Annex 45 of the International Energy Agency

Contribution of Ingélux to Subtask B

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B1. Identifying knowledgeable people in the industry and collecting information

- Ingélux has been associated with SONEPAR group, world major distributor of lighting equipment (contact : Guy Marchi).

- Contacts : Philips, Etap, Osram, Zumtobel Staff, Luxo, Artemide, SLI, Iguzzini, Radian, Regent, Optelma, Flos, Targetti, Sarlam, Troll, Trilux. Major electrical engineering firms (Sechaud & Bossuy, OTH, Girus)

B2. Performance criteria of lighting technologies

- Minimum power of task lighting
- Maximum luminance of luminaires
- Overhead glare
- Relative position of luminaires (role of shadows)
- Individual control

B3. Trends in existing and future lighting technologies

Existing :

- Ceiling recessed luminaire, 0.60 x 0.60 , 16W/m²
- Often 4x18 (or 14W) instead of 3x18 (14W) (Uniformity)
- T5 tube becomes standard in prescription
- T5 tubes mean modern, high efficiency solution (but largely rejected by users if visible)
- Electronic ballast is becoming standard since only 2 years.
- Poor control (Individual, daylight or presence asservisment)

B3. Trends in existing and future lighting technologies

Future :

- prismatic optic
- Side lighting with Total Internal reflection
- High optical efficiency is not first priority
- Stand alone luminaire
- Task lighting on large work area (minimum of uniformity)

Indirect lighting (luminance of the ceiling)

B4 : Comparison of installations, B5 : Case studies

Test of 9 different lighting designs

On the desk :

400 lux with 23 W/m²

650 (1000) Lux with 8 (12) W/m²

dimmable for each user

Reference 1 : Groupama Insurance Headquarters, Lyon

Testing of 9 solutions for 9 workplaces, 9 observers, one month, then extension to 900 workplaces, 20 000 m2

Reference 1 : Groupama Insurance Headquarters, Lyon, 20 000 m²

B4 : Comparison of installations, B5 : Case studies

We noticed :

- Energy savings are quite possible
- visual confort is usually not achieved
- lighting ambiance is usually poor

Reference 2 : Sonepar Group Administration Building, Lyon,

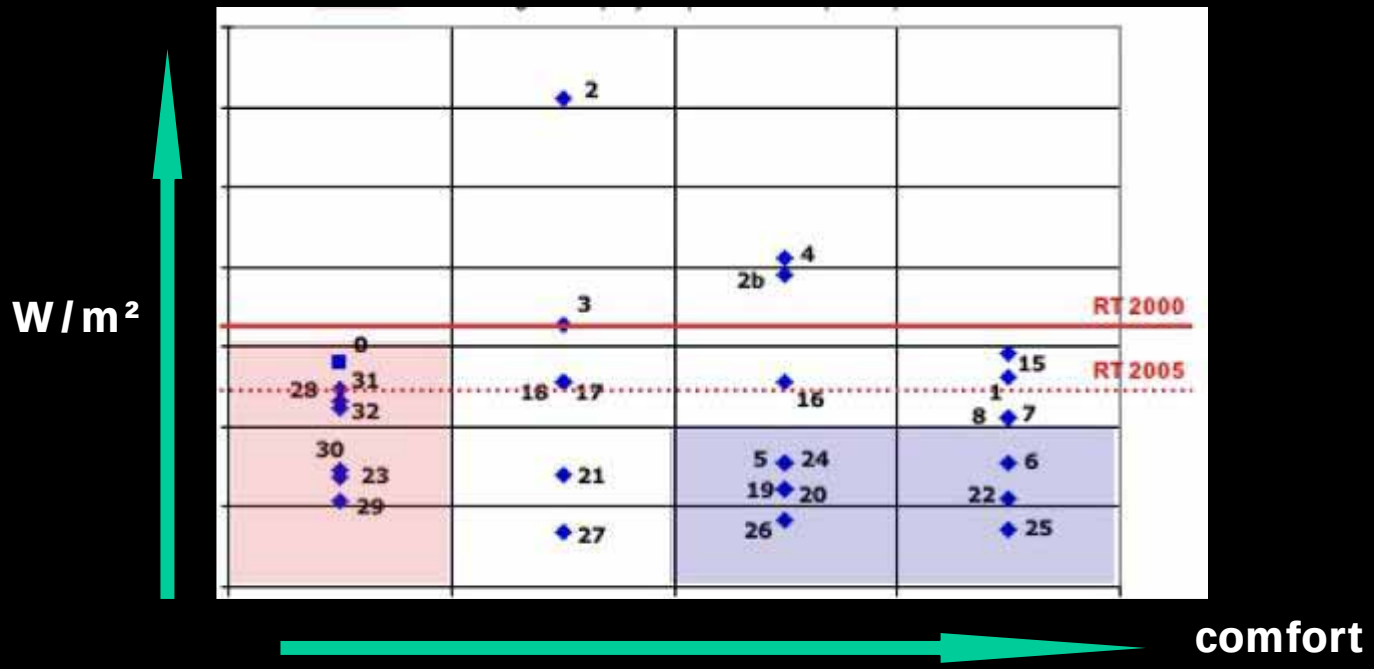
26 solutions for 26 users, 3 months

Comparing the offer of the market with visual comfort and energy savings

8 manufacturers, 26 ways of lighting, 26 users

We could notice :

- Investment price is not a garantee
- careful with over head glare
- No correlation between visual comfort and W/m² :



Reference 2 : Sonepar Group Administration Building, Lyon,

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B4 : Comparison of installations, B5 : Case studies

Same work in the classrooms

Reference 3 : Test Classrooms at SONEPAR, Lyon

22 configurations of lighting tested, 38 observers.

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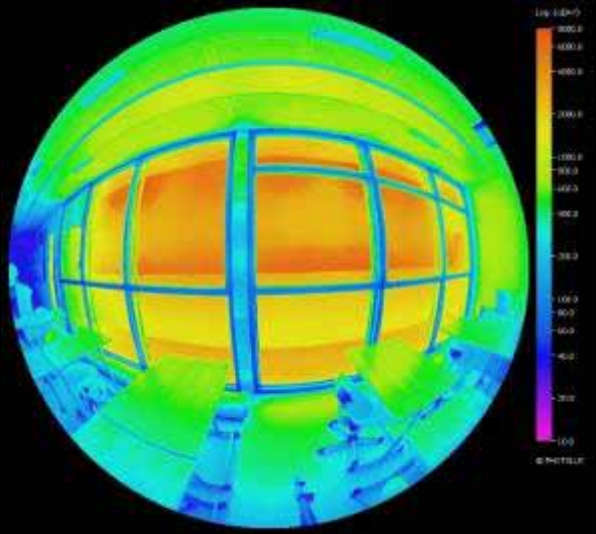

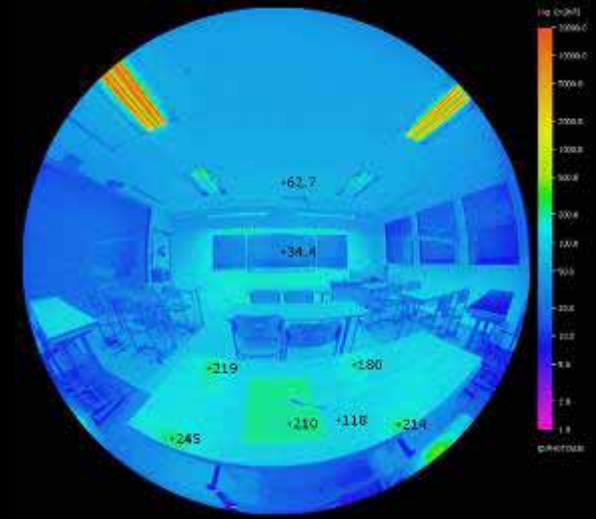

B4 : Comparison of installations, B5 : Case studies

Reference 4 : Office building, GIRUS headquarters, Lyon

90 workplaces, overt 4 floors, retrofit simulation,

Reference 5 : Office building, Nice, French Riviera (pending – 2007-2008)

Reference 6 : SOGEA Headquarters, Lyon (2006-2007)

10 000 m2

Reference 7 : CORBIOLI Headquarters, Bourg en Bresse (2006)

500 m2.

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