MEASURE	**ACEEE Summary Data**					**Premium Efficiency Motor (TEFC, 40-50 hp)**	**Premium Efficiency Motor (TEFC, 40-50 hp)**
ACEEE db Code						**Ind-1**	**Ind-1**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**
Link/citation or code number						M.TEFC1800.40.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVMOT17; MeasureID D03-930
Measure name	**Premium Efficiency Motor (TEFC, 40-50 hp)**					Motors - Totally Enclosed Fan-Cooled (TEFC) - 1800 RPM	Premium Efficiency Motor - 50 HP
Notes/description (note any differences, key assumptions, inputs)						40 hp; 94.1% efficiency motor replaces 93% efficiency motor; 4600 assumed annual operating hours; 20 year life (source is EES)	Closed Drip Proof: 2820 Hours of Operation; building type is ALC; 15 year life; baseline is EPAct efficiency motor
	Summary Data						
	Records	**Min**	**Max**	**Median**	**Mean**		
Energy savings (kWh)	3	1026	1346	1294	1222	1294	1346
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	NA	NA	0.281	NA
Summer coincident peak demand savings (kW)	2	0.219	0.471	0.345	0.345	0.219	0.471
Summer coincident peak factor	1	0.780	0.780	0.780	0.780	0.780	NA
Winter coincident peak demand savings	1	0.081	0.081	0.081	0.081	NA	NA
Winter coincident peak factor	1	0.640	0.640	0.640	0.640	NA	NA
Measure references/sources						Operating hours used by NYSERDA based on specific M&V work on motor operation in New York State. Baseline motor efficiency equal to EPACT minimum efficiency standard (federal minimum). Retrofit motor efficiency based on program requirements.	2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", prepared for Southern California Edison by Kema-Xenergy, February 13, 2004; The Pacific Northwest's Regional Technical Forum as of November, 2003 (http://rtf.nwppc.org/)

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE specifications not applicable to this set of commercial measures; ACEEE Emerging Technologies Database also does not include these measures.

MEASURE	**Premium Efficiency Motor (TEFC, 40-50 hp)**	**Premium Efficiency Motor (TEFC, 40-50 hp)**	**Premium Efficiency Motor (TEFC, 40-50 hp)**	**Premium Efficiency Motor (TEFC, 40-50 hp)**
ACEEE db Code	**Ind-1**	**Ind-1**	**Ind-1**	**Ind-1**
Name of Database or Reference	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**
Link/citation or code number	See Notes for Premium Efficiency Motor (TEFC, 5 hp) (Commercial Measure)	Ref. No.:IMD00095	Not included in set of measures.	
Measure name		New Premium Efficiency TEFC Industrial Motors, larger than 10 HP and smaller than 100 HP		40.00HP/1800RPM OPER-TEFC MOTR
Notes/description (note any differences, key assumptions, inputs)		Basis of savings: Deemed for CEE premium efficiency motors.		Retrofit Program; Motors
Energy savings (kWh)	NA	1026	NA	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	
Summer coincident peak demand savings (kW)	NA	NA	NA	Min of kW/Qty: 1.365; Max of kW/Qty2: 1.365
Summer coincident peak factor	NA	NA	NA	
Winter coincident peak demand savings	NA	0.081	NA	
Winter coincident peak factor	NA	0.640	NA	
Measure references/sources		Savings are based on average of Open Drip Proof and Total Enclosed Fan Cooled motors with speeds of 1200, 1800 and 3600 RPM listed in MotorMaster+ v3.0. Average loading and hours of operation were taken from US DOE Motors Market Survey Report.		

MEASURE	ACEEE Summary Data					Premium Efficiency Motor (TEFC, 75 hp)	Premium Efficiency Motor (TEFC, 75 hp)
ACEEE db Code						Ind-2	Ind-2
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)
Link/citation or code number						M.TEFC1800.75.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVMOT18; MeasureID D03-931
Measure name	Premium Efficiency Motor (TEFC, 75 hp)					Motors - Totally Enclosed Fan-Cooled (TEFC) - 1800 RPM	Premium Efficiency Motor - 100 HP
Notes/description (note any differences, key assumptions, inputs)						75 hp; 95.4% efficiency motor replaces 94.1% efficiency motor; 4600 assumed annual operating hours; 20 year life (source is EES)	Closed Drip Proof: 2820 Hours of Operation; building type ALC; 15 year life; baseline is EPAct efficiency motor
	Summary Data						
	Records	Min	Max	Median	Mean		
Energy savings (kWh)	3	1575	2795	2585	2318	2795	1575
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	NA	NA	0.608	NA
Summer coincident peak demand savings (kW)	2	0.474	0.551	0.513	0.513	0.474	0.551
Summer coincident peak factor	1	0.780	0.780	0.780	0.780	0.78	NA
Winter coincident peak demand savings	1	0.203	0.203	0.203	0.203	NA	NA
Winter coincident peak factor	1	0.640	0.640	0.640	0.640	NA	NA
Measure references/sources						Operating hours used by NYSERDA based on specific M&V work on motor operation in New York State. Baseline motor efficiency equal to EPACT minimum efficiency standard (federal minimum). Retrofit motor efficiency based on program requirements.	2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", prepared for Southern California Edison by Kema-Xenergy, February 13, 2004; The Pacific Northwest's Regional Technical Forum as of November, 2003 (http://rtf.nwppc.org/)

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE specifications not applicable to this set of commercial measures; ACEEE Emerging Technologies Database also does not include these measures.

MEASURE	**Premium Efficiency Motor (TEFC, 75 hp)**	**Premium Efficiency Motor (TEFC, 75 hp)**	**Premium Efficiency Motor (TEFC, 75 hp)**	**Premium Efficiency Motor (TEFC, 75 hp)**
ACEEE db Code	**Ind-2**	**Ind-2**	**Ind-2**	**Ind-2**
Name of Database or Reference	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**
Link/citation or code number	See Notes for Premium Efficiency Motor (TEFC, 5 hp) (Commercial Measure)	Ref. No.: IMD00049	Not included in set of measures.	
Measure name		New Premium Efficiency TEFC Industrial Motors, larger than 10 HP and smaller than 100 HP		75.00HP/1200RPM OPER-TEFC MOTR
Notes/description (note any differences, key assumptions, inputs)		Basis of savings: Deemed for CEE premium efficiency motors.		Retrofit Program; Motors; this is a 1200 RPM motor, there was no 75 hp TEFC 1800 rpm motor in the database.
Energy savings (kWh)	NA	2585	NA	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	
Summer coincident peak demand savings (kW)	NA	NA	NA	Min of kW/Qty: 1.514; Max of kW/Qty2: 1.514
Summer coincident peak factor	NA	NA	NA	
Winter coincident peak demand savings	NA	0.2033	NA	
Winter coincident peak factor	NA	0.64	NA	
Measure references/sources				

MEASURE	ACEEE Summary Data					Premium Efficiency Motor (TEFC, 150 hp)	Premium Efficiency Motor (TEFC, 150 hp)
ACEEE db Code						**Ind-3**	**Ind-3**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**
Link/citation or code number	**Premium Efficiency Motor (TEFC, 150 hp)**					M.TEFC1800.150.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVMOT19; MeasureID D03-932
Measure name						Motors - Totally Enclosed Fan-Cooled (TEFC) - 1800 RPM	Premium Efficiency Motor - 150 HP
Notes/description (note any differences, key assumptions, inputs)						150 hp; 95.8% efficiency motor replaces 95% efficiency motor; 4600 assumed annual operating hours; 20 year life (source is EES)	Closed Drip Proof: 2820 Hours of Operation ; building type ALC; 15 year life; baseline is EPAct efficiency motor
	Summary Data						
	Records	**Min**	**Max**	**Median**	**Mean**		
Energy savings (kWh)	3	2080	4032	3394	3169	3394	2,080.00
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	NA	NA	0.738	NA
Summer coincident peak demand savings (kW)	2	0.575	0.728	0.652	0.652	0.575	0.728
Summer coincident peak factor	1	0.780	0.780	0.780	0.780	0.78	NA
Winter coincident peak demand savings	1	0.317	0.317	0.317	0.317	NA	NA
Winter coincident peak factor	1	0.640	0.640	0.640	0.640	NA	NA
Measure references/sources						Operating hours used by NYSERDA based on specific M&V work on motor operation in New York State. Baseline motor efficiency equal to EPACT minimum efficiency standard (federal minimum). Retrofit motor efficiency based on program requirements.	2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", prepared for Southern California Edison by Kema-Xenergy, February 13, 2004; The Pacific Northwest's Regional Technical Forum as of November, 2003 (http://rtf.nwppc.org/)

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE specifications not applicable to this set of commercial measures; ACEEE Emerging Technologies Database also does not include these measures.

MEASURE	**Premium Efficiency Motor (TEFC, 150 hp)**	**Premium Efficiency Motor (TEFC, 150 hp)**	**Premium Efficiency Motor (TEFC, 150 hp)**	**Premium Efficiency Motor (TEFC, 150 hp)**
ACEEE db Code	**Ind-3**	**Ind-3**	**Ind-3**	**Ind-3**
Name of Database or Reference	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**
Link/citation or code number	See Notes for Premium Efficiency Motor (TEFC, 5 hp) (Commercial Measure)	Ref. No.: IMD00112	Not included in set of measures.	
Measure name		New Premium Efficiency TEFC Industrial Motors, 100-250 hp.		125.0HP/1800RPM OPER-TEFC MOTR
Notes/description (note any differences, key assumptions, inputs)		Basis of savings: Deemed for CEE PEM		Retrofit Program; Motors; note this is for a 125 hp motor; a 150 hp was not included in available data.
Energy savings (kWh)	NA	4032	NA	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	
Summer coincident peak demand savings (kW)	NA	NA	NA	Min of kW/Qty: 3.323; Max of kW/Qty2: 3.323
Summer coincident peak factor	NA	NA	NA	
Winter coincident peak demand savings	NA	0.3171	NA	
Winter coincident peak factor	NA	0.64	NA	
Measure references/sources				

MEASURE	ACEEE Summary Data					Premium Efficiency Motor (TEFC, 200 hp)	Premium Efficiency Motor (TEFC, 200 hp)
ACEEE db Code						**Ind-4**	**Ind-4**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**
Link/citation or code number						M.TEFC1800.200.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVMOT20; MeasureID D03-933
Measure name	**Premium Efficiency Motor (TEFC, 200 hp)**					Motors - Totally Enclosed Fan-Cooled (TEFC) - 1800 RPM	Premium Efficiency Motor - 200 HP
Notes/description (note any differences, key assumptions, inputs)						200 hp; 96.2% efficiency motor replaces 95% efficiency motor; 4600 assumed annual operating hours; 20 year life (source is EES)	Closed Drip Proof: 2215 Hours of Operation; building type ALC; 15 year life; baseline is EPAct efficiency motor
	Summary Data						
	Records	**Min**	**Max**	**Median**	**Mean**		
Energy savings (kWh)	3	3255	6759	5343	5119	6759	3,255.00
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	NA	NA	1.469	NA
Summer coincident peak demand savings (kW)	2	1.146	1.450	1.298	1.298	1.146	1.45
Summer coincident peak factor	1	0.780	0.780	0.780	0.780	0.78	NA
Winter coincident peak demand savings	1	0.420	0.420	0.420	0.420	NA	NA
Winter coincident peak factor	1	0.640	0.640	0.640	0.640	NA	NA
Measure references/sources						Operating hours used by NYSERDA based on specific M&V work on motor operation in New York State. Baseline motor efficiency equal to EPACT minimum efficiency standard (federal minimum). Retrofit motor efficiency based on program requirements.	2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", prepared for Southern California Edison by Kema-Xenergy, February 13, 2004; The Pacific Northwest's Regional Technical Forum as of November, 2003 (http://rtf.nwppc.org/)

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE specifications not applicable to this set of commercial measures; ACEEE Emerging Technologies Database also does not include these measures.

MEASURE	**Premium Efficiency Motor (TEFC, 200 hp)**	**Premium Efficiency Motor (TEFC, 200 hp)**	**Premium Efficiency Motor (TEFC, 200 hp)**	**Premium Efficiency Motor (TEFC, 200 hp)**
ACEEE db Code	**Ind-4**	**Ind-4**	**Ind-4**	**Ind-4**
Name of Database or Reference	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**
Link/citation or code number	See Notes for Premium Efficiency Motor (TEFC, 5 hp) (Commercial Measure)	Ref. No.: IMD00081	Not included in set of measures.	
Measure name		New Premium Efficiency TEFC Industrial Motors, larger than 100 HP and smaller than 250 HP		200.0HP/1800RPM OPER-TEFC MOTR
Notes/description (note any differences, key assumptions, inputs)		Basis of savings: Deemed for CEE PEM		New Construction; Motors
Energy savings (kWh)	NA	5343	NA	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	
Summer coincident peak demand savings (kW)	NA	NA	NA	Min of kW/Qty: 2.578; Max of kW/Qty2: 2.578
Summer coincident peak factor	NA	NA	NA	
Winter coincident peak demand savings	NA	0.4201	NA	
Winter coincident peak factor	NA	0.64	NA	
Measure references/sources				

MEASURE	ACEEE Summary Data					Energy Star room A/C	Energy Star room A/C	Energy Star room A/C
ACEEE db Code						Res-1	Res-1	Res-1
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						A.RAC._.RES.2002.2002.N; Energy Star Products Program	Room air conditioners not listed as a measure.	Measure Number: IV-D-1-c (Efficient Products Program, Air Conditioning End Use)
Measure name	Room Air Conditioner - ENERGY STAR					Room Air Conditioner (RAC) - ENERGY STAR	NA	Air Conditioning End Use, Energy Star Room Air Conditioner
Notes/description (note any differences, key assumptions, inputs)						2002 New 7,735 Btu/hr Room Air Conditioner with 10.77 EER and .718 kW demand replaces 9.7 EER with .797 kW demand; 13 year life (source is Technical Support Document for Energy Conservation)	NA	Room air conditioners with an output less than or equal to 18,000Btu meeting minimum qualifying efficiency established by Energy Star Program. Baseline efficiency is the current minimum federal efficiency standard. (average EER 9.7 for sizes included in measure) (Energy Star); High efficiency is defined as any model meeting Energy Star standards (average EER 11.5 for sizes included in measure)(Energy Star); 375 yearly operating hours; 13 year life
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	4	40	181	47	79	40	NA	39.6
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	2	0.079	0.106	0.093	0.093	0.079	NA	0.106
Summer coincident peak demand savings (kW)	3	0.058	0.067	0.063	0.063	0.067	NA	0.063
Summer coincident peak factor	2	0.600	0.840	0.720	0.720	0.84	NA	0.6
Winter coincident peak demand savings (kW)	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources						NYSERDA; Peak kW and kWh savings values from Aspen report (4/16/03) of NYSERDA's 2002 Keep Cool Program.	NA	EV; www.energystar.gov; www.ari.org; EPP_AC_savings_6_2002.xls

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	**Energy Star room A/C**	**Energy Star room A/C**	**Energy Star room A/C**	**Energy Star room A/C**	**Energy Star room A/C**	
ACEEE db Code	**Res-1**	**Res-1**	**Res-1**	**Res-1**	**Res-1**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Ref No: RHV00271	Page 10	Savings Calculator; http://www.energystar.gov/index.cfm?c=roomac.pr_room_ac	Only gives efficiency specifications; references ENERGY STAR website for more information	NA	
Measure name	Energy Star Window Air Conditioner; cooling zone 3; 19000 Btu/hr; 9 year life	Window Air Conditioner	Energy Star qualified room air conditioner			
Notes/description (note any differences, key assumptions, inputs)	Unit Must Comply with Energy Star specifications. Manufacturer, retailer or consumer rebate, coupon or other incentive.	Baseline is assumed to be a new air conditioning unit with an EER rating that meets current NAECA standard.; Current NAECA EER standard varies from 8.5 to 9.8 depending on the type and capacity of unit. Minimum cooling capacity is 5,000 Btu/hour, and the maximum is 25,000 Btu/hour; here using 6,000-7,999 btu/hr; and 9.7 Federal Standard (EER); climate zone 1 (panhandle region)	Room air conditioner with 10.7 EER replaces 9.7 EER; 10,000 BTU/hour; climate region 1 (average); 12 year life			
Energy savings (kWh)	181	54	231 kWh life cycle energy saved			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA				
Summer coincident peak demand savings (kW)	NA	0.058				
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	NA	NA				
Winter coincident peak factor	NA	NA				
Measure references/sources		NA				

MEASURE	ACEEE Summary Data					High Efficiency Central A/C	High Efficiency Central A/C	High Efficiency Central A/C
ACEEE db Code						Res-2	Res-2	Res-2
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						H.CAC.TIER2.res	RunID RSFm0803RSA13; MeasureID D03-402	Measure Number: VI-F-1-d (Residential New Construction, Space Cooling End Use)
Measure name	High-efficiency Central Air Conditioning					High-efficiency central air conditioning	13 SEER (11.09 EER) Split System Air Conditioner	Space Cooling End Use, Central Air Conditioner
Notes/description (note any differences, key assumptions, inputs)						Air-source unitary or split system HVAC <5.4 tons -- Air conditioner or heat pump (Tier 2) residential applications. Savings are in "per ton" values. For comparability we assume 3 tons in this case (185 kWh/ton value given from database), for total savings of 555 kWh. Similarly, 0.308 kW/ton given for maximum demand savings---yielding 0.924 kW. Finally, coincident peak demand savings given from NYSERDA DB at 0.258 kW/ton, yielding 0.774 kW for a 3 ton unit.	Baseline is 10.0 SEER split system air conditioner; building type is SFM; floor area is 2,393 sq ft; climate zone is El Toro-8; 18 year life. Values given "per unit" --- in "tons cooling" are 121.6 kW/ton and 0.145 kW/ton. Average number of units is given by DEER as 3.769. For comparative purposes here we assume a 3.0 ton unit.	5-star single family detached home; reduced pump and motor use from space cooling load reductions; Meets VT Energy Code minimums receiving 82 RBES points.; High efficiency homes are those that reach 5-Star or 4-Star plus.; 200 operating hours per year; 25 year lifetime
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	5	288	666	378	451	555	366	288
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	2	0.924	1.440	1.182	1.182	0.924	NA	1.44
Summer coincident peak demand savings (kW)	4	0.435	0.864	0.742	0.696	0.774	0.435	0.864
Summer coincident peak factor	2	0.600	0.840	0.720	0.720	0.84	NA	0.6
Winter coincident peak demand savings (kW)	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources						Efficiency Vermont, Technical Reference Manual User	DEER	EV; 2003_RNC_ShellSavings.xls

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	High Efficiency Central A/C	High Efficiency Central A/C	High Efficiency Central A/C	High Efficiency Central A/C	High Efficiency Central A/C	High Efficiency Central A/C
ACEEE db Code	Res-2	Res-2	Res-2	Res-2	Res-2	Res-2
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database (1)**	**ACEEE Emerging Technologies Database (2)**
Link/citation or code number	Ref. No: RHV00319	Page 3	Savings Calculator; http://www.energystar.gov/index.cfm?c=cac.pr_central_ac	Only gives efficiency specifications; references ENERGY STAR website for more information	W4 Integrated Home Comfort Systems	H5 Residential HVAC for Hot-Dry Climates
Measure name	Post79/Pre93 Single Family Construction CAC Upgrade SEER w/o PTCS - Cooling Zone 3	Central Air Conditioner Replacement	Energy Star qualified central air conditioner		Integrated Home Comfort Systems	Residential HVAC for Hot-Dry Climates
Notes/description (note any differences, key assumptions, inputs)	Central AC must be rated SEER 13 or higher and be installed in substantial compliance with the applicable specifications for Air Source Heating Pump Installation provided in the RTF's Appendix H - "Air Source Heat Pump Installation Standards.". Single Family Dwellings with existing central air conditioning system built between 1980 and 1992	Residential retrofit with a new central air conditioning system (packaged unit, or split system consisting of an indoor unit with a matching remote condensing unit). Maximum cooling capacity per unit is 65,000 Btu/hour.; In the Residential/Small Commercial Standard Offer Program, the baseline is assumed to be a new central air conditioning system with an ARI-listed Seasonal Energy Efficiency Ratio (SEER) rating of 10.5. Current National Appliance Energy Conservation Act (NAECA) standard is 10.0; here using 3 ton size (range of 33,000-38,999 ARI Rated BTU/hr) at 13-13.49 SEER range; climate zone 1 (panhandle region)	12 SEER replaces 10 SEER; 36,000 BTU/hour; baseline unit does not use programmable thermostat while new unit does; 14 year life		Multi-function ventilation, space heating, and water heating equipment; ECM motor, hot water coil in air handler, cond. WH with 0.89 CAE replaces gas furnace and water heater with 0.594/0.8 Federal min EF/min AFUE; 15 year life	Low-latent fraction air conditioner systems; 12% higher sensible capacity, 6% more efficient unit with low latent design replaces 12 SEER 3 ton central AC/furnace; 18.4 year life
Energy savings (kWh)	378	666	19,958 kWh life cycle energy savings		699 kWh/year (average national fan energy savings)	96 kWh/year
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA				
Summer coincident peak demand savings (kW)	NA	0.71			0.080 kW summer peak demand savings	0.2 kW summer peak demand savings
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	NA	NA			0.036 kW winter peak demand savings	0 kW winter peak demand savings
Winter coincident peak factor	NA	NA				
Measure references/sources	Source: Baseline Characteristics of the Residential Sector in Idaho, Montana, Oregon & Washington. Ecotope, Inc. for the Northwest Energy Efficiency Alliance. February 2000.					

MEASURE	**ACEEE Summary Data**					**ENERGY STAR Refrigerator/freezer**	**ENERGY STAR Refrigerator/freezer**	**ENERGY STAR Refrigerator/freezer**
ACEEE db Code						**Res-3**	**Res-3**	**Res-3**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						A.RF._.RES.2004._.N; Energy Star Products Program	RunID RRes00AVRTM18; MeasureID D03-958	Measure Number: IV-B-1-d (Efficient Products Program, Refrigeration End Use)
Measure name	**ENERGY STAR Refrigerator/freezer**					Refrigerator - ENERGY STAR	Refrigerator: Top Mount Freezer	Refrigeration End Use, Energy Star Refigerator
Notes/description (note any differences, key assumptions, inputs)						2004 new full-size refrigerator (average weighted by sales). New refrigerator with energy star required efficiency replaces old refrigerator with NAECA required efficiency; 19 year life (souce is U.S. Department of Energy (DOE), Office of Codes)	Refrigerator: Top Mount Freezer without through-the-door ice; 18 cf fresh vol and 5 cf freezer vol; 18 year life	An Energy Star-qualifying refrigerator replaces a refrigerator of baseline efficiency; 5000 hours/yr operating hours; 17 year life
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh)	5	52	212	61	91	79	53	52
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	2	0.010	0.013	0.012	0.012	0.013	NA	0.0104
Summer coincident peak demand savings (kW)	4	0.006	0.011	0.009	0.009	0.011	0.009	0.006
Summer coincident peak factor	2	0.600	0.860	0.730	0.730	0.86	NA	0.6
Winter coincident peak demand savings (kW)	1	0.006	0.006	0.006	0.006	NA	NA	0.006
Winter coincident peak factor	1	0.623	0.623	0.623	0.623	NA	NA	0.623
Measure references/sources						NYSERDA; The energy savings are a weighted average across all sizes and types of full sized refrigerators based on market share data provided by LBNL. The efficiency comparison is between the Federal standard and the ENERGY STAR requirement at the time of installation. Maximum demand factor from GDS.	DEER; CALMAC Effective Useful Life Report - September 2000; "Evaluation of Pacific Gas & Electric Company's 1997 Commercial Energy Efficiency Incentives Program: Lighting Technologies", prepared by Quantum Consulting, Inc., for Pacific Gas & Electric Company, March 1, 1999	EV; ES.ref.kWh.2002.sized.xls, ES.ref.kWh.doc

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	**ENERGY STAR Refrigerator/freezer**	**ENERGY STAR Refrigerator/freezer**	**ENERGY STAR Refrigerator/freezer**	**ENERGY STAR Refrigerator/freezer**	**ENERGY STAR Refrigerator/freezer**	
ACEEE db Code	**Res-3**	**Res-3**	**Res-3**	**Res-3**	**Res-3**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Ref No: RAP00008	Page 27	Savings calculator; http://www.energystar.gov/index.cfm?c=refrig.pr_refrigerators	Only gives efficiency specifications; references ENERGY STAR website for more information	A2 1 kWh/day refrigerator	
Measure name	Energy Star Refirgerator without through the door ice; 17.7 cf fresh vol and 2.3 cf freezer vol	Energy Star Refrigerator	Energy Star qualified residential refrigerator		1 kWh/day refrigerator	
Notes/description (note any differences, key assumptions, inputs)		The baseline for refrigerators is the equivalent of the DOE minimum efficiency standards for refrigerators. Current standards have been in effect since July 1, 2001.; 50% are 22 cu. ft. top-mounted freezers with auto defrost, 50% are 23.5 cu. ft. side-by-side models with auto defrost. Unit ages are between five and fifteen years.	Manual defrost refrigerator; 18 cf fresh vol and 5 cf freezer vol.; 13 year life		20 cubic foot top-freezer refrigerator using no more than 1 kWh/day; full-size, full-feature unit with .95 kWh/day efficiency replaces unit meeting 2001 federal standards with 1.36 kWh/day efficiency; 19 year life	
Energy savings (kWh)	212	61	934 kWh life cycle energy savings		149 kWh/year	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA				
Summer coincident peak demand savings (kW)	NA	0.008			.019 kW summer peak demand savings	
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	NA	NA			.018 kW winter peak demand savings	
Winter coincident peak factor	NA	NA				
Measure references/sources	Energy Star Refrigerator Deemed Savings and Rate Discount Credit Calculation Tool	NA				

MEASURE	**ACEEE Summary Data**					**Energy Star Freezer**	**Energy Star Freezer**	**Energy Star Freezer**
ACEEE db Code						**Res-4**	**Res-4**	**Res-4**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation						A.FR._.RES.2004._.N; Energy Star Products Program	Stand alone freezer not included as measure.	Stand alone freezer not included as measure.
Measure name/number	**ENERGY STAR Freezer**					Freezer - ENERGY STAR	NA	NA
Notes/description (note any differences, key assumptions, inputs)						2004 new freezer with energy star required efficiency (10% less than NAECA) replaces old freezer with NAECA required efficiency; 19 year life (source is U.S. Department of Energy (DOE), Office of Codes)	NA	NA
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings	1	39	39	39	39	39	NA	NA
Maximum demand savings	1	0.006	0.006	0.006	0.006	0.006	NA	NA
Summer coincident peak demand savings (kW)	1	0.005	0.005	0.005	0.005	0.005	NA	NA
Summer coincident peak factor	1	0.860	0.860	0.860	0.860	0.86	NA	NA
Winter coincident peak demand savings (kW)	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources						NYSERDA; Savings value is from Aspen 4/15/04 report for Energy Star Products and is based on the NAECA requirement vs Energy Star requirement. The savings value is weigthed based on market sales data of freezers by size and type.	NA	NA

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	**Energy Star Freezer**	**Energy Star Freezer**	**Energy Star Freezer**	**Energy Star Freezer**	**Energy Star Freezer**	
ACEEE db Code	**Res-4**	**Res-4**	**Res-4**	**Res-4**	**Res-4**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database**	
Link/citation	Stand alone freezer not included as measure.	Stand alone freezer not included as measure.	Savings calculator; http://www.energystar.gov/index.cfm?c=refrig.pr_refrigerators	Not listed separately from refrigerators on this website	NA	
Measure name/number	NA	NA	Energy Star qualified residential freezer			
Notes/description (note any differences, key assumptions, inputs)	NA	NA	Upright freezer with automatic defrost; 22 cf freezer vol.; 11 year life			
Energy savings	NA	NA	879 kWh life cycle energy savings			
Maximum demand savings	NA	NA				
Summer coincident peak demand savings (kW)	NA	NA				
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	NA	NA				
Winter coincident peak factor	NA	NA				
Measure references/sources	NA	NA				

MEASURE	ACEEE Summary Data					ENERGY STAR Clothes Washer	ENERGY STAR Clothes Washer	ENERGY STAR Clothes Washer
ACEEE db Code						Res-5	Res-5	Res-5
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						A.CW._.RES.2004._.N; Energy Star Products Program	RunID RRes00AVC3T1A; MeasureID D03-949	Measure Number: IV-A-1-e (Efficient Products Program, Clothes Washing End Use)
Measure name						Clothes Washer, Residential (NY averaged DHW & dryer) - ENERGY STAR	Energy Star Clothes Washer - 3.5 cf	Clothes Washing End Use; Energy Star Clothes Washer
Notes/description (note any differences, key assumptions, inputs)	**ENERGY STAR Clothes Washer**					2004 new 2.96 cu. Ft. clothes washer (NY averaged DHW & dryer) with energy star required efficiency (1.42 MEF) replaces washer with NAECA efficiency requirement (1.04 MEF); 14 year life (source is Final Rule Technical Support Document (TSD): Energy). Note: 127 annual kWh savings for clothes washer energy use alone; 1 MMBtu given for hot water heating savings. Converted to electrical equivalent is 227 kWh---for total of 354 kWh.	Energy Star clothes washer with 3.5 cf capacity; CEE Tier 1; MEF 1.42; electric water heat and electric dryer; 14 year life	New clothes washer with min MEF 1.26 replaces old with baseline MEF .817; electric dryer/electric DHW; 392 cycles/year; 14 year life
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh)	5	298	676	463	460	354	463	676
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	2	0.017	1.202	0.610	0.610	0.017	NA	1.202
Summer coincident peak demand savings (kW)	4	0.009	0.193	0.051	0.076	0.009	0.193	0.065
Summer coincident peak factor	2	0.054	0.520	0.287	0.287	0.52	NA	0.054
Winter coincident peak demand savings (kW)	2	0.011	0.088	0.050	0.050	NA	NA	0.088
Winter coincident peak factor	2	0.073	0.080	0.077	0.077	NA	NA	0.073
Measure references/sources						NYSERDA; Savings based on similar calculation method that Aspen utilized in for the Soak Up Some Savings Program. Savings are weighted based on hot water and dryer heat fuel source. The savings estimate is based on assumed capacity equal to 2.96 cu. ft. and 392 cycles per year.	DEER; CALMAC Effective Useful Life Report - September 2000; "Evaluation of Pacific Gas & Electric Company's 1997 Commercial Energy Efficiency Incentives Program: Lighting Technologies", prepared by Quantum Consulting, Inc., for Pacific Gas & Electric Company, March 1, 1999	EV; 2003_CW_savings_analysis.xls; waterpumpsavings.doc; U.S. Department of Energy, Final Rule Technical Support Document (TSD): Energy Efficiency Standards for Consumer Products: Clothes Washers, December, 2000

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	ENERGY STAR Clothes Washer	ENERGY STAR Clothes Washer	ENERGY STAR Clothes Washer	ENERGY STAR Clothes Washer	ENERGY STAR Clothes Washer	
ACEEE db Code	Res-5	Res-5	Res-5	Res-5	Res-5	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Ref. No.: RAP00003	Page 29	Savings Calculator; http://www.energystar.gov/index.cfm?c=clotheswash.pr_clothes_washers	http://www.cee1.org/	NA	
Measure name	Energy Star Clothes Washer with electric DHW & Dryer	Energy Star Clothes Washer	Energy Star qualified residential clothes washer	Energy Star Clothes Washer		
Notes/description (note any differences, key assumptions, inputs)	Replaces baseline efficiency clothes washer; 14 year life	Energy Star Clothes Washer with electric water heat and electric drying; standard size capacity of 2.96 cu. Ft. and annual usage of 392 cycles; MEF 1.04 for 2004 baseline and 1.42 for Enegry Star	Electric water heating; 8 loads per week; 234 kWh/year energy star unit replaces 532 kWh/year unit; 10 year life	Electric water heater, electric dryer		
Energy savings (kWh)	509	298	2,970 kWh life cycle energy saved	Tier 1: 502 kWh/year, 1.28 kWh/cycle; Tier 2: 604 kWh/yr, 1.54 kWh/cycle; Tier 3: 694 kWh/yr, 1.77 kWh/cycle; Tier 4a: 776 kWh/yr, 1.98 kWh/cycle; Tier 4b: 776 kWh/yr, 1.98 kWh/cycle		
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA				
Summer coincident peak demand savings (kW)	NA	0.036				
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	0.0113	NA				
Winter coincident peak factor	0.08	NA				
Measure references/sources	NA	NA		Consortium for Energy Efficiency Residential Clothes Washer Initiative Program Description; 1996, revised 2002; http://www.cee1.org/resid/seha/rwsh/rwsh-main.php3		

MEASURE	ACEEE Summary Data					Compact Fluorescent Lightbulb	Compact Fluorescent Lightbulb	Compact Fluorescent Lightbulb
ACEEE db Code						Res-6	Res-6	Res-6
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						L.CFL._RES._._N; Energy Star Products Program	RRes00AV20St	IV-E-1-h (Efficient Products Program, Lighting End Use)
Measure name	**Compact Fluorescent Lightbulb - 20W**					Compact Fluorescent Lamps (CFLs)-ENERGY STAR	20 Watt Integral CFL -- screw in	CFL
Notes/description (note any differences, key assumptions, inputs)						Replace 75W incandescent with a 20W CFL	20 W CFL replaces existing 75 W incandescent lamp	An existing incandescent lamp is replaced with a lower wattage ENERGY STAR qualified CFL
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh)	5	39	95	58	59	95	42.3	61
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	4	0.040	0.055	0.055	0.051	0.055	0.055	0.055
Summer coincident peak demand savings (kW)	4	0.004	0.009	0.006	0.006	0.006	0.00401	0.006
Summer coincident peak factor	2	0.100	0.123	0.112	0.112	0.1	NA	0.123
Winter coincident peak demand savings (kW)	2	0.003	0.012	0.008	0.008	NA	NA	0.012
Winter coincident peak factor	2	0.232	0.278	0.255	0.255	NA	NA	0.232
Measure references/sources						The gross kW reduction and annual operating hours are taken from the Nexus Research report of the NYSERDA Lighting Catalog	CFL metering study prepared for CA IOUs by KEMA, Inc., Feb 25, 2005.	(1) 2003 lighting wattage files (Efficiency Vermont, and (2) Xenergy, Process and Impact Evaluation of Joint Uilities Starlights Residential Lighting Program, prepared for Boston Edison and other MA utilities, July 23, 2000

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	Compact Fluorescent Lightbulb	Compact Fluorescent Lightbulb	Compact Fluorescent Lightbulb	Compact Fluorescent Lightbulb	Compact Fluorescent Lightbulb	
ACEEE db Code	Res-6	Res-6	Res-6	Res-6	Res-6	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Ref. No.: RLI00006	Page 30-31	Savings calculator; http://www.energystar.gov/index.cfm?c=cfls.pr_cfls	Only gives efficiency specifications; references ENERGY STAR website for more information	NA	
Measure name	ENERGY STAR CFL Interior - 20 Watt	Compact Fluorescent Lamps -- 20 Watts replaces 60 W inc	Energy Star qualified CF lamp			
Notes/description (note any differences, key assumptions, inputs)	Interior residential lighting	Installation of ENERGY STAR CFL to replace standard incandescent lamps	Used 6 hours/day; 13 watt CFL replaces 60 watt conventional bulb; 6,000 lifetime (hours) CFL replaces 750 lifetime (hours) conventional bulb; 4 uear life for 6,000 lifetime hours CFL			
Energy savings (kWh)	39	58.3	448 kWh life cycle energy saved			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	0.04				
Summer coincident peak demand savings (kW)	NA	0.009				
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	0.0033	NA				
Winter coincident peak factor	0.278	NA				
Measure references/sources	NA	NA				

	ACEEE Summary Data					ENERGY STAR Fluorescent Torchiere	ENERGY STAR Fluorescent Torchiere	ENERGY STAR Fluorescent Torchiere
ACEEE db Code						**Res-7**	**Res-9**	**Res-9**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						L.CFL-TORCH._.RES._._.N	Run ID: RRes00AVTor55. Measure ID: D03-842	IV-E-3-f (Efficient Products Program, Lighting End Use)
Measure name	**ENERGY STAR Fluorescent Torchiere**					Lighting fixtures, portable (torchieres)-ENERGY STAR	55W CFL Torchiere	Torchiere
Notes/description (note any differences, key assumptions, inputs)						1328 operating hours, replaces halogen torchiere, VEIC estimate based on 2004 retail prices, source of measure life based on VEIC estimate of average occupant residence	55 Watt CFL torchiere--pin based replaces 300 W halogen lamp torchiere.	A high efficiency flourescent torchiere replaces a halogen torchiere of baseline efficiency. Operating hours residential is 1241 hours/year.
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh)	4	180	325	231	242	325	203.9	257.9
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	3	0.226	0.245	0.245	0.239	0.245	0.245	0.226
Summer coincident peak demand savings (kW)	3	0.020	0.028	0.025	0.024	0.025	0.020	0.028
Summer coincident peak factor	3	0.081	0.123	0.100	0.101	0.1	0.081	0.123
Winter coincident peak demand savings (kW)	2	0.015	0.052	0.034	0.034	NA	NA	0.052
Winter coincident peak factor	2	0.232	0.278	0.255	0.255	NA	NA	0.232
Measure references/sources						The gross kW reduction and annual operating hours are taken from the Nexus Research report of the NYSERDA Lighting Catalog	"CFL Metering Study" prepared for PG&E, SDG&E and SCE by KEMA, Inc., February 25, 2005.	Xenergy, "Process and Impact Evaluation of Joint Utilities Starlights Residential Lighting Program," prepared for Boston Edison, Commonwealth Electric, Eastern Utilities and New England Power Service Co., July 23, 2000.

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

	ENERGY STAR Fluorescent Torchiere	ENERGY STAR Fluorescent Torchiere	ENERGY STAR Fluorescent Torchiere	ENERGY STAR Fluorescent Torchiere	ENERGY STAR Fluorescent Torchiere	
ACEEE db Code	**Res-9**	**Res-9**	**Res-9**	**Res-9**	**Res-9**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Ref. No.: RLI00010	Not included in database.	Performance specifications given at http://www.energystar.gov/index.cfm?c=fixtures.pr_light_fixtures	NA	NA	
Measure name	ENERGY STAR Fluorescent Torchiere					
Notes/description (note any differences, key assumptions, inputs)			Does not give specific savings estimates; includes calculators for commercial and bulk purchase applications.			
Energy savings (kWh)	180	NA				
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA				
Summer coincident peak demand savings (kW)	NA	NA				
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	0.0154	NA				
Winter coincident peak factor	0.278	NA				
Measure references/sources	NA	NA				

MEASURE	ACEEE Summary Data					ECM fan motor	ECM fan motor	ECM fan motor
ACEEE db Code						Res-8	Res-7	Res-7
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						H.FURNACE-GASw/ECM.<100000.RES._._.N	Not given as a program measure.	Not given as a program measure.
Measure name	ECM fan motor on residential furnace/central air conditioner					Furnace - natural gas, and equipped with an ECM blower motor (AFUE >=90%)		
Notes/description (note any differences, key assumptions, inputs)						Equipment size < 100,000 Btu/hour (assumed to be 80,000 Btu/hour). ECM motor savings based on Nexant's review of WI Focus on Energy Report, adjusted for NYS weather (CDD and HDD). The additional gas consumption due to reduced blower waste heat (negative gas impact of 1.5MMBtu) has been considered. Analysis assumes that approximately 70% of NYS homes have no Central A/C.		
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	1	396	396	396	396	396	NA	NA
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	1	0.175	0.175	0.175	0.175	0.175	NA	NA
Summer coincident peak demand savings (kW)	1	0.147	0.147	0.147	0.147	0.147	NA	NA
Summer coincident peak factor	1	0.840	0.840	0.840	0.840	0.84	NA	NA
Winter coincident peak demand savings (kW)	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources						Wisconsin Focus on Energy Report for ECM motor savings; Efficiency Vermont Technical Reference Manual for measure life		

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	**ECM fan motor**	**ECM fan motor**	**ECM fan motor**	**ECM fan motor**	**ECM fan motor**	
ACEEE db Code	**Res-7**	**Res-7**	**Res-7**	**Res-7**	**Res-7**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**ENERGY STAR Specifications**	**CEE Product Specifications**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Not given as a program measure.	Not given as a program measure.	Not listed as separate measure.	NA	D3 Advanced HVAC Fan Motors	
Measure name					Advanced HVAC Fan Motors	
Notes/description (note any differences, key assumptions, inputs)					DCPM and other alternatives to PSC multi-tap induction fan motors; DCPM motor of 1/2 hp (efficiency: 70%, 75% low speed, high speed) replaces multi-tap PSC motor of 1/2 hp (efficiency: 35%, 65% low speed, high speed); 15 year life	
Energy savings (kWh)	NA	NA			510 kWh/year	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA				
Summer coincident peak demand savings (kW)	NA	NA				
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	NA	NA				
Winter coincident peak factor	NA	NA				
Measure references/sources						

MEASURE	ACEEE Summary Data	Infiltration reduction - single family existing homes	Infiltration reduction - single family existing homes	Infiltration reduction - single family existing homes
ACEEE db Code		Res-9	Res-9	Res-9
Name of Database or Reference		NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number		H.AIRSEAL._.RES._._.N	Run ID: RSFm1275RLIWr. Measure ID: D03-439	Infiltration reduction not included as measure for single-family residential existing construction
Measure name	Residential single-family housing infiltration reduction	Infiltration reduction (weather-stripping or air sealing, conducted with blower door).	Low-Income Weatherization w/out Evaporative Cooler.	NA
Notes/description (note any differences, key assumptions, inputs)		The energy savings are based on 1998 ACEEE report. Assumptions include: 1700 ft2 house, gas heat and electric central A/C, and 8.5% savings of baseline HVAC consumptions.	1528 sq ft SF home. Built before 1978. Climate zone 12--Sacramento. Savings reported "per common unit," which is a "1000 sq ft house." Average size of unit is 1.528 or a 1,528 sq ft house. Values below are based on reported savings of 5.06 kWh/unit energy savings and 21.518 Watts/unit peak demand impact.	
	Summary Data			
	Records Min Max Median Mean			
Energy savings (kWh)	It is not possible to report any meaningful summary data for this measure as there are not common units used in reporting estimated impacts.	187	7.7	NA
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction		0.31	NA	NA
Summer coincident peak demand savings (kW)		0.26	0.033	NA
Summer coincident peak factor		0.84	NA	NA
Winter coincident peak demand savings (kW)			NA	NA
Winter coincident peak factor			NA	NA
Measure references/sources				

Additional Technical References and Cross Checks

Data from these additional references are not used in giving ranges, medians and means; only data from the primary state/regional databases are used for these summary data.

MEASURE	Infiltration reduction - single family existing homes	Infiltration reduction - single family existing homes	Infiltration reduction - single family existing homes	Infiltration reduction - single family existing homes	Infiltration reduction - single family existing homes	
ACEEE db Code	Res-9	Res-9	Res-9	Res-9	Res-9	
Name of Database or Reference	Northwest Power and Conservation Council: Conservation Resource Comments Database	Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards	NA	NA	NA	
Link/citation or code number	Ref. No.: REE00049	Air Infiltration (page 14)				
Measure name	Single family weatherization -- Infiltration control (cost and savings per sq. ft. of floor area for each 0.1 air change per hour reduction) Heating Zone 3	Air infiltration reduction				
Notes/description (note any differences, key assumptions, inputs)	Existing single family residence w/electric heat as defined by WeatherWise and Appendix T specifications. Change in air change per hour must be verified through pre- and post-measurement of infiltration/exfiltration using blower door per the protocols described in Appendix T, Part 1.	This measure reduces air infilration into the residence, using pre- and post-treatment blower door air pressure readings to confirm air leakage reduction. Homes must have electric air conditioning to qualify for measure coverage from program. Deemed savings values are equal to "CFM50 * V" where CFM50=air infiltration reduction in CFM at 50 pascals and V=savings value from table in database. Case reported below is for "Valley Region," home with gas heating.				
Energy savings (kWh)	0.37 kWh/sq ft for each 0.1 air change/hour reduction achieved	0.6268 kWh per CFM50 reduction				
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA				
Summer coincident peak demand savings (kW)	NA	0.00043 kW per CFM50 reduction				
Summer coincident peak factor	NA	NA				
Winter coincident peak demand savings (kW)	0.0001 kW/sq ft for each 0.1 air change/hour reduction achieved	NA				
Winter coincident peak factor	0.401	NA				
Measure references/sources						

MEASURE	ACEEE Summary Data					Packaged roof-top HVAC units, 5-12 tons	Packaged roof-top HVAC units, 5-12 tons	Packaged roof-top HVAC units, 5-12 tons
ACEEE db Code						**Comm-1**	**Comm-1**	**Comm-1**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						H.RTU-AS-TIER2.5-11.CI.1994.2002.N; Smart Equipment Choices Program	RunID CAsm0803ASPH4; MeasureID D03-081	I-B-1-f (Commercial Energy Opportunities, HVAC End Use)
Measure name	**Packaged roof-top HVAC units, 5-12 tons cooling.**					Air-Source Unitary or Split System HVAC > 5.4 to 11.25 tons - AC or HP (Tier 2)	High eff. packaged unitary system HP (65-134k)	HVAC End Use, Unitary HVAC
Notes/description (note any differences, key assumptions, inputs)						Equipment size 5.4 to 11.25 tons; new system with 11 EER efficiency replaces old system with 8.9 EER efficiency; 600 assumed annual operating hours; 15 year life. Savings are in "per ton" values. Baseline efficiency based on ASHRAE 90.1-89. The savings estimate is only valid for measures implemented before 7/3/02. The retrofit EER is based on program requirements.	11 EER / 3.4 COP Split/Package A/C Heat Pump; Building type ASM; floor area 34,003.4 sq ft; built between 2002 and 2005; Climate Zone 8-El Toro; 15 year life. Savings impacts given "per ton"	Unitary HVAC equipment meeting a minimum qualifying efficiency. See the Cool Choice Minimum Efficiencies table in the Reference Tables section; Split system and Single Package (rooftop units): 800 cooling full load hours; 15 year life; baseline and new efficiencies given in table on page 34; for example, assume 135,000 Btu/hr unit (11.25 ton); baseline EER=8.6; replacement EER=11) following formula gives 0.285 kW max demand savings and 228 kWh savings
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings **(kWh/ton)** *NOTE this difference from other measure reported savings.*	4	20	202	143	127	154	131	20.3
Maximum demand savings **(kW/ton)** or Full-load (Gross) kW demand reduction	2	0.025	0.257	0.141	0.141	0.257	NA	0.025
Summer coincident peak demand savings **(kW/ton**) *NOTE this difference from other measure reported savings.*	4	0.020	0.232	0.083	0.104	0.232	0.065	0.02
Summer coincident peak factor	2	0.800	0.900	0.850	0.850	0.9	NA	0.8
Winter coincident peak demand savings	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources								

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Packaged roof-top HVAC units, 5-12 tons**	**Packaged roof-top HVAC units, 5-12 tons**	**Packaged roof-top HVAC units, 5-12 tons**	**Packaged roof-top HVAC units, 5-12 tons**	
ACEEE db Code	**Comm-1**	**Comm-1**	**Comm-1**	**Comm-1**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Not included as a measure.	Page 12		H1b Advanced Roof-top Packaged Air Conditioners	
Measure name	NA	SPLIT SYSTEM AND SINGLE-PACKAGE AIR CONDITIONERS BETWEEN 65,000 BTU/H AND 240,000 BTU/H	UNITARY AC EQUIPMENT (>=5.4 AND < 11.25 TONS)	Advanced Roof-top Packaged Air Conditioners	
Notes/description (note any differences, key assumptions, inputs)	NA	The following deemed savings values could be used to calculate an incentive for replacing an existing central air conditioner with a premium efficiency central air conditioner through a standard offer program; Baseline is assumed to be a new central air conditioning system with an EER of 8.9 for units up to 135,000 Btu/h, and 8.5 for units between 135,000 Btu/h and 240,000 Btu/h; Minimum standard for units up to 135,000 Btu/h is 10.0 EER and 9.5 EER for units between 135,000 Btu/h and 240,000 Btu/h; for units greater than 65,000 Btu/h and less than 135,000 Btu/h; Zone 1; example is 10 ton unit eith EER of 10.5 installed in Zone 2.	New Construction; Cool Choice	10-ton RTU packaged unit for commercial spaces (with economizer); 13.4 EER replaces 10.3 EER; 15 year life	
Energy savings **(kWh/ton)** *NOTE this difference from other measure reported savings.*	NA	202		323.4 kWh/ton	
Maximum demand savings **(kW/ton)** or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings **(kW/ton**) *NOTE this difference from other measure reported savings.*	NA	0.1	Min of kW/Qty: .254; Max of kW/Qty2: .265	2.4 kW summer peak demand savings	
Summer coincident peak factor	NA	NA		0.3 kW winter peak demand savings	
Winter coincident peak demand savings	NA	NA			
Winter coincident peak factor	NA	NA			
Measure references/sources					

MEASURE	ACEEE Summary Data					Efficient Chillers -- 150-300 ton centrifugal	Efficient Chillers -- 150-300 ton centrifugal	Efficient Chillers -- 150-300 ton centrifugal
ACEEE db Code						**Comm-2**	**Comm-2**	**Comm-2**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						H.CHILLER-WC-CENT.150-299.CL._._.N	RunID CECC0803ChlC2; MeasureID D03-116	Not included in set of measures.
Measure name	**Efficient Chillers -- 150-300 ton centrifugal**					Centrifugal chiller (150-299 tons)	Centrifugal chillers (150-299 tons) with improved kW/ton	NA
Notes/description (note any differences, key assumptions, inputs)						Water cooled chiller, centrifugal 150-199 tons, IPLV kw/ton<0.52. Baseline equipment efficiency 5.55 IPLV (COP); baseline kW demand = 0.634 kW/ton. Retrofit equipment efficiency - 0.52. 1800 annual operating hours.	Water cooled centrifugal chiller (0.507 kW/ton) ; replaces Cent Chlr, water cooled cond (0.634 kW/ton (based on vintage)); building type ECC; floor area 300,046 sq ft; built between 2002 and 2005; climate zone 8-el toro; 20 year life	NA
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings **(kWh/ton)**: *NOTE this difference in reported units from other measures in database*	2	99	205	152	152	205	98.7	NA
Maximum demand savings (kW/ton) or Full-load (Gross) kW demand reduction	1	0.114	0.114	0.114	0.114	0.114	NA	NA
Summer coincident peak demand savings **(kW/ton)**: *NOTE this difference in reported units*	2	0.067	0.102	0.085	0.085	0.102	0.067	NA
Summer coincident peak factor	1	0.900	0.900	0.900	0.900	0.9	NA	NA
Winter coincident peak demand savings (kW)	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources						The calculation method is based on the FEMP calculator. Annual hours estimate provided by NYSERDA. Baseline efficiency is equal to ECCC of NYS.	DEER	NA

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Efficient Chillers -- 150-300 ton centrifugal**	**Efficient Chillers -- 150-300 ton centrifugal**	**Efficient Chillers -- 150-300 ton centrifugal**	**Efficient Chillers -- 150-300 ton centrifugal**	
ACEEE db Code	**Comm-2**	**Comm-2**	**Comm-2**	**Comm-2**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Not included in set of measures	Not listed within deemed savings database (which is only residential and small commercial)		NA	
Measure name	NA	NA	WATER COOLED CHILLER >=150 TONS <300 TONS - IPLV		
Notes/description (note any differences, key assumptions, inputs)	NA	NA	New Construction; HVAC		
Energy savings **(kWh/ton)**: *NOTE this difference in reported units from other measures in database*	NA	NA			
Maximum demand savings (kW/ton) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings **(kW/ton)**: *NOTE this difference in reported units*	NA	NA	Min of kW/Qty: .121; Max of kW/Qty2: .208		
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	NA	NA			
Winter coincident peak factor	NA	NA			
Measure references/sources	NA	NA			

MEASURE	**ACEEE Summary Data**					**HVAC Controls/EMS**	**HVAC Controls/EMS**	**HVAC Controls/EMS**
ACEEE db Code						**Comm-3**	**Comm-3**	**Comm-3**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						O.EMS._.CI._._.N; Loan Fund Program	RunID CECC0896HCEMS; MeasureID D03-072	Not included in set of measures.
Measure name	**HVAC Controls/Energy Management System**					Energy Management System (EMS) - control of HVAC and lighting loads	Suite of EMS measures	NA
Notes/description (note any differences, key assumptions, inputs)						equipment size: per square foot of floor area; EMS to control heating, cooling, and lighting equipment replaces no building control system; baseline equipment demand is .004 kW; 15 year life	CHW & HW reset; Building type ECC; floor area 300,046 sq ft; built between 1993 and 2001; climate zone 8-el toro; 1000 sqft building; 14 year life. DEER report gives 283.6 kWh/unit---a "unit" is 1000 sq ft=>0.284 kWh/sq feet is derived. Similarly; peak demand impact given as 7.78 Watts/unit=>~0 kW/sq ft (0.000008 kW/sq ft)	NA
	Summary Data: *In this case could not find comparable measures; summary/comparative data not meaningful.*							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (**kWh/square foot**) NOTE difference in reported units	See above note					1	284 kWh/unit	NA
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction						0	NA	NA
Summer coincident peak demand savings (kW)						0	0.008 kW/unit	NA
Summer coincident peak factor						0.9	NA	NA
Winter coincident peak demand savings (kW)						NA	NA	NA
Winter coincident peak factor						NA	NA	NA
Measure references/sources						The savings estimate are in units per square foot of floor space. Savings estimate assumes 10% savings compared to baseline system energy consumption. Estimate includes cooling, heating, and lighting energy. Stipulated assumptions include the following: Cooling equiv. full-load hours=600, Eff. of cooling equipment=0.8 kW/ton, cooling load=300 ft^2/ton, lighting load=1.3 W/ft^2, annual lighting hours=3760, annual HDD=6064, Heat loss=20 btu/h-ft^2, Eff. of heating equipment=0.80.	Central plant systems with no timeclocks in OLD vintage.	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**HVAC Controls/EMS**	**HVAC Controls/EMS**	**HVAC Controls/EMS**	**HVAC Controls/EMS**	
ACEEE db Code	**Comm-3**	**Comm-3**	**Comm-3**	**Comm-3**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Not included in set of measures.	Not included in set of measures.		H18 Ventilation Controlled by IAQ	
Measure name	NA	NA	EMS CONDITIONED SPACE CONTROLLED 80,001 -200,000 sqft	Ventilation Controlled by IAQ	
Notes/description (note any differences, key assumptions, inputs)	NA	NA	Retrofit Program; HVAC	Utilizing CO2 to control outdoor air ventilation rate; 50,000 ft office building with CO2 control in six key zones is new measure while 50,000 ft office building with standard ventilation is baseline; 15 year life	
Energy savings (**kWh/square foot**) NOTE difference in reported units	NA	NA		8,000 kWh/year	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA	Min of kW/Qty: .103; Max of kW/Qty2: .202	0.8 kW summer peak demand savings	
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	NA	NA		0.8 kW winter peak demand savings	
Winter coincident peak factor	NA	NA			
Measure references/sources					

MEASURE	**ACEEE Summary Data**					**Variable Speed Drive**	**Variable Speed Drive**	**Variable Speed Drive**
ACEEE db Code						**Comm-4**	**Comm-4**	**Comm-4**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						H.VSD-AHU._.CI._._.N; Smart Equipment Choices Program	RunID CECC0805VSDSF; MeasureID D03-051	I-A-2-a (Commercial Energy Opportunities Program, Motors End Use)
Measure name	**Variable Speed (Frequency) Drives**					Variable Speed Drive (replace constant speed control) - AHU Fan	Variable Frequency Drive motors use on VAV fans	Variable Frequency Drives (VFD)
Notes/description (note any differences, key assumptions, inputs)						VSD control replaces constant speed control; measured per motor hp; about 5914 assumed annual operating hours; 15 year life (source is Efficiency Vermont, Technical Reference User's Man)	Variable-frequency drive motors on VAV fans; VFD with 30% min-cfm-ratio; building type ECC; floor area 300,046 sq ft; built 2006 and later (measures as retrofit for nonresidential); climate zone 8-el Toro; 10 year life; common unit name: nameplate HP, number of common units=230.9.	All VFDs are treated as custom measures. Savings are estimated using two sets of equations. The first are standardized savings algorithms and assumptions for all VFDs applied to motors of 10 HP or less for the following HVAC applications: supply fans, return fans, exhaust fans, chilled water pumps, and boiler feedwater pumps ("Standardized Approach"). The savings for all VFDs applied to motors greater than 10 HP, or for other applications, are calculated on a site-specific basis, following the generalized engineering equation provided and standard engineering practice ("Customized Approach"). Metered data will be used when available; The Baseline reflects no VFD installed. Savings are based on application of VFDs to a range of baseline conditions including no control, inlet guide vanes, outlet guide vanes, and throttling valves; 15 year life for non-process VFDs and 10 year life for process. Values below are for supply fan applications.
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings **(kWh/hp)**: NOTE difference in units	3	822	1656	1001	1160	1656	822	1001
Maximum demand savings (kW/hp) or Full-load (Gross) kW demand reduction: NOTE Difference in units	2	0.173	0.280	0.227	0.227	0.28	NA	0.173
Summer coincident peak demand savings (kW/hp). NOTE Difference in units/	3	0.071	0.252	0.203	0.175	0.252	0.2026	0.07093
Summer coincident peak factor	2	0.410	0.900	0.655	0.655	0.9	NA	0.41
Winter coincident peak demand savings (kW)	1	0.173	0.173	0.173	0.173	NA	NA	0.173
Winter coincident peak factor	1	1.000	1.000	1.000	1.000	NA	NA	1
Measure references/sources						NYSERDA; The savings estimate is based on the review GDS completed for NYSERDA's LF Program. Savings estimates are in units per motor HP.	DEER	Source: RPF based on custom analyses of past EVT projects. CF summer and winter from National Grid evaluations of VFD installations from 1995 to 1999.

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Variable Speed Drive**	**Variable Speed Drive**	**Variable Speed Drive**	**Variable Speed Drive**	
ACEEE db Code	**Comm-4**	**Comm-4**	**Comm-4**	**Comm-4**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Not included in set of measures.	Not included in set of measures.		NA	
Measure name	NA	NA	HVAC SUPPLY FAN 30 HP VFD		
Notes/description (note any differences, key assumptions, inputs)	NA	NA	Retrofit Program; VSD		
Energy savings **(kWh/hp)**: NOTE difference in units	NA	NA			
Maximum demand savings (kW/hp) or Full-load (Gross) kW demand reduction: NOTE Difference in units	NA	NA			
Summer coincident peak demand savings (kW/hp). NOTE Difference in units/	NA	NA	Min of kW/Qty: .347; Max of kW/Qty2: .347		
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	NA	NA			
Winter coincident peak factor	NA	NA			
Measure references/sources					

MEASURE	ACEEE Summary Data					Compact Flourescent Lighting	Compact Flourescent Lighting	Compact Flourescent Lighting
ACEEE db Code						Comm-5	Comm-5	Comm-5
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						L.CFL.13.CI._._.N; Smart Equipment Choices Program	RunID CECC00AVI13Lo; MeasureID D03-801	IV-E-1-h (Efficient Products Program, Lighting End Use)
Measure name	**Compact Fluorescent Lighting**					Screw-in CFLs - (Non-Residential)	13 Watt Integral CFL	Lighting End Use CFL
Notes/description (note any differences, key assumptions, inputs)						CF13/1-SCRW with .013 kW demand replaces I60/1 (efficiency) with .06 kW demand; 3760 assumed annual operating hours; 4 year life	13 Watt < 800 Lumens - screw-in ; building type ECC; lamp; replaces 40 W incandescent; 2.1 year life	An existing incandescent lamp is replaced with a lower wattage ENERGY STAR qualified compact fluorescent; 3,500 hours / year; Most CFLs have a rated lifetime of 10,000 hours.
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh) annual	4	37	190	143	128	177	108	190
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	2	0.047	0.054	0.051	0.051	0.047	NA	0.054
Summer coincident peak demand savings (kW)	4	0.006	0.039	0.026	0.024	0.031	0.021	0.039
Summer coincident peak factor	2	0.650	0.720	0.685	0.685	0.65	NA	0.72
Winter coincident peak demand savings (kW)	1	0.036	0.036	0.036	0.036	NA	NA	0.036
Winter coincident peak factor	1	0.672	0.672	0.672	0.672	NA	NA	0.672
Measure references/sources						Lumen output of specified CFL matched to lumen output of incandescent. Nexant assumes savings for each replacement size is typical of stated case.	DEER; XENERGY Inc., "California Statewide Commercial Sector Efficiency Potential Study", July, 2002 2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; 2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001	1) 2003_lighting_wattage_EPP.xls; 2) Xenergy, Process and Impact Evaluation of Joint Utilities Starlights Residential Lighting Program, prepared for Boston Edison, Commonwealth Electric, Eastern Utilities, and New England Power Service Company, July 23, 2000

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Compact Flourescent Lighting**	**Compact Flourescent Lighting**	**Compact Flourescent Lighting**	**Compact Flourescent Lighting**	
ACEEE db Code	**Comm-5**	**Comm-5**	**Comm-5**	**Comm-5**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Not included as a measure	Page 30		L13 Very High Quality Residential Compact Fluorescent Portable (Plug-in) Fixtures	
Measure name		COMPACT FLUORESCENT LAMPS	NEW FL. CFL HI / LO BAY FIXTURE (<220W)	Very High Quality Residential Compact Fluorescent Portable (Plug-in) Fixtures	
Notes/description (note any differences, key assumptions, inputs)		Compact fluorescent lamps (CFLs) must be installed in a location that gets a daily usage of at least 3 hours per day. Deemed values were calculated based on an average daily usage of 4 hours per day. CFL incentives are for customers under the Hard-To-Reach Program template only; replace Standard incandescent lamps, with wattages of 40, 60, 75, or 100 watts; range of 14-18 watts for numbers below	Retrofit Program; Light	Table and floor lamps that use pin-based CFLs (lamps include ballasts); compact fluorescent table lamp with 27 watt CFL pin-based lamp with 65 LPW (including ballast) replaces standard A-Line table lamp with 100 one 100-watt lamp with 15 LPW; 12 year life	
Energy savings (kWh) annual	NA	36.5		60 kWh/year	
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	0.006	Min of kW/Qty: .134; Max of kW/Qty2: .237	.0051 kW summer peak demand savings	
Summer coincident peak factor	NA	NA		.0146 kW winter peak demand savings	
Winter coincident peak demand savings (kW)	NA	NA			
Winter coincident peak factor	NA	NA			
Measure references/sources					

MEASURE	ACEEE Summary Data					Daylighting Controls	Daylighting Controls	Daylighting Controls
ACEEE db Code						Comm-6	Comm-6	Comm-6
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						L.HID-DC._.CI._._.N; Smart Equipment Choices Program	RunID CAsm0103DLtS2; MeasureID D03-006	II-A-2-d (Commercial Energy Opportunities, Act 250 and Comprehensive Track, Lighting Controls)
Measure name	Daylighting Controls					Daylight Controlled (HID - Continuous or stepped dimming)	Ad daylighting controls to side-lit space w/ 2-step control	Lighting Controls
Notes/description (note any differences, key assumptions, inputs)						Estimated savings per fixture: 2 x HPS250/1 @ 50% power (efficiency) with .295 kW demand replaces 2 x HPS250/1 efficiency with .590 kW demand; 1128 assumed annual operating hours; 10 year life (source is 2004 Efficiency Vermont Technical Reference Manual)	Add daylighting controls to side-lit space with 2-step controls; minimum lumen based on building. Building type: ASM. Floor area=34,003.4 sq ft, built between 2002 and 2005, climate zone=1 (Arcata). Standard glass type, window-wall fraction. Common unit name = kW of LtgCtrl. Number of common units = 67.5 (kW of LtgCtrl). Standard glass type and window-wall fraction.	Controls for lighting, such as occupancy sensors and daylight dimming; For lighting controls the baseline is a manual switch. The Vermont Consolidated Act 250 Energy Guidelines call for multi-level and perimeter switching where appropriate; 10 year life
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	Summary data not meaningful; uniform definition of measures not found. Reported impacts are given in different units.					333	335.5 kWh/kW lighting controlled	Savings given as function of connected load; savings factors for different types of controls are: 50% for daylight controlled dimming ballast
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction						0.295	NA	Maximum savings for installed kW given by above savings factors: 50% for daylight controlled dimming ballasts
Summer coincident peak demand savings (kW)						0.192	0.127 kW/KW lighting controlled (12.7% of lighting load)	NA
Summer coincident peak factor						0.65	NA	0.72
Winter coincident peak demand savings (kW)						NA	NA	NA
Winter coincident peak factor						NA	NA	0.672
Measure references/sources						NYSERDA; Baseline kW/fixture based on "Lighting Table." Retrofit kW/fixture based on 50% of baseline fixture power. See PAF info on "Common Parameters" sheet.	DEER; "Review of Survey Data to Support Revisions to DOE's Dishwasher Test Procedure", Arthur D. Little Inc., December 18, 2001; "Evaluation of Pacific Gas & Electric Company's 1997 Commercial Energy Efficiency Incentives Program: Lighting Technologies", prepared by Quantum Consulting, Inc., for Pacific Gas & Electric Company, March 1, 1999	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Daylighting Controls**	**Daylighting Controls**	**Daylighting Controls**	**Daylighting Controls**	**Daylighting Controls**
ACEEE db Code	**Comm-6**	**Comm-6**	**Comm-6**	**Comm-6**	**Comm-6**
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database (1)**	**ACEEE Emerging Technologies Database (2)**
Link/citation or code number	Not included in measure database.	Not included in measure database		L5 Advanced/Integrated Daylighting Controls (ADCs)	L8 Universal Light Dimming Control Device
Measure name	NA	NA	DAYLIGHT DIMMING SYSTEM	Advanced/Integrated Daylighting Controls (ADCs)	Universal Light Dimming Control Device
Notes/description (note any differences, key assumptions, inputs)	NA	NA	Retrofit Program; Light	Improved combination occupancy-sensing, daylight-sensing and dimming; advanced/integrated lighting control with occupancy and daylight sensors of 0.5 watts per sq ft replaces general purpose recessed lensed fixture with 2 T8 lamps with electronic ballast of 0.92 watts per sq ft; 20 year life	A dimming device that attaches to a lighting circuit to dim any type of lighting; standard CF with universal dimming device of 18 watts and 55 LPW replaces a standard A-line lamp of 75 watts and 15 LPW; 20 year life (about 20,000 hrs)
Energy savings (kWh)	NA	NA		1.7 kWh/year per sq ft	62 kWh/year
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA	Min of kW/Qty: .470; Max of kW/Qty2: .470	0 kW summer peak demand savings	.004 kW summer peak demand savings
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	NA	NA		.003 kW winter peak demand savings	.011 kW winter peak demand savings
Winter coincident peak factor	NA	NA			
Measure references/sources					

MEASURE	ACEEE Summary Data					Occupancy Sensors Lighting	Occupancy Sensors Lighting	Occupancy Sensors Lighting
ACEEE db Code						Comm-7	Comm-7	Comm-7
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						L.HID-OC._.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVOCC01; MeasureID D03-856	See above (Daylight Controls); no stand alone occupancy sensors in Efficiency Vermont, but included in above daylighting controls
Measure name	Occupancy Sensors Lighting					Occupancy Sensors (HID fixture - Hi-Low Switching)	Occ-Sensor - Wall box	
Notes/description (note any differences, key assumptions, inputs)						2 x HPS250/1 @ 50% power (efficiency) with .295 kW demand replaces 2 x HPS250/1 efficiency with .590 kW demand; 1128 assumed annual operating hours; 10 year life (source is 2004 Efficiency Vermont Technical Reference Manual)	Assume control 3 2-lamp fixtures w/T8 34W EL Ballast; building type ALC; replaces no occupancy sensor; 8 year life. Common unit name = kW of LtgCtrl.	Savings given as function of connected load; savings factors for different types of controls are: 30% for wall occupancy sensors; 30% for remote-mounted occupancy sensor; and 30% for occupancy controlled hi-low switching for HID
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	Summary data not meaningful; uniform definition of measures not found. Reported impacts are given in different units.					333	214 kWh/kW lighting controlled	Maximum savings for installed kW given by above savings factors: 30% for occupancy sensors
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction						0.295	NA	NA
Summer coincident peak demand savings (kW)						0.192	0.176 kW/kW lighting controlled (17.6% of lighting load)	30% equivalent to 0.3 kW/kW lighting controlled
Summer coincident peak factor						0.65	NA	
Winter coincident peak demand savings (kW)						NA	NA	NA
Winter coincident peak factor						NA	NA	NA
Measure references/sources						Baseline kW/fixture based on "Lighting Table." Retrofit kW/fixture based on 50% of baseline fixture power. See PAF info on "Common Parameters" sheet.	DEER; 2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Review of Survey Data to Support Revisions to DOE's Dishwasher Test Procedure", Arthur D. Little Inc., December 18, 2001; "Evaluation of Pacific Gas & Electric Company's 1997 Commercial Energy Efficiency Incentives Program: Lighting Technologies", prepared by Quantum Consulting, Inc., for Pacific Gas & Electric Company, March 1, 1999	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Occupancy Sensors Lighting**	**Occupancy Sensors Lighting**	**Occupancy Sensors Lighting**	**Occupancy Sensors Lighting**	
ACEEE db Code	**Comm-7**	**Comm-7**	**Comm-7**	**Comm-7**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Not included in set of savings measures.	Not included in set of savings measures.		See above entry (Daylight Controlled (lighting) (1)	
Measure name	NA	NA	OCCUPANCY SENSOR -ALL HOURS		
Notes/description (note any differences, key assumptions, inputs)	NA	NA	Retrofit Program; Light		
Energy savings (kWh)	NA	NA			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA	Min of kW/Qty: .186; Max of kW/Qty2: .205		
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	NA	NA			
Winter coincident peak factor	NA	NA			
Measure references/sources					

MEASURE	ACEEE Summary Data					Premium Efficiency Motor (TEFC, 5 hp)	Premium Efficiency Motor (TEFC, 5 hp)	Premium Efficiency Motor (TEFC, 5 hp)
ACEEE db Code						**Comm-8**	**Comm-8**	**Comm-8**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						M.TEFC1800.5.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVMOT12; MeasureID D03-915	I-A-1-c (Commercial Energy Opportunities Program, Motors End Use)
Measure name	**Premium Efficiency Motor (TEFC, 5 hp)**					Motors - Totally Enclosed Fan-Cooled (TEFC) - 1800 RPM	Premium Efficiency Motor - 5 HP	Motors End Use, Efficient Motors
Notes/description (note any differences, key assumptions, inputs)						5 hp; 89.5% efficiency motor replaces 87.5% efficiency motor; 4600 assumed annual operating hours; 20 year life (source is EES)	Closed Drip Proof: 2076 Hours of Operation; building type ALC; 15 year life; baseline is EPAct efficiency motor	Three phase ODP & TEFC motors less than or equal to 200 HP meeting a minimum qualifying efficiency. The minimum efficiency is that defined by EPACT and the 2001 Vermont Guidelines for Energy Efficient Commercial Construction; The Baseline reflects the minimum efficiency allowed under the Federal Energy Policy Act of 1992 (EPACT) that went into effect October 1997. While EPACT generally reflects the floor of efficiencies available, most manufacturers produce models just meeting EPACT, and these are the most commonly purchased among customers not choosing high efficiency. Refer to the Baseline Motor Efficiencies table; 20 year life
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh)	3	148	329	163	213	329	148	"Efficient Motors" is a category of measures given in TRM User's Manual. Formulae are given to estimate kWh and kW savings that requires values for "baseline connected load kW." No "standard" or "default" values given so cannot give estimates here for examples.
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	1	0.071	0.071	0.071	0.071	0.071	NA	NA
Summer coincident peak demand savings (kW)	2	0.056	0.070	0.063	0.063	0.056	0.07	NA
Summer coincident peak factor	1	0.780	0.780	0.780	0.780	0.78	NA	NA
Winter coincident peak demand savings (kW)	1	0.013	0.013	0.013	0.013	NA	NA	NA
Winter coincident peak factor	1	0.640	0.640	0.640	0.640	NA	NA	NA
Measure references/sources						NYSERDA; Baseline motor efficiency equal to EPACT minimum efficiency standard (federal minimum). Retrofit motor efficiency based on program requirements.	DEER; 2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", prepared for Southern California Edison by Kema-Xenergy, February 13, 2004; The Pacific Northwest's Regional Technical Forum as of November, 2003 (http://rtf.nwppc.org/)	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Premium Efficiency Motor (TEFC, 5 hp)**	**Premium Efficiency Motor (TEFC, 5 hp)**	**Premium Efficiency Motor (TEFC, 5 hp)**	**Premium Efficiency Motor (TEFC, 5 hp)**	
ACEEE db Code	**Comm-8**	**Comm-8**	**Comm-8**	**Comm-8**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Ref. No.: IMD00113	Not included in set of savings measures.		NA	
Measure name	Premium Efficiency 5 HP 1800 RPM TEFC	NA	5.000HP/1800RPM OPER-TEFC MOTR		
Notes/description (note any differences, key assumptions, inputs)	New Premium Efficiency Totally Enclosed Fan Cooled (TEFC) Industrial Motors, 10 HP and smaller. Savings are based on average of Open Drip Proof and Total Enclosed Fan Cooled motors with speeds of 1200, 1800, or 3600 RPM listed in MotorMaster+ v3.0. Average Loading and hours of operation were taken from US DOE Motors Market Survey Report: http://www.oit.doe.gov/bestpractices/explore_library/pdfs/mtrmkt.pdf	NA	New Construction; Motors		
Energy savings (kWh)	163	NA			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA	Min of kW/Qty: .202; Max of kW/Qty2: .202		
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	0.013	NA			
Winter coincident peak factor	0.640	NA			
Measure references/sources	NW Energy Efficiency Alliance DrivePower Initiative: http://www.nwalliance.org/projects/current/DrivePower.html CEE Premium-Efficiency Motors Initiative: http://www.ceeformt.org/ind/motrs/motrs-main.php52				

MEASURE	ACEEE Summary Data					Premium Efficiency Motor (TEFC, 10 hp)	Premium Efficiency Motor (TEFC, 10 hp)	Premium Efficiency Motor (TEFC, 10 hp)
ACEEE db Code						**Comm-9**	**Comm-9**	**Comm-9**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						M.TEFC1800.10.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVMOT13; MeasureID D03-926	"Efficient Motors" is a category of measures given in TRM User's Manual. Formulae are given to estimate kWh and kW savings that requires values for "baseline connected load kW." No "standard" or "default" values given so cannot give estimates here for examples.
Measure name	**Premium Efficiency Motor (TEFC, 10 hp)**					Motors - Totally Enclosed Fan-Cooled (TEFC) - 1800 RPM	Premium Efficiency Motor - 10 HP	NA
Notes/description (note any differences, key assumptions, inputs)						10 hp; 91.7% efficiency motor replaces 89.5% efficiency motor; 4600 assumed annual operating hours; 20 year life (source is EES)	Closed Drip Proof: 2076 Hours of Operation; building type ALC; 15 year life; baseline is EPAct efficiency motor	NA
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh)	3	146	690	311	382	690	311	NA
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	1	0.150	0.150	0.150	0.150	0.15	NA	NA
Summer coincident peak demand savings (kW)	2	0.117	0.148	0.133	0.133	0.117	0.148	NA
Summer coincident peak factor	1	0.780	0.780	0.780	0.780	0.78	NA	NA
Winter coincident peak demand savings (kW)	1	0.012	0.012	0.012	0.012	NA	NA	NA
Winter coincident peak factor	1	0.640	0.640	0.640	0.640	NA	NA	NA
Measure references/sources						NYSERDA; Baseline motor efficiency equal to EPACT minimum efficiency standard (federal minimum). Retrofit motor efficiency based on program requirements.	2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", prepared for Southern California Edison by Kema-Xenergy, February 13, 2004; The Pacific Northwest's Regional Technical Forum as of November, 2003 (http://rtf.nwppc.org/)	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	Premium Efficiency Motor (TEFC, 10 hp)	Premium Efficiency Motor (TEFC, 10 hp)	Premium Efficiency Motor (TEFC, 10 hp)	Premium Efficiency Motor (TEFC, 10 hp)	
ACEEE db Code	**Comm-9**	**Comm-9**	**Comm-9**	**Comm-9**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	Ref. No.: IMD00107	Not included in set of savings measures.		NA	
Measure name	New Premium Efficiency TEFC Industrial Motors, 10 HP and smaller	NA	10.00HP/1800RPM OPER-TEFC MOTR		
Notes/description (note any differences, key assumptions, inputs)	New Premium Efficiency Totally Enclosed Fan Cooled (TEFC) Industrial Motors, 10 HP and smaller. Savings are based on average of Open Drip Proof and Total Enclosed Fan Cooled motors with speeds of 1200, 1800, or 3600 RPM listed in MotorMaster+ v3.0. Average Loading and hours of operation were taken from US DOE Motors Market Survey Report: http://www.oit.doe.gov/bestpractices/explore_library/pdfs/mtrmkt.pdf	NA	Retrofit Program; Motors		
Energy savings (kWh)	146	NA			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA	Min of kW/Qty: .410; Max of kW/Qty2: .410		
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	0.012	NA			
Winter coincident peak factor	0.640	NA			
Measure references/sources	NW Energy Efficiency Alliance DrivePower Initiative: http://www.nwalliance.org/projects/current/DrivePower.html CEE Premium-Efficiency Motors Initiative: http://www.ceeformt.org/ind/motrs/motrs-main.php52				

MEASURE	ACEEE Summary Data					Premium Efficiency Motor (TEFC, 25 hp)	Premium Efficiency Motor (TEFC, 25 hp)	Premium Efficiency Motor (TEFC, 25 hp)
ACEEE db Code						**Comm-10**	**Comm-10**	**Comm-10**
Name of Database or Reference						**NYSERDA: New York Energy $mart Programs--Deemed Savings Database**	**California Energy Commission: Database of Energy Efficiency Resources (DEER)**	**Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19**
Link/citation or code number						M.TEFC1800.25.CI._._.N; Smart Equipment Choices Program	RunID CALC00AVMOT16; MeasureID D03-929	See Notes for Premium Efficiency Motor (TEFC, 5 hp)
Measure name	**Premium Efficiency Motor (TEFC, 25 hp)**					Motors - Totally Enclosed Fan-Cooled (TEFC) - 1800 RPM	Premium Efficiency Motor - 25 HP	
Notes/description (note any differences, key assumptions, inputs)						25 hp; 93.6% efficiency motor replaces 92.4% efficiency motor; 4600 assumed annual operating hours; 20 year life (source is EES)	Closed Drip Proof: 2820 Hours of Operation ; building type ALC 15 year life; baseline is EPAct efficiency motor	
	Summary Data							
	Records	**Min**	**Max**	**Median**	**Mean**			
Energy savings (kWh)	3	547	893	788	743	893	547	NA
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	1	0.194	0.194	0.194	0.194	0.194	NA	NA
Summer coincident peak demand savings (kW)	2	0.151	0.191	0.171	0.171	0.151	0.191	NA
Summer coincident peak factor	1	0.780	0.780	0.780	0.780	0.78	NA	NA
Winter coincident peak demand savings (kW)	1	0.062	0.062	0.062	0.062	NA	NA	NA
Winter coincident peak factor	1	0.640	0.640	0.640	0.640	NA	NA	NA
Measure references/sources						NYSERDA; Baseline motor efficiency equal to EPACT minimum efficiency standard (federal minimum). Retrofit motor efficiency based on program requirements.	2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 200; "Measurement and Evaluation Study of 2002 Statewide Residential Appliance Recycling Program", prepared for Southern California Edison by Kema-Xenergy, February 13, 2004; The Pacific Northwest's Regional Technical Forum as of November, 2003 (http://rtf.nwppc.org/)	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	Premium Efficiency Motor (TEFC, 25 hp)	Premium Efficiency Motor (TEFC, 25 hp)	Premium Efficiency Motor (TEFC, 25 hp)	Premium Efficiency Motor (TEFC, 25 hp)	
ACEEE db Code	**Comm-10**	**Comm-10**	**Comm-10**	**Comm-10**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database**	
Link/citation or code number	IMD00050	Not included in set of savings measures.		NA	
Measure name	Premium Efficiency 25 HP 1800 RPM ODP	NA	20.00HP/1800RPM OPER-TEFC MOTR		
Notes/description (note any differences, key assumptions, inputs)	New Premium Efficiency TEFC Industrial Motors, larger than 10 HP and smaller than 100 HP. 1800 rpm.	NA	Retrofit Program; Motors		
Energy savings (kWh)	788	NA			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA	Min of kW/Qty: .768; Max of kW/Qty2: .768		
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	0.062	NA			
Winter coincident peak factor	0.640	NA			
Measure references/sources	NW Energy Efficiency Alliance DrivePower Initiative: http://www.nwalliance.org/projects/current/DrivePower.html CEE Premium-Efficiency Motors Initiative: http://www.ceeformt.org/ind/motrs/motrs-main.php52				

MEASURE	ACEEE Summary Data					T-8 fixtures with electronic ballast	T-8 fixtures with electronic ballast	T-8 fixtures with electronic ballast
ACEEE db Code						Comm-11	Comm-11	Comm-11
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						L.T8.4x2.CI._._.N; Smart Equipment Choices Program	RunID CECC00AVT8E01; MeasureID D03-852	Measure Number: I-C-1-d (Commercial Energy Opportunities Program, Lighting End Use)
Measure name	T-8 fixtures with electronic ballast					Fluorescent Fixture (4 ft - 2 lamp T8)	Premium T8 El Ballast	Lighting End Use, T8 Fixtures with Electronic Ballast
Notes/description (note any differences, key assumptions, inputs)						New efficiency F42ILL with .059 kW demand replaces F42EE with .072 kW demand; 3760 assumed annual operating hours; 12 year life	Four ft. 2 lamp fixture, ballast factor of less than or equal to 0.77; building type is ECC; replaces T8 32W El Ballast; 11 year life	T8 fixtures with electronic ballasts. Includes standard T8 fixtures, high-efficiency fixtures and open nonrecessed fixtures with specular reflectors; 2 T8 lamps w/ elec ballast -- 4' to 8'; operating hours depend on type of building (for office building: 3,435 annual hours); 20 year life for T8 fixtures
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	4	22	49	46	41	49	44	22
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	2	0.009	0.013	0.011	0.011	0.013	NA	0.009
Summer coincident peak demand savings (kW)	3	0.006	0.008	0.008	0.007	0.008	0.008	0.006
Summer coincident peak factor	2	0.650	0.720	0.685	0.685	0.65	NA	0.72
Winter coincident peak demand savings (kW)	1	0.005	0.005	0.005	0.005	NA	NA	NA
Winter coincident peak factor	1	0.483	0.483	0.483	0.483	NA	NA	NA
Measure references/sources						NYSERDA; Baseline and retrofit kW/fixture based on "Lighting Table."	2001 DEER Update, prepared for the California Energy Commission by Xenergy Inc., August 2001; "Energy Data Sourcebook for the US Residential Sector", Lawrence Berkeley Laboratory (LBL-40297 UC-1600), September, 1997; “Evaluation of Pacific Gas & Electric Company’s 1997 Commercial Energy Efficiency Incentives Program: Lighting Technologies”, prepared by Quantum Consulting, Inc., for Pacific Gas & Electric Company, March 1, 1999	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**T-8 fixtures with electronic ballast**	**T-8 fixtures with electronic ballast**	**T-8 with electronic ballast**	**T-8 with electronic ballast**	**T-8 with electronic ballast**
ACEEE db Code	**Comm-11**	**Comm-11**	**Comm-11**	**Comm-11**	**Comm-11**
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**	**NGRID**	**ACEEE Emerging Technologies Database (1)**	**ACEEE Emerging Technologies Database (2)**
Link/citation or code number	CLI00283	Not included in set of savings measures.		L1 High Efficacy Premium T8 Lighting (100 Lumens/W)	L14 One-Lamp Linear Fluorescent Fixtures with High Performance Lamps
Measure name	2-4ft, 34/40w, T-10/12 Lamp & Mag. Ballast Replacement w/T-8 Elect.	NA	LAMP(S) AND A BALLAST W/ HIGH EFF T8	High Efficacy Premium T8 Lighting (100 Lumens/W)	One-Lamp Linear Fluorescent Fixtures with High Performance Lamps
Notes/description (note any differences, key assumptions, inputs)	Energy Smart Design Rebate per Fixture Retrofit. Large (>20,000 ft2) Retail, heat pump heating	NA	Retrofit Program; Light	Super T8 lighting product that offers maximum efficacy and increased lamp life; new 2 lamp F32T8 XGEN fixture with 30,000 hrs. "super" lamps, BF of .78 of 48 watts/fixture replaces 2 lamp F32T8 fixture with instant start electronic ballast BF 0.9; 15 year life for ballast	One-lamp linear fluorescent fixtures with high performance lamps; two 1 lamp super T8 fixtures with high-power electronic ballast of 78 watts (including ballast) replaces two 2-lamp T8 fixtures, electronic ballast of 134 watts total; 15 year life
Energy savings (kWh)	48	NA		43 kWh/year	233 kWh/year
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA	Min of kW/Qty: .028; Max of kW/Qty2: .031	.010 kW summer peak demand savings	.046 kW summer peak demand savings
Summer coincident peak factor	NA	NA			.041 kW winter peak demand savings
Winter coincident peak demand savings (kW)	0.005	NA		.009 kW winter peak demand savings	
Winter coincident peak factor	0.483	NA			
Measure references/sources					

MEASURE	ACEEE Summary Data					Commercial office equipment: Imaging	Commercial office equipment: Imaging	Commercial office equipment: Imaging
ACEEE db Code						Comm-12	Comm-12	Comm-12
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						Not included in set of measures	RunID: CALC00AVCOP01. Measure ID: D03-901	Not included in set of savings measures.
Measure name	Commercial office equipment: Imaging						High efficiency copier	
Notes/description (note any differences, key assumptions, inputs)							0-20 copies/minute; no vintage distinction; no idle-off control for baseline unit	
	Summary Data							
	Records	Min	Max	Median	Mean	NA		
Energy savings (kWh)	1	324	324	324	324	NA	323.8	NA
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	NA	NA	NA	NA	NA
Summer coincident peak demand savings (kW)	1	0.041	0.041	0.041	0.041	NA	0.0407	NA
Summer coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak demand savings (kW)	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources								
MEASURE	ACEEE Summary Data					Vending-Miser	Vending-Miser	Vending-Miser
ACEEE db Code						Comm-13	Comm-13	Comm-13
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						O.VMOX._.CI_._.N	Run #CALC00AVVEN01, D03-912	Measure Number: I-E-1-b (Commercial Energy Opportunities, Refrigeration End Use)
Measure name	Vending-Miser					Vending Machine Occupancy Sensor	Vending Machine Controller, Cold Drink Vending Machine	Vending Miser for Soft Drink Vending Machines
Notes/description (note any differences, key assumptions, inputs)						Savings estimate based on documentation provided to NYSERDA from SAIC. Documentation supports a 40% savings estimate, which is reasonable.	No vintage distinction, region-wide, common unit=machine	Using an occupancy sensor, during times of inactivity the VendingMiser turns off the machines lights and duty cycles the compressor based on the ambient air temperature. Applicable for conditioned indoor installations. Assumed 8760 operating hours.
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	4	1022	1635	1406	1367	1022	1612	1635
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	NA	NA	0.117	NA	NA
Summer coincident peak demand savings (kW)	2	0.000	0.114	0.057	0.057	0.114	0	NA
Summer coincident peak factor	1	0.980	0.980	0.980	0.980	0.98	NA	NA
Winter coincident peak demand savings	1	0.234	0.234	0.234	0.234	NA	NA	NA
Winter coincident peak factor	1	0.270	0.270	0.270	0.270	NA	NA	NA
Measure references/sources						Efficiency Vermont Technical Reference Manual--Users Manual Measure Savings Algorithms and Cost	Memo from G. Fernstrom, PG&E, July 2004. "Final Report on Technology Energy Savings (DEER)" prepared by NEOS Corp for the CA Conservation Inventory Group, May 1994	

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Commercial office equipment: Imaging**	**Commercial office equipment: Imaging**	**Commercial office equipment: Imaging**	**Commercial office equipment: Imaging**	
ACEEE db Code	**Comm-12**	**Comm-12**	**Comm-12**	**Comm-12**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**			
Link/citation or code number	Not included in set of measures	Not included in set of savings measures.	NA	NA	
Measure name					
Notes/description (note any differences, key assumptions, inputs)					
Energy savings (kWh)	NA	NA			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA			
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	NA	NA			
Winter coincident peak factor	NA	NA			
Measure references/sources		NA			
MEASURE	**Vending-Miser**	**Vending-Miser**	**Vending-Miser**	**Vending-Miser**	
ACEEE db Code	**Comm-13**	**Comm-13**	**Comm-13**	**Comm-13**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**			
Link/citation or code number	Ref. No.: XVM00001	Not included in set of measures.	NA	NA	
Measure name	Vending Machine Controller-Large Machine w/Illuminated Front	NA			
Notes/description (note any differences, key assumptions, inputs)	Direct install, rebate or other measure cost buy-down	NA			
Energy savings (kWh)	1200	NA			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction		NA			
Summer coincident peak demand savings (kW)	NA	NA			
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings	0.234	NA			
Winter coincident peak factor	0.270	NA			
Measure references/sources					

MEASURE	ACEEE Summary Data					Commercial packaged refrigeration	Commercial packaged refrigeration	Commercial packaged refrigeration
ACEEE db Code						Comm-14	Comm-14	Comm-14
Name of Database or Reference						NYSERDA: New York Energy $mart Programs--Deemed Savings Database	California Energy Commission: Database of Energy Efficiency Resources (DEER)	Efficiency Vermont: Technical Reference User Manual (TRM), No. 4-19
Link/citation or code number						O.RF - TIER1.>60.CI. . .N	Not included in set of measures	Not included in set of measures
Measure name	Commercial packaged refrigeration					Commercial Packaged Refrigeration Equipment, Reach-in Refrigerator (3-door unit, >60 cu. Ft) - Tier 1 (Energy Star)		
Notes/description (note any differences, key assumptions, inputs)						Baseline efficiency equal to average model efficiency for units of this size. Packaged commercial refrigeration equipment is not covered by Federal Code. Equipment size = 72 cubic feet. Assumed operating hours = 8760.		
	Summary Data							
	Records	Min	Max	Median	Mean			
Energy savings (kWh)	1	1088	1088	1088	1088	1088	NA	NA
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA	NA	NA	NA	0.124	NA	NA
Summer coincident peak demand savings (kW)	1	0.122	0.122	0.122	0.122	0.122	NA	NA
Summer coincident peak factor	1	0.980	0.980	0.980	0.980	0.98	NA	NA
Winter coincident peak demand savings (kW)	NA	NA	NA	NA	NA	NA	NA	NA
Winter coincident peak factor	NA	NA	NA	NA	NA	NA	NA	NA
Measure references/sources						ACEEE Report #A022, 12/02		

Additional Technical References and Cross Checks

Note: ENERGY STAR and CEE Specifications not applicable to this set of commercial measures

MEASURE	**Commercial packaged refrigeration**	**Commercial packaged refrigeration**	**Commercial packaged refrigeration**	**Commercial packaged refrigeration**	
ACEEE db Code	**Comm-14**	**Comm-14**	**Comm-14**	**Comm-14**	
Name of Database or Reference	**Northwest Power and Conservation Council: Conservation Resource Comments Database**	**Public Utility Commission of Texas: Texas Deemed Savings, Installation and Efficiency Standards**			
Link/citation or code number	Not included in set of measures	Not included in set of measures.	NA	NA	
Measure name		NA			
Notes/description (note any differences, key assumptions, inputs)		NA			
Energy savings (kWh)	NA	NA			
Maximum demand savings (kW) or Full-load (Gross) kW demand reduction	NA	NA			
Summer coincident peak demand savings (kW)	NA	NA			
Summer coincident peak factor	NA	NA			
Winter coincident peak demand savings (kW)	NA	NA			
Winter coincident peak factor	NA	NA			
Measure references/sources					