SUBMITTAL DATA

EQUIPMENT: York Packaged Roof Top Units

TAGS: RTU-1 thru 6
Roof Curbs

PROJECT: Goodwill Retail Center
Chenal Parkway at Kirk Road
LOCATION: Little Rock, Arkansas

ENGINEER:

CONTRACTOR:

DATE: 1/21/2025

SUBMITTED BY: Forrest Moseley
forrest@airetechcorp.com

Date
01/28/2025
Project Name
Goodwill Retail Center Chenal
Project Number
Client / Purchaser

Submittal Summary Page

Qty	Tag #	Model # / Material #	Description
6	RTU-1 thru 6	KYG12E4B3AA6A122A1	10 Ton, Johnson Controls Core Single Packaged R-454B Air Conditioner, 12.0 EER, Gas Heat, 220 MBH Two Stage Input Medium Heat Aluminized Gas, 460-3-60 • Refrigerant Detection System • VFD IntelliSpeed • Medium Static Belt Drive Blower • Smart Equipment Controller including Discharge Air, Return Air, and Outdoor Air Temperature Sensors. • Non-fused Disconnect (60 Amp) • Return Air Smoke Detector • Microchannel All Aluminum Condenser Coil, Copper tube/Aluminum fin Evaporator Coil • Louvered Hail Guards
6	RTU-1 thru 6	2EE04711524	Enhanced Economizer, DB, Vertical Flow, Large Footprint (with Barometric Relief)
6	RTU-1 thru 6	1RC0459	Curb Rigid 24" (610 mm) Large Footprint
6	RTU-1 thru 6	2PM04700224	Phase Monitor Kit
6	RTU-1 thru 6	S1-CTSDTS	CTS Wired Temperature Sensor for thermostat | Duct *Also works for LX Series
6	RTU-1 thru 6	S1-TBSU306-S	Source 1 Branded LX Series | 3" Display | 3/4 Stage Heating | 2 Stage Cooling | (5+1+1) 7-day Programmable | Humidity On-Board

Equipment start-up and commissioning by a factory trained technician is recommended.
Contact your supplying distributor or sales representative for additional information & guidance.


WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

3-12.5 Core

Project Name: **Goodwill Retail Center Chenal** | Unit Model #: **KYG12E4B3AA6A122A1**

Quantity: **6** Tag #: **RTU-1 thru 6** | System: **KYG12E4B3AA6A122A1**

Cooling Performance

Total gross capacity	122.8	MBH
Sensible gross capacity	87.8	MBH
Total net capacity	116.9	MBH
Sensible net capacity	81.9	MBH
Efficiency (at ARI)	12.00	EER
Integrated eff. (at ARI)	14.80	IEER
Ambient DB temp.	95.0	°F
Entering DB temp.	77.6	°F
Entering WB temp.	64.4	°F
Evap Coil Leaving DB temp.	54.4	°F
Evap Coil Leaving WB temp.	52.5	°F
Unit Leaving DB temp.	55.9	°F
Unit Leaving WB temp.	53.1	°F
Leaving air temp dew point	51.10	°F
Power input (w/o blower)	8.40	kW
Sound power	87	dB(a)

Refrigerant

Refrigerant type	R-454B	
Sys1	5 lb	6 oz
Sys2	5 lb	10 oz

Gas Heating Performance

Entering DB temp.	65	°F
Heating output capacity (Max)	176.0	MBH
Supply air	3500	cfm
Heating input capacity (Max)	220	MBH
Leaving DB temp.	111.6	°F
Air temp. rise	46.6	°F
SSE	80.0	%
Stages	2	

Supply Air Blower Performance

Supply air	3500	cfm
Ext. static pressure	0.5	IWG
Addl. Unit Losses (Options/Accessories)	0.26	IWG
Blower speed	834	rpm
Max BHP of Motor (including service factor)	3.70	HP
Duct location	Bottom	
Motor rating	3.70	HP
Actual required BHP	1.85	HP
Power input	1.73	kW
Elevation	0	ft
Drive type	BELT	

Outside/Mixed Air

Outside Air cfm	450	cfm
Outside Air DB temp.	95	°F
Outsided Air WB temp.	78	°F
Outside Air RH	47.3	%
Return Air cfm	3050	cfm
Return Air DB temp.	75	°F
Return Air WB temp.	62	°F
Return Air RH	48.1	%

Electrical Data

Power supply	460-3-60	
Unit min circuit ampacity	25	A
Unit min over-current protection	30	A
Unit max over-current protection	30	A

Dimensions & Weight

Hgt	55 in	Len	87 in	Wth	62 in
Weight with factory installed options				1062	lb

Clearances

Right	18 in	Front	48 in	Rear	36 in
Top	72 in	Bottom	1 in	Left	12 in

Note: Please refer to the tech guide for listed maximum static pressures

Unit Features

- Refrigerant Detection System (RDS) is Factory Installed
- 220 MBH Two Stage Input Medium Heat Aluminized Gas
- Unit Cabinet Constructed of Powder Painted Steel, Certified At 750 Hours Salt Spray Test (ASTM B-117 Standards)
- Either supply and/or return can be field converted from vertical to horizontal configuration without cutting panels.
- Full perimeter base rails with built in rigging capabilities
- Scroll Compressors
- Medium Static Belt Drive Blower
- Solid Core Liquid Line Filter Driers
- Unit Ships with 2" Throwaway Filters
- Replacement Filters: 4 - (20" x 20"). Unit accepts 2" or 4" wide filters.
- Single Point Power Connection
- Short Circuit Current: 5kA RMS Symmetrical
- Non-fused Disconnect (60 Amp)
- Microchannel All Aluminum Condenser Coil, Copper tube/Aluminum fin Evaporator Coil

10 Ton

- All units are manufactured at an ISO 9001 registered facility and each rooftop is completely computer-run tested prior to shipment.

Standard Unit Controller

- On-Board Diagnostic and Fault Code display
- Smart Equipment Control Board
- An Integrated Low-Ambient Control, Anti-Short Cycle Protection, Lead-Lag, Fan On and Fan off Delays, Low Voltage Protection, Allows all units to operate in the cooling mode down to 0 °F outdoor ambient without additional components or intervention.
- Safety Monitoring - Monitors the high and low-pressure switches, the freezestats, the gas valve, if applicable, and the temperature limit switch on gas and electric heat units. The unit control board will alarm on ignition failures, safety lockouts and repeated limit switch trips.

BAS Controller

- Smart Equipment Controller including Discharge Air, Return Air, and Outdoor Air Temperature Sensors.

Warranty

- One (1) Year Limited Warranty on the Complete Unit
- Five (5) Year Warranty - Compressors
- Ten (10) Year Warranty - Aluminized Steel Tubular Heat Exchangers

Project Name: **Goodwill Retail Center Chenal** Unit Model #: **KYG12E4B3AA6A122A1**

Quantity: **6** Tag #: **RTU-1 thru 6** System: **KYG12E4B3AA6A122A1**

Additional Electrical Data		
Power supply	460-3-60	
Unit min circuit ampacity	25	A
Unit max over-current protection	30	A
Min Voltage	432	V
Max Voltage	504	V
Comp #1 RLA	7.1	
Comp #1 LRA	69.0	
Comp #2 RLA	7.1	
Comp #2 LRA	69.0	
Indoor Mtr Voltage	460-3-60	
Indoor Mtr FLA	6.1	
Outdoor Mtr Qty	1	
Outdoor Fan Voltage	460-3-60	
OD Fan Mtr FLA (ea.)	2.9	
Power Ex Mtr Qty (if applicable)	2	
Powered Ex Voltage(if applicable)	460-3-60	
Power Ex Mtr FLA (ea) (if applicable)	0.5	
Combustion Mtr Qty	1	
Combustion Motor Voltage	208/230-1-60	
Combustion Mtr FLA (ea)	0.5	

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RDS SUMMARY (Lowest Elevation Floor Being Served)

Refrigerant Detection System (RDS) Not Required.

Room with the Lowest Discharge Height	0	ft
Smallest RDS Required Room Area on the Lowest Floor	N/A	ft²
Min. Allowed Smallest Room Area without an RDS	N/A	ft²
Total Applied Area	0	ft²
Min. Allowed Total Applied Area	N/A	ft²
Min. CFM when RDS is enabled	N/A	cfm
Min. System Exhaust (External to Unit)	N/A	cfm
Total Largest Circuit Refrigerant Charge	5.625	lb

JOBSITE INPUTS

R454B is a mildly flammable refrigerant. Unit installation must be in compliance with UL 60335-2-40 and installation and operations manual available on Solution Navigator, DS Solutions app and shipped with the unit.

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Quantity: **6** Tag #: **RTU-1 thru 6** System: **KYG12E4B3AA6A122A1**

Factory Installed Options

KYG12E4B3AA6A122A1

Equipment Options		Option(s) Selected
Product Category:	**KY**	Johnson Controls Core Single Packaged R-454B Air Conditioner
Heat Type:	**G**	Gas Heat
Nominal Cooling Capacity:	**12**	10 Ton 12.0 EER
Heat Size:	**E**	220 MBH Two Stage Input Medium Heat Aluminized Gas
Voltage:	**4**	460-3-60
Airflow:	**B**	Medium Static Belt Drive Blower
Airflow Options:	**3**	VFD IntelliSpeed
Coil Options:	**A**	Microchannel All Aluminum Condenser Coil, Copper tube/Aluminum fin Evaporator Coil
Controls:	**A**	Smart Equipment Controller including Discharge Air, Return Air, and Outdoor Air Temperature Sensors.
Sensor Options:	**6**	Refrigerant Detection System Return Air Smoke Detector
Economizer / Damper:	**A**	
Convenience Outlet:	**1**	
Electrical Options:	**2**	Non-fused Disconnect (60 Amp)
Cabinet Options:	**2**	Louvered Hail Guards
Special Options:	**A**	
Product Generation:	**1**	

Field Installed Accessories

- ○ 1BD0410 - Burglar Bars (Large Footprint) (32.0 lbs)
- ○ 1CV0404 - Concentric Diffuser,Flush Mount,18X28
- ○ 1CV0405 - Concentric Diffuser,Flush Mount,18X32
- ○ 1CV0413 - Concentric Diffuser,Side Discharge,18X28
- ○ 1CV0414 - Concentric Diffuser,Side Discharge,18X32
- ○ 1CV0420 - Concentric Diffuser,Specialty,24X24
- ○ 1CV0426 - Concentric Diffuser,Specialty,24X24
- ○ 1FA0416 - Manual O.A. Damper with Hood Kit- 0% to 25% Capability Large Footprint 2-position (25.0 lbs)
- ○ 1FA0418 - Manual OA Damper Large Footprint 0-100% 2-position (25.0 lbs)
- ○ 1FE0416 - Flue Extension Kit (18.1 lbs)
- ○ 1HA0455 - High Altitude Kit for Natural Gas - For applications between 2000 and 10,000 feet altitude (1.5 lbs)
- ○ 1HA0459 - High Altitude Kit for Propane - For applications between 2000 and 10,000 feet altitude (1.9 lbs)
- ○ 1HG0424 - Hail Guard Kit (Large Footprint Tall Cabinet) (50.0 lbs)
- ○ 1HS0401 - Heat Shield (0.6 lbs)
- ○ 1NP0457 - Propane Conversion Kit (1.9 lbs)

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Quantity: **6** Tag #: **RTU-1 thru 6** System: **KYG12E4B3AA6A122A1**

- ○ 1RC0457 - Curb Rigid 14" (356 mm) Large Footprint (135.0 lbs)
- ● 1RC0459 - Curb Rigid 24" (610 mm) Large Footprint (135.0 lbs)
- ○ 1TB0402 - Large Footprint Thru The Base Electrical & Thru The Curb Gas (1.0 lbs)
- ○ 1TB0404 - Large Footprint Thru The Base Electrical & Gas (1.0 lbs)
- ○ 1WS0416 - Stacking Bracket (230.0 lbs)
- ○ 2EC0401 - Kit, Single Enthalpy Field Installed (1.0 lbs)
- ○ 2EE04706824 - Economizer, DB, Vertical Flow, Large Footprint (with Barometric Relief) (96.0 lbs)
- ● 2EE04711524 - Enhanced Economizer, DB, Vertical Flow, Large Footprint (with Barometric Relief) (96.0 lbs)
- ○ 2AQ04700524 - CO^2 Space Sensor - Wall Mount Accessory (5.0 lbs)
- ○ 2AQ04700624 - CO^2 Unit Mount Accessory (4.6 lbs)
- ○ 2PE04704346 - Power Exhaust Vert Flow Large Footprint 460V 3-ph (38.8 lbs)
- ● 2PM04700224 - Phase Monitor Kit (1.0 lbs)
- ○ 2SD04701424 - Smoke Detector - Return (Downflow Only) (12.0 lbs)
- ○ PCCP100PK012LO - One Year Labor Only AC/HP PKG 8.5 to 10T
- ○ PCCP100PK012PL - One Year Renewable Parts & Labor AC/HP PKG 8.5 to 10T
- ○ PCCP100PK060PL - 5 Year Parts and Labor AC/HP PKG 8.5 to 10T
- ○ PCCP100PK060PO - 5 Year Parts Only (No Compressor Coverage) AC/HP PKG 8.5 to 10T
- ○ S1-03102529000 - Non-Networking Wall Sensor – Allows remote sensing and control from single or multiple zones. (0.2 lbs)
- ○ S1-03102529004 - Non-Networking Wall Sensor with Over-ride button – Allows remote sensing and control from single or multiple zones. Override allows setpoint to be overridden for 2 hour time period. (0.2 lbs)
- ○ S1-03102529100 - Non-Networking Wall Sensor – Allows remote sensing and control from single or multiple zones. (0.0 lbs)
- ○ S1-03102529104 - Non-Networking Wall Sensor with Over-ride button – Allows remote sensing and control from single or multiple zones. Override allows setpoint to be overridden for 2 hour time period. (0.2 lbs)
- ○ S1-03102529106 - Non-Networking Wall Sensor with Setpoint Adjustment and Over-ride Button – Allows remote sensing and control from single or multiple zones. Allows setpoint to be adjusted ± 5º F. Override allows setpoint to be overridden for 2 hour time period. (0.2 lbs)
- ○ S1-ADDWIRE - Add-a-Wire allows 5-wire thermostats to use only 4 wires. (0.3 lbs)
- ● S1-CTSDTS - CTS Wired Temperature Sensor for thermostat | Duct *Also works for LX Series (0.3 lbs)
- ○ S1-CTSHTS - CTS Hardwired Temperature Sensor for CTS Thermostats *Works with LX series as well (0.2 lbs)
- ○ S1-CTSPLATE - Wall Plate for CTS Thermostats *Also works for new platform LX series models below (0.0 lbs)
- ○ S1-CTSWFTS - CTS Temperature Sensor with WiFi for CTS Thermostats *Also works with LX Series (0.1 lbs)
- ○ S1-LXLOCK - Locking Ring For LX-Series Thermostats (0.4 lbs)
- ○ S1-LXPLATE - Wall Plate For LX-Series Thermostats (0.0 lbs)
- ○ S1-LXWFM - For LX Series Thermostats - WiFi Communication (0.1 lbs)
- ○ S1-MP-PRTKIT-0P - MAP (Multiple Access Portal) Gateway Kit- Replacement MAP gateway protective case, lanyard and communication cable. Use only to replace worn or damaged components. (0.3 lbs)
- ○ S1-MP-STAFBA-0 - Field Bus Adapter (Includes RJ-12 to 4-position Terminal Block Adapter. Used for interfacing directly to MS/TP Field Bus) (1.0 lbs)
- ○ S1-MP-STAKIT-0 - Stationary Cradle Only (Includes mounting bracket and field bus adapter) (0.1 lbs)
- ○ S1-MP-STAKIT-0H - Stationary Cradle Kit (Includes mounting bracket, field bus adapter, and 100-240 VAC line voltage power supply) (1.0 lbs)
- ○ S1-NSB8BHN041-0 - Wall Temperature and 3% Relative Humidity Combined Sensor, No Display, WHITE, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BHN043-0 - Wall Temperature and 3% Relative Humidity Combined Sensor, No Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BHN141-0 - Wall Temperature and 3% Relative Humidity Combined Sensor, Warmer/Cooler Display, WHITE, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BHN143-0 - Wall Temperature and 3% Relative Humidity Combined Sensor, Warmer/Cooler Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BHN240-0 - Zone Temperature Sensor. +3% RH, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, WITH JCI LOGO (0.4 lbs)
- ○ S1-NSB8BHN241-0 - Zone Temperature Sensor. +3% RH, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, NO LOGO (0.4 lbs)
- ○ S1-NSB8BHN243-0 - Wall Temperature and 3% Relative Humidity Combined Sensor, Full Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BPN240-0 - Wall Temperature and 2% Relative Humidity Combined Sensor, Full Display, WHITE, JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BPN241-0 - Wall Temperature and 2% Relative Humidity Combined Sensor, Full Display, WHITE, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BPN243-0 - Wall Temperature and 2% Relative Humidity Combined Sensor, Full Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs)

Project Name: **Goodwill Retail Center Chenal** Unit Model #: **KYG12E4B3AA6A122A1**

Quantity: **6** Tag #: **RTU-1 thru 6** System: **KYG12E4B3AA6A122A1**

- ○ S1-NSB8BTN041-0 - Zone Temerature Sensor Only, NO DISPLAY, NO SETPOINT CONTROL , WHITE, NO LOGO (0.4 lbs)
- ○ S1-NSB8BTN141-0 - Zone Temerature Sensor Only, NO DISPLAY, WARMER/COOLER TEMP. ADJUSTMENT , WHITE, NO LOGO (0.4 lbs)
- ○ S1-NSB8BTN143-0 - Wall Temperature Sensor, Warmer/Cooler Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-NSB8BTN240-0 - Zone Temerature Sensor Only, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, WITH JCI LOGO (0.4 lbs)
- ○ S1-NSB8BTN241-0 - Zone Temerature Sensor Only, LCD DISPLAY, LOCAL SETPOINT CONTROL , WHITE, NO LOGO (0.4 lbs)
- ○ S1-NSB8BTN243-0 - Wall Temperature Sensor, Full Display, BLACK, NO JCI LOGO, NS8000 Series (0.4 lbs)
- ○ S1-SE-COM2001-0 - Field Installed Communication Card for Simplicity SE control. Can be field configurable for BACnet, N2 or ModBUS MSTP, R454B (1.0 lbs)
- ○ S1-TBPU435-S - Source 1 Branded CTS Series | 4.3" Display | 3/4 Stage Heating | 2 Stage Cooling | (5+1+1) 7-day Programmable | WiFi On-Board (0.7 lbs)
- ○ S1-TBPU436-S - Source 1 Branded CTS Series | 3/4 Stage Heating | 2 Stage Cooling | (5+1+1) 7-day Programmable | WiFi and Humidity On-Board (0.7 lbs)
- ○ S1-TBSU232-S - Source 1 Branded LX Series | 2.3" Display | 2 Stage Heating | 2 Stage Cooling | 7-day Programmable (0.2 lbs)
- ○ S1-TBSU304-S - Source 1 Branded LX Series | 3" Display | 2 Stage Heating | 2 Stage Cooling | Non-Programmable | Humidity On-Board (1.0 lbs)
- ○ S1-TBSU305-S - Source 1 Branded LX Series | 3" Display | 3/4 Stage Heating | 2 Stage Cooling | (5+1+1) 7-day Programmable (1.0 lbs)
- ● S1-TBSU306-S - Source 1 Branded LX Series | 3" Display | 3/4 Stage Heating | 2 Stage Cooling | (5+1+1) 7-day Programmable | Humidity On-Board (1.0 lbs)
- ○ S1-TEC3630-14-000 - 7 DAY PROGRAMMABLE THERMOSTAT, OPTIONAL MSTP OR N2 COMMUNICATION, RTU/HEAT PUMP WITH ECON,FULL COLOR, WHITE, JCI Logo (0.8 lbs)
- ○ S1-TL-CWCVT-0 - CWCVT Commissioning Tool (Connected Workflow Converter) (1.0 lbs)
- ○ S1-YK/AN-RSO-ACI - Non-Networking Wall Sensor with Setpoint Adjustment and Over-ride Button – Allows remote sensing and control from single or multiple zones. (1.0 lbs)
- ○ S1-YK-MAP1810-0P - MAP (Multiple Access Portal) Gateway-For use with SimplicitySE Control. (0.2 lbs)
- ○ S1-YK-MAP1810-0S - Stationary MAP Gateway (Includes MAP Gateway, Field Bus Adapter, Mounting Bracket and 100 to 240 VAC Power Supply). US-compatible counties. (1.9 lbs)

3-12.5 Core

Project Name: **Goodwill Retail Center Chenal**

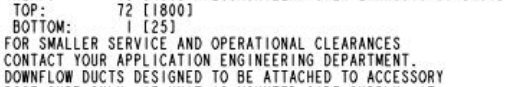
Unit Model #: **KYG12E4B3AA6A122A1**

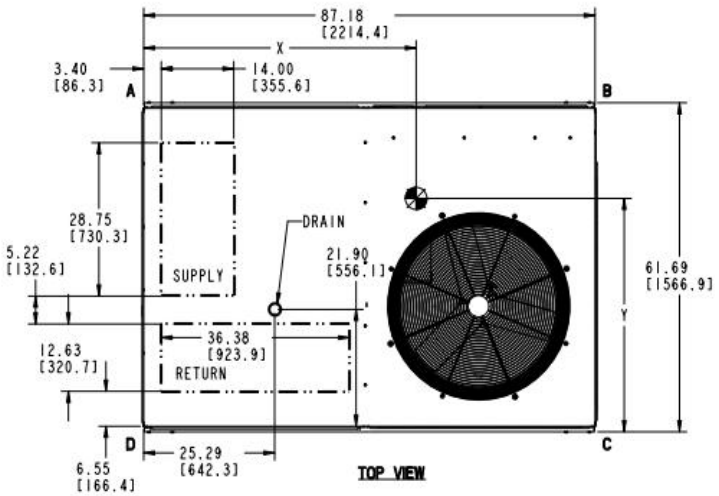
Quantity: **6** Tag #: **RTU-1 thru 6**

Submittal

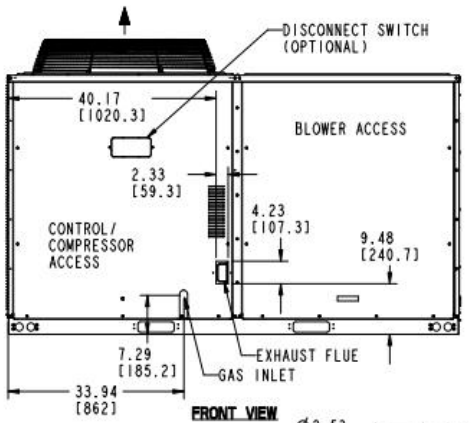
NOTES:
1. FOR OUTDOOR USE ONLY.
2. WEIGHTS SHOWN ARE FOR COOLING ONLY UNITS.
3. RECOMMENDED MIN. CLEARANCES:
   RIGHT SIDE: 18 [450] W/SIDE CONDENSATE DRAIN: 24 [600]
   LEFT SIDE: 12 [300] W/PIGTAIL: 18 [450]
   FRONT: 48 [1200]
   REAR: 18 [450] W/ECONOMIZER/POWER EXHAUST: 36 [900]
   TOP: 72 [1800]
   BOTTOM: 1 [25]
4. FOR SMALLER SERVICE AND OPERATIONAL CLEARANCES CONTACT YOUR APPLICATION ENGINEERING DEPARTMENT.
5. DOWNFLOW DUCTS DESIGNED TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY. IF UNIT IS MOUNTED SIDE SUPPLY, IT IS RECOMMENDED THAT THE DUCTS ARE SUPPORTED BY CROSS BRACES, AS DONE ON ACCESSORY ROOF CURBS.
6. MINIMUM CONDENSATION TRAP HEIGHT SHALL BE 1.5 TIMES THE LOWEST NEGATIVE STATIC.
7. DIMENSIONS IN [ ] ARE IN MILLIMETERS OR KILOGRAMS.
8. OPTIONAL COIL GUARDS, GAS HEAT, DISCONNECT SWITCH SHOWN.
9. TOP PANEL EMBOSSMENTS NOT SHOWN FOR DIMENSION CLARITY.
10. HEAT EXCHANGER IS TYPICAL OF HIGH GAS HEAT OPTION.

TONNAGE	UNIT	OPERATING WEIGHT (LBS) (BASE UNIT)	CENTER OF GRAVITY LOCATION (BASE UNIT)		4 POINT CORNER LOADS (LBS) (BASE UNIT)			
			X	Y	A	B	C	D
10	KL	955 [433.2]	45.8 [1163.3]	35.4 [899.2]	258.2 [117.1]	287.1 [130.2]	215.7 [97.8]	194.0 [88.0]
12.5	KL	980 [444.5]	44 [1117.6]	35.4 [899.2]	276.6 [125.5]	283.0 [128.4]	212.6 [96.4]	207.8 [94.3]
10	KY	902 [409.1]	46.8 [1189]	35.5 [902]	238.6 [108.2]	277.8 [126]	207.3 [94.1]	178.1 [80.8]

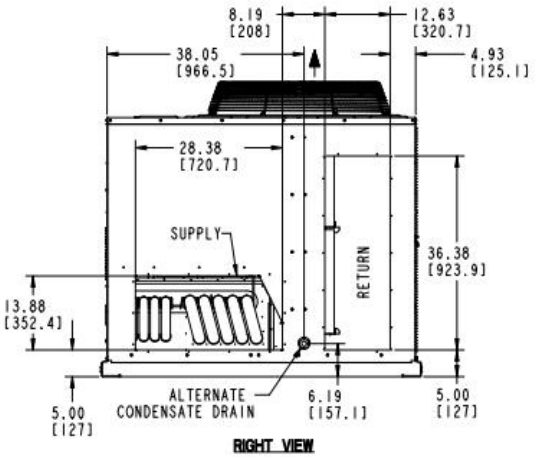




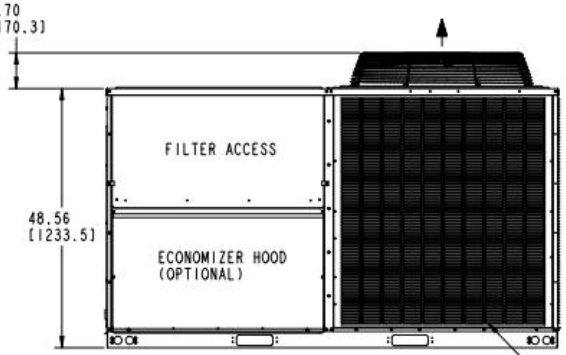
TOP VIEW



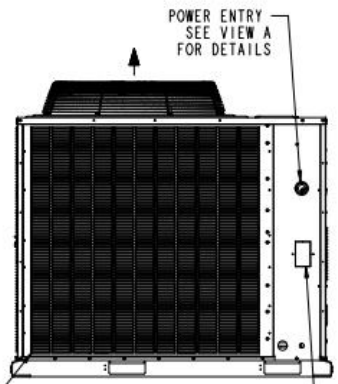
FRONT VIEW



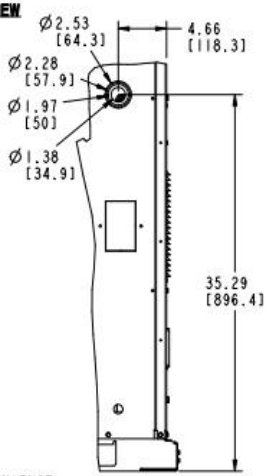
RIGHT VIEW



REAR VIEW



LEFT VIEW



VIEW A
SCALE 0.180

REV LEV	DATE	REVISION RECORD	EC NO	DR	CK	ENG
A	04-18-24	NEW DRAWING (FROM 5901140)	101151	RCH	MLP	BV

THIRD ANGLE PROJECTION

	NAME	DATE
DRN	R.HADDAD	04-18-24
CHK	M.PHAM	04-18-24
ENG	D.VARVA	04-18-24
MFG		

SCALE 0.090

DRAWING PER ASME Y14.5-2009
TOLERANCES UNLESS OTHERWISE SPECIFIED:
ONE PLACE DECIMAL = ± .1
TWO PLACE DECIMAL = ± .03
THREE PLACE DECIMAL = ± .010
ANGLES = ± 2°
DIMENSIONS ARE IN INCHES
DO NOT SCALE PRINT

SUBMITTAL DATA DWG, CORE
1 ODF, 48.5" CAB

JOHNSON CONTROLS
UNITARY PRODUCTS GROUP
NORMAN, OK 73069

SAFETY AND KEY CHARACTERISTICS PER BE-PDP-STD-01
MATERIAL
TYPE NOT APPLICABLE
ENG SPEC NOT APPLICABLE
SIZE
DWG NO. 6504492 REV A
PART NO.
SHT NO 1 OF 1

Table 20: KY12 physical data

Component		Model			
		KYG12			KYE12
Nominal tonnage		10			10
AHRI cooling performance	Gross capacity @ AHRI A point (BTU)	120,000			120,000
	AHRI net capacity (BTU)	117,000			117,000
	EER	12.0			12.2
	IEER IntelliSpeed	14.8			15.0
	Nominal cfm	3,300			3,300
	System power (kW)	9.6			9.6
	Refrigerant type	R-454B			R-454B
	Refrigerant charge (lb-oz)				
	System 1	5-6			5-6
	System 2	5-10			5-10
	Refrigerant charge MagnaDRY[1] option (lb-oz)				
	System 1	6-0			6-0
	System 2	5-10			5-10
AHRI heating performance	Heating options	D	E	F	—
	Heating model	Low	Med	High	—
	1st stage heat input (kBTU)	125	176	200	—
	2nd stage heat input (kBTU)	180	220	250	—
	1st stage heat output (kBTU)	100	141	162	—
	2nd stage heat output (kBTU)	144	176	203	—
	AFUE %	—	—	—	—
	Steady state efficiency (%)	80	80	81	—
	No. burners	4	5	5	—
	No. stages	2	2	2	—
	Temperature rise range (°F)	27-44	33-54	37-62	—
	Gas limit setting (°F)	150	140	160	—
	Gas piping connection (in.)	3/4	3/4	3/4	—
Dimensions (in.)	Length	87.2			87.2
	Width	61.7			61.7
	Height	55.3			55.3
Operating weight (lb)		1,008			902
Operating weightwith MagnaDRY (lb)		1,026			920
Compressors	Type	Scroll			Scroll
	Quantity	2			2
	Unit capacity steps (%)	50/100			50/100
Condenser coil data	Face area (sq ft)	24.9			24.9
	Rows	1			1
	Fins per in.	21			21
	Tube diameter (in./mm)	1.26/32			1.26/32
	Circuitry type	2-pass Microchannel			2-pass Microchannel
Evaporator coil data	Face area (sq ft)	11.1			11.1
	Rows	4			4
	Fins per in.	15			15
	Tube diameter	0.375			0.375
	Circuitry type	Intertwined			Intertwined
	Refrigerant control	TXV			TXV
Reheat option coil data	Face area (sq ft)	8.2			8.2
	Rows	1			1
	Fins per in.	23			23
	Tube diameter (in./mm)	1/25			1/25
Condenser fan data	Quantity of fans	1			1
	Fan diameter (in.)	30			30
	Type	Prop			Prop
	Drive type	Direct			Direct
	Quantity of motors	1			1
	Motor hp each	1 1/2			1 1/2
	No. speeds	1			1
	rpm	1,140			1,140
	Nominal total cfm	7,700			7,700

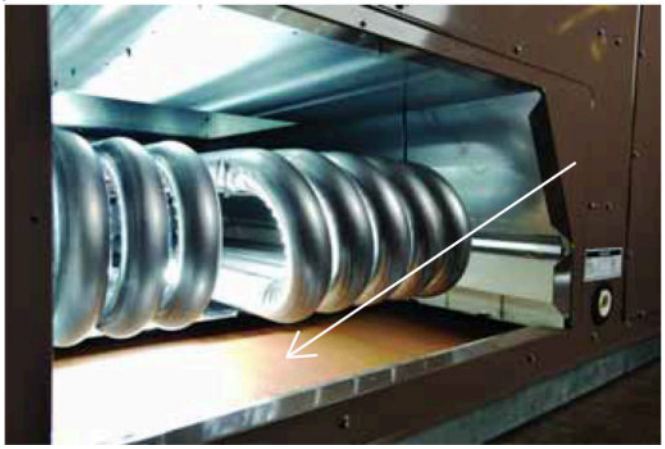
Table 20: KY12 physical data

Component		Model					
		KYG12			KYE12		
Nominal tonnage		10			10		
Evaporator fan data belt drive	Airflow option	A	B	C	A	B	C
	Quantity	1	1	1	1	1	1
	Fan size (in.)	15 x 15	15 x 15	15 x 15	15 x 15	15 x 15	15 x 15
	Type	Centrifugal			Centrifugal		
	Motor sheave	1VL44	1VP50	1VP56	1VL44	1VP50	1VP56
	Blower sheave	AK79	AK79	BK85	AK79	AK79	BK85
	Belt	A50	A50	BX52	A50	A50	BX52
	Motor max bhp, 3 phase	2.4	3.7	5.25	2.4	3.7	5.25
	rpm	1,725	1,725	1,725	1,725	1,725	1,725
	Frame size	56Y	56HZ	145TY	56Y	56HZ	145TY
Filters	Quantity - Size	4 - (20 x 20 x 2)[2]			4 - (20 x 20 x 2)[2]		

Note:

1. MagnaDRY reheat option is available in power supply of 208/230/460/575-3-60 options only.
2. 2 in. throwaway, standard, MERV 4 (Minimum Efficiency Reporting Value).

Figure 20: Bottom supply opening for side duct conversion

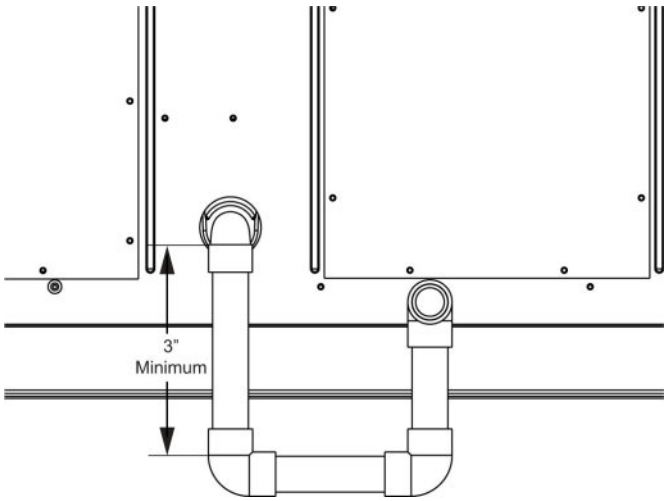


Condensate drain

A side condensate drain is provided to facilitate condensate piping. A condensate drain connection is available through the base pan for piping inside the roof curb. Trap the connection as shown in Figure 21. The trap and drain lines should be protected from freezing.

Plumbing must conform to local codes. Use a sealing compound on male pipe threads. Install condensate drain line from the 3/4 in. NPT female connection on the unit to an open drain.

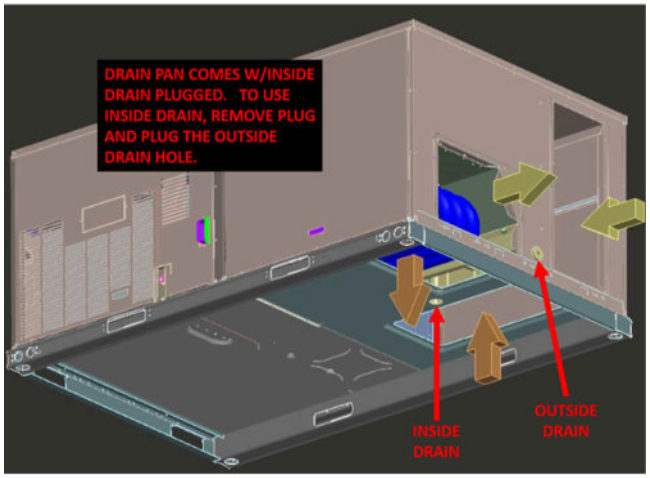
Figure 21: Condensate drain



The condensate drain connection locations are shown in Figure 22. The inside drain plumbing, which is not supplied, must conform to local code.

Note: The drain pan comes with the inside drain plugged. To use the inside drain remove the plug from the inside drain and plug the outside drain hole.

Figure 22: Drain connection locations



Compressors

The compressor used in this product is specifically designed to operate with R-454B refrigerant and cannot be interchanged.

The compressor also uses a refrigerant oil that is extremely hygroscopic, meaning it absorbs water readily. They can absorb 15 times as much water as other oils designed for HCFC and CFC refrigerants. Take all necessary precautions to avoid exposure of the oil to the atmosphere.

CAUTION

Do not leave the system open to the atmosphere. Unit damage could occur due to moisture being absorbed by the **refrigerant** in the system. This type of oil is highly susceptible to moisture absorption.

R-454B compressor lubricants are known to cause long term damage to some synthetic roofing materials.

Project Name: **Goodwill Retail Center Chenal**

Unit Model #: **KYG12E4B3AA6A122A1**

Quantity: **6** Tag #: **RTU-1 thru 6**

Field Installed Accessory Weights

Unit Accessory Weights

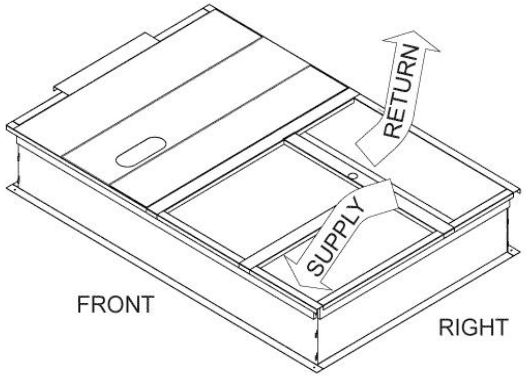
Unit Accessory	Weights (lbs.)
Vertical Flow Dry Bulb Economizer Small Footprint	63
Horizontal Flow Dry Bulb Economizer Small Footprint Short	96
Horizontal Flow Dry Bulb Economizer Small Footprint Short	75
Horizontal Flow Dry Bulb Economizer Small Footprint Tall	81
Horizontal Flow Dry Bulb Economizer Large Footprint Short	105
Horizontal Flow Dry Bulb Economizer Large Footprint Tall	102
Power Exhaust Vert Flow Small Footprint	38
Power Exhaust Vert Flow Large Footprint	38
Power Exhaust Horiz Flow Small Footprint	38
Power Exhaust Horiz Flow Large Footprint	38
Hail Guard Kit Small Short Factory Installed	19
Hail Guard Kit Small Tall Factory Installed	24
Hail Guard Kit Large Short Factory Installed	50
Hail Guard Kit Large Tall Factory Installed	50
Curb Rigid 14" Small Footprint	145
Curb Rigid 24" Small Footprint	135
Curb Rigid 14" Large Footprint	135
Curb Rigid 24" Large Footprint	135

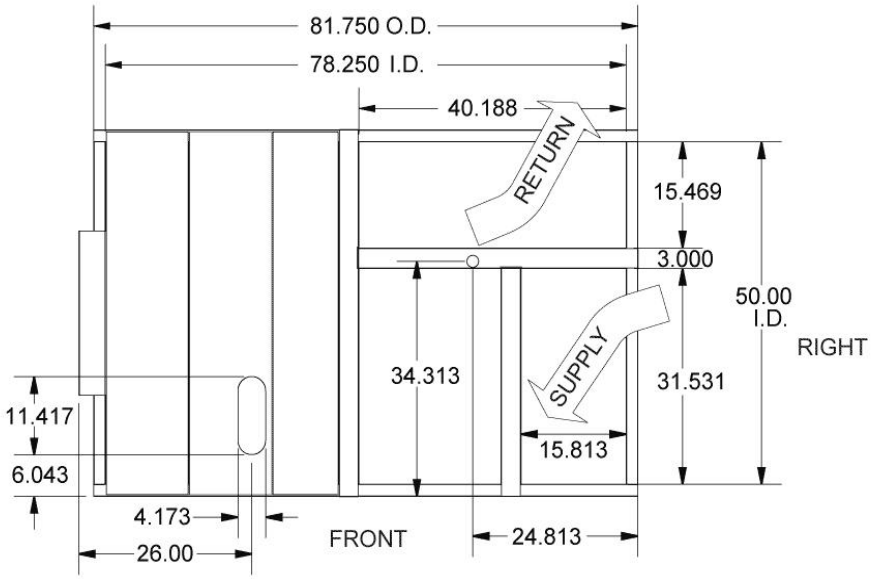
Project Name: **Goodwill Retail Center Chenal**

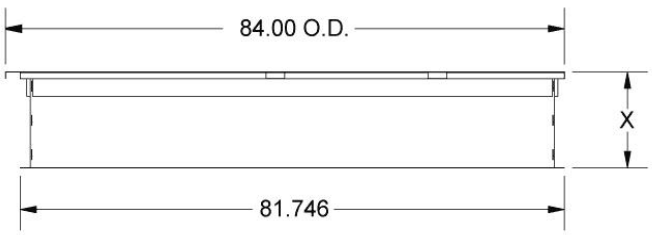
Unit Model #: **KYG12E4B3AA6A122A1**

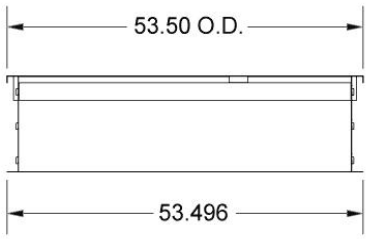
Quantity: **6** Tag #: **RTU-1 thru 6**

1RC0459 Roof Curb









1RC0457 X= 14" Height
1RC0459 X= 24" Height

Notes:
1. Sides, ends, unit locator and cross support are 18-G90. Deck pans, R/A & S/A supports are 20-G90.
2. Full perimeter wood nailer.
3. Insulated deck pans.

Unit Models used with 1RC0457, 1RC0459 Roof Curb

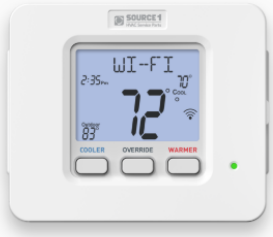
ZX08	ZY07
ZX09	ZY08
ZX12	ZY09
ZX14	ZY12

Date
01/22/2025
Project Name
Goodwill Retail Center Chenal
Project Number
Client / Purchaser

Control Summary Page

Control	Models and Unit Tags	
Standard Simplicity Control	KYG12E4B3AA6A122A1	RTU-1 thru 6

Commercial Thermostats



Commercial Models

- S1-TBSU304-S
- S1-TBSU305-S
- S1-TBSU306-S

The LX series of commercial thermostats can meet all your HVAC control needs from large multi-stage Gas Electric package units to small Heat-Pumps and air handlers. Its universal connections are a perfect fit for any commercial HVAC application.

Three built in password protected security levels and optional locking covers are available for higher grades of protection. With the optional locking cover in place all advanced buttons can be secured under the cover giving the end user only limited operation by 3 simple buttons temperature up, temperature down, and override. Under the front cover users will find more options for complete comfort and control. From here you can access the Fan, Program, and Outdoor temperature buttons. Additional advanced options and setup buttons are discreetly located under a concealed drop down door.

A random start feature is included to help keep the building owners peak usage low on equipment start up, dry contact closures or after a power failure. In the deluxe version of the LX's thermostat you can also average with up to 9 indoor remote sensors and have an "econ" terminal that will energize any time the LX thermostat is in the occupied mode.

All commercial LX thermostats offer simple as you want operation and a bi-color LED to indicate a cooling or heating demand. They also come switchable from auto-changeover to non-auto changeover, heat only or cool only. This intuitive design is a leader in the industry. Its features and pricing cannot be beat.

Standard Features

- Programmable
- Backlit display
- Adjustable backlight intensity
- Customizable scrolling marquee with English, Spanish, and French language support
- Customizable service alerts and error messages
- Switchable manual and auto changeover
- Up to 3 Occupied time periods per day
- Outdoor sensor ready
- Wireless accessories
- Service filter reminder
- UV lamp replacement reminder
- Aux heat indicator
- Random start
- Dual units (F or C)
- Dry contact input for condensate overflow

Technical Specifications

S1-TBSU306-S Thermostat Controllers

Power Requirements		20 - 30 VAC 50/60 Hz, 3.0 VA @ 24V nominal.
Output Rating		W1, W2, W3 = 0.2A max, 0.01A min, 3A inrush, 20 - 30 VAC Y1, Y2, G = 0.4A max, 0.01A min, 3A inrush, 20 - 30 VAC HUM, DEHUM, AUX = 0.1A max, 0.01A min, 3A inrush, 20 - 30 VAC
Local Temperature Sensor Type		Thermistor, NTC 10K @ 25˚C
Remote Temperature Sensor Type		Thermistor, NTC 10K @ 25˚C
Wire Size		16 AWG (100 ft max) to 24 AWG (36 ft max)
Temperature Adjustment Range		35˚ to 99˚ deg F (2˚ to 36˚ deg C)
Accuracy		35˚ to 65˚ deg F +/- 3˚ degF, greater than 65˚ to less than 80 degF +/- 2 degF, 80˚ to 99˚ deg F +/- 3˚ degF, greater than 99˚ to 104˚ deg F +/- 5˚ deg F
Humidity		+/- 10% RH from 30-70% RH, 50˚- 90˚ F
Deadband		Adjustable 1˚ to 6˚ deg first stage, 0˚ - 10˚ deg 2nd & 3rd stages
Ambient Conditions	Operating	35˚ to 104˚ deg F (2˚to 40˚ deg C), 5 - 95% RH non-condensing, 86˚ deg F max dew point
	Storage	-22˚ to 122˚ deg F (-30˚ to 50˚ deg C), 5-95% RH non-condensing, 86˚ deg F max dew point
Compliance		UL/cUL listed, file E107041, NEC Class 2
Dimensions		4.4" H x 5.2" W x 1.0"D
Shipping Weight		0.34 kg

THERMOSTATS & CONTROLLERS

THERMOSTAT GUARDS

ATK, A/LC, BA, TG, TG500, SGP-2 SERIES

DESCRIPTION

The **TG, ATK, A/LC, F29** and **BAPI-Guard Thermostat Guards** are used to enclose and protect wall thermostats and sensors against tampering, damage, and unauthorized adjustment of thermostat settings.

FEATURES

TG500 Series Vented Guards

- *Patented, double-wall construction*
- *Available in various sizes*
- *Clear plastic or painted steel*
- *Includes ring base, cover, lock and two keys*

BAPI-Guard Series Vented Guards

- *Clear low profile design*
- *All mounting, hardware included*
- *Key lock for vertical or horizontal mounting*
- *Two sizes to fit most applications*
- *Hammer tough*

ATK Series

- *Available in wire and cast aluminum*
- *Vertical and horizontal mounting*

A/LC Series

- *Clear Plastic*
- *Vented Design*

TG Series Vented Guards

- *One piece U.V. stabilized high impact molded polycarbonate housing*
- *Ring base is 16 gauge steel with white finish and four mounting holes*
- *Stainless steel fasteners secure housing to base*
- *Ventilation holes allow air to circulate freely*

F29 Series

- *Clear plastic, opaque, or metal housings*
- *18 gauge cover, 22 gauge frame on metal units*
- *Beige enamel finish available on metal units*
- *Solid or ring base*

SGP-2

- *Combination tumbler lock with resettalbe code*
- *Reduce your energy consumption*
- *Control your overhead cost*

SGP-201401

A/Locking Cover

BAPI-GUARD

TG510A

TG-1

ATK03

ATK04

ORDERING INFORMATION

Model	Size	Cover	Ring Base	Solid Wall Plate	Inside Dimensions Height in (cm)	Inside Dimensions Width in (cm)	Inside Dimensions Depth in (cm)	Outside Dimensions Height in (cm)	Outside Dimensions Width in (cm)	Outside Dimensions Depth in (cm)
TG510A1001	Small	Clear	Clear	Opaque	4.38 (11.13)	4.38 (11.13)	2.25 (5.72)	5.88 (14.94)	5.88 (14.94)	2.5 (6.35)
TG510D1005		Painted Steel (off-white)	Opaque		4.38 (11.13)	4.38 (11.13)	2.25 (5.72)	5.88 (14.94)	5.88 (14.94)	2.5 (6.35)
BA/BG2		Clear	Clear	—	4.8 (12.3)	2.9 (7.4)	1.43 (3.65)	6.75 (17)	4.75 (12)	2.1 (5.4)
ATK03		Wire	—		4.25 (10.80)	2.63 (6.66)	1.63 (4.12)	—	—	—
ATK04		Cast Aluminum			4.25 (10.80)	2.75 (6.98)	1.63 (4.12)			
F229-0225		Clear			3.88 (9.86)	3.5 (8.89)	2.5 (6.35)			
TG511A1000	Medium	Clear	Clear	Opaque	5.06 (12.85)	6.06 (15.39)	2.63 (6.68)	6.5 (16.51)	7.5 (19.05)	2.94 (7.47)
TG511D1004		Painted Steel (off-white)	Opaque		5.06 (12.85)	6.06 (15.39)	2.63 (6.68)	6.5 (16.51)	7.5 (19.05)	2.94 (7.47)
F29-0227		Clear	—	—	5.25 (13.34)	4.63 (11.76)	3.25 (8.26)			
TG-1	Large	Pearlescent	White	—	2.8 (7.1)	5.0 (12.7)	3.1 (7.9)	5.375 (13.7)	7.75 (19.7)	4.25 (10.8)
TG-37		Pearlescent	White		3.0 (7.6)	5.5 (14.0)	3.1 (7.9)	5.875 (14.9)	8.5 (21.6)	4.125 (10.5)
TG512A1009		Clear	Clear	Opaque	5.88 (14.94)	8.38 (21.29)	3.0 (7.62)	7.25 (18.42)	9.75 (24.77)	3.38 (8.59)
TG512D1003		Painted Steel (off-white)	Opaque		5.88 (14.94)	8.38 (21.29)	3.0 (7.62)	7.25 (18.42)	9.75 (24.77)	
BA/BG		Clear	Clear	—	6.9 (17.5)	4.7 (11.8)	1.75 (4.43)	9.45 (24)	9.45 (24)	3.0 (7.6)
ATK63		Wire	—	—	6.50 (16.51)	6.38 (16.21)	3.0 (7.62)	—	—	—
F29-0231		Clear			7.06 (17.93)	4.13 (10.49)	2.25 (5.72)			
F29-0143					6.36 (16.15)	3.5 (8.89)	3.25 (8.26)			
F29-0198					8.13 (20.65)	4.63 (11.76)	3.63 (9.22)			
F29-0220		Painted Steel (beige)			7.13 (18.11)	4.63 (11.76)	3.25 (8.26)			
F29-0222		Mounted			6.63 (16.84)	4.50 (11.43)	338 (8.58)			
F29-0192		Hinged			6.25 (15.88)	4.75 (12.07)	3.0 (7.62)			
F29-0193		Hinged			6.0 (15.24)	3.82 (9.7)	3.13 (7.95)			
SGP-201401		Clear	Clear	—	4.5 (11.43)	7.25 (18.42)	2.25 (5.72)	6 (15.24)	9.25 (23.5)	2.625 (6.67)
A/LOCKING-COVER		Clear		Opaque	6.36 (16.15)	5.63 (14.3)	3 (7.62)	6.625 (16.83)	5.9 (14.99)	3.25 (8.26)

Start-up sheet

START-UP & SERVICE DATA INSTRUCTION

COMMERCIAL PACKAGE UNITS

3.0 To 50.0 TONS

START-UP CHECKLIST

Date: _____

Job Name: _____

Customer Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Model Number: _____ Serial Number: _____

Qualified Start-up Technician: _____ Signature: _____

HVAC Contractor: _____ Phone: _____

Address: _____

Contractor's E-mail Address: _____

Electrical Contractor: _____ Phone: _____

Distributor Name: _____ Phone: _____

WARRANTY STATEMENT

Johnson Controls/Ducted Systems is confident that this equipment will operate to the owner's satisfaction if the proper procedures are followed and checks are made at initial start-up. This confidence is supported by the 30 day dealer protection coverage portion of our standard warranty policy which states that Johnson Controls/ Ducted Systems will cover parts and labor on new equipment start-up failures that are caused by a defect in factory workmanship or material, for a period of 30 days from installation. Refer to the current standard warranty policy and warranty manual for details.

In the event that communication with Johnson Controls/Ducted Systems is required regarding technical and/or warranty concerns, all parties to the discussion should have a copy of the equipment start-up sheet for reference. A copy of the original start-up sheet should be filed with the Technical Services Department.

The packaged unit is available in constant or variable air volume versions with a large variety of custom options and accessories available. Therefore, some variation in the startup procedure will exist depending upon the products capacity, control system, options and accessories installed.

This start-up sheet covers all startup check points common to all package equipment. In addition it covers essential startup check points for a number of common installation options. Depending upon the particular unit being started not all sections of this startup sheet will apply. Complete those sections applicable and use the notes section to record any additional information pertinent to your particular installation.

Warranty claims are to be made through the distributor from whom the equipment was purchased.

EQUIPMENT STARTUP

Use the local LCD or Mobile Access Portal (MAP) Gateway to complete the start-up.

A copy of the completed start-up sheet should be kept on file by the distributor providing the equipment and a copy sent to:

Johnson Controls/Ducted Systems
Technical Services Department
5005 York Drive
Norman, OK 73069

SAFETY WARNINGS

The inspections and recording of data outlined in this procedure are required for start-up of Johnson Controls/Ducted Systems' packaged products. Industry recognized safety standards and practices must be observed at all times. General industry knowledge and experience are required to assure technician safety. It is the responsibility of the technician to assess all potential dangers and take all steps warranted to perform the work in a safe manner. By addressing those potential dangers, prior to beginning any work, the technician can perform the work in a safe manner with minimal risk of injury.

⚠WARNING

Lethal voltages are present during some start-up checks. Extreme caution must be used at all times.

⚠WARNING

Moving parts may be exposed during some startup checks. Extreme caution must be used at all times.

NOTE: Read and review this entire document before beginning any of the startup procedures.

DESIGN APPLICATION INFORMATION

This information will be available from the specifying engineer who selected the equipment. If the system is a VAV system the CFM will be the airflow when the remote VAV boxes are in the full open position and the frequency drive is operating at 60 HZ. **Do not proceed with the equipment start-up without the design CFM information.**

Design Supply Air CFM: _____ Design Return Air CFM: _____

Design Outdoor Air CFM At Minimum Position: _____

Total External Static Pressure: _____

Supply Static Pressure: _____

Return Static Pressure: _____

Design Building Static Pressure: _____

Outside Air Dilution: Economizer Position Percentage: _____ CFM: _____

Supply Gas Pressure After Regulator W/o Heat Active _____ Inches _____

ADDITIONAL APPLICATION NOTES FROM SPECIFYING ENGINEER:

REFERENCE

General Inspection	Completed	See Notes
Unit inspected for shipping, storage, or rigging damage	☐	☐
Unit installed with proper clearances	☐	☐
Unit installed within slope limitations	☐	☐
Refrigeration system checked for gross leaks (presence of oil)	☐	☐
Terminal screws and wiring connections checked for tightness	☐	☐
Filters installed correctly and clean	☐	☐
Economizer hoods installed in operating position	☐	☐
Condensate drain trapped properly, refer to Installation Manual	☐	☐
Economizer damper linkage tight	☐	☐
Gas Heat vent hood installed	☐	☐
All field wiring (power and control) complete	☐	☐

Air Moving Inspection	Completed	See Notes
Alignment of drive components	☐	☐
Belt tension adjusted properly	☐	☐
Blower pulleys tight on shaft, bearing set screws tight, wheel tight to shaft	☐	☐
Pressure switch or transducer tubing installed properly	☐	☐

Exhaust Inspection Powered ☐ Barometric Relief ☐	Completed	See Notes
Check hub for tightness	☐	☐
Check fan blade for clearance	☐	☐
Check for proper rotation	☐	☐
Check for proper mounting (screen faces towards unit)	☐	☐
Prove operation by increasing minimum setting on economizer	☐	☐

Economizer Inspection Standard ☐ BAS ☐	Completed	See Notes
CO_2 sensor installed Yes ☐ No ☐	☐	☐
Check economizer setting (Reference Smart Equipment™ Control Board LCD menu location)	☐	☐
Prove economizer open/close through Smart Equipment™ Board Setting	☐	☐

Reheat Mode Normal ☐ or Alternate ☐ Not Applicable ☐
Humidity Sensor (2SH0401) _____

Operating Measurements - Air Flow

Fan operates with proper rotation (All VFD equipped units with the optional Manual Bypass must be phased for correct blower rotation with the Bypass switch set in the LINE position) ID Fans ☐ Exh. Fans ☐ Cond. Fans ☐	
Pressure drop across dry evaporator coil (At maximum design CFM) [1]	IWC
External Static Pressure	IWC
Return Static Pressure	IWC
Supply Static Pressure	IWC
Supply Air CFM Using Dry Coil Chart	CFM
Final Adjusted Supply Air CFM[2]	CFM

1. Consult the proper airflow to pressure drop table to obtain the actual airflow at the measured pressure differential.
2. Was a motor pulley adjustment or change required to obtain the correct airflow?
   Was it necessary to increase of decrease the airflow to meet the design conditions?
   If the motor pulley size was changed, measure the outside diameters of the motor and blower pulleys and record those diameters here;

Blower Motor HP _____ FLA_____ RPM_____

Pulley Pitch Diameter _____ Turns Out_____ Final Turns Out_____

Blower Pulley Pitch Diameter _____ Fixed Sheave_____

ELECTRICAL DATA

T1 - T2 _____ Volts T2 - T3 _____ Volts

Control Voltage _____ Volts T1 - T3 _____ Volts

Device	Nameplate	Measured List All Three Amperages
Supply Fan Motor[1, 2]	AMPS	AMPS
Exhaust Motor (Dampers 100%)	AMPS	AMPS
Condenser Fan #1	AMPS	AMPS
Condenser Fan #2 (if equipped)	AMPS	AMPS
Condenser Fan #3 (if equipped)	AMPS	AMPS
Condenser Fan #4 (if equipped)	AMPS	AMPS
Compressor #1	AMPS	AMPS
Compressor #2 (if equipped)	AMPS	AMPS
Compressor #3 (if equipped)	AMPS	AMPS
Compressor #4 (if equipped)	AMPS	AMPS

1. VAV units with heat section - simulate heat call to drive VAV boxes and VFD/IGV to maximum design airflow position.
2. VAV units without heat section - VAV boxes must be set to maximum design airflow position.

OPERATING MEASUREMENTS - COOLING

Stage	Discharge Pressure	Discharge Temp.	Liquid Line Temp.[1]	Subcooling[2]	Suction Pressure	Suction Temp.	Superheat
First	#	°	°	°	#	°	°
Second (if equipped)	#	°	°	°	#	°	°
Third (if equipped)	#	°	°	°	#	°	°
Fourth (if equipped)	#	°	°	°	#	°	°
Reheat 1st Stage	#	°	°	°	#	°	°

1. Liquid temperature should be taken before filter/drier.
2. Subtract 10 psi from discharge pressure for estimated liquid line pressure

Outside air temperature	_____	°F db	_____	°F wb	_____ %RH
Return Air Temperature	_____	°F db	_____	°F wb	_____ %RH
Mixed Air Temperature	_____	°F db	_____	°F wb	_____ %RH
Supply Air Temperature	_____	°F db	_____	°F wb	_____ %RH

REFRIGERANT SAFETIES

Action	Completed	See Notes
Prove Compressor Rotation (3 phase only) by gauge pressure	☐	☐
Prove High Pressure Safety, All Systems	☐	☐
Prove Low Pressure Safety, All Systems	☐	☐

OPERATING MEASUREMENTS - GAS HEATING

Fuel Type: ☐ Natural Gas ☐ LP Gas

Action		Completed	See Notes
Check for gas leaks		☐	☐
Prove Ventor Motor Operation		☐	☐
Prove Primary Safety Operation		☐	☐
Prove Auxiliary Safety Operation		☐	☐
Prove Rollout Switch Operation		☐	☐
Prove Smoke Detector Operation		☐	☐
Manifold Pressure	Stage 1	IWC	☐
	Stage 2 (If Equipped)	IWC	☐
	Stage 3 (If Equipped)	IWC	☐
Supply gas pressure at full fire		IWC	☐
Check temperature rise[1]	☐ measured at full fire	°F	☐

1. Input X Eff. (BTU output)
   1.08 X Temp. Rise

OPERATIONAL MEASUREMENTS - STAGING CONTROLS

Verify Proper Operation of Heating/Cooling Staging Controls	
Create a cooling demand at the Thermostat, BAS System or Smart Equipment™ Verify that cooling/economizer stages are energized.	☐
Create a heating demand at the Thermostat, BAS System or Smart Equipment™ Verify that heating stages are energized.	☐
Verify Proper Operation of the Variable Frequency Drive (If Required)	
Verify that motor speed modulates with duct pressure change.	☐

FINAL - INSPECTION

Verify that all operational control set points have been set to desired value Scroll through all setpoints and change as may be necessary to suit the occupant requirements.	☐
Verify that all option parameters are correct Scroll through all option parameters and ensure that all installed options are enabled in the software and all others are disabled in the software. (Factory software settings should match the installed options)	☐
Verify that all access panels have been closed and secured	☐
Save a backup file from the unit control board onto a USB flash drive.	☐

OBSERVED PRODUCT DEFICIENCIES & CONCERNS: