



# Prescriptive Lighting & Lighting Controls

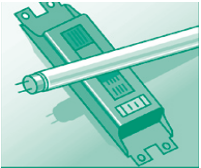
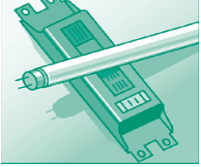

- **Enhanced** several categories offering **greater incentives** for increased performance !  
**Increased incentives across all prescriptive Retrofit Lighting applications**
- **Maintained** Program Offerings and Incentive Levels carried over to 2011 for most lighting systems & controls
- **Performance Lighting:** Decrease in benchmark from 30% to 25%.
- Status of FINAL Mass Save LED Products List





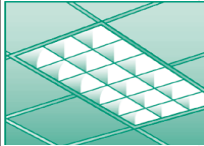


# Lighting: Retrofit 2011

## Measure Codes 10, 12, and 30A

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
10 *	Re-lamp/re-ballast of existing fixtures with new High Performance /Reduced Wattage (HP/RW) T-8 or T-5 lamps and HP/RW T-8 Electronic Ballasts	\$15	Re-lamp/re-ballast of existing fixtures with T-8 or T-5 lamps, each fixture is composed of a ballast and 1, 2, 3 or 4 lamps. Only one incentive may be counted per fixture. Multiple fixtures served by a single ballast are only eligible for one incentive. Consider using reduced wattage 25 & 28 T8 CEE qualified lamps/ballasts.	11	
12 *	Re-lamp/re-ballast of existing fixtures with new High Performance /Reduced Wattage (HP/RW) T-8 or T-5 lamps and HP/RW T-8 Electronic Ballasts	\$25	Re-lamp/re-ballast of existing fixtures with <b>opportunity for increased savings for Measure Code 12 with increased watts saved of more than 23 watts.</b> . Consider using reduced wattage 25 & 28 T8 CEE qualified lamps/ballasts.	23	
30A *	High Efficiency 2 lamp Prismatic Lensed Fluorescent Fixtures - 2x2 or 2x4	\$40	Overall fixture efficiency must be $\geq$ : - 83% for 2x4 prismatic lensed fixture with two T-8 or T-5 lamps; - 75% for 2x2 prismatic lensed fixture with two T-8 or T-5 lamps (reduced wattage biax lamps are eligible- 28 watts).	27	 2

# Lighting: Retrofit 2011

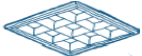
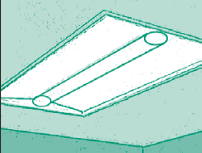
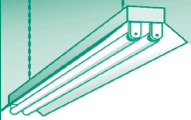
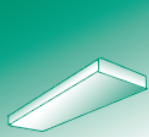
## Measure Codes 30B, 30C, and 31

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
30B *	High Efficiency 2 lamp Parabolic Fluorescent Fixtures - 2x2 or 2x4	\$45	Overall fixture efficiency must be $\geq$ : - 80% for 2x4 fixture with parabolic louver (2" to 3" deep cells) with two T-8 or T5 lamps; - 80% for 2x2 fixture with parabolic louver (2" to 3" deep cells) with two T-8 or T5 lamps (reduced wattage biax lamps are eligible- 28 watts)	27	
30C *	High Efficiency up to 2 lamp Recessed Indirect/Direct Fluorescent Fixtures - 2x2 or 2x4	\$45	Overall fixture efficiency must be $\geq$ : - 75% for 2x4 recessed indirect/direct fixture with two T-8 or T-5 lamps; - 70% for 2x2 recessed indirect/direct fixture with two T-8, T-5, or T5HO (only reduced wattage biax lamps are eligible- 28 watts)	27	
31 *	High Efficiency 3 lamp Fluorescent Fixtures - 2x4	\$35	Overall fixture efficiency must be $\geq$ : - 83% for 2x4 prismatic lensed fixture with three T-8 or T-5 lamps; - 75% for 2x4 fixture with parabolic louver (2" to 3" deep cells) with three T-8 or T5 lamps; - 70% for 2x4 recessed indirect fixture with three T-8 or T-5 lamps; <b>Eligible fixtures are limited to 3 lamps with a low power ballast factor &lt; 0.80.</b>	31	







# Lighting: Retrofit 2011

## Measure Codes 32, 34, and 41

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
32 *	High Efficiency Recessed Fluorescent 2 lamp Retrofit Kits- 2x2 and 2x4	\$45	<p>Overall fixture efficiency must be <math>\geq</math> :</p> <ul style="list-style-type: none"> <li>- 80% for 2x4 parabolic retrofit kit and advanced glare reducing diffuser retrofit kit with two T-8 or T-5 lamps;</li> <li>- 80% for 2x2 parabolic retrofit kit and advanced glare reducing diffuser retrofit kit with two T-8, T-5, or T-5HO (reduced wattage biax lamps are eligible- 28 watts)</li> </ul>	27	
34 *	Advanced Recessed Fluorescent Fixtures 2x2, 1x4 or 2x4	\$50	<p>Overall fixture efficiency must be <math>\geq</math> :</p> <ul style="list-style-type: none"> <li>- 85% for 2x4 advanced glare reducing diffuser fixture with one or two T-8 or T-5 lamps, or one T-5HO lamp;</li> <li>- 80% for 1x4 advanced glare reducing diffuser fixture with one or two T-8 or T-5 lamps, or one T-5HO lamp.</li> <li>- 80% for 2x2 advanced glare reducing diffuser fixture with one or two T-8, T-5, T-5HO lamps (reduced wattage biax lamps are eligible- 28</li> </ul>	33	
41 *	Industrial/Commercial Fluorescent Fixtures –4 ft. and 8ft. Fixtures	\$45	<p>Overall fixture efficiency must be <math>\geq</math> :</p> <ul style="list-style-type: none"> <li>- 85% for Industrial Reflector fixture with T-8 or T-5 lamps (up to 20% up-light);</li> <li>- 83% for Commercial Grade Wraparound fixture with one or two T-8 or T-5 lamps.</li> <li>- 85% for reflector kits with specular or semi-specular reflectors</li> </ul> <p>Reflector Kits for Existing Fixtures includes 2'x2', and 2'x4' reflector troffer kits, 4' and 8' strip channel, and industrial reflector kits.</p> <p>Applies to fixtures installed at or less than 16 feet above the floor. Only one incentive may be counted per fixture. Eight foot and multiple fixtures served by a single ballast are only eligible for one incentive.</p>	23	 




# Lighting: Retrofit 2011

## Measure Codes 43, 44, 21 and 23

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
43 *	Vapor Tight Fluorescent Fixtures- 4 ft. and 8ft. Fixtures	\$75	Overall fixture efficiency must be $\geq$ : -70% for Vapor Tight fluorescent fixture with one or two T-8, T-5, T-8HO, T-5HO or 3-T8 lamps. Typically installed in garage, warehouse, food prep and other industrial applications.	45	
44 *	Clean Room Rated Fluorescent Fixtures – 1x4or 2x4	\$60	Overall fixture efficiency must be $\geq$ : -75% for Clean Room fluorescent fixture with up to three T-8 or T-5 lamps. To be eligible for incentives, fixtures must be installed in a clean room rated environment.	27	
21	Compact Fluorescent Fixture	\$20	To be eligible for incentives, all fixtures must be hard-wired and have electronic ballasts with <33% THD. (Retrofit kits and screw-in adapters not eligible)	35	
23	Dimmable Compact Fluorescent Fixture	\$40	To be eligible for incentives, all fixtures must be hard-wired and have electronic ballasts with <33% THD. (Retrofit kits and screw-in adapters not eligible)	35	

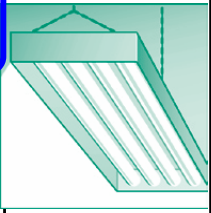
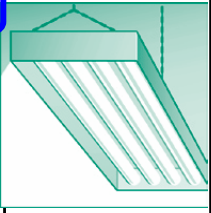
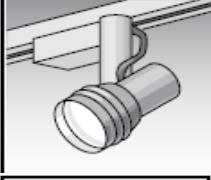

# Lighting: Retrofit 2011

## Measure Codes 25, 51 and 52

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
25	LED or LEC (Electroluminescence) Exit Fixtures	\$20	All materials and assembled units shall comply with all applicable codes and standards including (but not limited to) Federal/State/Local building, fire, and electrical codes, and may require designated egress lighting to comply with such codes. Exit sign retrofit kits are not eligible.	15	
51	Pulse Start Metal Halide Lamp and Electronic Ballast Kits	\$70	All kits must include a new matched Pulse Start Metal Halide Lamp and Electronic Ballast installed per manufacturer's specifications and applicable codes. Indoor and Outdoor fixtures are eligible..	50	
52	Pulse Start Metal Halide Fixture with Electronic Ballast	\$85	Only New Metal Halide Pulse Start fixtures with Electronic Ballasts are eligible. Retrofit of existing metal halide fixture of less than 200 watts with new fixture is not eligible. Indoor and Outdoor fixtures are eligible.	64	






# Lighting: Retrofit 2011

## Measure Codes 56, 57, 70 and 71

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
56*	High Intensity Fluorescent Fixtures (HIF) for High and Low Bay Applications (less than or equal to 207W)	\$90	Minimum wattage is 104 Watts and Maximum wattage is 207 Watts. Minimum fixture efficiency must exceed 80%. Recommended mounting height > 16 feet above the floor. High Intensity Fluorescent fixtures incorporate a number of lamp technologies that include T-8, T-5, T-5HO and compact fluorescent. <b>Low power ballasts are not eligible.</b>	70	
57*	High Intensity Fluorescent Fixtures (HIF) for High and Low Bay Applications (greater than 207W)	\$150	Minimum wattage is greater than 207 Watts. Minimum fixture efficiency must exceed 80%. Recommended mounting height > 20 feet above the floor. High Intensity Fluorescent fixtures incorporate a number of lamp technologies that include T-8, T-5, T-5HO and compact fluorescent. <b>Low power ballasts are not eligible.</b>	95	
70	Metal Halide Specialty Lighting Hard Wired Fixtures with Electronic Ballast	\$75	Metal Halide Specialty Fixtures maybe track, recessed or surface mounted and used for high quality display type lighting. Must be approved by UL or similar agency.	55	
71	Integral Metal Halide PAR Replacement Lamp	\$20	Install an Integral Metal Halide PAR replacement lamps, not to exceed 25W PAR38 lamp or similar.	27	

# Lighting: Retrofit 2011




## Measure Codes 80, 81A and 81B

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
80	LED Down Light Fixtures- Hard Wired or GU- 24 base	\$60	This incentive only applies to hardwired or GU-24 base LED fixtures rated as a Commercial LED product by Energy Star. (for more information see <a href="http://www.energystar.gov">www.energystar.gov</a> )	25	
81A	Integral LED Directional Replacement Lamps- MR16, PAR16 & PAR20	\$20	Eligible LED Directional Integral replacement lamps for these reflector styles: MR16, PAR16 and PAR20. Eligible lamps are required to be listed by Energy Star or Mass Save Interim LED Pre-Qualified list (for more information see <a href="http://www.energystar.gov">www.energystar.gov</a> or <a href="http://www.masssave.com/business">www.masssave.com/business</a> )	12	 
81B	Integral LED Directional Replacement Lamps - PAR30, PAR38 & Screw Base LED Down Light Retrofit Kits.	\$40	Eligible LED Directional Integral replacement lamps for these reflector styles: PAR30S, PAR30L and PAR38. <b>Also Eligible Screw Base LED Down Light Retrofit Kits.</b> Eligible lamps are required to be listed by Energy Star or Mass Save Interim LED Pre-Qualified list (for more information see <a href="http://www.energystar.gov">www.energystar.gov</a> or	25	 



# Lighting: Retrofit 2011

## Measure Codes 82A, 82B and 83

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	Min Watts Saved	
82A	LED Cooler , Freezer Case or Refrigerated Shelving Fixtures – 3’ & 4’ Fixture	\$40	Eligible LED Cooler and Freezer Case fixtures are required to be listed by Mass Save Interim LED Pre-Qualified list or Design Lights Consortium ( for more information see <a href="http://www.masssave.com/business">www.masssave.com/business</a> or <a href="http://www.designlights.org">www.designlights.org</a> ). Please specify quantity of end and/or center mount fixtures.	14	
82B	LED Cooler , Freezer Case or Refrigerated Shelving Fixtures – 5’ & 6’ Fixture	\$60	Eligible LED Cooler and Freezer Case fixtures are required to be listed by Mass Save Interim LED Pre-Qualified list or Design Lights Consortium ( for more information see <a href="http://www.masssave.com/business">www.masssave.com/business</a> or <a href="http://www.designlights.org">www.designlights.org</a> ). Please specify quantity of end and/or center mount fixtures.	23	
83	LED Low Bay Fixtures- Garage & Canopy fixtures	\$200	Eligible LED Low Bay fixtures are required to be installed in <b>8,760 hour</b> applications and be listed by Mass Save Interim LED Pre-Qualified list or Design Lights Consortium ( for more information see <a href="http://www.masssave.com/business">www.masssave.com/business</a> or <a href="http://www.designlights.org">www.designlights.org</a> )	60	







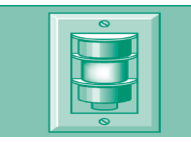

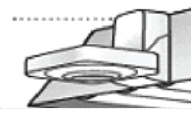
# Current Status of Interim LED Eligible Products List

## Key Points

- All LED products as of January 1, 2011 must be submitted to the either Energy Star or DesignLights Consortium (DLC).
- **Energy Star** will review products such as integral lamps, bollards and recessed lighting. [www.energystar.gov/index.cfm?c=ssl\\_res.pt\\_ssl](http://www.energystar.gov/index.cfm?c=ssl_res.pt_ssl)
- **DLC** will review garage/canopy luminaires, wall packs, street and area lighting, track heads, and case refrigeration. (This list of product types is not meant to be exhaustive, if you have question as to where your product needs to be submitted please contact Energy Star or the DLC.) [www.designlights.org/solidstate.manufacturer.overview.php](http://www.designlights.org/solidstate.manufacturer.overview.php)
- All products on the list as of December 31, 2010 **will continue to be eligible** for incentives from Mass Save program administrators, regardless of whether or not they are on the Energy Star or DLC lists for an undetermined period of time.





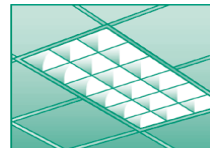

# Lighting Controls: Retrofit/New Construction 2011

Measure Code	Measure Description	Per Control Incentive	Eligibility Criteria	Min Controlled Wattage	
61	Remote - Mounted occupancy	\$85	Comply with manufacturer's coverage recommendations. Ceiling mounted control. No manual "ON" overrides	110	
62	Daylight Dimming System (DDSFL)	\$30 (per fixture)	Must have continuous dimming or adjust to a minimum of 4 levels.	53 (per fixture)	
63	Occupancy Controlled Step- Dimming System	\$30 (per fixture)	Ballast must be automatically controlled based on occupancy. Power consumption in low mode must not exceed 60%.	53 (per fixture)	
64A	Wall mounted Occupancy Sensors	\$35	Occupancy Sensors must operate as <b>Automatic On and off</b> . Sensors are wall mounted devices only. Not eligible if installed in restrooms, locker rooms, stairwells or rooms of greater than 250 square feet	51	
64B	Wall mounted Vacancy Occupancy Sensors	\$40	Vacancy Sensors must operate as <b>Manual ON, Automatic off</b> . Sensors are wall mounted devices only. Not eligible if installed in restrooms, locker rooms, stairwells or rooms of greater than 250 square feet	51	
65	Photocell Sensors (lighting systems on 24/7)	\$70	Photocell control for lighting systems that operate on 24 hours a day, 7 days a week (8,760 hours annually)	70	
68	High Bay Fluorescent (HIF) Occupancy Control Systems	\$40 (per fixture)	Ballasts must be automatically controlled based on occupancy. Systems with manual "ON" or override switches are not eligible. Sensors may be remote mounted or mounted on individual fixtures	110 (per fixture)	



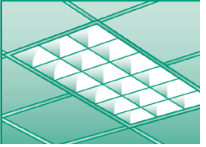
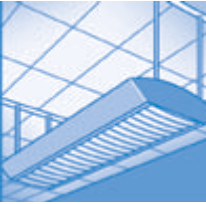
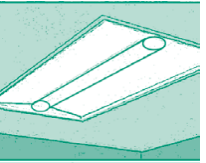
# Lighting: New Construction 2011

## Measure Codes 10, 30A, 30B and 30C

Product Code	Measure Description	Per Fixture Incentive	Eligibility Criteria	
10 *	High Performance or Reduced Wattage Lamp & Ballast Systems Any new fluorescent fixture with High Performance / Reduced Wattage (HP/RW) 4' T8 or 4' T5 lamps and electronic ballast	\$10	Each new fixture is composed of a ballast and 1, 2, 3 or 4 lamps. Only one incentive may be counted per fixture. Multiple fixtures served by a single ballast are only eligible for one incentive. Only HP/RW 4'T8 or 4' T5 lamps are eligible.	
30A *	High Efficiency 2 lamp Prismatic Lensed Fluorescent Fixtures - 2x2 or 2x4	\$15	Overall fixture efficiency must exceed: - 83% for 2x4 prismatic lensed fixture with two T-8 or T-5 lamps; - 75% for 2x2 prismatic lensed fixture with two T-8 or T-5 lamps (Biax lamps are not eligible).	
30B *	High Efficiency 2 lamp Parabolic Fluorescent Fixtures - 2x2 or 2x4	\$20	Overall fixture efficiency must exceed: - 80% for 2x4 fixture with parabolic louver (2" to 3" deep cells) with two T-8 or T5 lamps; - 80% for 2x2 fixture with parabolic louver (2" to 3" deep cells) with two T-8 or T5 lamps (biax lamps are not eligible).	
30C *	High Efficiency 2 lamp Recessed Indirect/Direct Fluorescent Fixtures - 2x2 or 2x4	\$15	Overall fixture efficiency must exceed: - 75% for 2x4 recessed indirect/direct fixture with two T-8 or T-5 lamps; - 70% for 2x2 recessed indirect/direct fixture with two T-8, T-5, or T5HO lamps (biax lamps are not eligible)	

# Lighting: New Construction 2011

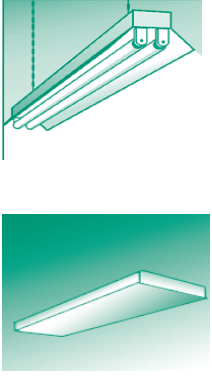

## Measure Codes 31, 33 and 34

31 *	High Efficiency 3 lamp Fluorescent Fixtures -2x4	\$15	<p>Overall fixture efficiency must exceed:</p> <ul style="list-style-type: none"> <li>- 83% for 2x4 prismatic lensed fixture with three T-8 or T-5 lamps;</li> <li>- 75% for 2x4 fixture with parabolic louver (2" to 3" deep cells) with three T-8 or T5 lamps;</li> <li>- 70% for 2x4 recessed indirect fixture with three T-8 or T-5 lamps;</li> </ul> <p><b>Eligible fixtures are limited to 3 lamps with a low power ballast factor &lt; 0.80.</b></p>	
33 *	High Efficiency Indirect Low Glare Pendant Fluorescent Fixtures	\$30	<p>Overall fixture efficiency must exceed:</p> <ul style="list-style-type: none"> <li>- 80% for an Indirect pendant fixture with two T-8 or T-5 lamps or one T-5HO lamp. Fixtures may have a down-light component of no greater than 45%. Fixtures with a down-light component must incorporate glare limiting louvers or a perforated cover shielding the lamps. Fixtures must be installed at a lighting power density 10% below current building codes. Ceiling finish must be white and unobstructed</li> </ul>	
34 *	Advanced Recessed Fluorescent Fixtures – 2x2, 1x4 or 2x4	\$35	<p>Overall fixture efficiency must exceed:</p> <ul style="list-style-type: none"> <li>- 85% for 2x4 advanced glare reducing diffuser fixture with one or two T-8 or T-5 lamps, or one T-5HO lamp;</li> <li>-80% for 1x4 advanced glare reducing diffuser fixture with one or two T-8 or T-5 lamps, or one T-5HO lamp;</li> <li>- 80% for 2x2 advanced glare reducing diffuser fixture with one or two T-8, T-5, T-5HO lamps (biax lamps are not eligible).</li> </ul>	



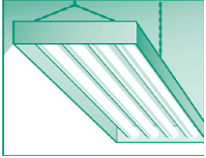
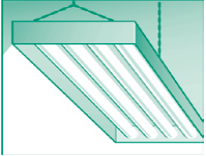
# Lighting: New Construction 2011

## Measure Codes 41 and 44

41 *	Industrial/Commercial Fluorescent Fixtures – 4 ft. and 8ft. Fixtures	\$20	<p>Overall fixture efficiency must exceed:</p> <ul style="list-style-type: none"> <li>- 85% for Industrial Reflector fixture with T-8 or T-5 lamps;</li> <li>- 83% for Commercial Grade Wraparound fixture with one or two T-8 or T-5 lamps.</li> </ul> <p>Applies to fixtures installed at or less than 16 feet above the floor. Up to 20% up-light as an integral fixture feature. Fixtures with T-8 or T-5 lamps, each fixture is composed of a ballast and 1, 2, 3 or 4 lamps. Only one incentive may be counted per fixture. Eight foot and multiple fixtures served by a single ballast are only eligible for one incentive.</p>	
44 *	Clean Room Rated Fluorescent Fixtures – 1x4 or 2x4	\$30	<p>Overall fixture efficiency must exceed:</p> <ul style="list-style-type: none"> <li>-75% for Clean Room fluorescent fixture with up to three T-8 or T-5, lamps.</li> </ul> <p>To be eligible for incentives, fixtures must be installed in a clean room rated environment.</p>	

# Lighting: New Construction 2011


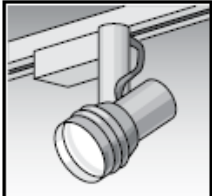



## Measure Codes 56 and 57

56 *	<p>High Intensity Fluorescent Fixtures (HIF) for High and Low Bay Applications (less than or equal to 207W)</p>	\$20	<p>Minimum wattage is 104 Watts and Maximum wattage is 207 Watts. Minimum fixture efficiency must exceed 80%. Recommended mounting height &gt; 16 feet above the floor. Minimum fixture efficiency must exceed 80%. High Intensity Fluorescent fixtures incorporate a number of lamp technologies that include T-8, T-5, T-5HO and compact fluorescent. <b>Low power ballasts are not eligible.</b></p>	
57 *	<p>High Intensity Fluorescent Fixtures (HIF) for High and Low Bay Applications (greater than 207W)</p>	\$40	<p>Minimum wattage is greater than 207 Watts. Minimum fixture efficiency must exceed 80%. Recommended mounting height &gt; 20 feet above the floor. High Intensity fluorescent fixtures incorporate a number of lamp technologies that include T-8, T-5, T-5HO and compact fluorescent. <b>Low power ballasts are not eligible.</b></p>	



# Lighting: New Construction 2011

## Measure Codes 80, 84, 82A/B and 83

80	LED Down Light Fixtures- Hard Wired or <b>GU- 24 base</b>	\$30	<p>This incentive only applies to hardwired or GU-24 base LED fixtures rated as a Commercial LED product by Energy Star.          (for more information see <a href="http://www.energystar.gov">www.energystar.gov</a>)  <i>If you have already received an incentive through another offering (i.e. manufacturers buy down) you may not be eligible to receive this prescriptive incentives, pertains to measure code 84 as well</i></p>	
84	LED Track Heads- Hardwired	\$20	<p>LED trackheads fixtures hardwired installations only, replacement lamps not eligible.          Eligible fixtures are required to be listed by Mass Save Interim LED Pre-qualified list or Design Lights Consortium ( for more information see <a href="http://www.masssave.com/business">www.masssave.com/business</a> and <a href="http://www.designlights.org">www.designlights.org</a> )</p>	
82A	<b>LED Cooler, Freezer Case or Refrigerated Shelving Fixtures – 3’ and 4’ Fixtures</b>	\$15	<p>Eligible LED Freezer Case fixtures are required to be listed by Mass Save Interim LED Pre-qualified list or Design Lights Consortium ( for more information see <a href="http://www.masssave.com/business">www.masssave.com/business</a> and <a href="http://www.designlights.org">www.designlights.org</a> )  <b>Please specify quantity of end and/or center mount fixtures – same with 82B.</b></p>	
82B	<b>LED Cooler, Freezer Case or Refrigerated Shelving Fixtures – 5’ and 6’ Fixtures</b>	\$30	<p>Eligible LED Freezer Case fixtures are required to be listed by Mass Save Interim LED Pre-qualified list or Design Lights Consortium ( for more information see <a href="http://www.masssave.com/business">www.masssave.com/business</a> and <a href="http://www.designlights.org">www.designlights.org</a> )</p>	
83	LED Low Bay Fixtures- Garage & Canopy Fixtures	\$100	<p>Eligible LED Low Bay fixtures are required to be installed in 8,760 hour applications and be listed by Mass Save Interim LED Pre-qualified list or Design Lights Consortium ( for more information see <a href="http://www.masssave.com/business">www.masssave.com/business</a> and <a href="http://www.designlights.org">www.designlights.org</a> )</p>	



# Performance Lighting

- Performance Initiative – “Code Dependent”
- New Construction or Major Renovation
- “NEW” for 2010 - 2011 open fixture selection, no restriction on type of fixtures.
- LED products required to be listed on either Energy Star, DLC or "Grandfathered" Mass Save LED lists
- Require High Performance Lamps & Ballasts
- Exclude Incandescent & Halogen lamps
- NEW Two Tier Approach added in 2010:
  - Tier 1 at \$0.40 per watt saved - minimum 15% LPD (Industrial projects limited to Tier 1 only *includes: garages, warehouse, manufacturing*)
  - Tier 2 at \$1.00 per watt saved - minimum **25%** reduction in LPD (watts/sq.ft)