## Comments on Draft ENERGY STAR SSL Kevin Gauna, California Lighting Technology Center

- The example given for a CRI 'tradeoff' with efficacy lists 50% fixture efficiency for CFL's in downlights. I see where it states that this 50% is used for all of the niche applications listed, but it took me several readings and some confusion before I was able to see that 50% would be used for all of the niche applications. It could be stated more explicitly that the equation applies for all of the examples.
- 2) The equation can be reduced to ease application. One example would be to use: Efficacy x CRI = 2320. You could also make a table for various efficacies:

CRI		min. Efficacy
	50	46
	51	45
	52	45
	53	44
	54	43
	54 55 56	45 44 43 42 41 41 40
	56	41
	57 58	41
	58	40
	59	39 39 38 37 37 36
	60	39
	61 62 63	38
	62	37
	63	37
	64 65	36
	65	36 35 35 34 34 33 33 33 32 32 32 31
	66	35
	67	35
	68	34
	69	34
	70	33
	71	33
	72	32
	73	32
	74	31
	75	31
	68 69 70 71 72 73 74 75 76 77 78	31
	77	30
		31 31 30 30 29
	79	29
	80	29

3) As a lighting engineer, I think I understand your zonal lumen angular requirements, but I don't see any definitions or references to definitions for these angles. Will these definitions be included? It would be helpful if all of the angles described in the requirements were defined with respect to spatial planar reference surfaces.