

## New DOE Regulation for CCS NAR - Efficiency Increase by Application

Standards Effective March 27, 2017								
Equipment Category	Condensing Unit Configuration	Equipment Family	Rating Temp. (°F)	Operating Temp. (°F)	Equipment Class Designation*	Maximum Daily Energy Consumption (kWh/day)		
Remote Condensing Refrigerators and Commercial Freezers	Remote (RC)	Vertical Open (VOP)	38 (M)	>=32	VOP.RC.M	0.64 x TDA + 4.07		
			0 (L)	<32	VOP.RC.L	2.2 x TDA + 6.85		
		Semivertical Open (SVO)	38 (M)	>=32	SVO.RC.M	0.66 x TDA + 3.18		
			0 (L)	<32	SVO.RC.L	2.2 x TDA + 6.85		
		Horizontal Open (HZO)	38 (M)	>=32	HZO.RC.M	0.35 x TDA + 2.88		
			0 (L)	<32	HZO.RC.L	0.55 x TDA + 6.88		
		Vertical Closed Transparent (VCT)	38 (M)	>=32	VCT.RC.M	0.15 x TDA + 1.95		
			0 (L)	<32	VCT.RC.L	0.49 x TDA + 2.61		
		Horizontal Closed Transparent (HCT)	38 (M)	>=32	HCT.RC.M	0.16 x TDA + 0.13		
			0 (L)	<32	HCT.RC.L	0.34 x TDA + 0.26		
		Vertical Closed Solid (VCS)	38 (M)	>=32	VCS.RC.M	0.1 x V + 0.26		
			0 (L)	<32	VCS.RC.L	0.21 x V + 0.54		
		Horizontal Closed Solid (HCS)	38 (M)	>=32	HCS.RC.M	0.1 x V + 0.26		
			0 (L)	<32	HCS.RC.L	0.21 x V + 0.54		
		Service Over Counter (SOC)	38 (M)	>=32	SOC.RC.M	0.44 x TDA + 0.11		
			0 (L)	<32	SOC.RC.L	0.93 x TDA + 0.22		
		Self-Contained Commercial Refrigerators and Commercial Freezers without Doors	Self-Contained (SC)	Vertical Open (VOP)	38 (M)	>=32	VOP.SC.M	1.69 x TDA + 4.71
					0 (L)	<32	VOP.SC.L	4.25 x TDA + 11.82
Semivertical Open (SVO)	38 (M)			>=32	SVO.SC.M	1.7 x TDA + 4.59		
	0 (L)			<32	SVO.SC.L	4.26 x TDA + 11.51		
Horizontal Open	38 (M)			>=32	HZO.SC.M	0.72 x TDA + 5.55		
	0 (L)			<32	HZO.SC.L	1.9 x TDA + 7.08		
Commercial Ice-Cream Freezers	Remote (RC)	Vertical Open (VOP)			VOP.RC.I	2.79 x TDA + 8.7		
		Semivertical Open (SVO)			SVO.RC.I	2.79 x TDA + 8.7		
		Horizontal Open (HZO)			HZO.RC.I	0.7 x TDA + 8.74		
		Vertical Closed Transparent (VCT)			VCT.RC.I	0.58 x TDA + 3.05		
		Horizontal Closed Transparent (HCT)			HCT.RC.I	0.4 x TDA + 0.31		
		Vertical Closed Solid (VCS)			VCS.RC.I	0.25 x V + 0.63		
		Horizontal Closed Solid (HCS)			HCS.RC.I	0.25 x V + 0.63		
		Service Over Counter (SVO)			SOC.RC.I	1.09 x TDA + 0.26		
		Vertical Open (VOP)	-15 (I)	<=-5**	VOP.SC.I	5.4 x TDA + 15.02		

TDA = Total display area of the case, as measured in the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Standard 1200-2010

V = Refrigerated volume of the case, as measured in American National Standards Institute (ANSI)/Association of Home Appliance Manufacturers (AHAM) Standard HRF-1-2004.

	Self-Contained (SC)	Semivertical Open (SVO)			SVO.SC.I	$5.41 \times TDA + 14.63$
		Horizontal Open (HZO)			HZO.SC.I	$2.42 \times TDA + 9.$
		Vertical Closed Transparent (VCT)			VCT.SC.I	$0.62 \times TDA + 3.29$
		Horizontal Closed Transparent (HCT)			HCT.SC.I	$0.56 \times TDA + 0.43$
		Vertical Closed Solid (VCS)			VCS.SC.I	$0.34 \times V + 0.88$
		Horizontal Closed Solid (HCS)			HCS.SC.I	$0.34 \times V + 0.88$
		Service Over Counter (SVO)			SOC.SC.I	$1.53 \times TDA + 0.36$
Self-Contained Commercial Refrigerators and Commercial Freezers with Doors	Self-Contained (SC)	Vertical Closed Transparent (VCT)	38 (M)	$\geq 32$	VCT.SC.M	$0.1 \times V + 0.86$
			0 (L)	$< 32$	VCT.SC.L	$0.29 \times V + 2.95$
		Vertical Closed Solid (VCS)	38 (M)	$\geq 32$	VCS.SC.M	$0.05 \times V + 1.36$
			0 (L)	$< 32$	VCS.SC.L	$0.22 \times V + 1.38$
		Horizontal Closed Transparent (HCT)	38 (M)	$\geq 32$	HCT.SC.M	$0.06 \times V + 0.37$
			0 (L)	$< 32$	HCT.SC.L	$0.08 \times V + 1.23$
		Horizontal Closed Solid (HCS)	38 (M)	$\geq 32$	HCS.SC.M	$0.05 \times V + 0.91$
			0 (L)	$< 32$	HCS.SC.L	$0.06 \times V + 1.12$
		Service Over Counter (SOC)	38 (M)	$\geq 32$	SOC.SC.M	$0.52 \times TDA + 1$
			0 (L)	$< 32$	SOC.SC.L	$1.1 \times TDA + 2.1$
Self-Contained Commercial Refrigerators with Transparent Doors for Pull-Down Temperature Applications	Self-Contained (SC)	Pull-Down (PD)	38 (M)	$\geq 32$	PD.SC.M	$0.11 \times V + 0.81$