DEEMED SAVINGS TECHNICAL ASSUMPTIONS

Product: Lighting Efficiency

Description:
Prescriptive rebates will be offered for replacement lighting equipment. New Construction rebates will be offered for new facilities or spaces overhauled for a new purpose. Custom Efficiency Lighting rebates are available for lighting-related improvements that are not prescriptive (pre-approval is required).
Information in red type indicates an addition or change to the technical assumptions

Algorithms:

Electrical Demand Savings (Customer kW)	= (kW_Base - kW_EE) x HVAC_cooling_kWsavings_factor
Electrical Energy Savings (Customer kWh/yr)	= (kW_Base - kW_EE) x Hrs x HVAC_cooling_kWhsavings_factor
Natural Gas Savings (Dth)	= (kW_Base - kW_EE) x Hrs x HVAC_heating_penalty_factor
kW_saved	= kW_Base - kW_EE
Hrs_Baseline (Base)	= Hrs *HVAC_cooling_kWhsavings_factor/HVAC_cooling_kWsavings_factor
Hrs_Energy Efficient (EE)	= Hrs *HVAC_cooling_kWhsavings_factor/HVAC_cooling_kWsavings_factor
Stairwell Fixture with Integral Occupancy Sensor EE_H1	= Hours in State 1 of fixture usage = Hrs * (1-Percent_Time_Controlled)
Stairwell Fixture with Integral Occupancy Sensor EE_H2	= Hours in State 2 of fixture usage = Hrs - EE_H1
Stairwell Fixture with Integral Occupancy Sensor Base_Watt-Hrs	= Baseline Watt-Hours = Base_kW * 1000 * Hrs
Stairwell Fixture with Integral Occupancy Sensor EE_Watt-Hrs	= High Efficiency Watt-Hours = (EE_W1 * EE_H1)+(EE_W2 * EE_H2)
Stairwell Fixture with Integral Occupancy Sensor kW_EE	= Average calculated Wattage of two states of fixture usage = Base_kW - [(Base_Watt-Hrs - EE_Watt-Hrs) / (Hrs *1000)] Calculated values shown in Deemed Fixture Table
Lighting Controls -Electrical Energy Savings (Customer kWh/yr)	=(kW connected) x (1-PAF) x Hrs x HVAC_cooling_kWhsavings_factor
Lighting Controls -Electrical Demand Savings (Customer kW)	=(kW connected) x (1-PAF) x HVAC_cooling_kWsavings_factor
Lighting Controls -Natural Gas Savings (Dth)	=(kW connected) x (1-PAF) x Hrs x HVAC_heating_penalty_factor
Electrical Energy Savings (Gross Generator kWh)	= Customer kWh / (1-TDLF)
Electrical Demand Savings (Gross Generator kW)	= Customer kW x CF / (1-TDLF)
Electrical Energy Savings (Net Generator kWh)	= Gross Generator kWh x NTG
Electrical Demand Savings (Net Generator kW)	= Gross Generator kW x NTG

Variables:

Hrs	= Annual Operating Hours. Hours to be obtained from Table 2. The type of facility is to be supplied by the customer.
kW_Base	= Baseline fixture wattage (kW per fixture) determined from deemed fixture table.
kW_EE	= High Efficiency fixture wattage (kW per fixture) determined from deemed fixture table
Stairwell Fixture with Integral Occupancy Sensor Hrs_full_power	= 263 per year
Stairwell Fixture with Integral Occupancy Sensor Hrs_dimmed	= 8497 per year
Stairwell Fixture with Integral Occupancy Sensor Percent_Time_Controlled	= 97% (Ref 8)
Stairwell Fixture with Integral Occupancy Sensor EE_W1	= Wattage in State 1 of fixture usage
Stairwell Fixture with Integral Occupancy Sensor EE_W2	= Wattage in State 2 of fixture usage

HVAC_cooling_kWhsavings_factor	= Cooling system energy savings factor resulting from efficient lighting from Table 1. Reduction in lighting energy results in a reduction in cooling energy, if the customer has air conditioning. Existence
HVAC_cooling_kWsavings_factor	= Cooling system demand savings factor resulting from efficient lighting from Table 1. Reduction in
HVAC_heating_kWsavings_factor	= Heating system penalty factor resulting from efficient lighting. Reduction in lighting demand results in an increase in heating usage, if the customer has air conditioning. A value of -0.00088738 Dth/kWh given by (Reference 4).
CF	= Coincidence Factor, the probability that peak demand of the lights will coincide with peak utility system demand. CF will be determined based on customer provided building type in Table 2.
Measure Life	= Length of time the lighting equipment will be operational, see Table 3 for Measure Lifetimes
Baseline Cost	= Cost of the baseline technology. For Retrofit, the cost is 0 since the baseline is to continue to operate the existing system. For New Construction, the cost is given in the deemed fixture table. (Reference 4) and vendors.
High Efficiency Cost	= Cost of the High Efficiency technology. Costs given in Deemed Fixture Table (Reference 4, 8, 11) and vendors.
kW connected	Total connected fixture load, determined as the sum of stipulated fixture wattages from Deemed Fixture Table.
PAF	Stipulated power adjustment factor based on control type from Table 4.
TDLF	Transmission Distribution Loss Factor = **6.50**%, the percentage loss of electricity as it flows from the power plant to the customer, calculated using factors from Enhanced DSM Filing SRD-2
NTG	Net-to-gross = 84% for prescriptive measures (Reference 5) and 96% for Custom Efficiency Lighting and Lighting Redesign based on the additional influence.
Incremental operation and maintenance cost	= Other annual savings or costs associated with the electrical savings. For Lighting, this consists of additional natural gas for heating. Methodology given by (Reference 2).
Adjustments for closely-related fixture combinations	Allow closely-related fixture combinations to be added to the DSTA and qualify for a prescriptive rebate if the technology pairings are in a range deemed viable by PSCo energy efficiency engineering or product management.
Higher wattage level or quantity of fixtures removed	Allow a higher level of wattage, or a higher number of fixtures, to be removed during a lighting retrofit if the customer so chooses.

Inputs:	**Verified during M&V:**
Number of Fixtures	Yes
Lighting equipment type	Yes
Building type	Yes
Existence of air conditioning	Yes

Assumptions:

- Each replacement lighting fixture is going in on a one-for-one basis for existing fixtures. New construction fixtures are put in on a one-for-one basis instead of lower efficiency options.
- In the Technical Assumptions, one will note that the Operating Hours does not appear, but rather a modified version. The methodology defines kW Savings on the basis of difference in kW with the HVAC Cooling demand factor. The Annual Energy Savings takes into account any heating that has to be added.

Table 1: HVAC Interactive Factors (Reference 2)

HVAC system	**HVAC_cooling_kWh savings_factor**	**HVAC_cooling_kW savings_factor**
Heating only	1.00	1.00
Heating and cooling	1.11	1.33

LED Refrigerated Case Door	1.41	1.41
LED Freezer Case Door	1.59	1.59

Table 2: Coincident Peak Demand Factors and Annual Operating Hours by Building Type (Reference 1 and 3

Building Type	CF	Annual Operating Hours
24-Hour Facility	94%	8234
Building Stairwells	91.7%	Matches Segment
College	71%	5010
Cooler Door Retrofit to LED	94%	Matches Segment
Freezer Door Retrofit to LED	94%	Matches Segment
Elemen./Second. School	73%	2080
Grocery (All) / Big Box Retail (larger than 50,000 SF)	94%	5478
Health	84%	3392
Hospital	84%	4532
Hotel/Motel	51%	2697
Manufacturing	96%	5913
Night Time Exterior (LED Canopy/Soffit Lights, LED Exterior Wall Packs)	0%	4380
Office	78%	3435
Other/Misc.	96%	2278
Parking Garages, incl. LED Parking Garage Wall Packs	100%	8760
Restaurant	94%	4156
Retail	94%	3068
Safety or Code Required	100%	8760
Warehouse	96%	2388

Table 3: Measure Lifetimes in Years (Reference 4, 8, 9, 10)

Measure	Lifetime in Years
Low Wattage T8 Lamps	8
T8 Lighting Systems including High Efficiency Ballasts	20
T5 Lighting Systems	20
Ballasted CFLs	20
Integrated 25W Ceramic Metal Halide	7
LED Retrofit Fixture	20
LED Screw In Retrofit Fixture	8
LED Screw In Lamp	12
LED Wall Pack fixtures	18
Lighting Controls	8
Stiarwell Fixtures with Occupancy Sensors	14.4

Table 4: Stipulated Power Adjustment Factors (Reference 1 and 7)

Control Type	PAF	Cost
No controls	1.00	
Occupancy Sensor - Wall Mount	0.70	$55

Occupancy Sensor - Ceiling Mount	0.70	$125
Daylighting - Continuous Dimming	0.70	$65
Daylighting - Multiple Step Dimming	0.80	$65
Daylighting - On/Off	0.90	$65

Incandescent Lamp Wattages

Year	100W	75W	60W	40W
2013	0.0805	0.0645	0.0550	0.0370
2014	0.0760	0.0575	0.0485	0.0330
2015	0.0720	0.0530	0.0430	0.0290
Average 2013-15	0.0762	0.0583	0.0488	0.0330

References

1. Arkansas Deemed Savings Quick Start Program Draft Report Commercial Measures Final Report, Nexant. CF and hours
2. HVAC Interactive Factors developed based on the Rundquist Simplified HVAC Interaction Factor method for Minnesota, presented on page 28 of the 11/93 issue of the ASHRAE Journal - "Calculating lighting and HVAC interactions".
3. Technical Reference User Manual No. 2004-31, Efficiency Vermont, 12/31/04. CF and Hours
4. Deemed Savings Database, Minnesota Department of Commerce Division of Energy Resources (DER), 2008. CF, Hours, kW, Costs, Measure life
5. Net-to-Gross factor from National Energy Efficiency Best Practices Study(http://www.eebestpractices.com)
6. Lighting Efficiency input wattage guide, Xcel Energy, July, 2008, kW
7. CL&P and UI program Savings Documentation modified for 3022 Daylight Hours in Denver CO
8. University of Minnesota Study, 2010
9. LED Lamp measure life based on average 2009 custom project LED life of 45,000 hours / weighted hours of operation average
10. LED Fixture measure life based on Xcel Energy Minnesota Lighting Efficiency Program average replacement fixture lifetime
11. LED Fixture costs based on Xcel Energy Custom Lighting Efficiency project costs

Lighting Efficiency Fixture & Lamp Key

Xcel Energy developed this key to simplify product specifications.

F T2 48 GEN 32 1 Fixture MB HE LBF 5

Technology

Fluorescent (F)	Compact Fluorescent (CFL)
Metal Halide (MH)	LED (LED)
Pulse-Start Metal Halide (PSMH)	Incandescent (INX)
High Pressure Sodium (HPS)	LEC (LEC)
Ceramic Metal Halide (CMH)	Tungsten Halogen (THG)
Mercury Vapor (MV)	Low Pressure Sodium (LPS)

Tube Diameter

T2	T10
T4	T12
T8	*N/A (XX)*

Tube Length (Inches)

6	24	48	84
9	30	60	96
12	36	64	45.8
18	42	72	*N/A (XX)*

Type of Fixture

General (GEN)	Traffic Signal (TRF)
High Bay (HBY)	Optimization (OPT)
Parking Garage (PKG)	Exterior (EXT)
Sensor (SEN)	Wall Pack Exterior (WPE)
Canopy/Soffit (CSO)	Wall Pack Garage (WPG)
Exit (XIT)	Freezer (FRZ)
Refrigerated Case (REF)	Screw in Retrofit (SCI)
Stairwell (STR)	

Wattage

Quantity

Quantity of lamps in the fixture

Fixture or Lamp

Fixture
Lamp

Ballast Type

Magnetic Ballast (MB)
Energy Saving Magnetic Ballast (ESMB)
Electronic Ballast (EB)
Integral Ballast (IB)
N/A (XX)

Ballast Efficiency

Standard (STD)
High Efficiency (HE)
N/A (XX)

Ballast Factor

Low Ballast Factor (LBF)
Normal Ballast Factor (NBF)
High Ballast Factor (HBF)
Very High Ballast Factor (VBF)
N/A (XX)

Dimming (Percentage)

50/50	20	40	45	65	85
5	25	45	50	70	90
10	30	50	55	75	95
15	35	55	60	80	*N/A (XX)*

Lighting Equipment Table

Efficient Fixture, Lamp or Lighting Control	kW	Incremental Cost (Beginning 2013)
FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	0.0368	$23.45
FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	0.0250	$23.45
FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	0.0282	$25.45
FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	0.0736	$25.45
FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	0.0499	$25.45
FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	0.0563	$25.45
FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	0.1104	$35.45
FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	0.0749	$35.45
FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	0.0845	$35.45
FT8-48-GEN-32-4-Fixt-EB-HE-HBF-XX	0.1472	$58.17
FT8-48-GEN-32-4-Fixt-EB-HE-LBF-XX	0.0998	$58.17
FT8-48-GEN-32-4-Fixt-EB-HE-NBF-XX	0.1126	$58.17
FT8-48-GEN-32-1-Blst-EB-HE-HBF-XX	0.0368	$3.00
FT8-48-GEN-32-1-Blst-EB-HE-LBF-XX	0.0250	$3.00
FT8-48-GEN-32-1-Blst-EB-HE-NBF-XX	0.0282	$3.00
FT8-48-GEN-32-2-Blst-EB-HE-HBF-XX	0.0736	$3.00
FT8-48-GEN-32-2-Blst-EB-HE-LBF-XX	0.0499	$3.00
FT8-48-GEN-32-2-Blst-EB-HE-NBF-XX	0.0563	$3.00
FT8-48-GEN-32-3-Blst-EB-HE-HBF-XX	0.1104	$3.00
FT8-48-GEN-32-3-Blst-EB-HE-LBF-XX	0.0749	$3.00
FT8-48-GEN-32-3-Blst-EB-HE-NBF-XX	0.0845	$3.00
FT8-48-GEN-32-4-Blst-EB-HE-HBF-XX	0.1472	$3.00
FT8-48-GEN-32-4-Blst-EB-HE-LBF-XX	0.0998	$3.00
FT8-48-GEN-32-4-Blst-EB-HE-NBF-XX	0.1126	$3.00

Deemed Fixture Table - Retrofit Fixtures To Add

Prescriptive_Measure	Post-Retrofit Efficient Fixture, Lamp or Lighting Control	Pre-Retrofit Baseline Fixture, Allowable Item to Remove (Beginning in 2013, based on updated DOE baselines)
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-110-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-110-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-60-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-60-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-75-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-75-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-95-1-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-HBF-XX	FT12-96-GEN-95-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-110-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-110-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-60-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-60-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-75-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-75-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-95-1-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-LBF-XX	FT12-96-GEN-95-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-110-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-110-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-60-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-60-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-75-1-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-75-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-95-1-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-1-Fixt-EB-HE-NBF-XX	FT12-96-GEN-95-1-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-HBF-XX	FT12-24-GEN-20-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-LBF-XX	FT12-24-GEN-20-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-2-Fixt-EB-STD-XX-XX

Deemed Fixture Table - Retrofit Fixtures To Add

Prescriptive_Measure	Post-Retrofit Efficient Fixture, Lamp or Lighting Control	Pre-Retrofit Baseline Fixture, Allowable Item to Remove (Beginning in 2013, based on updated DOE baselines)
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-NBF-XX	FT12-24-GEN-20-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-24-GEN-17-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-110-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-110-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-60-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-60-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-75-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-75-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-95-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-HBF-XX	FT12-96-GEN-95-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-110-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-110-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-60-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-60-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-75-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-75-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-95-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-LBF-XX	FT12-96-GEN-95-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX

Deemed Fixture Table - Retrofit Fixtures To Add

Prescriptive_Measure	Post-Retrofit Efficient Fixture, Lamp or Lighting Control	Pre-Retrofit Baseline Fixture, Allowable Item to Remove (Beginning in 2013, based on updated DOE baselines)
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-110-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-110-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-60-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-60-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-75-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-75-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-95-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimiztion 1 and 2 Lamp	FT8-48-GEN-32-2-Fixt-EB-HE-NBF-XX	FT12-96-GEN-95-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-3-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-3-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-3-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-HBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-HBF-XX	FT12-48-GEN-40-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-LBF-XX	FT12-48-GEN-40-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-24-GEN-17-4-Fixt-EB-HE-NBF-XX	FT12-48-GEN-40-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	FT12-96-GEN-110-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	FT12-96-GEN-110-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	FT12-96-GEN-60-2-Fixt-ESMB-STD-XX-XX

Deemed Fixture Table - Retrofit Fixtures To Add

Prescriptive_Measure	Post-Retrofit Efficient Fixture, Lamp or Lighting Control	Pre-Retrofit Baseline Fixture, Allowable Item to Remove (Beginning in 2013, based on updated DOE baselines)
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	FT12-96-GEN-75-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	FT12-96-GEN-75-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	FT12-96-GEN-95-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-HBF-XX	FT12-96-GEN-95-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-110-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-110-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-60-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-60-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-75-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-75-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-95-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-LBF-XX	FT12-96-GEN-95-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-48-GEN-34-4-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-110-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-110-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-60-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-60-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-75-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-75-2-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-95-2-Fixt-EB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-3-Fixt-EB-HE-NBF-XX	FT12-96-GEN-95-2-Fixt-MB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-4-Fixt-EB-HE-HBF-XX	FT12-96-GEN-60-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-4-Fixt-EB-HE-LBF-XX	FT12-96-GEN-60-4-Fixt-ESMB-STD-XX-XX
T12 to T8 Optimization 3 and 4 Lamp	FT8-48-GEN-32-4-Fixt-EB-HE-NBF-XX	FT12-96-GEN-60-4-Fixt-ESMB-STD-XX-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-1-Blst-EB-HE-HBF-XX	FT8-48-GEN-32-1-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-1-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-1-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-1-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-1-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-1-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-1-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-1-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-1-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-1-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-1-Blst-EB-STD-LBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-2-Blst-EB-HE-HBF-XX	FT8-48-GEN-32-2-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-2-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-2-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-2-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-2-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-2-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-2-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-2-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-2-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 1 and 2 lamp	FT8-48-GEN-32-2-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-2-Blst-EB-STD-LBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-3-Blst-EB-HE-HBF-XX	FT8-48-GEN-32-3-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-3-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-3-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-3-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-3-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-3-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-3-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-3-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-3-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-3-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-3-Blst-EB-STD-LBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-4-Blst-EB-HE-HBF-XX	FT8-48-GEN-32-4-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-4-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-4-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-4-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-4-Blst-EB-STD-HBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-4-Blst-EB-HE-NBF-XX	FT8-48-GEN-32-4-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-4-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-4-Blst-EB-STD-NBF-XX
T8 Ballasts,2 ft to 4 ft., 3 and 4 lamp	FT8-48-GEN-32-4-Blst-EB-HE-LBF-XX	FT8-48-GEN-32-4-Blst-EB-STD-LBF-XX