

Turn on the Lights and Let the Sun Shine In

HERS Rating Score Sensitivity Study

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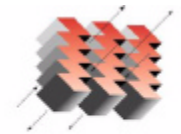


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Architectural Energy Corporation

Analysis Approach

1. **REM/Rate ä software in combination w/ spreadsheet**
2. **Four climates: Chicago, Miami, Baltimore, San Diego**
3. **Varying floor area: 1000 - 5000 sf**
4. **Standard efficiency and Energy Star homes**
5. **Impact of internal gains included**

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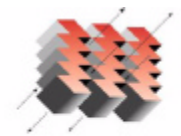


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Sensitivity to %Fluorescent Lighting

% Fluorescent	Chicago	Miami	Baltimore	San Diego
0%	79.89	79.78	79.88	79.80
10%	80.00	80.00	80.00	80.00
20%	80.11	80.21	80.12	80.20
30%	80.23	80.43	80.24	80.41
40%	80.34	80.64	80.37	80.61
50%	80.45	80.86	80.49	80.81
60%	80.57	81.07	80.61	81.02
70%	80.68	81.29	80.74	81.22
80%	80.80	81.50	80.86	81.42
90%	80.91	81.72	80.98	81.63
100%	81.02	81.93	81.10	81.83

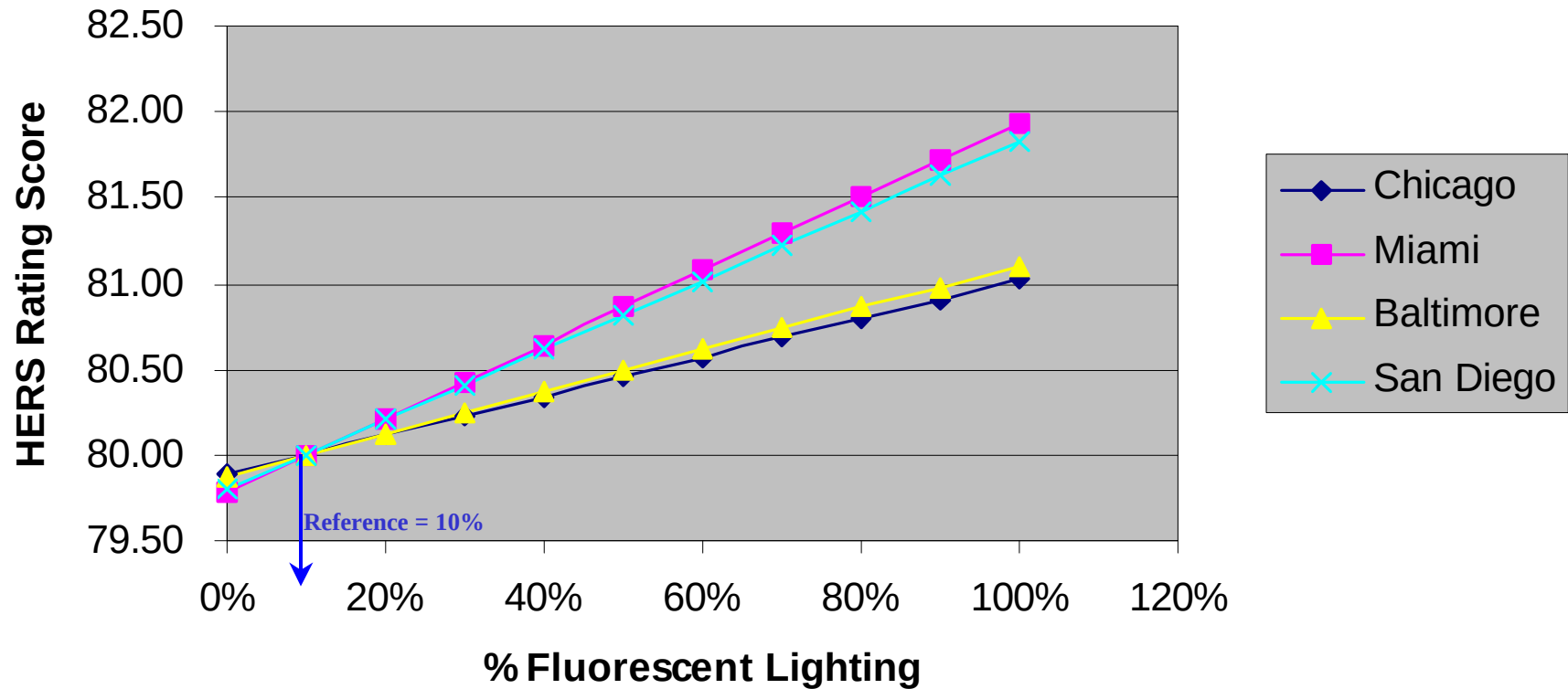
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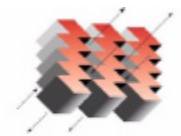
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Sensitivity to Fluorescent Lighting

3000 sf, 80 point home



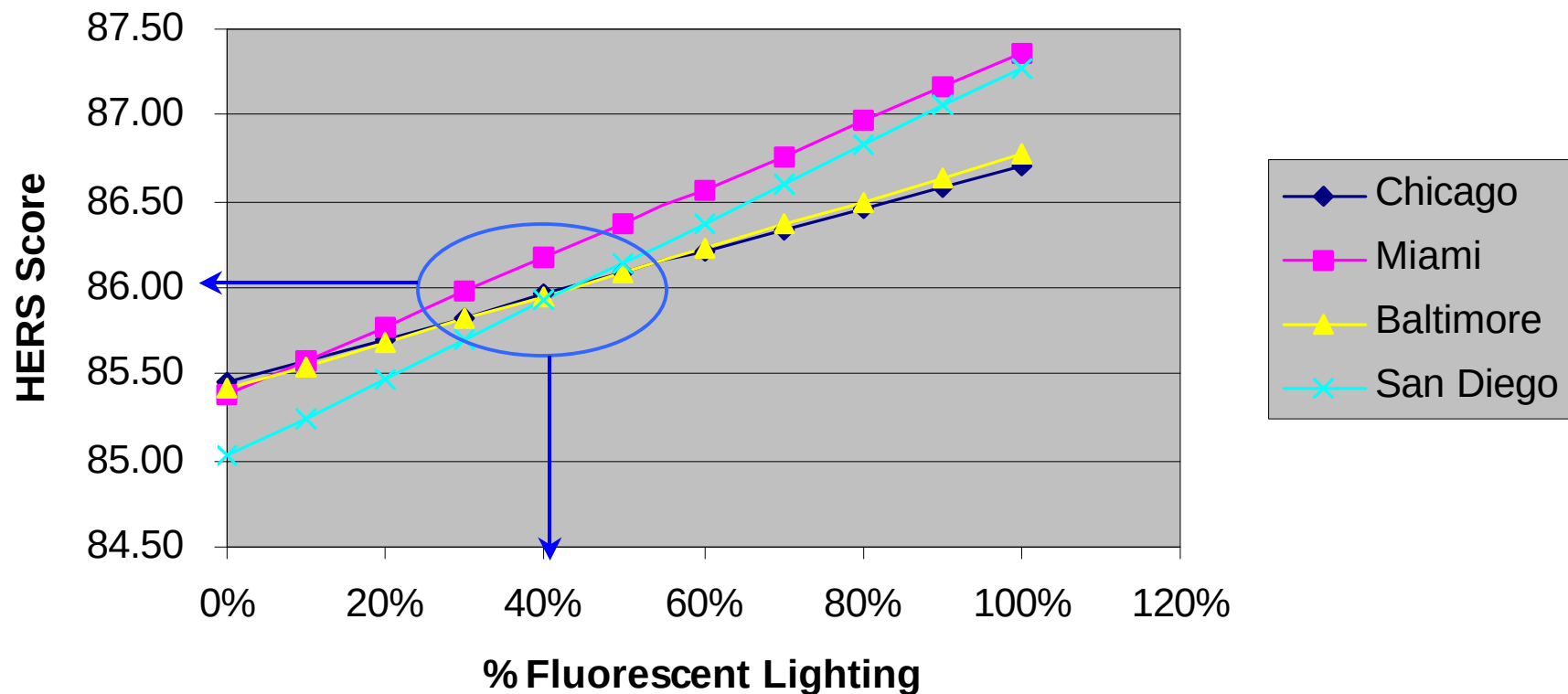
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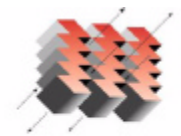
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Sensitivity to Fluorescent Lighting

3000 sf, 86 point home

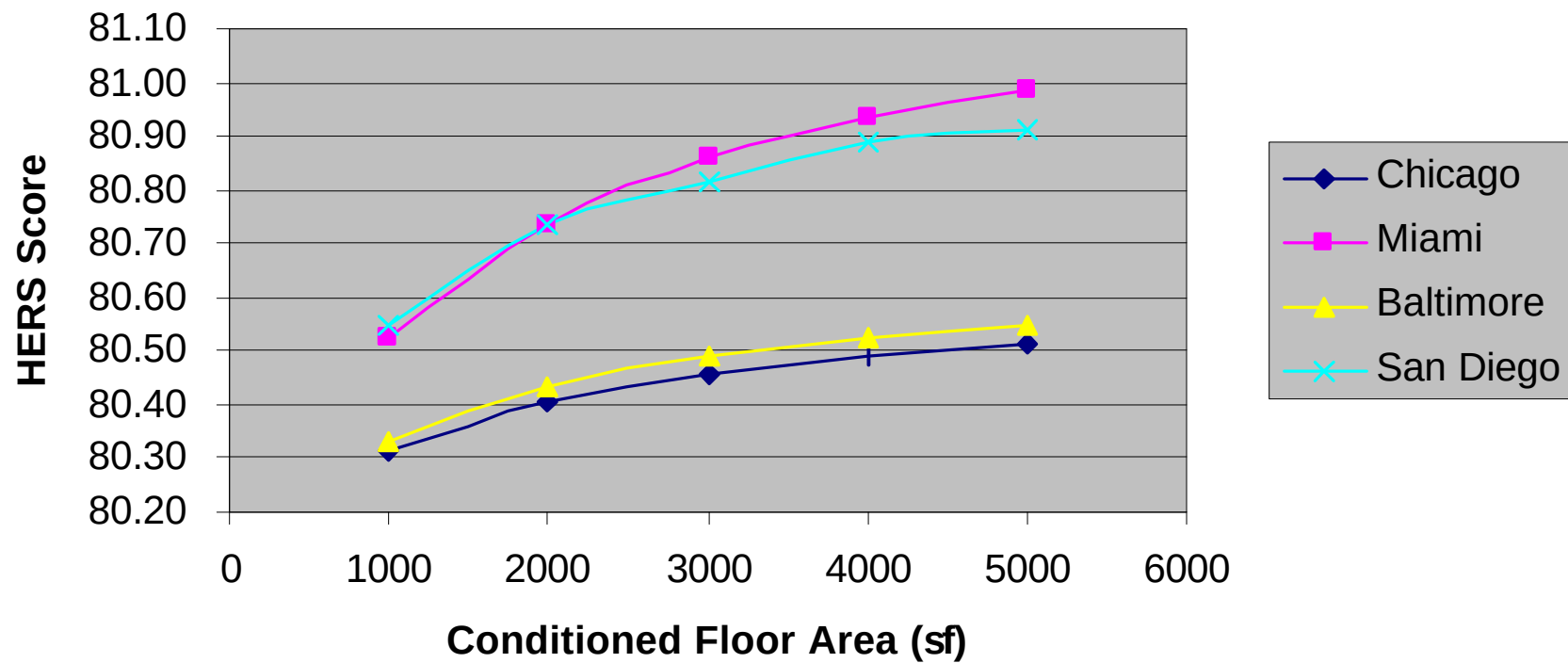


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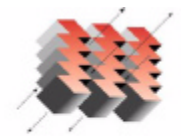


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Sensitivity to Floor Area 50% fluorescent, 80 point home



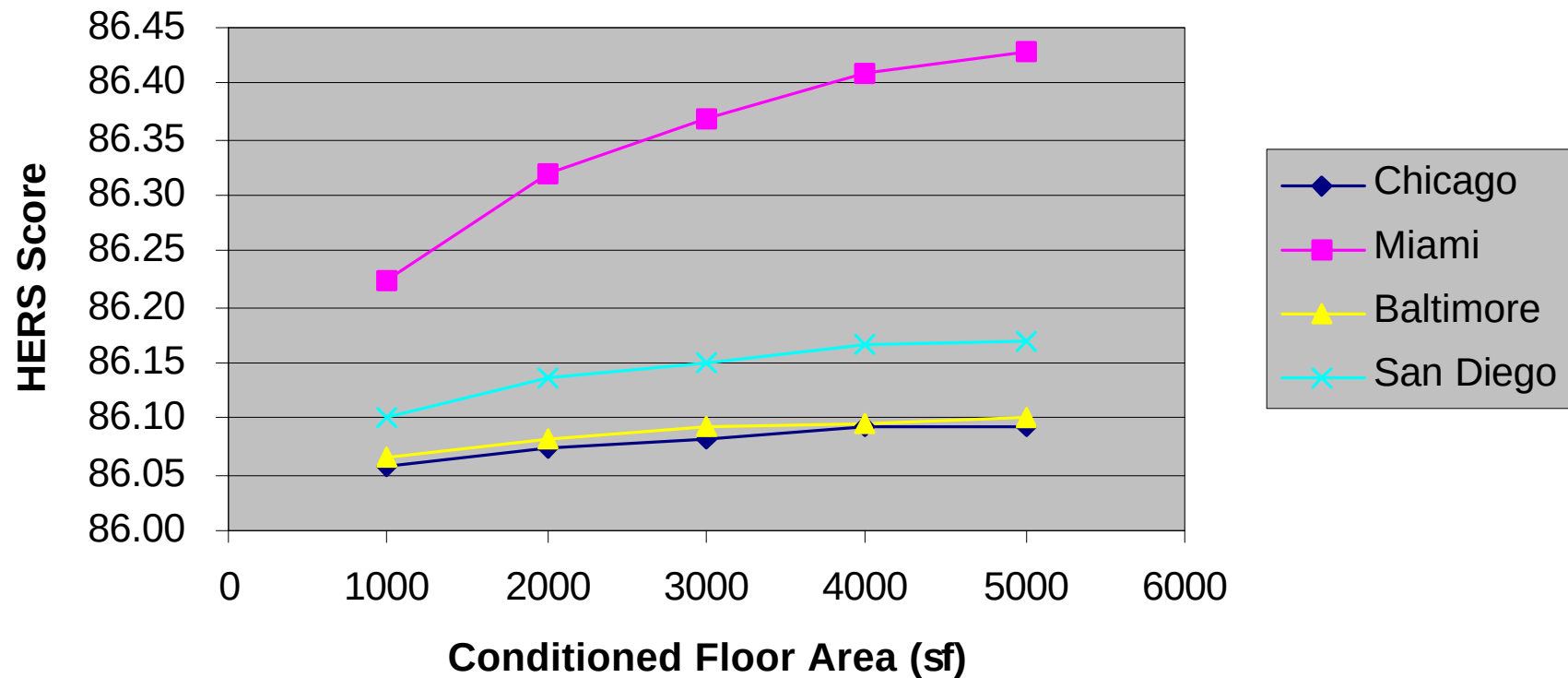
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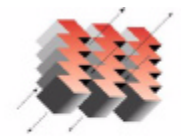
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Sensitivity to Floor Area

50% fluorescent, 86 point home



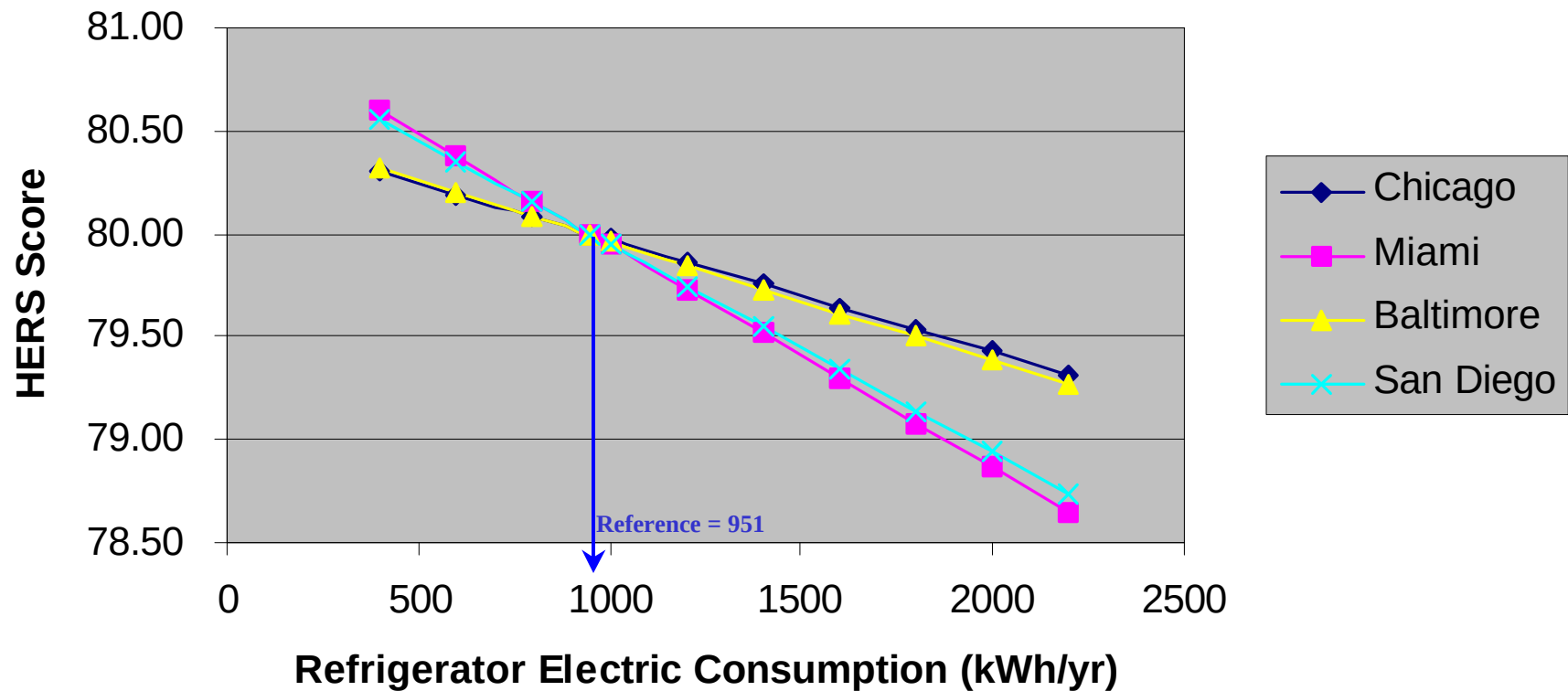
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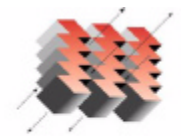
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Sensitivity to Refrigerator Consumption

3000 sf 80 point home

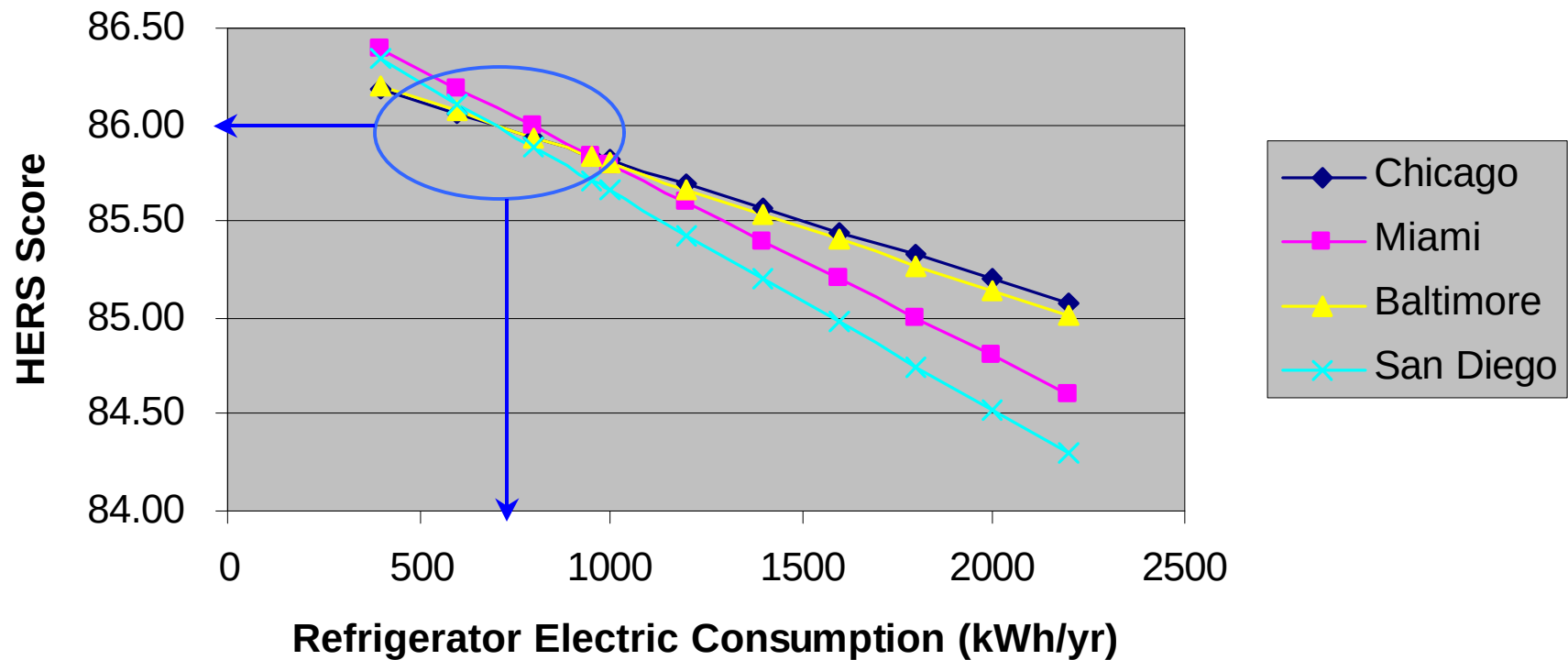


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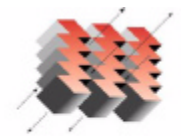


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Sensitivity to Refrigerator Consumption 3000 sf, 86 point home



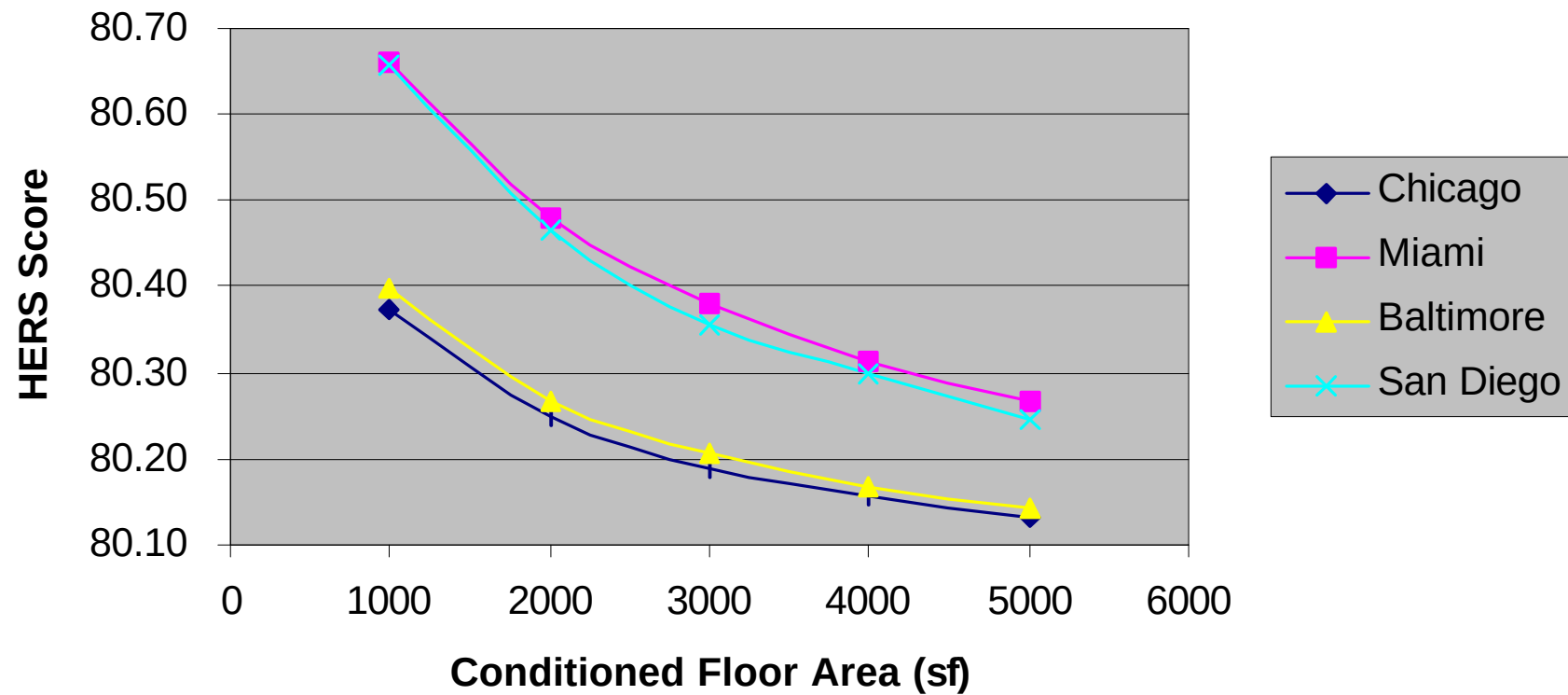
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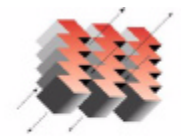
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Sensitivity to Floor Area

600 kWh/yr, 80 point home

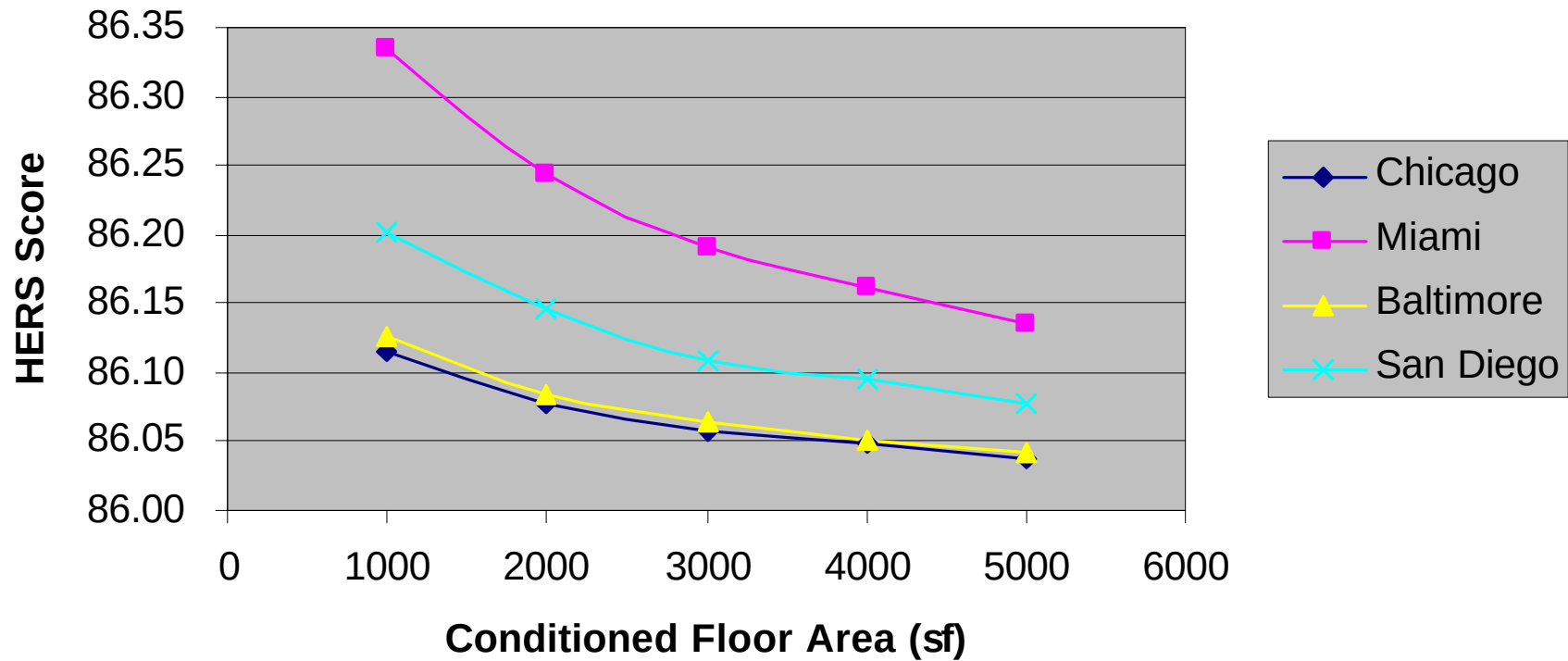


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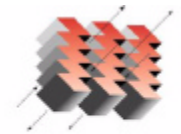


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Sensitivity to Floor Area 600 kWh/yr, 86 point home



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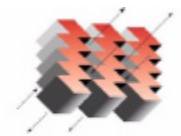


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In Summary

- 1. The maximum impact of lighting is about ~2 points**
- 2. It will take about ~40% fluorescent to maintain Energy Star designation**
- 3. The maximum impact of the refrigerator is about ~2 points**
- 4. To maintain Energy Star designation, the refrigerator will have to use less than ~700 kWh/yr**

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