

APPLICATION BULLETIN

R20250324B

April 9th, 2025

Supersedes R20250324A

Subject: ASHRAE Standard 15.2 Quick Reference Guide

Introduction:

The purpose of this bulletin is to provide a brief overview, as per ASHRAE Standard 15.2, 2024, regarding Leak Detection System requirements and the allowed R-32 refrigerant charge in a space. This bulletin also provides factory refrigerant charge information for Fujitsu Airstage H-series and J-7S R-32 systems to provide a quick guidance regarding system charge compliance per Standard 15.2.

Discussion:

1. Leak Detection System (LDS) requirement as per Standard 15.2, Section 5.3.

Definitions for Table A:

- m_s = Total refrigerant system charge (include any field added charge for liquid line length)
- m_{max} = Maximum allowed R-32 refrigerant charge for the space, as per Table B.
- m_{rel} = Releasable R-32 refrigerant charge. (Applies to J-Series only, with Shutoff Valve Kit option)

Table A.

R-32 charge	LDS (Leak Detection System) requirement / comments
$m_s \leq 4$ lbs.	LDS is not required
m_s (or m_{rel}) > 35 lb or m_{max}	System charge does not comply with ASHRAE Standard 15.2. <ul style="list-style-type: none"> Review air circulation and ventilation options.
$m_{rel} > 4$ lbs.	LDS is required for initiating Shutoff Valve operation (J-Series only)
$m_s > 4$ lbs.	LDS is not required, unless to initiate operation of: <ul style="list-style-type: none"> Air circulation in the space Ventilation for dilution

Note: H-Series and J-Series R-32 ducted units include a factory installed LDS.

2. Determining Maximum allowed R-32 system charges, m_{max} , as per Standard 15.2, Section 9.

Definitions for Table B:

- Dispersal floor area - smallest room floor area where refrigerant in the system can disperse. For multi-zone systems, the smallest room shall be used to determine m_{max} .
- Dispersal height, ducted systems - the mean of actual ceiling heights in the space with no height greater than 9 ft used for the calculation.
- Dispersal height, ductless systems - the height of the lowest point of the equipment opening delivering conditioned air but not less than 2 ft or more than 9 ft.
- Air circulation - air is circulated by fans within the space, without any outside air.
- Ventilation - a means to introduce outside air in order to displace, or dilute, any refrigerant in the space.

This information is provided for general informational purposes only and is not a substitute for complying with all national, state and local codes as may be required.

Subject: ASHRAE Standard 15.2 Quick Reference Guide**Table B.**

Maximum allowed R-32 system charges, m_{max} , as per ASHRAE Standard 15.2 for minimum dispersable floor areas and dispersal heights Spaces without/with ventilation (for dilution) and without/with air circulation												
Min. floor area	* Without Ventilation (for dilution)											
	Without Air Circulation						With Air Circulation					
	2 ft	4 ft	6 ft	7 ft	8 ft	9 ft	2 ft	4 ft	6 ft	7 ft	8 ft	9 ft
100 sf	1.9 lb	3.8 lb	5.8 lb	6.7 lb	7.7 lb	8.6 lb	1.9 lb	3.8 lb	5.8 lb	6.7 lb	7.7 lb	8.6 lb
125 sf	2.4 lb	4.8 lb	7.2 lb	8.4 lb	9.6 lb	10.8 lb	2.4 lb	4.8 lb	7.2 lb	8.4 lb	9.6 lb	10.8 lb
150 sf	2.9 lb	5.7 lb	8.6 lb	10.0 lb	11.4 lb	12.9 lb	2.9 lb	5.7 lb	8.6 lb	10.0 lb	11.4 lb	12.9 lb
175 sf	3.1 lb	6.2 lb	9.3 lb	10.8 lb	12.3 lb	13.9 lb	3.4 lb	6.7 lb	10.1 lb	11.8 lb	13.4 lb	15.1 lb
200 sf	3.3 lb	6.6 lb	9.9 lb	11.6 lb	13.2 lb	14.9 lb	3.8 lb	7.7 lb	11.5 lb	13.4 lb	15.3 lb	17.3 lb
225 sf	3.5 lb	7.0 lb	10.5 lb	12.3 lb	14.0 lb	15.8 lb	4.3 lb	8.6 lb	12.9 lb	15.1 lb	17.2 lb	19.4 lb
250 sf	3.7 lb	7.4 lb	11.1 lb	12.9 lb	14.8 lb	16.6 lb	4.8 lb	9.6 lb	14.3 lb	16.7 lb	19.1 lb	21.5 lb
275 sf	3.9 lb	7.7 lb	11.6 lb	13.5 lb	15.4 lb	17.4 lb	5.3 lb	10.5 lb	15.8 lb	18.4 lb	21.0 lb	23.6 lb
300 sf	4.1 lb	8.1 lb	12.2 lb	14.2 lb	16.2 lb	18.3 lb	5.8 lb	11.5 lb	17.3 lb	20.1 lb	23.0 lb	25.9 lb
325 sf	4.2 lb	8.4 lb	12.7 lb	14.8 lb	16.9 lb	19.0 lb	6.2 lb	12.4 lb	18.7 lb	21.8 lb	24.9 lb	28.0 lb
350 sf	4.4 lb	8.7 lb	13.1 lb	15.3 lb	17.4 lb	19.6 lb	6.7 lb	13.4 lb	20.1 lb	23.4 lb	26.8 lb	30.1 lb
375 sf	4.5 lb	9.1 lb	13.6 lb	15.8 lb	18.1 lb	20.4 lb	7.2 lb	14.3 lb	21.5 lb	25.1 lb	28.7 lb	32.3 lb
400 sf	4.7 lb	9.3 lb	14.0 lb	16.3 lb	18.7 lb	21.0 lb	7.7 lb	15.3 lb	23.0 lb	26.8 lb	30.7 lb	34.5 lb
425 sf	4.8 lb	9.6 lb	14.4 lb	16.8 lb	19.2 lb	21.6 lb	8.1 lb	16.3 lb	24.4 lb	28.5 lb	32.6 lb	35.0 lb
450 sf	4.9 lb	9.9 lb	14.8 lb	17.3 lb	19.8 lb	22.3 lb	8.6 lb	17.2 lb	25.8 lb	30.1 lb	34.4 lb	35.0 lb
475 sf	5.1 lb	10.2 lb	15.3 lb	17.8 lb	20.3 lb	22.9 lb	9.1 lb	18.2 lb	27.3 lb	31.8 lb	35.0 lb	35.0 lb
500 sf	5.2 lb	10.4 lb	15.7 lb	18.3 lb	20.9 lb	23.5 lb	9.6 lb	19.1 lb	28.7 lb	33.4 lb	35.0 lb	35.0 lb
525 sf	5.4 lb	10.7 lb	16.1 lb	18.8 lb	21.4 lb	24.1 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
550 sf	5.5 lb	10.9 lb	16.4 lb	19.2 lb	21.9 lb	24.6 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
575 sf	5.6 lb	11.2 lb	16.8 lb	19.6 lb	22.4 lb	25.3 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
600 sf	5.7 lb	11.4 lb	17.2 lb	20.0 lb	22.9 lb	25.8 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
625 sf	5.8 lb	11.7 lb	17.5 lb	20.4 lb	23.3 lb	26.3 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
650 sf	5.9 lb	11.9 lb	17.8 lb	20.8 lb	23.8 lb	26.8 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
675 sf	6.1 lb	12.1 lb	18.2 lb	21.2 lb	24.2 lb	27.3 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
700 sf	6.2 lb	12.3 lb	18.5 lb	21.6 lb	24.7 lb	27.8 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
725 sf	6.3 lb	12.6 lb	18.8 lb	22.0 lb	25.1 lb	28.3 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
750 sf	6.4 lb	12.8 lb	19.2 lb	22.4 lb	25.6 lb	28.8 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
775 sf	6.5 lb	13.0 lb	19.5 lb	22.8 lb	26.0 lb	29.3 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
800 sf	6.6 lb	13.2 lb	19.8 lb	23.1 lb	26.4 lb	29.8 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
825 sf	6.7 lb	13.4 lb	20.1 lb	23.4 lb	26.8 lb	30.1 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
850 sf	6.8 lb	13.6 lb	20.4 lb	23.8 lb	27.2 lb	30.6 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
875 sf	6.9 lb	13.8 lb	20.8 lb	24.2 lb	27.7 lb	31.1 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
900 sf	7.0 lb	14.0 lb	21.0 lb	24.5 lb	28.0 lb	31.5 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
925 sf	7.1 lb	14.2 lb	21.3 lb	24.9 lb	28.4 lb	32.0 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
950 sf	7.2 lb	14.4 lb	21.6 lb	25.2 lb	28.8 lb	32.4 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
975 sf	7.3 lb	14.6 lb	21.8 lb	25.5 lb	29.1 lb	32.8 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
1000 sf	7.4 lb	14.8 lb	22.2 lb	25.9 lb	29.6 lb	33.3 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
1025 sf	7.5 lb	14.9 lb	22.4 lb	26.2 lb	29.9 lb	33.6 lb	9.7 lb	19.4 lb	29.2 lb	34.0 lb	35.0 lb	35.0 lb
Interpolate as needed to determine precise value or use the closest lower value												
* For spaces <u>with ventilation</u> and <u>without circulation</u> , add 0.4 lb for 20 CFM, 0.9 lb for 50 CFM, 1.8 lb for 100 CFM, 3.5 lb for 200 CFM, 5.8 lb for 300 CFM, and 7.7 lb for ≥ 400 CFM, while keeping the total ≤ 35 lb.												
* For spaces <u>with ventilation</u> and <u>with circulation</u> , add 0.8 lb for 20 CFM, 1.8 lb for 50 CFM, 3.6 lb for 100 CFM, 7 lb for 200 CFM, 11.6 lb for 300 CFM, and 15.4 lb for ≥ 400 CFM, while keeping the total ≤ 35 lb.												
Example:												
<ul style="list-style-type: none"> A space with 175 sf dispersal floor area, 6 ft dispersal height, <u>no air circulation</u>, and <u>no ventilation</u>, has a maximum allowed R-32 system charge of 9.3 lb. If the same space has 8 ft dispersal height instead, the maximum allowed charge is 12.3 lb. If the same space has 8 ft dispersal height <u>with air circulation</u>, the maximum allowed charge is 13.4 lb. If the space with 8 ft dispersal height <u>with air circulation</u> and also with 200 CFM ventilation, maximum allowed charge is $13.4+7=20.4$ lb. 												

This information is provided for general informational purposes only and is not a substitute for complying with all national, state and local codes as may be required.

Subject: ASHRAE Standard 15.2 Quick Reference Guide**3. Factory refrigerant charge information for AIRSTAGE R-32 systems.****Table C. H-Series Single-Zone**

System	Indoor Unit	Outdoor Unit	Factory Charge (lb)	Precharge Pipe Length (ft)	Max Refrigerant Charge (lb)	Max Pipe Length (ft)
Orion XLTH+	ASUH09KTAS	AOUH09KTAP1	2.69	49	2.92	66
	ASUH12KTAS	AOUH12KTAP1	2.94	49	3.17	66
	ASUH15KTAS	AOUH15KTAP1	3.06	49	3.30	66
Orion XLTH	ASUH09KZAS	AOUH09KZAH1	2.56	49	3.02	82
	ASUH12KZAS	AOUH12KZAH1	2.56	49	3.02	82
	ASUH15KZAS	AOUH15KZAH1	2.63	49	3.30	98
	ASUH18KZAS	AOUH18KZAH1	3.75	66	6.38	164
	ASUH24KZAS	AOUH24KZAH1	3.75	66	6.38	164
Altair 700	ASUH09KMAS	AOUH09KMAS1	1.88	49	2.11	66
	ASUH12KMAS	AOUH12KMAS1	1.88	49	2.11	66
Altair 500	ASUH09KPAS	AOUH09KPAS1	1.31	49	1.55	66
	ASUH12KPAS	AOUH12KPAS1	1.56	49	1.80	66
	ASUH18KPAS	AOUH18KPAS1	2.63	49	3.30	98
	ASUH24KPAS	AOUH24KPAS1	2.63	49	3.30	98
	ASUH30KPAS	AOUH30KPAS1	3.75	66	6.38	164
	ASUH36KPAS	AOUH36KPAS1	3.75	66	6.38	164
Altair 300 (115V)	ASLH09KNAS	AOLH09KNAS1	1.19	49	1.42	66
	ASLH12KNAS	AOLH12KNAS1	1.44	49	1.67	66
Centauri Ceiling Suspended	ABUH18KUAS	AOUH18KUAS1	2.75	66	3.19	98
	ABUH24KUAS	AOUH24KUAS1	3.31	66	4.66	164
	ABUH30KUAS	AOUH30KUAS1	4.44	66	7.07	164
	ABUH36KUAS	AOUH36KUAS1	4.44	66	7.07	164
Centauri Compact Cassette	ACUH09KUAS	AOUH09KUAS1	1.88	49	2.11	66
	ACUH12KUAS	AOUH12KUAS1	2.25	66	2.69	98
	ACUH18KUAS	AOUH18KUAS1	2.75	66	3.19	98
Centauri Large Cassette	AUUH18KUAS	AOUH18KUAS1	2.75	66	3.19	98
	AUUH24KUAS	AOUH24KUAS1	3.31	66	4.66	164
	AUUH30KUAS	AOUH30KUAS1	4.44	66	7.07	164
	AUUH36KUAS	AOUH36KUAS1	4.44	66	7.07	164
	AUUH42KUAS	AOUH42KUAS1	5.94	98	9.92	246
	AUUH48KUAS	AOUH48KUAS1	5.94	98	9.92	246

This information is provided for general informational purposes only and is not a substitute for complying with all national, state and local codes as may be required.

Subject: ASHRAE Standard 15.2 Quick Reference Guide**Table D. H-Series Multi-Zone**

System	Indoor Unit	Outdoor Unit	Factory Charge (lb)	Precharge Pipe Length (ft)	Max Refrigerant Charge (lb)	Max Pipe Length (ft)
Aquila Outdoor Unit	-	AOUH18KWAS2	3.06	* 98	3.94	* 164
	-	AOUH24KWAS3	3.94	* 98	4.81	* 164
	-	AOUH36KWAS4	5.50	* 164	6.38	* 230
	-	AOUH45KWAS5	6.63	* 164	7.94	* 262
Aquila XLTH Outdoor Unit	-	AOUH18KWAH2	3.06	* 98	3.94	* 164
	-	AOUH24KWAH3	3.94	* 98	5.69	* 230
	-	AOUH36KWAH4	5.50	* 164	6.38	* 230

*Total liquid pipe length

Table E. AIRSTAGE J-7S

System	Indoor Unit	Outdoor Unit	Factory Charge (lb)	Precharge Pipe Length (ft)	Max Refrigerant Charge (lb)	Max Pipe Length (ft)
AIRSTAGE J-7S	-	AOUK24SSAN7	5.95	** 0	8.82	*** 197
	-	AOUK36SSAN7			13.23	*** 393
	-	AOUK48SSAN7				

** J-7S outdoor units are precharged to 0 ft. of piping.

*** The Max Pipe Length (ft) is limited to the Max Refrigerant Charge (lb). Please use the Fujitsu Design Simulator software to verify the maximum refrigerant charge and maximum pipe lengths are not exceeded.

Additional information:

For additional information, see Fujitsu Application Guide R20250114B "ASHRAE Standard 15, 15.2, and 34" located in the Fujitsu [ACCESS](#) portal Applications Library, and also the ASHRAE Standard 15.2 "Safety Standard for Refrigeration Systems in Residential Applications" available from ASHRAE.

Information regarding additional charge calculations, refrigerant piping guidelines, etc., are available from the product specific documentation in the Fujitsu portal.

ASHRAE Standard 15.2 is for residential use only. All commercial and other non-residential applications shall follow ASHRAE Standard 15 (latest edition).

The information in the bulletin is subject to change without notice.

Additional support:

Please contact Fujitsu General America Applications Department with any questions:

applicationsupport@fujitsugeneral.com