooling & Gas Heat)

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FEATURES - ALL MODELS

Item	LCA/LGA300H	LCA/LGA360
Air Flow Choice — Bottom (down-flow) or □ horizontal (side) supply and return air	Standard	Standard
Bottom Power Entry — For electrical and gas lines	Standard	Standard
Cabinet — Heavy gauge galvanized steel, fully insulated, powdered enamel paint finish, large removeable access panels, electrical inlets in cabinet base and electric heat end panel (LCA only), easy access control area with factory installed controls, low voltage terminal strip, unit lifting holes in base rail	Standard	Standard
Cabinet Access Panels (Hinged) — 2 compressor/controls/heating area access panels, 1 blower access panel and 1 air filter/economizer access panel hinged with tool-less access handles, gaskets on all edges for tight seal, filter and blower access panels have steel panel inner liner with insulation sandwiched in-between	Standard	Standard
Coil Construction — Copper tube construction, ripple-edged enhanced aluminum fins, flared shoulder tubing connections, silver soldered construction, factory tested, evaporator coil face split with separate circuits, indoor coil drain connection extends outside of unit cabinet	Standard	Standard
Compressors — Copeland® Compliant Scroll™ type for high efficiency, resiliently mounted on rubber grommets	Standard	Standard
Compressor Crankcase Heaters	Standard	Standard
Filters — Disposable 2 inch (51 mm) pleated commercial grade	Standard	Standard
Filter Access — Hinged filter door with tool-less access handles	Standard	Standard
Integrated Modular Control (IMC) — Solid-state board contains all controls and control relays to operate unit Built-in Functions Include: <ul style="list-style-type: none"> - Blower On/Off Delay - Built-in Control Parameter Defaults, ensure proper unit operation when power is restored after power failure - Service Relay Output - Defrost Control - Dehumidification Control - monitors humidity levels, will allow both heating and cooling to operate at the same time, as needed, required optional field installed Dehumidistat - Dirty Filter Switch Input - Economizer Control, four modes of operation (outdoor enthalpy, differential enthalpy, temperature and global) - Electric Heat Staging, regulates electric heat during building warm-up - ETM Compatible, various modules (see factory or field installed accessories) - Extensive Unit Diagnostics, (80 diagnostic codes) - Permanent Diagnostic Code Storage - Field Changeable Control Parameters, (114 different parameters) - Gas Valve Delay Between First and Second Stage - Indoor Air Quality Input, monitors CO₂ levels, adjusts economizer dampers as needed (four modes of operation), requires optional field installed Indoor Air Quality (CO₂) Sensor - Low Ambient Controls — Allows unit cooling operation down to 0°F (-17.8°C) - Minimum Run Time - Night Setback Mode, adjusts setpoint, closes outdoor air dampers and operates blower on demand, may be customized for special requirements - Return Air Temperature Limit Control - Smoke Alarm Mode, (four modes of operation) - “Strike Three” Low Pressure Control, protects system from low suction pressure while eliminating nuisance faults - Thermostat Bounce Delay - Three Digit Display, (Displays: outdoor temperature, supply air temperature, return air temperature, economizer damper position, Indoor Air Quality, control parameters) - Two Stage Heat/Three Stage Cool Thermostat Compatible - Warm-up Mode, (four modes of operation) 	Standard	Standard
Outdoor Coil Construction — Slab type, angled design of coil (26°) inherently protects it from possible hail damage	Standard	Standard
Outdoor Coil Fans — PVC coated fan guards furnished	Standard	Standard
Outdoor Coil Fan Motors — Overload protected, permanently lubricated, equipped with ball bearings, shaft up, wire basket mount	Standard	Standard
Ratings — Tested at conditions included in ARI Standard 340/360-93	Standard	Standard
Transformer — 70VA transformer with built-in circuit breaker.	Standard	Standard
Refrigeration System — Consists of: compressors, condenser coils and direct drive fans, evaporator coil and belt drive blowers, expansion valves, high capacity driers, high pressure switches, low pressure switches, full refrigerant charge, crankcase heaters, freezestats (prevent coil freeze-up during low ambient operation or loss of air), independent refrigerant circuits (allows staging)	Standard	Standard
Supply Air Blower — Belt drive, forward curved blades with double inlet, blower wheel statically and dynamically balanced, ball bearings, grease fittings furnished, adjustable pulley (allows speed change), blower assembly slides out of unit for servicing	Standard	Standard
Supply Air Motor (Standard Efficiency) — Overload protected, equipped with ball bearings	Standard	Standard

□ With optional Horizontal Roof Mounting Frame and Horizontal Return Air Panel Kit.

FEATURES - LCA MODELS

Item	LCA300	LCA360
Approvals — E.T.L. and C.G.A. listed, efficiency rating verified by C.S.A., components bonded for grounding to meet safety standards for servicing required by U.L. C.S.A. and National and Canadian Electrical Codes, developed in accordance with ISO 9002 quality standards	Standard	Standard
Warranty — Limited five years compressors, limited one year all other components, see limited warranty certificate included with unit for details	Standard	Standard

FEATURES - LGA MODELS

Item	LGA300	LGA360
Approvals — E.T.L./C.G.A. certified as combination heating/cooling unit for outdoor installation, efficiency rating verified by C.S.A., bonded for grounding to meet safety standards for servicing required by E.T.L./C.G.A. and National and Canadian Electrical Codes, developed in accordance with ISO 9002 quality standards	Standard	Standard
Fan and Limit Controls — Factory installed, 90 second fan "on" time delay, dual limit controls (primary and secondary) with fixed temperature setting	Standard	Standard
Heat Exchanger — Tubular construction, aluminized steel, life cycle tested	Standard	Standard
Heating System — Aluminized steel inshot burners, direct spark ignition, electronic flame sensor, redundant automatic dual gas valve with manual shut-off, induced draft blower, flame rollout switch	Standard	Standard
Warranty — Limited ten years heat exchanger, limited five years compressors, one year all other components, see limited warranty certificate included with unit for details	Standard	Standard

REQUIRED OPTIONS - ITEMS MUST BE ORDERED AND FACTORY INSTALLED

Air Flow Configuration — specify horizontal or down-flow when ordering base unit
Drive Kit — Order one, see Drive Kit Specifications Table
Gas Input (LGA Models) — Order one:
169,000/260,000 Btuh (49.5/76.2 kW) high/low fire - Standard Heat Gas Input
305,000/470,000 Btuh (89.4/137.7 kW) high/low fire - High Heat Gas Input
Supply Air Motor — Order one (See Blower Data Table for specifications):
Standard Efficiency
High Efficiency — Overload protected, equipped with ball bearings

OPTIONAL ACCESSORIES

FACTORY INSTALLED ONLY

Item	LCA/LGA300H	LCA/LGA360
Cold Weather Kit (Canada Only) — Electric heater automatically controls minimum temperature in gas burner compartment when temperature is below -40°F (-40°C). C.G.A. certified to allow operation of unit down to -60°F (-50°C) LGA Models Only	Factory	
Corrosion Protection — Phenolic epoxy coating, applied to condenser coils (with painted base section) and evaporator coils (with painted evaporator base section and painted blower housings), factory applied to either section or both sections	Factory	
① Disconnect Switch — Accessible from outside of unit, spring loaded weatherproof cover furnished	Factory	
Service Outlets (2) — 115v ground fault circuit interrupter (GFCI) type	Factory	
Service Valves — Fully serviceable brass valves installed in discharge and liquid lines	Factory	
② Stainless Steel Heat Exchanger (LGA Models)	Factory	

① Not available for 208/230v models with 90 or 120 kW electric heat.

② Required if mixed air temperature is between 30 and 45°F (-1 and 7°C).

OPTIONAL ACCESSORIES - CONTINUED

FACTORY OR FIELD INSTALLED

Item		LCA/LGA300H	LCA/LGA360
Blower Proving Switch — Monitors blower operation, shuts down unit if blower fails		18L89	
Condensate Drain Trap - field installed only, may be factory enclosed to ship with unit	PVC	37K70	
	Copper	48K14	
Control Systems — See pages 6 - 11 for complete listing.		See pages 6 - 11	
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition		30K48	
Down-Flow Gravity Exhaust Dampers — Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle, bird screen furnished - Net Weight		LAGED30/36 - 28 lbs. (13 kg)	
Economizer — Opposing gear driven recirculated air and outdoor air dampers, plug-in connections to unit, nylon bearings, neoprene seals, 24 volt fully modulating spring return motor, adjustable minimum damper position, damper assembly slides in unit, outdoor air hood must be ordered separately (see below), optional down-flow gravity exhaust dampers available (see below), choice of economizer controls (see below)		LAREMD30/36 - 98 lbs. (45 kg)	
Economizer Control Choice — Sensible Control — Furnished on IMC board in unit, uses outdoor air sensor furnished with unit to measure outdoor air temperature and control damper position (Furnished) Global Control — Furnished on IMC board in unit, used with Direct Digital Control (DDC) systems, uses global air sensor to control damper position, determines when to use outdoor air for cooling or set damper at minimum position (Furnished) Outdoor Enthalpy Control — Adjustable enthalpy sensor, senses outdoor air enthalpy for economizer control, 0 to 100% outdoor air Differential Enthalpy Control — Two solid-state enthalpy sensors allow selection between outdoor air and return air (whichever has lowest enthalpy)		16K96 (Outdoor) 16K97 (Differential)	
Hood for Down-Flow Gravity Exhaust Dampers		LAGEH30H/36	
Electric Heat (EHA) — helix wound nichrome elements, time delay for element staging, individual element limit controls (45, 60, 90 and 120 kW), may be two-stage controlled, wiring harness furnished, requires Electric Heat Control Module, Fuse Block and Terminal Block (LCA Models Only)		See Electric Heat Data Tables Page 15	
Electric Heat Control Module — Required with 45, 60, 90 and 120 kW electric heaters, provides control of second stage heating		LCA Models Only See Optional Electric Heat Accessories Table Page 14	
Electric Heat Fuse Block — Required with electric Heat, mounting screws furnished			
Electric Heat LTB2 Terminal Block — Required with electric heat			
Outdoor Air Damper Section - mechanical dampers, 0 to 25% outdoor air ,installs in unit cabinet, outdoor air hood must be ordered separately (see below) - Net Weight	Automatic Operation - Gear driven, adjustable outdoor air, fully modulating spring return damper motor, plug-in connection	LAOADM30/36 - 60 lbs. (27 kg)	
	Manual Operation - Linked dampers, adjustable fixed position outdoor air	LAOAD30/36 - 55 lbs. (25 kg))	
Outdoor Air Hood — Required with LAREMD30/36 Economizer, LAOAD30/36 and LAOADM30/36 Outdoor Air Damper Sections, five cleanable aluminum mesh fresh air filters furnished- Net Weight		LAOAH30/36 - 55 lbs. (25 kg.) filter size: (5) 16 x 25 x 1 in. (406 x 635 x 25)	
Power Exhaust Fan — Installs external to unit for down-flow applications only with economizer option, provides exhaust air pressure relief, interlocked to run when return air dampers are closed and supply air blower is operating, fan runs when outdoor air dampers are 50% open (adjustable), motor is overload protected, steel cabinet and hood painted to match unit	Model Number - Net Weight	LAPEF30/36 - 99 lbs. (45 kg)	
	Dia. - in. (mm) No. Blades	(3) 20 (508) - 5	
	Total air volume - cfm (L/s)	12,800 (6040) @ 0 in. wg (0 PA)	
	Motor Horsepower (W)	(3) 1/3 (249)	
	Total Watts Input	1125	
Smoke Detector — Photoelectric type, installed in supply air section or return air section or both sections	Supply	70K87	
	Return	70K86	

OPTIONAL ACCESSORIES - CONTINUED

FIELD INSTALLED ONLY

Item		LCA/LGA300H	LCA/LGA360
Coil Guards — Galvanized steel wire guards to protect outdoor coil. Not used with Hail Guards.		88K53	
Dehumidistat - Monitors humidity levels, reports to the IMC board which allows the heating and cooling to run simultaneously as needed. Lowers indoor humidity for process air applications.		65F86	
Diffusers - Aluminum grilles, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), adapts to T-bar ceiling grids or plaster ceilings- Net Weight	Step-Down - double deflection louvers	LARTD30/36 - 437 lbs. (198 kg)	
	Flush - fixed blade louvers	LAFD30/36 - 414 lbs. (188 kg)	
Grille Guards — Protects the space between outdoor coils and main unit		86K30	
Hail Guards — Constructed of heavy gauge steel, painted to match cabinet, helps protect outdoor coils from hail damage. Not used with Coil Guards		88K26	
Horizontal Gravity Exhaust Dampers — Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle, field installed in return air duct, bird screen furnished- Net Weight		LAGEDH30/36 - 20 lbs. (9 kg)	
Horizontal Return Air Panel Kit — Required for horizontal applications with horizontal roof mounting frame, contains panel with return air opening for field replacement of existing unit panel and panel to cover bottom return air opening in unit, see dimension drawings- Net Weight		38K48 - 43 lbs. (20 kg)	
IMC Software and Manual Only — Interfaces individual or networked (up to 32 units) IMC to PC for field service and diagnostics. Program includes: setup, main status of unit, main status of network, error code download, economizer status, equipment configuration, ECTO parameter edit and two unit test screens (one for simulating a room thermostat demand and one for controlling individual control outputs). System requirements: PC with DOS 3.3 or higher, hard drive and free COM port. Color monitor recommended		32K22	
IMC Software / PC Interface Kit — Includes IMC/PC Interface Kit and IMC Software Kit.		86K84	
IMC/PC Interface Kit Only — RS-485 to RS-232 converter and cable for connecting IMC to PC. Includes instruction manual.		28K56	
Indoor Air Quality (CO₂) Sensor — Monitors CO ₂ levels, reports to Integrated Modular Control (IMC) board which adjusts economizer dampers as needed		93J69	
Indoor Air Quality Sensor Aspiration box — for duct mounting of Indoor Air Quality Sensor		47N18	
LPG/Propane Kits — to field change over LGA units from Natural Gas to LPG		41L15 (2 kits required)	
Roof Mounting Frame — Nailor strip furnished, mates to unit, U.S. National Roofing Contractors Approved, shipped knocked down - Net Weight	14 inch (356 mm) height	LARMF18/36-14 - 160 lbs. (73 kg)	
	24 inch (610 mm) height	LARMF18/36-24 - 220 lbs. (100 kg)	
Roof Mounting Frame - Full Perimeter (Canada Only)	14 inch (356 mm) height	LARMF30/36-14SFC	
	18 inch (457 mm) height	LARMF30/36-18SFC	
	24 inch (610 mm) height	LARMF30/36-24SFC	
Roof Mounting Frame (Horizontal) — Nailor strip furnished, mates to unit, converts unit from down-flow to horizontal (side) air flow, shipped knocked down, return air is on unit, supply air is on frame, see dimension drawings. Requires Horizontal Return Air Panel, see above. Net Weight	30 inch (762 mm) height (for slab applications)	LARMFH30/36-30 - 445 lbs. (202 kg)	
	41 inch (1041 mm) height (for roof-top applications) - meets National Roofing Code requirements	LARMFH30/36-41 - 725 lbs. (329 kg)	
Roof Mounting Frame (Horizontal) Insulation Kit - helps prevent sweating of horizontal roof mounting frames	30 inch (762 mm) frames	73K33	
	41 inch (1041 mm) frames	73K35	
Transitions (Supply and Return) — Used with diffusers, installs in roof mounting frame, galvanized steel construction, flanges furnished for duct connection, fully insulated		LASRT30/36 - 85 lbs. (39 kg)	
Vertical Vent Extension Kit - to exhaust flue gases vertically above unit (LGA Models Only)		LB-94710A (40L80)	

OPTIONAL DDC TEMPERATURE CONTROL SYSTEMS (FACTORY OR FIELD INSTALLED)

System and Component Description	Field Installed Catalog No.
AMERICAN AUTOMATRIX KIT	
Control module/Blower Proving Switch/Return Air Sensor/Discharge Air Sensor/Wiring Harness — Stand alone control of all heating cooling and economizer functions, various operations modes (including: occupied, unoccupied), 8 universal inputs, momentary override, indoor air quality control, alarm monitoring of: sensors, airflow, economizer, dirty filter, heating/cooling operation, cooling limit.	59K22
Sensor — Room temperature	49K84
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
ANDOVER INFINITY KIT	
Control Module/Blower Proving Switch/Return Air Sensor/Discharge Air Sensor/Wiring Harness — Network communication (RS-485, 2 or 4 wire, 300, 1200 or 9600 baud selectable), 2 stage cool/ 2 stage heat, zone temperature monitoring, discharge temperature monitoring, dirty filter monitoring, LED's for system monitoring, 5 SPDT outputs, battery backup, Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Return Air Sensor provides input to module to determine heating or cooling operation and number of stages required, Discharge Air Sensor monitors leaving air temperature during unit operation	16K27
Sensor — Room temperature	78H42
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
CPC 810-3060 KIT	
Control Module/Blower Proving Switch/Return Air Sensor/Discharge Air Sensor/Wiring Harness — Network communications (RS-485, shielded pair twisted wire), 8 analog/digital inputs, 8 form-C relay outputs, 2 analog outputs, 24 VAC, output connections (2 stage heat/2 stage cool, 2 auxiliary outputs (user defined), economizer, fan), input connections (space temperature, discharge and return air temperature, 2 compressor monitoring, 2 aux. inputs (user defined), local override (1 to 240 minutes), Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Return Air Sensor provides input to module to determine heating or cooling operation and number of stages required, Discharge Air Sensor monitors leaving air temperature during unit operation	48K88
Sensor — Room temperature	48J43
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
CSI MR88R KIT	
Control Module/Blower Proving Switch/Return Air Sensor/Discharge Air Sensor/Wiring Harness — Small point count controller, supports free-form modular DDC programming, intelligent I/STAT for independent local analog or digital control, local override and setpoint adjustment, 4 local or global points, integral start/stop schedule, standalone operation, universal inputs (thermistors, voltage, current, contact), 8 relay or low voltage triac outputs, analog outputs, 7 signal inputs plus power, ISTAT port, MR LAN port (RS-485, shielded pair twisted wire), self test diagnostics with LED readout, input point parameters (normal and narrow range, indoor and outdoor temperature range, individual calibration)	28K58
Sensor — Room temperature sensor with microprocessor data communications and power, alphanumeric LCD display for modes selected, mode selection push buttons for (Function, Call, Service, Change and Select), password protection for Service mode, up to 4 global point assignment with red LED's to indicate (Set Temp., Fan Speed, Room and Outside)	I/STAT (Field Furnished)
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
HONEYWELL EXCEL 10 KIT	
Control Module (W7750A)/Blower Proving Switch/Return Air Sensor/Wiring Harness — Standalone control (staged or modulating) of all heating, cooling, mixed air, system fan and economizer functions, up to four stages of heating/cooling combinations, for single zone applications, 6 relay outputs, 2 digital inputs, 1 resistive analog input, network communications, LonMark compliant, configuration options include: supply fan type of air handler, occupancy sensor, window sensor, wall module option, dirty filter monitor, indoor air quality override and smoke control. modes of operation include: occupied, standby, unoccupied, bypass occupied, override modes, start-up and wait, cooling, heating, emergency heat, off mode, disabled mode, smoke emergency, freeze protect, manual position, fan only and disabled. Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Return Air Sensor provides input to module to determine heating or cooling operation and number of stages required.	20L39
Sensor — Room temperature, with setpoint knob	19L21
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
HONEYWELL W7620 KIT	
Control Module/Blower Proving Switch/Return Air Sensor/Discharge Air Sensor/Wiring Harness — Local and remote monitoring and alarming (smoke alarms, dirty filter, freezestat, heating and cooling failures, run time accumulation for overrides, zone high/low temperature alarms, fan failure alarm, space humidity), heating and cooling control, economizer control, up to 4 stages with minimum on/off times, auxiliary heat for heat pump control, intelligent recovery, humidity and indoor air quality control, four relay outputs, network communications (RS-485, shielded pair twisted wire), space temperature inputs, room or return air temperature control, precise proportional plus integral (P+I) control, control loops provide accurate unit control without temperature droop, Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Return Air Sensor provides input to module to determine heating or cooling operation and number of stages required, Discharge Air Sensor monitors leaving air temperature during unit operation	28K59
Sensor — Room temperature, platinum RTD (Resistive Temperature Device)	T7660 (Field Furnished)
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
JOHNSON FACILITATOR FA-UNT KIT	
Control Module/Blower Proving Switch/Wiring Harness — Standalone control of all heating, cooling and economizer functions, various operation modes (including: occupied, unoccupied, warm-up, standby), network communications, 6 analog inputs, 4 binary inputs, momentary override, zone lighting control, advanced unit diagnostics, indoor air quality control, outdoor air temperature and humidity monitoring, alarm monitoring of: sensors, airflow, economizer, dirty filter, heating/cooling operation, cooling limit, Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Control module for use in single zone applications.	86K65
Sensor — Room temperature, phone jack style wiring, quick-mount design, latching door mechanism, setpoint adjustment (warmer/cooler), optional override button, nickel sensors, options for choosing setpoint, indication mounting and wiring type, plug for handheld commissioning tool (60K36).	60K12
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48

□ Field installs in return air duct. Two dampers furnished per order no.

OPTIONAL DDC TEMPERATURE CONTROL SYSTEMS (FACTORY OR FIELD INSTALLED)

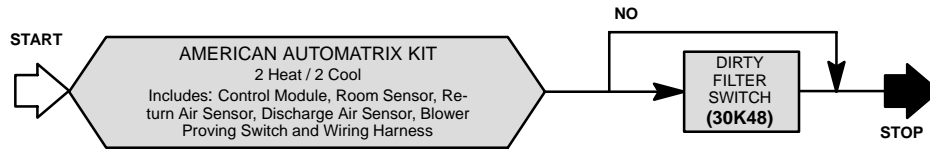
System and Component Description	Field Installed Catalog No.
JOHNSON METASYS UNT KIT	
Control Module/Blower Proving Switch/Wiring Harness — Standalone control of all heating, cooling and economizer functions, various operation modes (including: occupied, unoccupied, warm-up, standby), network communications, 6 analog inputs, 4 binary inputs, momentary override, zone lighting control, advanced unit diagnostics, indoor air quality control, outdoor air temperature and humidity monitoring, alarm monitoring of: sensors, airflow, economizer, dirty filter, heating /cooling operation, cooling limit, Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Control module may be used in multi-zone applications (i.e. L-Zone).	34K84
Commissioning Tool — Hand-held interface tool, monitor and adjust 36 analog and binary points, password protected, carrying case.	60K37
Sensor — Room temperature, phone jack style wiring, quick-mount design, latching door mechanism, setpoint adjustment (warmer/cooler), optional override button, nickel sensors, options for choosing setpoint, indication, mounting and wiring type, plug for handheld commissioning tool (60K36).	60K12
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
NOVAR ETM-2050 KIT	
Electronic Thermostat Module (ETM)/Blower Proving Switch/Return Air Sensor/Discharge Air Sensor/Wiring Harness — Module monitors unit operation from different sensors installed in unit, has outputs for 2 stage heat/2 stage cool, automatic or continuous blower operation, economizer damper operation and night setback, features: day/occupied mode with low enthalpy (outdoor air damper open), high enthalpy (outdoor air damper closed) or night/unoccupied mode (outdoor air damper closed), network communication (RS-485, shielded pair twisted wire), local override (1 to 255 minutes), watchdog function, fail-safe operation, ETM allows units to be “daisy chained” together (up to 31 units) to be operated from one central location with an “executive” type control processor (onsite or offsite), built-in time delays, built-in unit operating defaults, diagnostic LED's indicate various operating functions, surge suppression protects ETM against lightning or voltage spikes, Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Return Air Sensor provides input to ETM module to determine heating or cooling operation and number of stages required, Discharge Air Sensor monitors leaving air temperature during unit operation	48K87
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
Room Temperature Sensor — Provides input to ETM module to determine heating or cooling operation and number of stages required (ordered separately)	97H53
Night Setback Override Switch — Allows momentary override of night setback during unoccupied mode	Field Furnished
NOVAR ETM-2051 KIT	
Electronic Thermostat Module (ETM)/Blower Proving Switch/Return Air Sensor/Discharge Air Sensor/Wiring Harness — Module monitors unit operation from different sensors installed in unit and monitors unit diagnostic codes of the IMC. The ETM has outputs for 2 stage heat/2 stage cool, 7 relay outputs: fan Cool 1, Cool 2, Heat 1, Heat 2, Economizer, Night Mode, automatic or continuous blower operation, economizer damper operation and night setback, features: day/occupied mode with low enthalpy (outdoor air damper open), high enthalpy (outdoor air damper closed) or night/unoccupied mode (outdoor air damper closed), network communication (RS-485, shielded pair twisted wire), local override (1 to 255 minutes), watchdog function, fail-safe operation, ETM allows units to be “daisy chained” together (up to 31 units) to be operated from one central location with an “executive” type control processor (onsite or offsite), built-in time delays, built-in unit operating defaults, diagnostic LED's indicate various operating functions, surge suppression protects ETM against lightning or voltage spikes, Blower Proving Switch monitors blower operation and locks out unit in case of blower failure, Return Air Sensor provides input to ETM module to determine heating or cooling operation and number of stages required, Discharge Air Sensor monitors leaving air temperature during unit operation	69K67
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
Room Temperature Sensor with Built-in Night Setback Override Button — Provides input to ETM module to determine heating or cooling operation and number of stages required (ordered separately). Override button allows momentary override of night setback during unoccupied mode.	67K61
NOVAR CUSTOM CONTROLLER KIT	
Control Module/Blower Proving Switch/Discharge Air Sensor/Room Air Sensor/Wiring Harness — User definable comfort setpoint, on/off and time of day control, cycle II ventilation control	48K89
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS (FIELD INSTALLED)

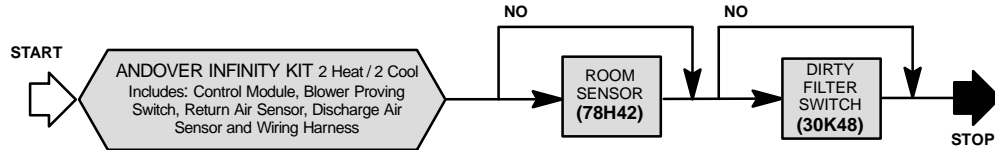
System and Component Description	Catalog No.
ELECTRO-MECHANICAL THERMOSTAT	
Thermostat — Two stage heat & two stage cool with dual temperature levers, subbase choice	13F06
Subbase — Manual system switch (Off-Heat-Auto-Cool), fan switch (Auto-On)	13F17
Subbase — Non-switching	13F16
Night Setback Operation — Order components below	—
Heating Thermostat — Single stage heat	13F12
Subbase — Non-switching	13F16
Time Clock — 7 day operation, indicates day and night periods, 2 hour increments, battery back-up	See Price Book for Selection
Time Clock — 24 hour night setback operation, 15 minute increments, battery back-up	See Price Book for Selection
Blower Proving Switch — Monitors blower operation, locks out unit in case of blower failure	30K49
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
ELECTRONIC THERMOSTAT	
Electronic Thermostat — Any two stage heat/ two stage cool electronic thermostat may be used.	See Price Book for Selection
Time Clock — 7 day operation, indicates day and night periods, 2 hour increments, battery back-up	See Price Book for Selection
Time Clock — 24 hour night setback operation, 15 minute increments, battery back-up	See Price Book for Selection
Blower Proving Switch — Monitors blower operation, locks out unit in case of blower failure	30K49
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48
HONEYWELL T7300 THERMOSTAT	
Thermostat — Programmable, internal or optional remote temperature sensing (sensor required), touch sensitive keyboard, automatic switching, °F or °C readout, no anticipator, droop/no droop selection, indicator LED's, hour/day programming, override capabilities, time and operational mode readout, stage status indicators, battery back-up, subbase choice	37L54
Subbase — Selectable staging up to three stage heat & two stage cool, manual system switch (Heat-Off-Auto-Cool), fan switch (Auto-On), indicator LED's, auxiliary relay output for economizer operation	37L53
Sensor — Room temperature	58C92
Sensor — Room temperature with 3 hour override and setpoint adjustment	86G67
Sensor — Return air temperature	27C40
Blower Proving Switch — Monitors blower operation, locks out unit in case of blower failure	30K49
Dirty Filter Switch — Senses static pressure increase indicating a dirty filter condition	30K48

DDC COMMERCIAL TEMPERATURE CONTROL SELECTION FLOWCHARTS

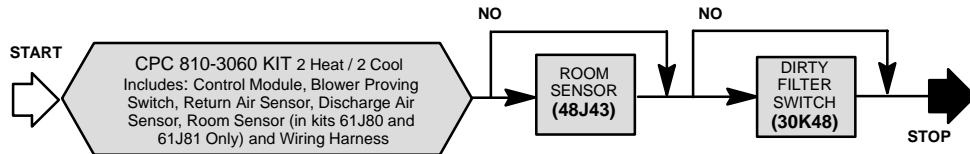
AMERICAN AUTOMATRIX



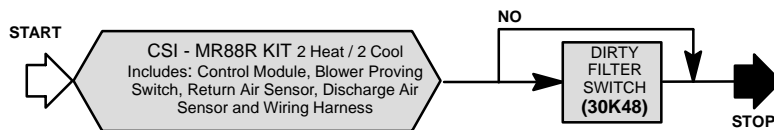
ANDOVER INFINITY



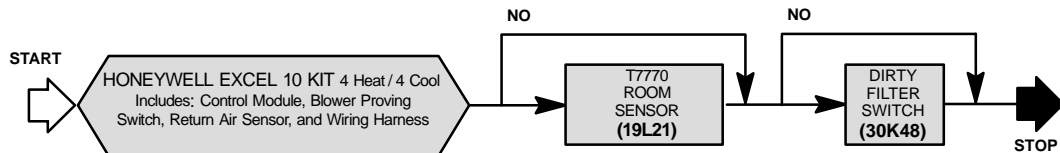
CPC 810-3060



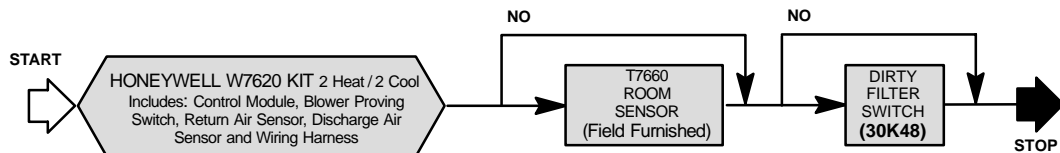
CSI - MR88R



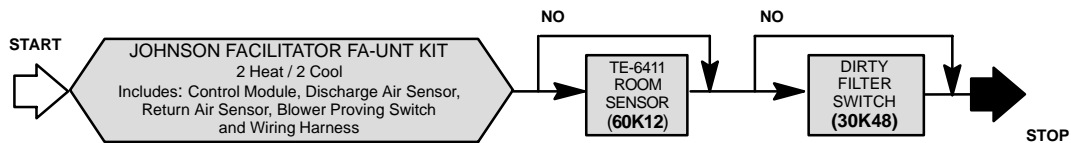
HONEYWELL EXCEL 10



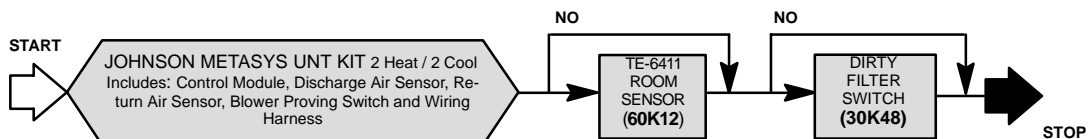
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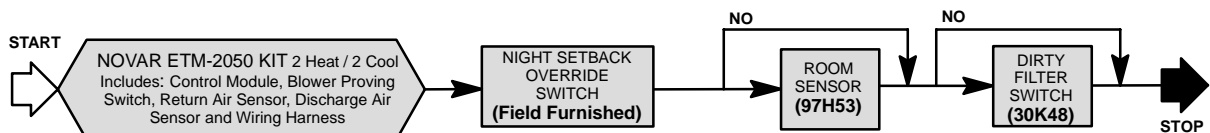
JOHNSON FACILITATOR FA-UNT



JOHNSON METASYS UNT

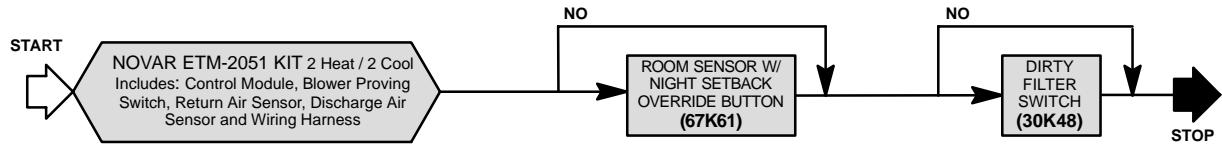


NOVAR ETM-2050

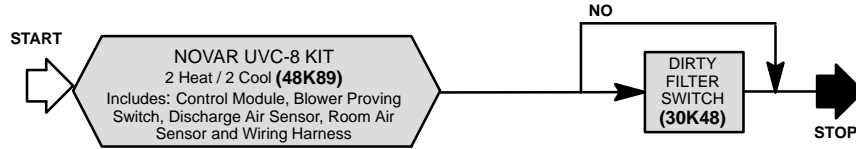


DDC COMMERCIAL TEMPERATURE CONTROL SELECTION FLOWCHARTS (CONTINUED)

NOVAR ETM-2051

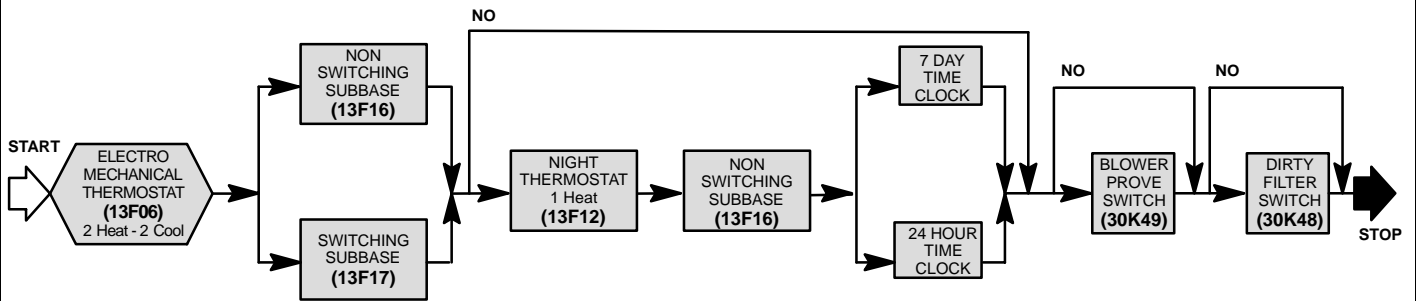


NOVAR CUSTOM CONTROLLER

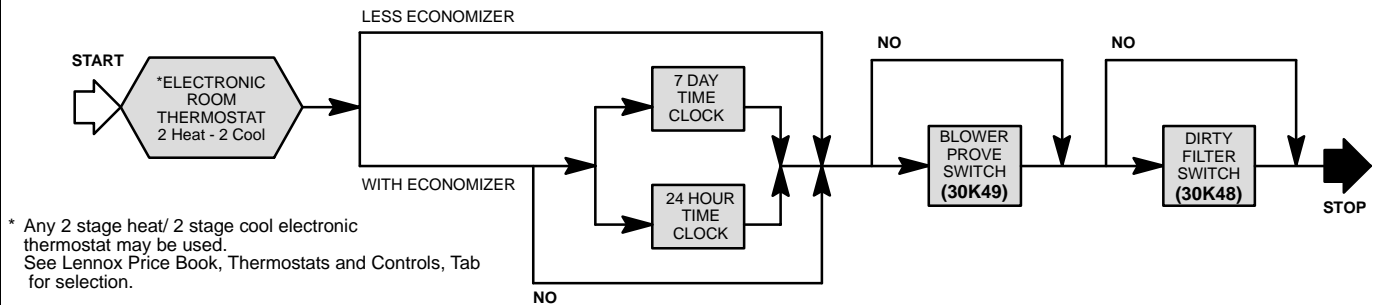


CONVENTIONAL COMMERCIAL TEMPERATURE CONTROL SELECTION FLOWCHARTS

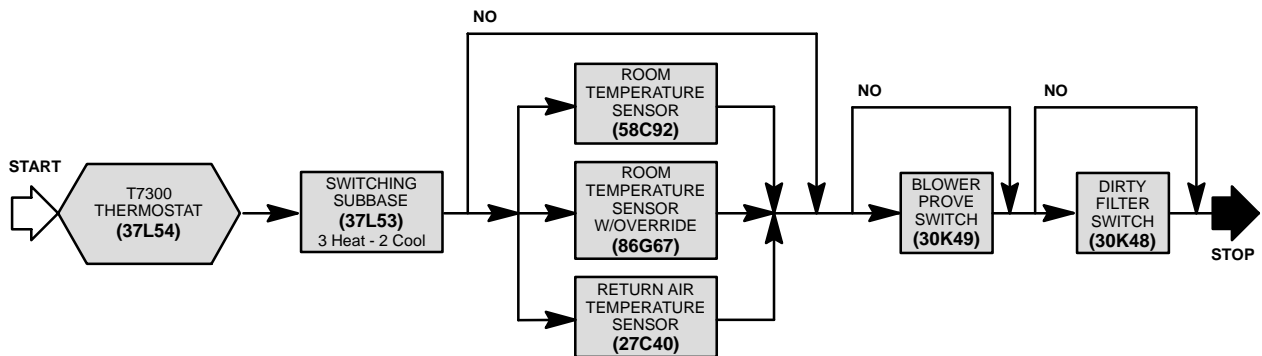
ELECTRO-MECHANICAL THERMOSTAT



ELECTRONIC THERMOSTAT



HONEYWELL T7300 THERMOSTAT

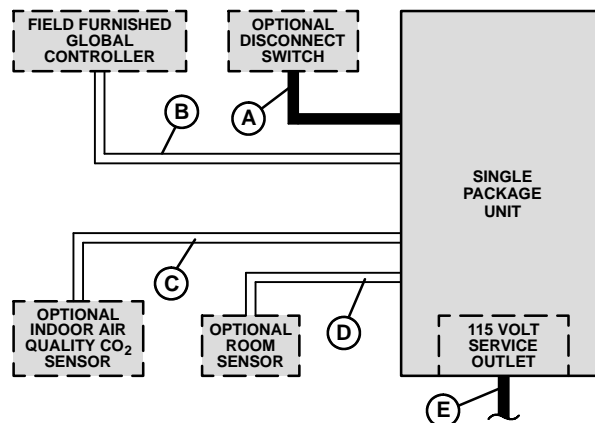


ALL DDC CONTROL SYSTEMS

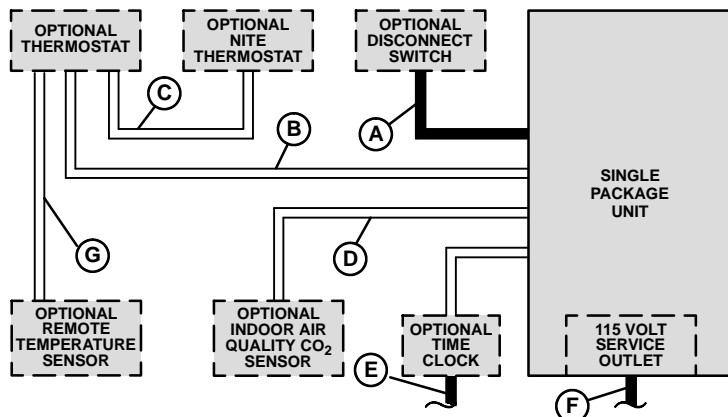
- A — Two or Three wire power (See Electrical Data Table)
- B — RS-485 shielded pair twisted wire
- C — Four wire low voltage
- D — Two wire low voltage (Andover Infinity, CPC 810-3060 and Novar ETM-2050)
Three wire low voltage (CSI MR88R)
Four wire low voltage (Johnson Metasys, Honeywell W7620)
Four wire low voltage (Novar Custom Controller) + 2 wire low voltage (Novar UVC-8 Sensor)
Seven wire low voltage (Honeywell Excel 10)
- E — Two wire power (115 volt)

— Field wiring not furnished —

NOTE — All wiring must conform to NEC or CEC and local electrical codes.



ELECTRO-MECHANICAL, ELECTRONIC OR HONEYWELL T7300 THERMOSTAT CONTROL SYSTEM



- A — Two or Three wire power (See Electrical Data Table)
- B — Six wire low voltage (Electro-Mechanical)
Seven wire low voltage (Electronic)
Nine wire low voltage (Honeywell T7300)
Ten wire low voltage (Honeywell T7300 with Service LED)
- C — Two wire low voltage (Electro-Mechanical Only)
- D — Four wire low voltage (All Systems)
- E — Two wire power
- F — Two wire power (115 volt)
- G — Two wire low voltage
— Seven wire low voltage (T7300 Room Sensor with override)

— Field wiring not furnished —

NOTE — All wiring must conform to NEC or CEC and local electrical codes.

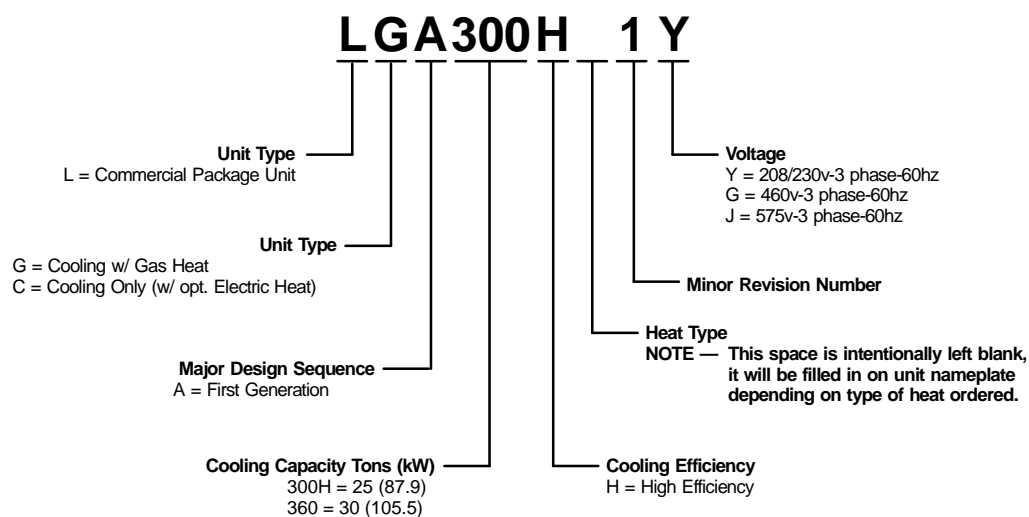
HIGH ALTITUDE DERATE (LGA MODELS)

Units may be installed at altitudes up to 2000 feet (610 m) above sea level without any modification. At altitudes above 2000 feet (610 m), units must be derated to match gas manifold pressures shown in table below.

NOTE — This is the only permissible derate for these units.

Altitude - ft. (m)	Gas Manifold Pressure - in. w.g. (kPa)
2001 - 3000 (610 - 915)	3.6 (0.90)
3001 - 4000 (915 - 1220)	3.5 (0.87)
4001 - 5000 (1220 - 1525)	3.4 (0.85)
5001 - 6000 (1525 - 1830)	3.3 (0.82)
6001 - 7000 (1830 - 2135)	3.2 (0.80)
7001 - 8000 (2135 - 2440)	3.1 (0.77)

MODEL NUMBER IDENTIFICATION



WEIGHT DATA

Model No.	Description	Weight	
		lbs.	kg
Net Weights			
LCA300H	Net weight (Base unit)	2910	1320
LCA360H	Net weight (Base unit)	3220	1461
LGA300H	Net weight (Base unit with standard fire heat exchanger)	3020	1370
LGA360H	Net weight (Base unit with standard fire heat exchanger)	3330	1510
Shipping Weights (Add Factory Installed Options Weights To Base Unit Weights For Total Shipping Weight)			
LCA300H	Base unit	3120	1415
LCA360H	Base unit	3430	1556
LCA Models	Electric Heat (add to Base unit)	78	35
LGA300H	Base unit with standard fire heat exchanger	3230	1465
LGA360H	Base unit with standard fire heat exchanger	3540	1606
LGA Only	High Fire Heat Exchanger (add to Base unit)	28	13
All Models	Economizer (add to Base unit)	98	44
	Outdoor Air Damper (add to Base unit)	55	25
	Power Exhaust (add to Base unit)	90	41
	LTL Packaging (less than truck load) (add to Base unit)	300	136

SPECIFICATIONS

Model No.			LCA/LGA300H		LCA/LGA360H	
Cooling Ratings	Gross Cooling Capacity — Btuh (kW)		298,000 (87.3)		355,000 (104.0)	
	★Net Cooling Capacity — Btuh (kW)		284,000 (83.2)		336,000 (98.4)	
	Total Unit Power (kW)		28.4		33.6	
	★EER (Btuh/Watt)		10.0		10.0	
	★Integrated Part Load Value (Btuh/Watt)		10.4		10.4	
Refrigerant Charge Furnished (HCFC-22)	Circuit 1		11 lbs. 0 oz. (4.99 kg)		18 lbs. 0 oz. (8.16 kg)	
	Circuit 2		11 lbs. 0 oz. (4.99 kg)		18 lbs. 0 oz. (8.16 kg)	
	Circuit 3		11 lbs. 0 oz. (4.99 kg)		18 lbs. 0 oz. (8.16 kg)	
	Circuit 4		11 lbs. 0 oz. (4.99 kg)		- - - -	
Two Stage Heating Capacity (Natural or LPG/Propane Gas (at Sea Level)	Model No.		LGA300H		LGA360H	
	Heat Input Type		Standard (S)	High (H)	Standard (S)	High (H)
	Input (low) — Btuh (kW)		169,000 (49.5)	305,000 (89.4)	169,000 (49.5)	305,000 (89.4)
	Output (low) — Btuh (kW)		135,000 (39.6)	244,000 (71.5)	135,000 (39.6)	244,000 (71.5)
	Input (High) — Btuh (kW)		260,000 (76.2)	470,000 (137.7)	260,000 (76.2)	470,000 (137.7)
	Output (High) — Btuh (kW)		208,000 (60.9)	376,000 (110.2)	208,000 (60.9)	376,000 (110.2)
	A.G.A./C.G.A. Thermal Efficiency		80.0%			
Gas Supply Connections npt — in. Natural or LPG/Propane			1			
Recommended Gas Supply Pressure — wc. in. (kPa)		Natural	7 (1.7)			
		LPG/Propane	11 (2.7)			
Evaporator Blower and Drive Selection	Blower wheel nominal diameter x width — in. (mm)		(2) 18 x 15 (457 x 381)			
	5 hp (3.7 kW) ①Motor & Drives	Nominal motor output — hp (kW)	5 (3.7)			
		Max. usable motor output — hp (kW)	5.75 (4.3)			
		Voltage & phase	208/230v, 460v or 575v-3ph			
		(Drive kit #) RPM range	(1) 660 - 810 or (2) 770 - 965			
	7.5 hp (5.6 kW) ①Motor & Drives	Nominal motor horsepower (kW)	7.5 (5.6)			
		Max. usable motor output — hp (kW)	8.6 (6.4)			
		Voltage & phase	208/230v, 460v or 575v-3ph			
		(Drive kit #) RPM range	(3) 715 - 880 or (4) 770 - 965			
	10 hp (7.5 kW) ①Motor & Drives	Nominal motor output — hp (kW)	10 (7.5)			
		Max. usable motor output — hp (kW)	11.5 (8.6)			
		Voltage & phase	208/230v, 460v or 575v-3ph			
		(Drive kit #) RPM range	(3) 715 - 880 or (5) 850 - 1045			
Evaporator Coil	Net face area — sq. ft. (m²)		33.3 (3.1)			
	Tube diameter — in. (mm) & No. of rows		3/8 (9.5) — 2	3/8 (9.5) — 3		
	Fins per inch (m)		14 (551)			
	Drain connection no. & size — in. (mm) fpt		(1) 1 (25)			
	Expansion device type		Thermostatic Expansion Valve			
Condenser Coil	Net face area — sq. ft. (m²)		70.6 (6.6)			
	Tube diameter — in. (mm) & No. of rows		3/8 (9.5) — 2			
	Fins per inch (m)		16 (630)			
Condenser Fans	Diameter — in. (mm) & No. of blades		(6) 24 (610 — 3			
	Total Air volume — cfm (L/s)		21,500 (10,145)			
	Motor horsepower (W)		(6) 1/3 (249)			
	Motor rpm		1075			
	Total Motor watts		2170			
Filters (furnished)	Type of filter		Disposable, commercial grade, pleated			
	No. and size — in. (mm)		(12) 20 x 20 x 2 (508 x 508 x 51)			
Electrical characteristics			208/230v, 460v or 575v — 60 hertz — 3 phase			

① Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished by Lennox are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

★ Tested at conditions included in ARI Standard 340/360; 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19°C) wb entering evaporator air; minimum external duct static pressure. Integrated Part Load Value tested at 80°F (27°C) outdoor air temperature.

NOTE — Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

ELECTRICAL DATA

Model No.			LCA/LGA300H										LCA/LGA360H																
Line voltage data — 60 Hz — 3 phase			208/230v			460v			575v				208/230v			460v			575v										
Compressors	No. of compressors		4																	3									
	Rated load amps each (total)		18.6 (74.4)			9.0 (36.0)			7.4 (29.6)				30.1 (90.3)			15.5 (46.5)			12.1 (36.3)										
	Locked rotor amps each (total)		156.0 (624.0)			70.0 (280.0)			54.0 (216.0)				225.0 (675.0)			114.0 (342.0)			80.0 (240.0)										
Condenser Fan Motors	No. of motors		6																										
	Full load amps each(total)		2.4 (14.4)			1.3 (7.8)			1.0 (6.0)				2.4 (14.4)			1.3 (7.8)			1.0 (6.0)										
	Locked rotor amps each (total)		4.7 (28.2)			2.4 (14.4)			1.9 (11.4)				4.7 (28.2)			2.4 (14.4)			1.9 (11.4)										
Evaporator Blower Motor	Motor Output	hp	5	7.5	10	5	7.5	10	5	7.5	10	5	7.5	10	5	7.5	10	5	7.5	10									
		kW	3.7	5.6	7.5	3.7	5.6	7.5	3.7	5.6	7.5	3.7	5.6	7.5	3.7	5.6	7.5	3.7	5.6	7.5									
	Full load amps		16.7	24.2	30.8	7.6	11	14	6.1	9	11	16.7	24.2	30.8	7.6	11	14	6.1	9	11									
Locked rotor amps		105	152	193	45.6	66	84	36.6	54	66	105	152	193	45.6	66	84	36.6	54	66										
Rec. max. fuse size (amps)	With Exhaust Fans		125	150	150	60	70	70	50	50	60	150	150	175	80	80	90	60	60	70									
	Less Exhaust Fans		125	125	150	60	60	70	50	50	60	150	150	150	80	80	80	60	60	60									
†Minimum Circuit Ampacity	With Exhaust Fans		117	126	134	57	61	65	46	50	52	137	144	151	70	74	77	55	58	60									
	Less Exhaust Fans		110	119	127	54	57	61	43	47	49	129	137	144	66	70	73	52	55	57									
Optional Power Exhaust Fans	(No.) Horsepower (W)		(3) 1/3 (249)																										
	Full load amps (total)		7.2			3.9			3.0				7.2			3.9			3.0										
	Locked rotor amps (total)		14.1			7.2			5.7				14.1			7.2			5.7										
Service Outlet (2) 115 volt GFCI (amp rating)			15																										

†Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

NOTE — Extremes of operating range are plus and minus 10 % of line voltage.

NOTE — Where current does not exceed 100 amps, HACR type circuit breaker may be used in place of fuse (U.S. only).

OPTIONAL ELECTRIC HEAT ACCESSORIES

ELECTRIC HEAT CONTROL MODULE AND UNIT FUSE BLOCKS

Unit Model No.			LCA300H	LCA360H
Electric Heat	Model No.		EHA (see Electric Heat Data tables for additional information)	
	kW Input Range		30-45-60-90-120	
Electric Heat Control	Module (45, 60, 90 & 120 kW)		15K13 (208/230v), 15K92 (460v), 15K93 (575v)	
Unit Fuse Block (3 phase)	With Power Exhaust Fans	208/230v - 5 hp (3.7 kW)	25K19	35K01
		460v - 5 hp (3.7 kW)	25K14	35K04
		575v - 5 hp (3.7 kW)	25K13	25K14
		208/230v - 7.5 hp (5.6 kW)	35K01	35K01
		460v - 7.5 hp (5.6 kW)	35K03	35K04
		575v - 7.5 hp (5.6 kW)	25K13	25K14
		208/230v - 10 hp (7.5 kW)	35K01	35K02
		460v - 10 hp (7.5 kW)	35K03	48L63
		575v - 10 hp (7.5 kW)	25K14	35K03
	Without Power Exhaust Fans	208/230v - 5 hp (3.7 kW)	25K19	35K01
		460v - 5 hp (3.7 kW)	25K14	35K04
		575v - 5 hp (3.7 kW)	25K13	25K14
		208/230v - 7.5 hp (5.6 kW)	25K19	35K01
		460v - 7.5 hp (5.6 kW)	25K14	35K04
		575v - 7.5 hp (5.6 kW)	25K13	25K14
		208/230v - 10 hp (7.5 kW)	35K01	35K01
		460v - 10 hp (7.5 kW)	35K03	35K04
		575v - 10 hp (7.5 kW)	25K14	25K14

LTB2 ELECTRIC HEAT TERMINAL BLOCK - LTB2-175 (30K75) 175 amps, LTB2-335 (30K76) 335 amps
(Required for units WITHOUT disconnect/circuit breaker but WITH single point power source)

Unit Model No.			LCA300H and LCA360H	
LTB2 Terminal Block (3 Phase)	30 kW □ 208/230v-3ph	5 hp (3.7 kW)	30K75	
		7.5 hp (5.6 kW)	30K75	
		10 hp (7.5 kW)	30K75	
	45 kW □ 208/230v-3ph	5 hp (3.7 kW)	30K75	
		7.5 hp (5.6 kW)	30K75	
		10 hp (7.5 kW)	30K76	
	60 kW □ 208/230v-3ph	5 hp (3.7 kW)	30K75	
		7.5 hp (5.6 kW)	30K76	
		10 hp (7.5 kW)	30K76	
	90 kW □ 208/230v-3ph	5 hp (3.7 kW)	30K76	
		7.5 hp (5.6 kW)	30K76	
		10 hp (7.5 kW)	30K76	
	120 kW □ 208/230v-3ph	5 hp (3.7 kW)	30K76	
		7.5 hp (5.6 kW)	30K76	
		10 hp (7.5 kW)	30K76	

□ NOTE — ALL 460V AND 575V UNIT VOLTAGES USE LTB2-175 (30K75) TERMINAL BLOCK.

NOTE — Terminal Block is factory installed in units with factory installed electric heat without disconnect/circuit breaker but with single point power source.

OPTIONAL ELECTRIC HEAT DATA (REQUIRES UNIT FUSE BLOCK, TERMINAL BLOCK & 2 HEATER CONTROL MODULE)

300H								
kW Size Required	Electric Heat Model No. (see footnote & Net Weight	No. of Steps	Volts Input	kW Input	Btuh Output	Total Unit, Power Exhaust Fans and Electric Heat † Minimum Circuit Ampacity		
						5 hp (3.7 kW)	7.5 hp (5.6 kW)	10 hp (7.5 kW)
30 kW	†(1) EHA360-15 208/230v (99J22) 460v (99J24) 575v (99J26) and †(1) EHA360S-15 208/230v (99J23) 460v (99J25) 575v (99J27) 59 lbs. (27 kg) (total weight)	1	208	22.5	76,800	117	126	134
		1	220	25.2	86,000			
		1	230	27.5	93,900	120	130	138
		1	240	30.0	102,400			
		1	440	25.2	86,000			
		1	460	27.5	93,900	59	64	67
		1	480	30.0	102,400			
		1	550	25.2	86,000			
		1	575	27.5	93,900	47	51	54
		1	600	30.0	102,400			
45 kW	¥(2) EHA360-22.5 208/230v (99J28) 460v (99J29) 575v (99J30) 76 lbs. (35 kg) (total weight)	1/2	208	33.8	115,300	147	157	165
		1/2	220	37.8	129,000			
		1/2	230	41.3	141,000	165	175	183
		1/2	240	45.0	153,600			
		1/2	440	37.8	129,000			
		1/2	460	41.3	141,000	82	86	90
		1/2	480	45.0	153,600			
		1/2	550	37.8	129,000			
		1/2	575	41.3	141,000	66	69	72
		1/2	600	45.0	153,600			
60 kW	¥(2) EHA150-30 208/230v (99J07) 460v (99J08) 575v (99J09) 76 lbs. (35 kg) (total weight)	1/2	208	45.0	153,600	155	164	173
		1/2	220	50.4	172,000			
		1/2	230	55.1	188,000	174	184	192
		1/2	240	60.0	204,800			
		1/2	440	50.4	172,000			
		1/2	460	55.1	188,000	87	91	95
		1/2	480	60.0	204,800			
		1/2	550	50.4	172,000			
		1/2	575	55.1	188,000	69	73	75
		1/2	600	60.0	204,800			
90 kW	¥(2) EHA150-45 208/230v (99J10) 460v (99J11) 575v (99J12) 84 lbs. (38 kg) (total weight)	1/2	208	67.6	230,700	218	227	235
		1/2	220	75.6	258,000			
		1/2	230	82.7	282,200	246	256	264
		1/2	240	90.0	307,100			
		1/2	440	75.6	258,000			
		1/2	460	82.7	282,200	123	127	131
		1/2	480	90.0	307,100			
		1/2	550	75.6	258,000			
		1/2	575	82.7	282,200	98	102	104
		1/2	600	90.0	307,100			
120 kW	¥(2) EHA150-60 208/230v (99J13) 460v (99J14) 575v (99J15) 98 lbs. (45 kg) (total weight)	1/2	208	90.2	307,800	280	289	298
		1/2	220	100.8	344,000			
		1/2	230	110.2	376,100	318	328	335
		1/2	240	120.0	409,500			
		1/2	440	100.8	344,000			
		1/2	460	110.2	376,100	159	163	167
		1/2	480	120.0	409,500			
		1/2	550	100.8	344,000			
		1/2	575	110.2	376,100	127	130	133
		1/2	600	120.0	409,500			

†NOTE - For field installed electric heat, order (1) of each heater shown to make up heater size required.

¥NOTE - For field installed electric heat, order (2) of same heater shown to make up heater size required.

† Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F (75°C).

1/2 May be used with two stage control.

2 Electric Heat Control Module required on 45, 60, 90 & 120 kW sizes only (module furnished with factory installed electric heaters).

NOTE — Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. Also requires LTB2 Terminal Block. See Optional Electric Heat Accessories tables.

360								
kW Size Required	Electric Heat Model No. (see footnote & Net Weight	No. of Steps	Volts Input	kW Input	Btuh Output	Total Unit, Power Exhaust Fans and Electric Heat † Minimum Circuit Ampacity		
						5 hp (3.7 kW)	7.5 hp (5.6 kW)	10 hp (7.5 kW)
30 kW	†(1) EHA360-15 208/230v (99J22) 460v (99J24) 575v (99J26) and †(1) EHA360S-15 208/230v (99J23) 460v (99J25) 575v (99J27) 59 lbs. (27 kg) (total weight)	1	208	22.5	76,800	137	144	151
		1	220	25.2	86,000			
		1	230	27.5	93,900			
		1	240	30.0	102,400			
		1	440	25.2	86,000	70	74	77
		1	460	27.5	93,900			
		1	480	30.0	102,400			
		1	550	25.2	86,000			
		1	575	27.5	93,900	55	58	60
		1	600	30.0	102,400			
45 kW	¥(2) EHA360-22.5 208/230v (99J28) 460v (99J29) 575v (99J30) 76 lbs. (35 kg) (total weight)	1/2	208	33.8	115,300	147	157	165
		1/2	220	37.8	129,000			
		1/2	230	41.3	141,000	165	175	183
		1/2	240	45.0	153,600			
		1/2	440	37.8	129,000			
		1/2	460	41.3	141,000	82	86	90
		1/2	480	45.0	153,600			
		1/2	550	37.8	129,000			
		1/2	575	41.3	141,000	66	69	72
		1/2	600	45.0	153,600			
60 kW	¥(2) EHA150-30 208/230v (99J07) 460v (99J08) 575v (99J09) 76 lbs. (35 kg) (total weight)	1/2	208	45.0	153,600	155	164	173
		1/2	220	50.4	172,000			
		1/2	230	55.1	188,000	174	184	192
		1/2	240	60.0	204,800			
		1/2	440	50.4	172,000			
		1/2	460	55.1	188,000	87	91	95
		1/2	480	60.0	204,800			
		1/2	550	50.4	172,000			
		1/2	575	55.1	188,000	69	73	75
		1/2	600	60.0	204,800			
90 kW	¥(2) EHA150-45 208/230v (99J10) 460v (99J11) 575v (99J12) 84 lbs. (38 kg) (total weight)	1/2	208	67.6	230,700	218	227	235
		1/2	220	75.6	258,000			
		1/2	230	82.7	282,200	246	256	264
		1/2	240	90.0	307,100			
		1/2	440	75.6	258,000			
		1/2	460	82.7	282,200	123	127	131
		1/2	480	90.0	307,100			
		1/2	550	75.6	258,000			
		1/2	575	82.7	282,200	98	102	104
		1/2	600	90.0	307,100			
120 kW	¥(2) EHA150-60 208/230v (99J13) 460v (99J14) 575v (99J15) 98 lbs. (45 kg) (total weight)	1/2	208	90.2	307,800	280	289	298
		1/2	220	100.8	344,000			
		1/2	230	110.2	376,100	318	328	335
		1/2	240	120.0	409,500			
		1/2	440	100.8	344,000			
		1/2	460	110.2	376,100	159	163	167
		1/2	480	120.0	409,500			
		1/2	550	100.8	344,000			
		1/2	575	110.2	376,100	127	130	133
		1/2	600	120.0	409,500			

†NOTE - For field installed electric heat, order (1) of each heater shown to make up heater size required.

¥NOTE - For field installed electric heat, order (2) of same heater shown to make up heater size required.

† Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F (75°C).

1/2 May be used with two stage control.

2 Electric Heat Control Module required on 45, 60, 90 & 120 kW sizes only (module furnished with factory installed electric heaters).

NOTE — Fuse block must be ordered extra. Factory installed heaters will have the fuse block factory installed. Fuse block must be installed in field installed heaters. Also requires LTB2 Terminal Block. See Optional Electric Heat Accessories tables.

COOLING RATINGS - LCA/LGA

NOTE - For Temperatures and Capacities not shown in tables, see bulletin — Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

LCA/LGA300H - HIGH EFFICIENCY - COOLING CAPACITY - TWO COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C
63°F (17°C)	8000	3775	144.3	42.3	7.73	.65	.79	.92	140.4	41.1	8.64	.65	.80	.93	136.3	39.9	9.68	.66	.81	.95	131.9	38.7	10.87	.67	.83	.96
	10000	4720	149.4	43.8	7.82	.69	.85	.98	145.3	42.6	8.74	.70	.87	.99	141.0	41.3	9.78	.71	.88	1.00	136.5	40.0	10.96	.72	.90	1.00
	12000	5665	153.3	44.9	7.90	.74	.92	1.00	149.2	43.7	8.82	.75	.93	1.00	144.9	42.5	9.86	.76	.94	1.00	140.2	41.1	11.04	.78	.96	1.00
67°F (19°C)	8000	3775	153.4	45.0	7.88	.51	.62	.75	149.2	43.7	8.80	.52	.63	.76	144.9	42.5	9.84	.52	.64	.77	140.2	41.1	11.02	.53	.65	.79
	10000	4720	158.2	46.4	7.98	.54	.66	.82	153.7	45.0	8.90	.54	.67	.83	149.0	43.7	9.93	.55	.69	.85	144.1	42.2	11.10	.55	.70	.86
	12000	5665	161.3	47.3	8.05	.56	.71	.88	156.8	46.0	8.96	.56	.72	.90	151.9	44.5	9.99	.57	.74	.91	147.0	43.1	11.18	.58	.75	.93
71°F (22°C)	8000	3775	162.9	47.7	8.08	.39	.50	.60	158.6	46.5	8.99	.39	.50	.61	154.0	45.1	10.04	.39	.50	.62	149.0	43.7	11.22	.40	.51	.62
	10000	4720	167.8	49.2	8.18	.40	.52	.64	163.1	47.8	9.09	.40	.53	.65	158.2	46.4	10.13	.40	.53	.66	153.0	44.8	11.31	.40	.54	.67
	12000	5665	171.1	50.1	8.25	.41	.55	.69	166.2	48.7	9.16	.41	.55	.70	161.2	47.2	10.20	.41	.56	.71	155.8	45.7	11.39	.41	.57	.73

LCA/LGA300H - HIGH EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C
63°F (17°C)	8000	3775	281.9	82.6	19.19	.69	.83	.96	272.8	79.9	21.54	.70	.85	.97	263.0	77.1	24.19	.71	.86	.98	252.5	74.0	27.18	.72	.88	1.00
	10000	4720	291.6	85.5	19.38	.74	.90	1.00	282.3	82.7	21.72	.75	.91	1.00	272.3	79.8	24.39	.76	.93	1.00	261.4	76.6	27.41	.78	.95	1.00
	12000	5665	299.7	87.8	19.54	.79	.95	1.00	290.1	85.0	21.88	.80	.97	1.00	279.9	82.0	24.56	.82	.98	1.00	269.5	79.0	27.56	.84	1.00	1.00
67°F (19°C)	8000	3775	299.6	87.8	19.50	.55	.67	.80	289.9	85.0	21.84	.55	.68	.81	279.3	81.9	24.50	.56	.69	.83	268.1	78.6	27.50	.56	.70	.84
	10000	4720	308.2	90.3	19.67	.57	.71	.87	298.0	87.3	22.00	.58	.73	.88	287.1	84.1	24.67	.58	.74	.90	275.3	80.7	27.69	.59	.76	.92
	12000	5665	314.2	92.1	19.80	.60	.76	.93	303.9	89.1	22.15	.60	.78	.94	292.7	85.8	24.81	.61	.80	.96	280.6	82.2	27.84	.62	.82	.98
71°F (22°C)	8000	3775	318.4	93.3	19.89	.41	.53	.64	308.1	90.3	22.24	.41	.53	.65	297.1	87.1	24.89	.41	.54	.66	285.4	83.6	27.92	.42	.55	.68
	10000	4720	327.1	95.9	20.08	.42	.56	.69	316.4	92.7	22.42	.42	.56	.70	305.0	89.4	25.09	.43	.57	.72	292.6	85.8	28.12	.43	.58	.73
	12000	5665	333.3	97.7	20.21	.43	.59	.74	322.1	94.4	22.56	.43	.59	.76	310.3	90.9	25.23	.44	.60	.77	297.7	87.2	28.25	.44	.61	.79

LCA/LGA360H - HIGH EFFICIENCY - COOLING CAPACITY - TWO COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C				
63°F (17°C)	9000	4250	234.5	68.7	12.87	.65	.79	.93	227.8	66.8	14.19	.65	.80	.95	220.8	64.7	15.68	.66	.82	.96	213.2	62.5	17.39	.67	.83	.98
	11200	5285	243.1	71.2	13.05	.69	.87	1.00	236.1	69.2	14.38	.70	.88	1.00	228.7	67.0	15.85	.72	.90	1.00	220.9	64.7	17.55	.73	.92	1.00
	13400	6325	249.9	73.2	13.21	.75	.94	1.00	242.8	71.2	14.52	.76	.95	1.00	235.2	68.9	16.01	.78	.97	1.00	227.4	66.6	17.70	.79	.98	1.00
67°F (19°C)	9000	4250	248.8	72.9	13.17	.51	.62	.75	241.5	70.8	14.48	.51	.63	.76	233.9	68.5	15.97	.52	.64	.78	225.7	66.1	17.68	.52	.65	.80
	11200	5285	256.5	75.2	13.35	.54	.67	.83	248.7	72.9	14.66	.54	.68	.85	240.6	70.5	16.15	.55	.69	.86	232.2	68.1	17.85	.55	.71	.88
	13400	6325	261.8	76.7	13.48	.56	.72	.90	253.9	74.4	14.78	.57	.74	.92	245.6	72.0	16.26	.58	.75	.94	236.8	69.4	17.96	.58	.77	.96
71°F (22°C)	9000	4250	264.4	77.5	13.53	.39	.50	.60	256.7	75.2	14.84	.39	.50	.61	248.5	72.8	16.34	.39	.50	.62	239.8	70.3	18.04	.39	.51	.63
	11200	5285	272.0	79.7	13.70	.40	.52	.65	263.8	77.3	15.02	.40	.53	.66	255.1	74.8	16.52	.40	.53	.67	245.9	72.1	18.22	.40	.54	.68
	13400	6325	277.1	81.2	13.83	.41	.55	.70	268.5	78.7	15.16	.41	.56	.71	259.7	76.1	16.64	.41	.57	.73	250.3	73.4	18.32	.42	.58	.75

LCA/LGA360H - HIGH EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtu/h	kW	75°F 24°C	80°F 27°C
63°F (17°C)	9000	4250	337.6	98.9	23.59	.69	.83	.97	326.0	95.5	26.17	.70	.85	.98	313.7	91.9	29.07	.71	.87	1.00	300.4	88.0	32.36	.72	.89	1.00
	11200	5285	349.7	102.5	23.86	.74	.91	1.00	337.7	99.0	26.41	.75	.93	1.00	324.9	95.2	29.33	.77	.95	1.00	311.3	91.2	32.66	.79	.97	1.00
	13400	6325	359.6	105.4	24.09	.79	.97	1.00	347.7	101.9	26.64	.81	.99	1.00	335.0	98.2	29.59	.83	1.00	1.00	321.8	94.3	32.94	.85	1.00	1.00
67°F (19°C)	9000	4250	357.6	104.8	24.04	.54	.66	.80	345.1	101.1	26.61	.54	.67	.81	331.7	97.2	29.54	.55	.68	.83	317.4	93.0	32.83	.56	.70	.85
	11200	5285	367.9	107.8	24.31	.57	.71	.88	355.0	104.0	26.87	.57	.73	.89	341.1	100.0	29.76	.58	.74	.92	325.9	95.5	33.08	.59	.76	.94
	13400	6325	375.6	110.4	24.48	.60	.77	.95	362.1	106.1	27.03	.61	.79	.96	347.8	101.9	29.97	.62	.81	.98	332.3	97.4	33.28	.63	.83	1.00
71°F (22°C)	9000	4250	380.0	111.4	24.60	.40	.52	.64	366.7	107.5	27.16	.41	.53	.65	352.5	103.3	30.10	.41	.54	.66	337.2	98.8	33.41	.41	.54	.68
	11200	5285	390.1	114.3	24.86	.41	.55	.69	376.0	110.2	27.43	.42	.56	.71	361.4	105.9	30.31	.42	.57	.72	345.4	101.2	33.61	.43	.58	.74
	13400	6325	397.1	116.4	25.06	.43	.59	.75	382.7	112.2	27.59	.43	.60	.77	367.3	107.6	30.50	.43	.61	.79	350.5	102.7	33.83	.44	.62	.81

BLOWER DATA

BLOWER TABLE INCLUDES RESISTANCE FOR LCA300H BASE UNIT ONLY WITH DRY INDOOR COIL & AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

- 1 - Wet indoor coil air resistance of selected unit.
- 2 - Any factory installed options air resistance (heat section, economizer, etc.)
- 3 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output and drive required.

See Page 18 for wet coil and option/accessory air resistance data.

MINIMUM AIR VOLUME REQUIRED FOR USE WITH OPTIONAL ELECTRIC HEAT - 10,500 cfm (4955 L/s).

BOLD ITALIC INDICATES FIELD FURNISHED DRIVE

Air Volume cfm (L/s)	TOTAL STATIC PRESSURE — Inches Water Gauge (Pa)													
	.20 (50)	.40 (100)	.60 (150)	.80 (200)	1.00 (250)	1.20 (300)	1.40 (350)	1.60 (400)	1.80 (450)	2.00 (495)	2.20 (545)	2.40 (595)	2.60 (645)	
	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	RPM BHP (kW)	
7500 (3540)	380 1.05 (0.78)	465 1.50 (1.12)	540 1.90 (1.42)	600 2.30 (1.72)	660 2.70 (2.01)	715 3.15 (2.35)	765 3.60 (2.69)	810 4.00 (2.98)	855 4.45 (3.32)	895 4.90 (3.66)	935 5.35 (3.99)	975 5.85 (4.36)	1010 6.30 (4.70)	
8000 (3775)	390 1.25 (0.93)	475 1.65 (1.23)	545 2.10 (1.57)	610 2.55 (1.90)	665 2.95 (2.20)	720 3.45 (2.57)	770 3.90 (2.91)	815 4.35 (3.25)	860 4.85 (3.62)	900 5.30 (3.95)	940 5.75 (4.29)	980 6.30 (4.70)	1015 6.75 (5.04)	
8500 (4010)	405 1.40 (1.04)	485 1.90 (1.42)	555 2.35 (1.75)	620 2.80 (2.09)	675 3.30 (2.46)	725 3.75 (2.80)	775 4.20 (3.13)	820 4.70 (3.51)	865 5.20 (3.88)	905 5.70 (4.25)	945 6.20 (4.63)	985 6.75 (5.04)	1020 7.25 (5.41)	
9000 (4245)	415 1.60 (1.19)	495 2.10 (1.57)	565 2.60 (1.94)	625 3.10 (2.31)	685 3.60 (2.69)	735 4.10 (3.06)	785 4.60 (3.43)	830 5.10 (3.80)	870 5.60 (4.18)	915 6.15 (4.59)	955 6.70 (5.00)	990 7.20 (5.37)	1025 7.70 (5.74)	
9500 (4485)	430 1.85 (1.38)	505 2.35 (1.75)	575 2.90 (2.16)	635 3.40 (2.54)	690 3.90 (2.91)	745 4.50 (3.36)	790 4.95 (3.69)	835 5.50 (4.10)	880 6.05 (4.51)	920 6.60 (4.92)	960 7.15 (5.33)	995 7.70 (5.74)	1035 8.30 (6.19)	
10,000 (4720)	445 2.10 (1.57)	520 2.65 (1.98)	585 3.20 (2.39)	645 3.75 (2.80)	700 4.30 (3.21)	750 4.85 (3.69)	800 5.40 (4.03)	845 5.95 (4.44)	885 6.50 (4.85)	925 7.05 (5.26)	965 7.65 (5.71)	1000 8.20 (6.12)	1040 8.85 (6.60)	
10,500 4955)	455 2.35 (1.75)	530 2.95 (2.20)	595 3.50 (2.61)	655 4.10 (3.06)	710 4.70 (3.03)	760 5.25 (3.92)	805 5.80 (4.33)	850 6.40 (4.77)	895 7.00 (5.22)	935 7.60 (5.67)	970 8.15 (6.08)	1010 8.80 (6.56)	1045 9.40 (7.01)	
11,000 (5190)	470 2.60 (1.94)	545 3.25 (2.42)	605 3.85 (2.87)	665 4.45 (3.32)	720 5.10 (3.80)	765 5.66 (4.22)	815 6.30 (4.70)	860 6.90 (5.15)	900 7.50 (5.60)	940 8.10 (6.04)	980 8.75 (6.53)	1015 9.35 (6.98)	----	
11,500 (5425)	485 2.95 (2.20)	555 3.60 (2.69)	620 4.25 (3.17)	675 4.85 (3.62)	730 5.55 (4.14)	775 6.10 (4.55)	820 6.70 (5.00)	865 7.40 (5.52)	910 8.05 (6.01)	945 8.65 (6.45)	985 9.30 (6.94)	1020 9.95 (7.42)	----	
12,000 (5665)	500 3.30 (2.46)	570 4.00 (2.98)	630 4.65 (3.47)	685 5.30 (3.95)	740 6.00 (4.48)	785 6.60 (4.92)	830 7.25 (5.41)	875 7.95 (5.93)	915 8.60 (6.42)	955 9.25 (6.90)	995 9.95 (7.42)	1030 10.60 (7.91)	----	
12,500 (5900)	515 3.65 (2.72)	580 4.35 (3.25)	640 5.05 (3.77)	695 5.75 (4.29)	750 6.50 (4.85)	795 7.10 (5.30)	840 7.80 (5.82)	885 8.55 (6.38)	925 9.20 (6.86)	965 9.90 (7.39)	1000 10.55 (7.87)	1035 11.25 (8.39)	----	
13,000 (6135)	530 4.05 (3.02)	595 4.80 (3.58)	655 5.55 (4.14)	710 6.25 (4.66)	760 7.00 (5.22)	805 7.65 (5.71)	850 8.40 (6.27)	890 9.05 (6.75)	930 9.75 (7.27)	970 10.50 (7.83)	1010 11.30 (8.43)	----	----	
13,500 (6370)	545 4.45 (3.32)	610 5.25 (3.92)	665 6.00 (4.48)	720 6.75 (5.04)	770 7.50 (5.60)	815 8.25 (6.15)	860 9.00 (6.71)	900 9.70 (7.24)	940 10.45 (7.80)	980 11.20 (8.36)	----	----	----	
14,000 (6605)	560 4.90 (3.66)	620 5.70 (4.25)	680 6.55 (4.89)	730 7.30 (5.45)	780 8.10 (6.04)	825 8.85 (6.60)	870 9.65 (7.20)	910 10.40 (7.76)	950 11.15 (8.31)	----	----	----	----	
14,500 (6845)	575 5.40 (4.03)	635 6.25 (4.66)	690 7.05 (5.26)	745 7.90 (5.89)	790 8.65 (6.45)	835 9.45 (7.05)	880 10.30 (7.68)	920 11.10 (8.28)	----	----	----	----	----	
15,000 (7080)	590 5.90 (4.40)	650 6.80 (5.07)	705 7.65 (5.71)	755 8.50 (6.34)	800 9.30 (6.94)	845 10.10 (7.53)	890 11.00 (8.21)	----	----	----	----	----	----	

BELT DRIVE BLOWER DATA

FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Motor Outputs				RPM Range				
Nominal hp	Maximum hp	Nominal kW	Maximum kW	Drive 1	Drive 2	Drive 3	Drive 4	Drive 5
Standard or High Efficiency - 5	5.75	3.7	4.3	660-810	770-965	----	----	----
Standard or High Efficiency - 7.5	7.5	5.6	6.4	----	----	715-880	770-965	----
Standard or High Efficiency - 10	11.5	7.5	8.6	----	----	715-880	----	850-1045

*Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished by Lennox are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

BLOWER DATA

FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE

Air Volume		Total Resistance — inches water gauge (Pa)						
		Wet Indoor Coil		Gas Heat Exchanger (LGA Models)		Electric Heat (LCA Models)	Economizer	Horizontal Roof Mounting Frame
		300H	360H	Standard Heat	High Heat			
7500	3540	.04 (10)	.07 (17)	.15 (37)	.25 (62)	.03 (7)	.02 (5)	.11 (27)
8000	3775	.05 (12)	.08 (20)	.17 (42)	.28 (70)	.03 (7)	.02 (5)	.13 (32)
8500	4010	.05 (12)	.08 (20)	.20 (50)	.31 (77)	.04 (10)	.03 (7)	.15 (37)
9000	4245	.06 (15)	.09 (22)	.22 (55)	.34 (85)	.04 (10)	.04 (10)	.17 (42)
9500	4485	.06 (15)	.10 (25)	.24 (60)	.38 (94)	.05 (12)	.04 (10)	.19 (47)
10,000	4720	.07 (17)	.11 (27)	.27 (67)	.42 9104	.05 (12)	.05 (12)	.21 (52)
10,500	4955	.07 (17)	.12 (30)	.30 (75)	.46 (114)	.06 (15)	.06 (15)	.24 (60)
11,000	5190	.08 (20)	.12 (30)	.33 (92)	.50 (137)	.06 (15)	.07 (17)	.27 (67)
11,500	5425	.08 (20)	.13 (32)	.37 (92)	.55 (137)	.07 (17)	.08 (20)	.30 (75)
12,000	5665	.09 (22)	.14 (35)	.40 (99)	.60 (149)	.07 (17)	.10 (25)	.33 (82)
12,500	5900	.09 (22)	.15 (37)	.44 (109)	.65 (162)	.08 (20)	.11 (27)	.37 (92)
13,000	6135	.10 (25)	.16 (40)	.48 (119)	.70 (174)	.08 (20)	.13 (32)	.40 (99)
13,500	6370	.11 (27)	.17 (42)	.53 (132)	.76 (189)	.09 (22)	.14 (35)	.44 (109)
14,000	6605	.11 (27)	.18 (45)	.57 (142)	.82 (204)	.10 (25)	.16 (40)	.49 (122)
14,500	6845	.12 (30)	.19 (47)	.62 (154)	.89 (221)	.10 (25)	.18 (45)	.53 (132)
15,000	7080	.13 (32)	.20 (50)	.68 (169)	.95 (236)	.11 (27)	.21 (52)	.58 (144)

CEILING DIFFUSER AIR RESISTANCE

Unit Size	Air Volume		Total Resistance — inches water gauge (Pa)			
			LARTD30/36 Step-Down Diffuser			LAFD30/36 Flush Diffuser
			2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open	
300H & 360 Models	7500	3540	.37(92)	.31 (77)	.25(62)	.29 (72)
	8000	3775	.42 (104)	.36 (90)	.29 (72)	.34 (85)
	8500	4010	.48 (119)	.41 (102)	.34 (85)	.39 (97)
	9000	4245	.55 (137)	.47 (117)	.39 (97)	.44 (109)
	9500	4485	.62 (154)	.53 (132)	.45 (112)	.51 (127)
	10,000	4720	.70 (1740)	.60 (149)	.51 (127)	.57 (142)
	10,500	4955	.78 (194)	.68 (169)	.58 (144)	.65 (162)
	11,000	5190	.87 (216)	.76 (190)	.65 (162)	.72 (179)
	11,500	5425	.97 (241)	.85 (211)	.73 (182)	.81 (201)
	12,000	5665	1.08 (269)	.94 (234)	.82 (204)	.90 (223)
	12,500	5900	1.19 (296)	1.04 (259)	.91 (226)	.99 (246)
	13,000	6135	1.30 (323)	1.15 (286)	1.00 (249)	1.10 (274)
	13,500	6370	1.43 (356)	1.26 (313)	1.10 (374)	1.20 (298)
	14,000	6605	1.56 (388)	1.38 (343)	1.20 (298)	1.31 (326)
	14,500	6845	1.69 (420)	1.50 (373)	1.31 (326)	1.43 (356)
	15,000	7080	1.84 (457)	1.63 (405)	1.43 (356)	1.56 (388)

POWER EXHAUST FANS PERFORMANCE

Return Air System Static Pressure		Air Volume Exhausted	
in. w.g.	Pa	cfm	L/s
0	0	12,800	6040
0.05	12	12,200	5760
0.10	25	11,500	5430
0.15	37	10,800	5100
0.20	50	9900	4670
0.25	62	9000	4250
0.30	75	7900	3730
0.35	87	6750	3190
0.40	100	5450	2570
0.45	112	4150	1960
0.50	125	2900	1370

CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume		Effective Throw Range			
			LARTD30/36 Step-Down		LAFD30/36 Flush	
	cfm	L/s	ft.	m	ft.	m
300H Models 360 Models	9000	4245	40 - 47	12 - 14	29 - 35	8 - 11
	9500	4485	43 - 50	13 - 15	33 - 41	10 - 12
	10,000	4720	46 - 54	14 - 16	37 - 46	11 - 14
	10,500	4955	50 - 58	15 - 18	42 - 51	13 - 15
	11,000	4190	53 - 61	16 - 19	46 - 56	14 - 17
	11,500	5425	55 - 64	17 - 20	50 - 61	15 - 19
	12,000	5665	58 - 67	18 - 20	54 - 66	16 - 20
	12,500	5900	61 - 71	19 - 22	58 - 71	18 - 22
	13,000	6135	64 - 74	20 - 23	62 - 75	19 - 23
	13,500	6370	67 - 77	20 - 23	66 - 79	20 - 24

□ Throw is the horizontal or vertical distance an airstream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. (15 m) per minute. Four sides open.

GUIDE SPECIFICATIONS

Prepared for the guidance of architects, consulting engineers and mechanical contractors.

General — Furnish and install a single package air to air DX mechanical cooling system, cooling and gas fired heating system or heat pump system, complete with automatic controls. The single package unit shall be a standard product of a firm regularly engaged in the manufacture of heating-cooling equipment. The manufacturer shall have parts and service available throughout the U.S. and Canada.

The installed weight shall not be more than _____ lbs. (kg). Entire unit shall have a width of not more than _____ inches (mm), a depth of not more than _____ inches (mm) and an overall height of not more than _____ inches (mm). The equipment shall be shipped completely factory assembled, pre-charged, piped and wired internally ready for field connections. In addition, manufacturer shall test operate system at the factory before shipment.

Air Distribution — Equipment shall be capable of bottom (down-flow) or side (horizontal) handling of conditioned air. Horizontal air shall require optional horizontal conversion kit. All air distribution ducts shall be fiberglass or _____ ga. galvanized steel insulated with _____ inch (mm) thick lb./ft.³ (kg/m³) density fiberglass or equivalent.

Approvals — All electrical components shall have E.T.L. and C.G.A. Listing. All wiring shall be in compliance with NEC and CEC.

Equipment Warranty — Heat Exchangers shall have a limited warranty for a full ten years (LGA Models). Compressors have a limited warranty for a full five years. All other components have a limited warranty for one year. Refer to the Lennox Equipment Limited Warranty certificate included with the unit for details.

Cooling System — The total certified cooling capacity shall not be less than _____ Btuh (kW) with an indoor coil air volume of _____ cfm (L/s), an entering wet bulb air temperature of _____ °F (°C), an entering dry bulb air temperature of _____ °F (°C) and an outdoor coil entering temperature of _____ °F (°C). The compressor power input shall not exceed _____ kW at these conditions.

The coils shall be non-ferrous construction with aluminum fins mechanically bonded to durable copper tubes. Coils shall be pressure leak tested. Coil face area shall be not less than _____ sq. ft. (m²) (indoor coil) and _____ sq. ft. (m²) (outdoor coil). Outdoor coils shall be slab coil construction.

Compressors shall be resiliently mounted, have overload protection and crankcase heaters. The refrigeration system shall have discharge suction and liquid line gauge ports, high pressure switches, low pressure switches, driers, freestat and full refrigerant charge. Optional service valves shall be available. All models shall have low ambient operation down to 0°F (-17.7°C). All models shall be tested at conditions included in ARI Standards 340/360-93.

Heating System (LGA Models) — The heating capacity output shall be _____ Btuh (kW) with a gas input of _____ Btuh (kW).

Tubular heat exchanger and inshot type gas burners shall be constructed of aluminized steel. Controls shall consist of direct spark ignition, electronic flame sensor controls, flame rollout switch, limit controls and automatic redundant dual gas valve with staging control and combustion air proving switch on induced draft blower. Unit shall be available for use with LPG/propane as an option. Heat exchanger shall be removable for servicing. Complete service access shall be provided for controls and wiring. Shall be E.T.L./C.G.A. design certified for outdoor installation. Optional stainless steel heat exchanger shall be available for applications where mixed air temperature is between 30 and 45°F (-1 and 7°C).

Cabinet — Shall be galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal. Cabinet panels where conditioned air is handled shall be fully insulated to prevent sweating and minimize sound. Openings shall be provided for power connection entry. Indoor coil condensate drain extended outside cabinet shall be provided. Lifting holes shall be provided for rigging. Bottom power and gas (LGA) entry shall be furnished.

Service Access — Cabinet panels shall be hinged with tool-less access for compressor/heating/controls, blower and air filter/economizer compartments.

Supply Air Blower — Centrifugal supply air blower shall have ball bearings and adjustable belt drive. Blower assembly shall slide out of unit for servicing. Motor mount base shall permit ease of motor changeover and belt tension adjustment. Blower wheel shall be statically and dynamically balanced. Blower shall be capable of delivering _____ cfm (L/s) at an external static pressure of _____ inches water gauge (Pa) requiring _____ bhp (W) and _____ rpm.

Integrated Modular Control (IMC) — Solid state control board shall be provided to operate unit. Built-in functions shall include: blower on/off delay, built-in control parameter defaults, service relay output, dirty filter switch input, dehumidistat input, economizer control, electric heat staging, ETM compatible, unit diagnosis, diagnostics code storage, gas valve delay between stages, indoor air quality input, low ambient controls, minimum run time, night setback mode, smoke alarm mode, low pressure control, thermostat bounce delay, three digit display, °F or °C display, 2 stage heat/3 stage cool thermostat compatible and warm up mode.

Outdoor Coil Fans — Direct drive propeller type outdoor coil fans shall discharge vertically and be direct driven by a _____ hp (W) motor. Fan motor shall have ball bearings and be permanently lubricated and inherently protected. Fans shall have a safety guard.

Air Filters — Disposable 2 inch (51 mm) thick pleated filters furnished shall have not less than _____ sq. ft. (m²) of free area.

OPTIONAL ACCESSORIES

Additive Electric Heaters (LCA Models) — The certified total heating capacity output shall be _____ Btuh with _____ kW input at _____ volts power supply.

Electric heaters shall be available for factory or field installation. Heating elements shall be nichrome bare wire exposed directly to the air stream. Time delays shall bring the elements on and off in sequence with a time delay between each element. Limit controls shall provide overload and short circuit protection.

Blower Proving Switch — Furnish and factory install air pressure switch to monitor blower operation.

Ceiling Diffusers — Furnish and install a (flush or stepdown) optional combination ceiling supply and return air diffuser. It shall be capable of not less than _____ ft. (m) radius of effective throw. Supply and return transitions shall be available, for field installation in the roof mounting frame, to provide duct connection to the diffuser.

Coil Guards — Furnish and install galvanized steel coil guards.

Control Systems — Shall provide a selection of control systems to automatically operate the mechanical equipment through the heating or cooling and ventilating cycles as required.

Corrosion Protection — Furnish and factory apply phenolic epoxy coating to either or both of the following: Outdoor coils with painted outdoor base section. Indoor coil with painted indoor base section and painted blower housings.

Dehumidistat — Furnish and install dehumidistat, relays information to Integrated Modular Control.

Dirty Filter Switch — Furnish and install pressure switch that indicates dirty filter, relays information to Integrated Modular Control.

Disconnect — Furnish and factory install unit disconnect switch.

Economizer Section — Furnish and install economizer complete with recirculated air dampers, outside air dampers and controls. Low leakage dampers shall ride in nylon bearings. The economizer section shall provide for the introduction of outdoor air for minimum ventilation and free cooling. Integrated economizer control shall allow compressors to cycle for additional cooling, as needed. Damper actuator shall be opposing gear driven, 24 volt, fully modulating design. Plug-in control board (on unit IMC board) shall consist of adjustable minimum positioner, enthalpy setpoint and DIP switches for setting type of control logic used. Economizer control options shall consist of sensible temperature, global, outdoor enthalpy and differential enthalpy (outdoor and return air). Optional outdoor air hood (required) with filters shall be galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal. Economizer shall be available for factory or field installation.

Gravity Exhaust Dampers — Pressure operated dampers shall be available for factory or field installation. Extruded aluminum dampers shall prevent blow-back and outdoor air infiltration during off cycle. Optional hood shall be available.

Grille Guards — Furnish and install heavy gauge guards, shall protect the space between the outdoor coils and the main unit.

Hail Guards — Furnish and install heavy gauge, painted steel hail guards.

High Efficiency Blower Motor — Furnish and factory install high efficiency blower motor.

Horizontal Conversion Kit — Shall be available for all models to provide duct covers to block off unit down-flow supply air opening, horizontal return air opening panel (on unit) is moved to block off down-flow return air opening for horizontal applications.

Horizontal Gravity Exhaust Dampers — Pressure operated dampers shall be available for field installation in the return air duct. Extruded aluminum dampers shall prevent blow-back and outdoor air infiltration during off cycle.

Indoor Air Quality Sensor — Furnish and field install sensor to monitor CO₂ levels, relays information to Integrated Module Control which adjusts economizer dampers proportionately to the pollutant level.

Outdoor Air Damper Section — Optional outdoor dampers shall be available to provide outdoor air requirements of up to 25%. Models shall be available for manual or automatic operation. Dampers shall be opposing gear driven design. Motorized damper section shall install internal to the unit. Optional outdoor air hood (required) with filters shall be galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal. Dampers shall be available for factory or field installation.

Power Exhaust Fan — Shall be available for all models with economizer (down-flow applications only). Direct drive propeller type fan shall exhaust air through optional gravity exhaust damper (required). Motor shall be overload protected. Fan shall be factory or field installed between economizer and gravity exhaust dampers.

Roof Mounting Frame — Furnish and install a steel roof mounting frame for bottom discharge and return air duct connection. It shall mate to the bottom perimeter of the equipment. When flashed into the roof it shall make a unit mounting curb and provide weatherproof duct connection and entry into the conditioned area. Height of frame shall be _____ inches (mm). Flashing shall be the responsibility of the roofing contractor. Frame shall be approved by U.S. National Roofing Contractors Association.

Service Outlets — Furnish and factory install dual 115 volt, 15 amp GFCI type service outlets. Wiring shall be field provided.

Service Valves — Furnish and factory install fully serviceable brass service valves in discharge and liquid lines. Shall allow refrigerant pump down to high side of system for servicing of low side.

Smoke Detectors — Furnish and factory install photoelectric type smoke detector in either or both return air section and supply air section.

Terminal Block (LCA Models) — Shall be required for units without disconnect switch but with single point power supply and electric heat.

Unit Fuse Block (LCA Models) — Shall be required for units with single point power supply and electric heat.

DIMENSIONS - INCHES (MM)

LCA MODELS

Shown With Optional Economizer Dampers, Power Exhaust Fans, Convenience Outlet, Unit Disconnect

CORNER WEIGHTS — lbs. (kg)

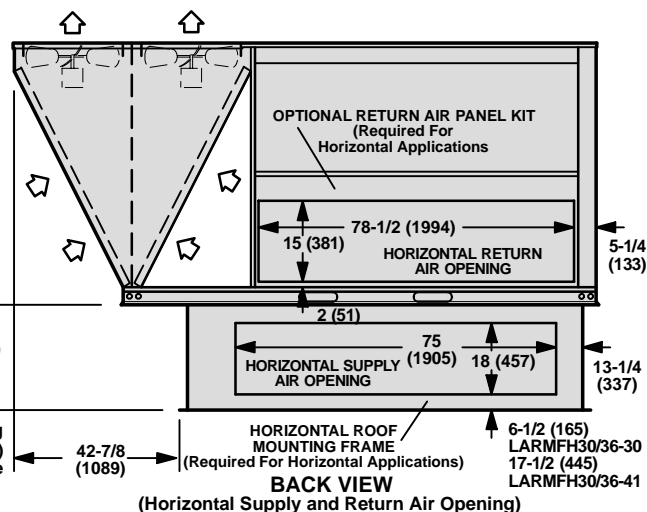
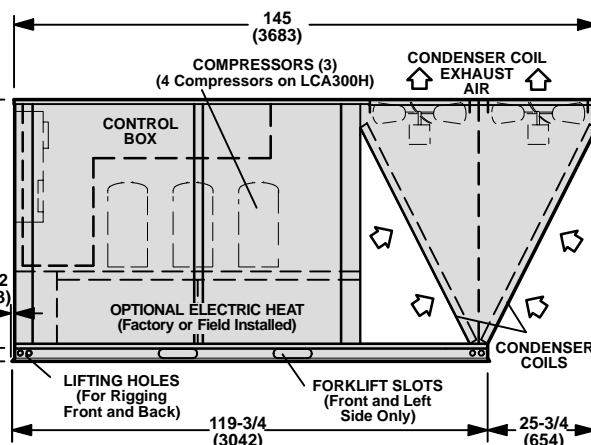
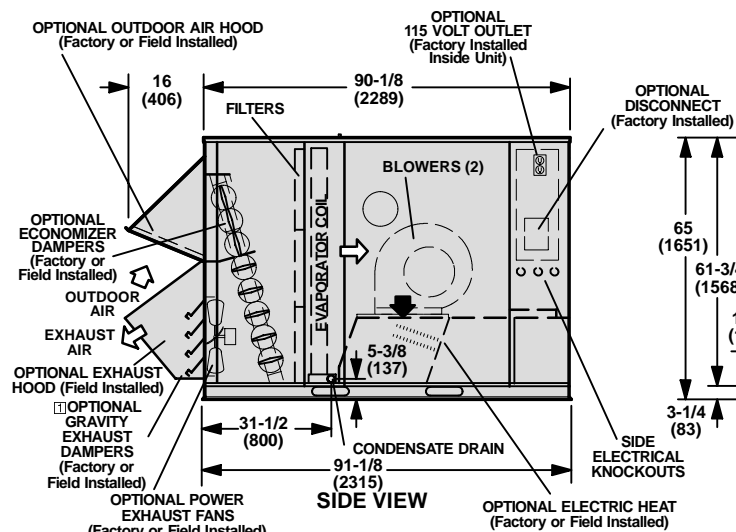
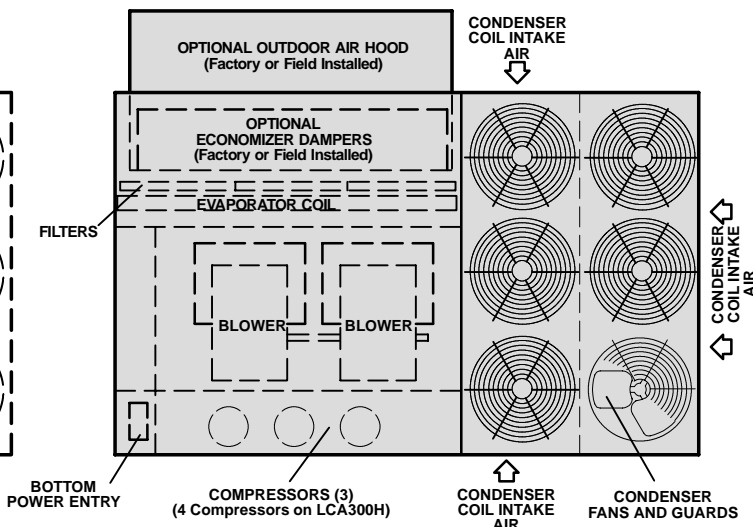
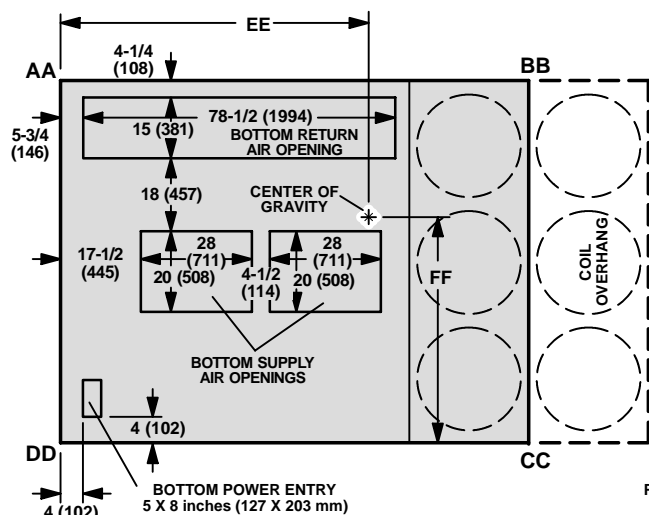
Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
LCA300H Base Unit	569	258	626	284	899	408	816	370
LCA300H Max. Unit	713	323	732	332	929	421	906	411
LCA360 Base Unit	637	289	636	288	972	441	975	442
LCA360 Max. Unit	780	354	738	335	1001	454	1061	481

CENTER OF GRAVITY — inches (mm)

Model Number	EE		FF	
	inch	mm	inch	mm
LCA300H Base Unit	63-3/8	1610	37-1/4	946
LCA300H Max. Unit	61-1/4	1556	40-1/8	1019
LCA360 Base Unit	60-3/8	1534	36	914
LCA360 Max. Unit	58-7/8	1495	38-5/8	981

Base Unit — The standard unit with NO OPTIONS.
Max. Unit — The standard unit with ALL OPTIONS Installed. (Economizer, Power Exhaust Fans, High Input Heating and Controls)

Base Unit — The standard unit with NO OPTIONS.
Max. Unit — The standard unit with ALL OPTIONS Installed. (Economizer, Power Exhaust Fans, High Input Heating and Controls)



NOTE — Field Installed in Return Air Duct for Horizontal Applications.

NOTE — Top of Mounting Frame extends 4 inch (102 mm) inside bottom of unit base. See Typical Flashing Detail.

DIMENSIONS - INCHES (MM)

LGA MODELS

Shown With Optional Economizer Dampers, Power Exhaust Fans, Convenience Outlet, Unit Disconnect

CORNER WEIGHTS — lbs. (kg)

Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
LGA300H Base Unit	588	267	630	286	932	423	870	395
LGA300H Max. Unit	716	325	743	337	958	335	923	419
LGA360 Base Unit	656	298	639	290	1004	455	1031	468
LGA360 Max. Unit	785	356	740	336	1025	465	1090	494

Base Unit — The standard unit with NO OPTIONS.

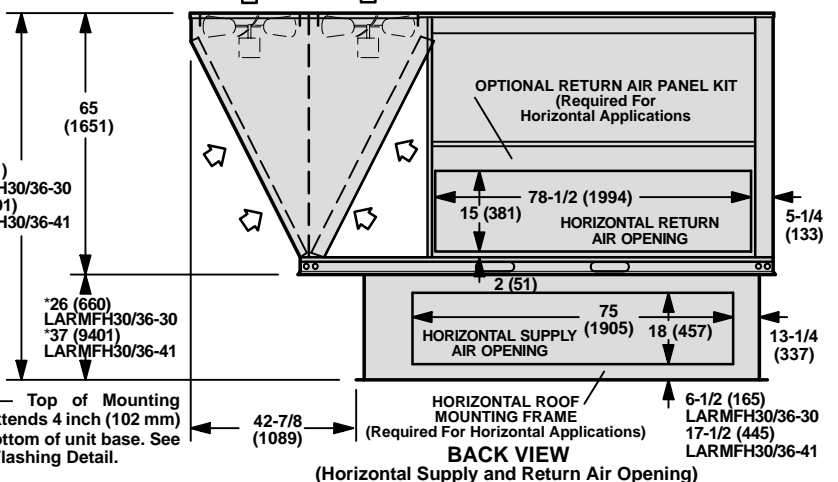
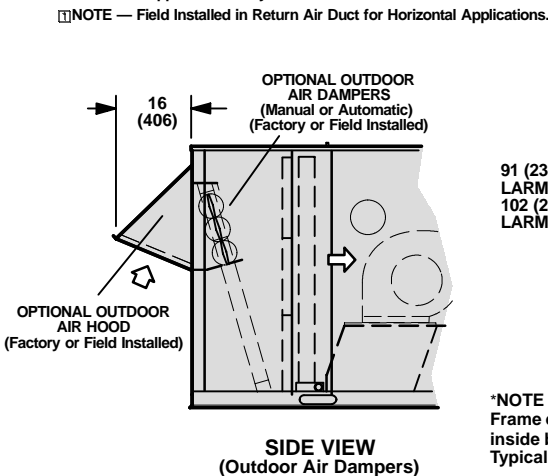
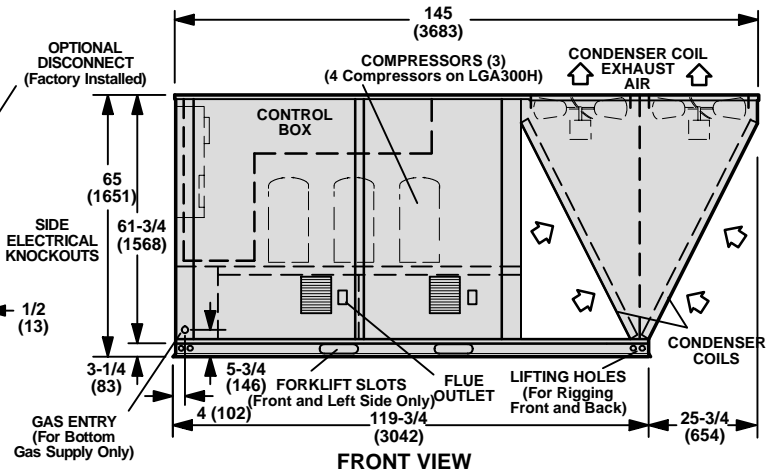
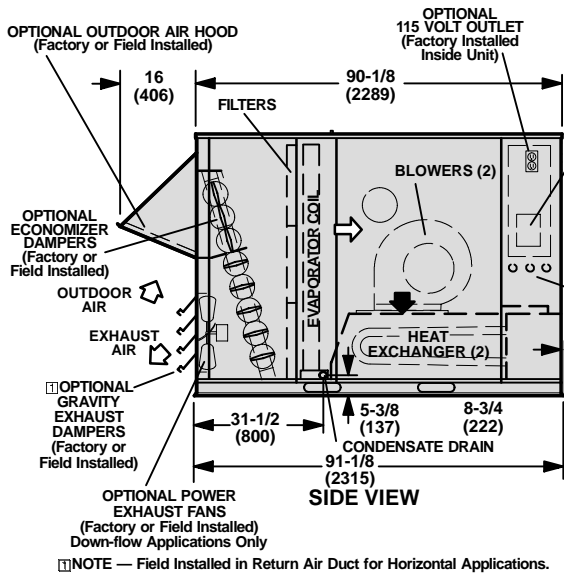
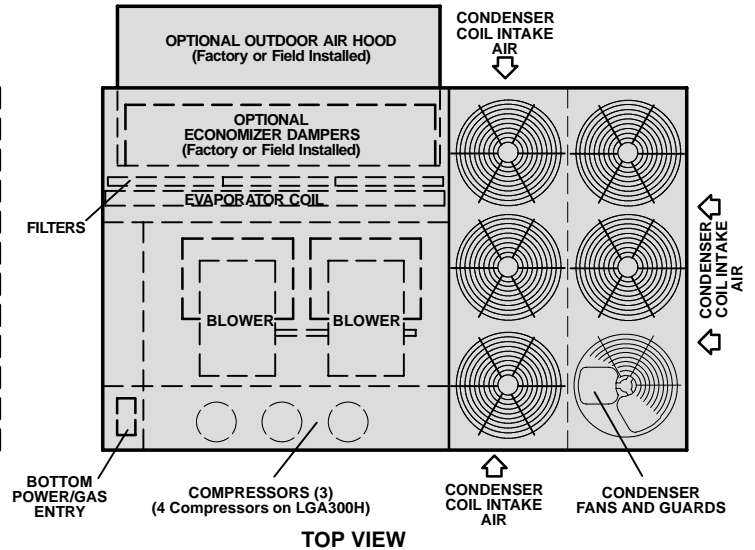
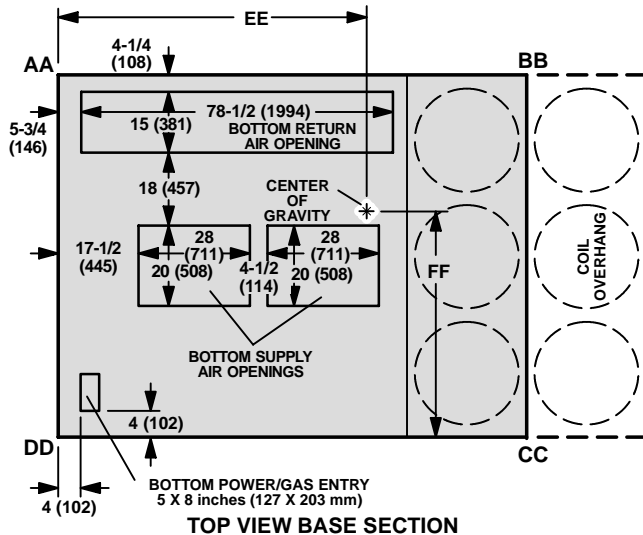
Max. Unit — The standard unit with ALL OPTIONS Installed. (Economizer, Power Exhaust Fans, High Input Heating and Controls)

CENTER OF GRAVITY — inches (mm)

Model Number	EE		FF	
	inch	mm	inch	mm
LGA300H Base Unit	62-5/8	1591	36-3/4	933
LGA300H Max. Unit	61-1/4	1556	39-3/4	1010
LGA360 Base Unit	59-3/4	1518	35-3/8	899
LGA360 Max. Unit	58-7/8	1495	38-1/4	972

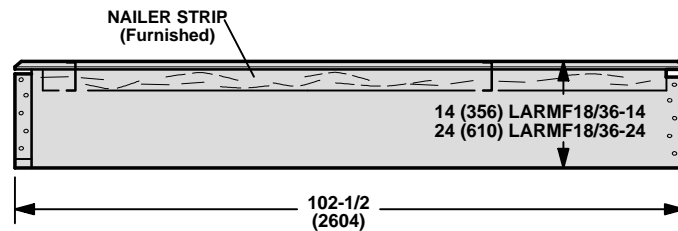
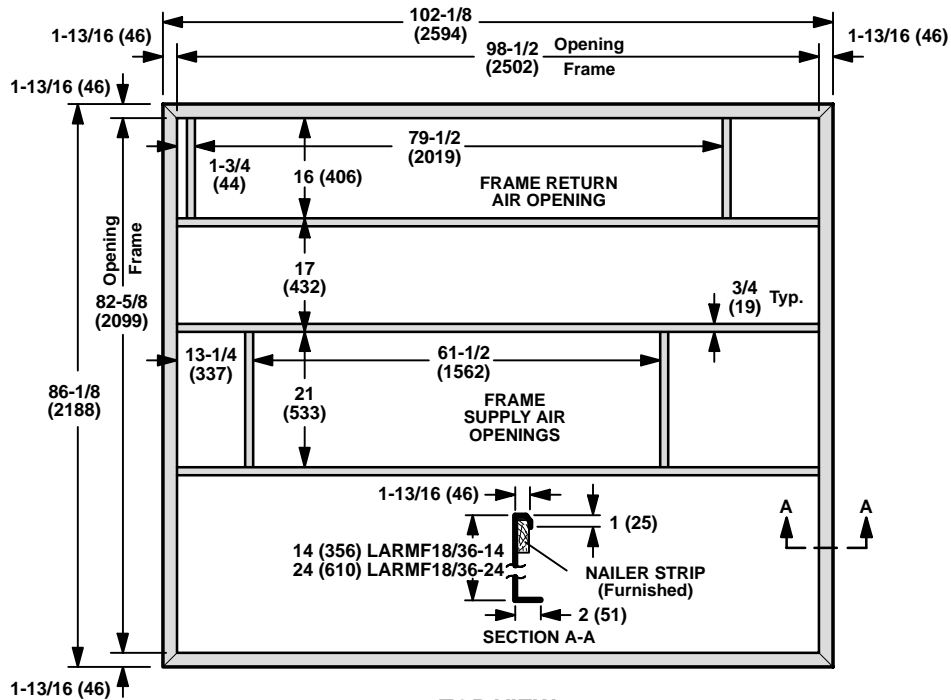
Base Unit — The standard unit with NO OPTIONS.

Max. Unit — The standard unit with ALL OPTIONS Installed. (Economizer, Power Exhaust Fans, High Input Heating and Controls)



ACCESSORY DIMENSIONS - INCHES (MM)

LARMF18/36-14 and LARMF18/36-24 Roof Mounting Frames with Double Duct Opening For -300H & -360 Units



NOTE — Roof deck may be omitted within confines of frame.

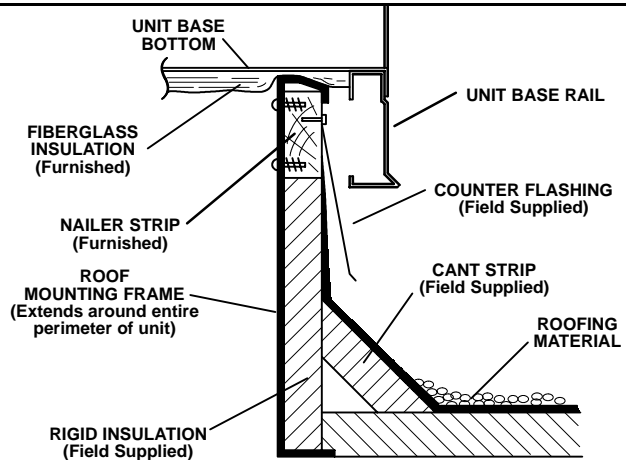
ROOF MOUNTING FRAME SPECIFICATIONS

Roof Mounting frame is rigid enough to be spanned over its entire length or cantilevered if supported on both sides of center of gravity.

Roof Mounting Frame	LARMF18/36-14	LARMF18/36-24
□ Moment of inertia (I) (in. ⁴) (cm ⁴)	39 (1634)	160 (6639)
□ Section modulus $\frac{I}{C}$ (in. ³) (cm ³)	5.5 (90)	13.1 (512)
Frame weight. (lb/ft) (kg/m) of length	5.5 (8.2)	8.5 (12.7)
Design strength (psi) (kPa)	20,000 (137,900)	

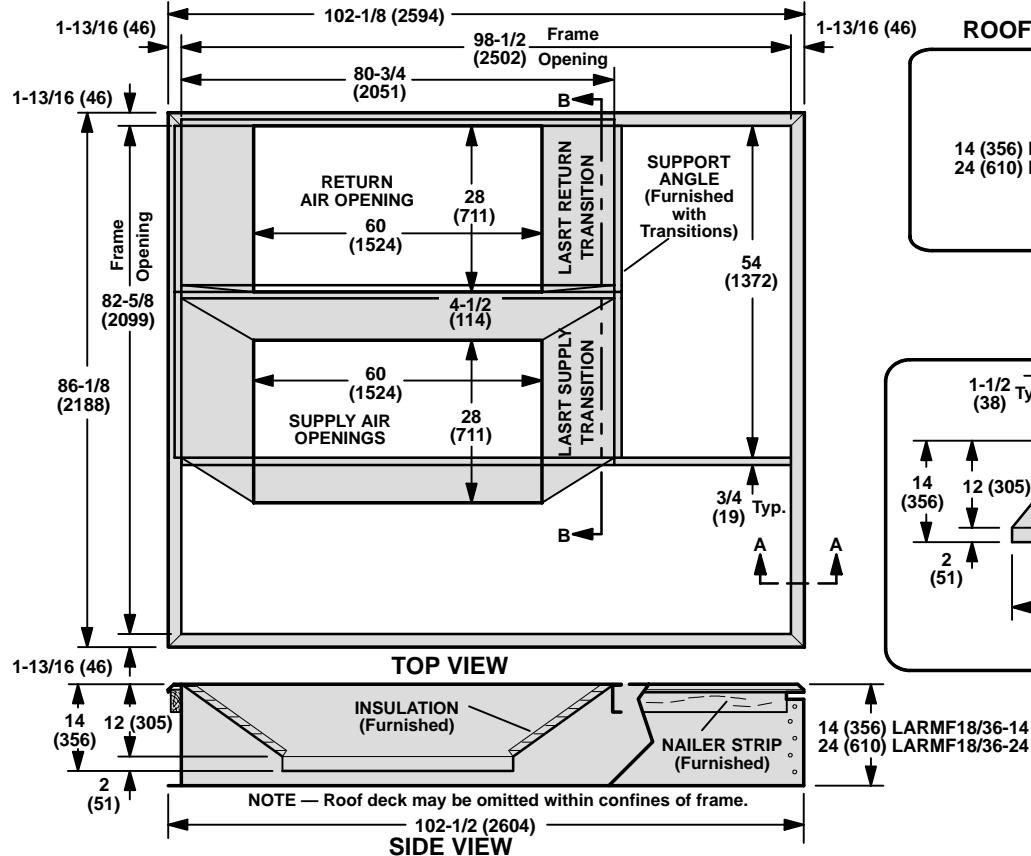
□ Includes both sides of frame.

Typical Flashing Detail for LARMF18/36 Roof Mounting Frames

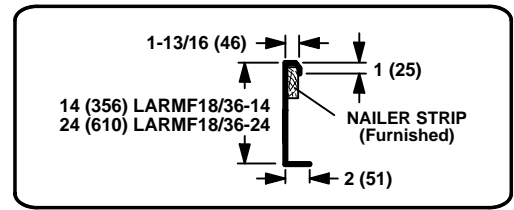


ACCESSORY DIMENSIONS - INCHES (MM)

LARMF18/36-14 and LARMF18/36-24 Roof Mounting Frames With LASRT36 Supply & Return Air Transitions For LARTD26 & LAFD36 Ceiling Diffusers

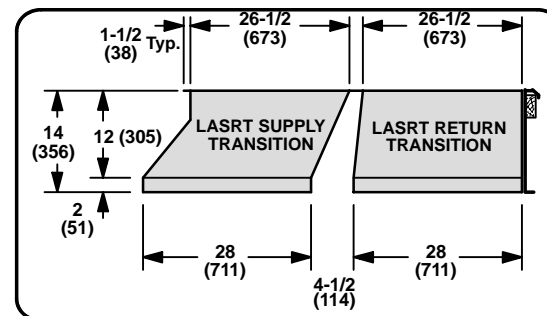


ROOF MOUNTING FRAME DETAIL



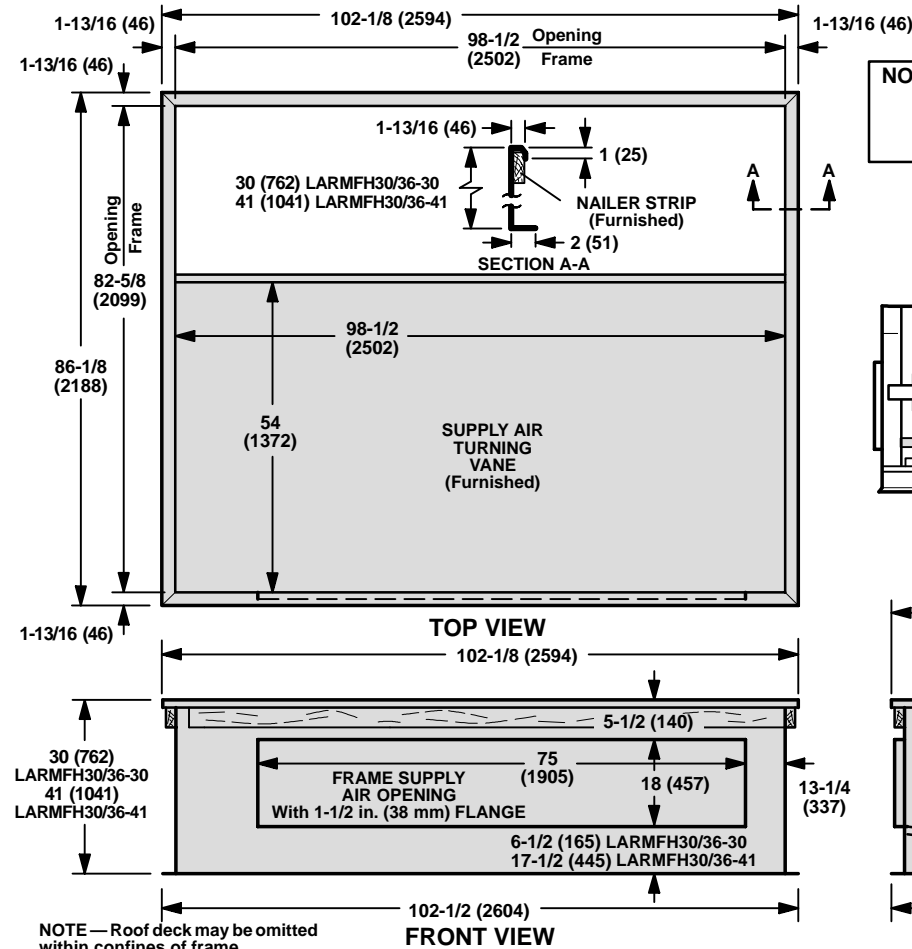
SECTION A-A

TRANSITION DETAIL

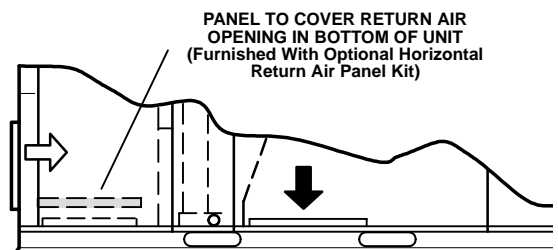


SECTION B-B

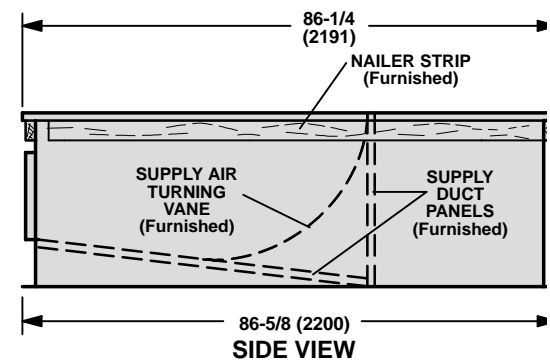
LARMFH30/36-30 & LARMFH30/36-41 Horizontal Roof Mounting Frames (Requires Optional Horizontal Return Air Panel Kit)



NOTE - LARMFH30/36-30 is designed for horizontal discharge when unit is mounted on a slab. LARMFH30/36-41 is designed for horizontal discharge when unit is mounted on a rooftop.

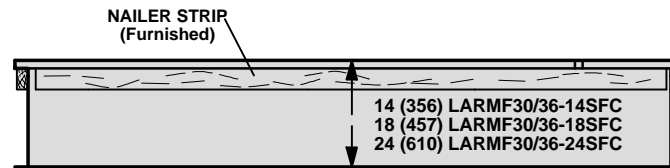


SIDE VIEW (PACKAGED UNIT)



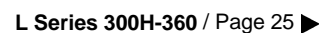
SIDE VIEW

LARMF30/36-14SFC, LARMF30/36-18SFC & LARMF30/36-24SFC Full Perimeter Roof Mounting Frames



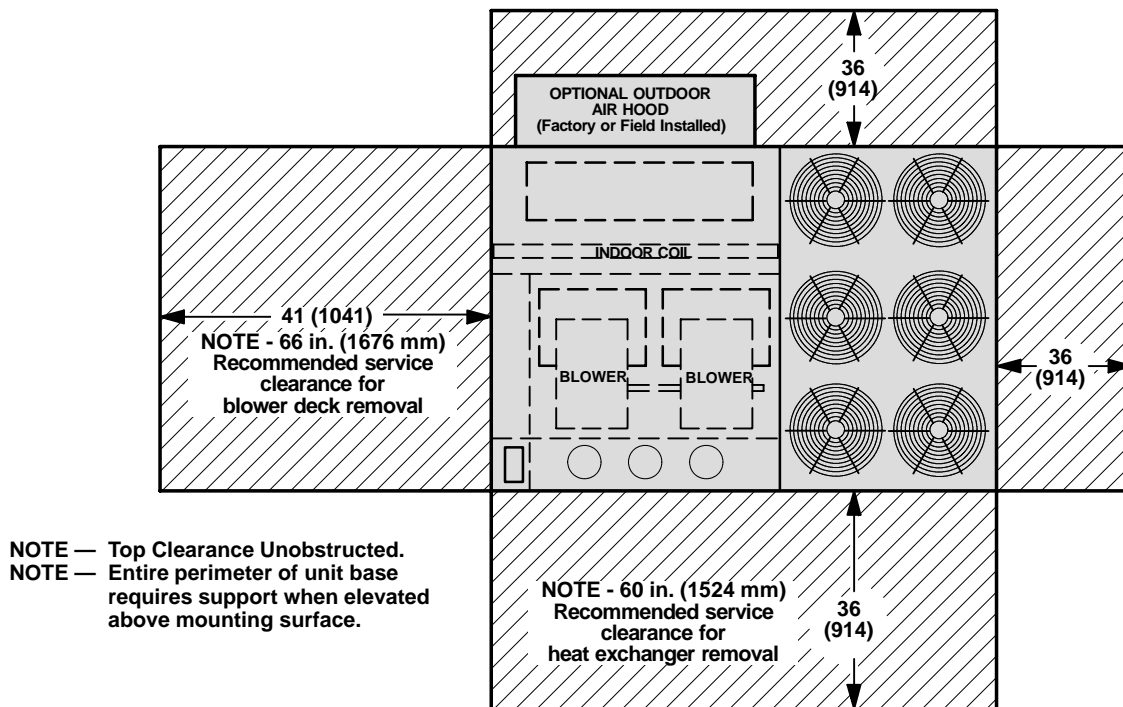
SIDE VIEW

Combination Ceiling Supply And Return Diffusers



INSTALLATION DIMENSIONS - INCHES (MM)

Unit With Economizer



Unit With Horizontal Gravity Exhaust Dampers

