DRAFT PDS-02

BSR/RESNET/ICC 301-2014 Addendum G-201x, Solid State Lighting

Modify the following Sections:

3.2 Definitions

Qualifying Tier II Light Fixture – A light fixture located in a Qualifying Light Fixture Location that contains lamps/light bulbs with an average luminous efficacy equal to or greater than ~~50~~ 80 lumens/watt; an integrated solid state lighting fixture, whose light source efficacy is not measurable separately from the fixture, with a luminaire efficacy of 65 lumens/watt; ~~or~~ an outdoor light fixture that is controlled by a photocell; or an indoor fixture controlled by a motion sensor.

Qualifying Tier I Light Fixture – A light fixture located in a Qualifying Light Fixture Location that contains lamps/light bulbs with an average luminous efficacy equal to or greater than 50 lumens/watt and less than 80 lumens/watt.

Qualifying Light Fixture Locations – For the purposes of rating, those light fixtures located in kitchens, dining rooms, living rooms, family rooms/dens, bathrooms, hallways, stairways, entrances, bedrooms, garage, utility rooms, home offices, and all outdoor fixtures mounted on a building or pole. This excludes plug-in lamps, closets, unfinished basements, and landscape lighting.

4.2 Energy Rating Reference Home and Rated Home Configuration

4.2.2.5.2.2. Interior Lighting. Interior lighting annual energy use in the Rated Home shall be determined in accordance with Equation 4.2-2:

~~**kWh/y = 0.8*[(4 - 3*qFF$_{IL}$)/3.7]*(455 + 0.8*CFA)**~~
~~**+ 0.2*(455 + 0.8*CFA)** **(Eq 4.2-2)**~~

kWh/y = 0.9/0.925*(455 + 0.8*CFA)
***[(1 – FFII$_{IL}$ – FFI$_{IL}$) + FFI$_{IL}$*15/60 + FFII$_{IL}$*15/90]**
+ 0.1*(455 + 0.8*CFA) **(Eq 4.2-2)** [‡]

where:
CFA = Conditioned Floor Area

[‡] ~~(Informative note) When FFI$_{IL}$ = 0.10 (10%) and FFII$_{IL}$ = 0, the equation reduces to the standard interior lighting equation of: kWh/y = 455 + 0.8*CFA.~~

~~q~~FFI$_{IL}$ = The ratio of the interior Tier I Qualifying Light Fixtures to all interior light fixtures in Qualifying Light Fixture Locations.

FFII$_{IL}$ = The ratio of the interior Tier II Qualifying Light Fixtures to all interior light fixtures in Qualifying Light Fixture Locations.

~~For rating purposes, the Rated Home shall not have qFF$_{IL}$ less than 0.10 (10%).~~[2]

For the purpose of adjusting the annual interior lighting energy consumption for calculating the rating, EUL$_{LA}$ shall be adjusted by ΔEUL$_{IL}$, which shall be calculated as the annual interior lighting energy use derived by the procedures in this section minus the annual interior lighting energy use derived for the Energy Rating Reference Home in Section 4.2.2.5.1, converted to MBtu/y, where MBtu/y = (kWh/y)/293.

For interior lighting, internal gains in the Rated Home shall be modified by 100% of the interior lighting ΔEUL$_{IL}$ converted to Btu/day as follows: ΔEUL$_{IL}$ * 10^6 / 365.

4.2.2.5.2.3. Exterior Lighting. Exterior lighting annual energy use in the Rated Home shall be determined in accordance with Equation 4.2-3:

kWh/y = (100 + 0.05*CFA)*[(1 - FFI$_{EL}$ - FFII$_{EL}$)
+ ~~0.25~~15/60*(100 + 0 .05*CFA)*FFI$_{EL}$
+ 15/90*(100 + 0.05*CFA)*FFII$_{EL}$] **(Eq 4.2-3)**

where

CFA = Conditioned Floor Area

FFI$_{EL}$ = Fraction of exterior fixtures that are Tier I Qualifying Light Fixtures

FFII$_{EL}$ = Fraction of exterior fixtures that are Tier II Qualifying Light Fixtures

For the purpose of adjusting the annual exterior lighting energy consumption for calculating the rating, EUL$_{LA}$ shall be adjusted by ΔEUL$_{EL}$, which shall be calculated as the annual exterior lighting energy use derived by the procedures in this section minus the annual exterior lighting energy use derived for the Energy Rating Reference Home in Section 4.2.2.5.1, converted to MBtu/y, where MBtu/y = (kWh/y)/293.

Internal gains in the Rated Home shall not be modified as a result of reductions in exterior lighting energy use.

4.2.2.5.2.4. Garage Lighting. For Rated Homes with garages, garage annual lighting energy use in the Rated Home shall be determined in accordance with Equation 4.2-4:

kWh = 100*[(1 - FFI$_{GL}$ - FFII$_{GL}$) + ~~25~~15/60*FFI$_{GL}$ + 15/90*FFII$_{GL}$](Eq 4.2-4)

where:

FFI$_{GL}$ = Fraction of garage fixtures that are Tier I Qualifying Light Fixtures

FFII$_{GL}$ = Fraction of garage fixtures that are Tier II Qualifying Light Fixtures

[2] ~~(Informative note) When qFFI$_{IL}$ = 0.10 (10%) and FFII$_{IL}$ = 0, the above equation reduces to the standard interior lighting equation of: kWh/y = 455 + 0.8*CFA.~~

For the purpose of adjusting the annual garage lighting energy consumption for calculating the rating, EUL_{LA} shall be adjusted by ΔEUL_{GL}, which shall be calculated as the annual garage lighting energy use derived by the procedures in this section minus the annual garage lighting energy use derived for the Energy Rating Reference Home in Section 4.2.2.5.1, 100 kWh/y, converted to MBtu/y, where MBtu/y = (kWh/y)/293.

Internal gains in the Rated Home shall not be modified as a result of reductions in garage lighting energy use.