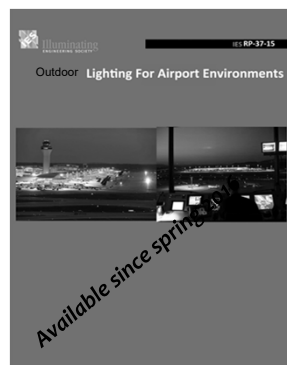


## IES-RP-37 Outdoor Lighting in the Airport Environment new publication

2016 IES ALC Fall  
Technology Meeting  
Hyatt Regency Mission  
Bay Spa and Marina  
San Diego, California



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## IES RP-37 - Scope

- ✧ Outdoor lighting in the airport environment includes aircraft stands and apron areas, roadways, vehicular parking facilities, passenger loading and unloading areas and pedestrian walkways.
- ✧ The recommendations included in this IES RP provide guidance for lighting of these areas while **emphasizing the restrictions, regulations, and best practices for safe movement of aircraft.**
- ✧ **Excluding** AGL and heliport areas.



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## IES RP-37 - History

- ✧ 1987 - Publication of RP-14 and RP-17 (1968)
- ✧ 2008 - RP-37 subcommittee kick-off
- ✧ 2010 - Document sent for comments at IES TRC – 40% draft
- ✧ 2011 - 80% draft sent out for comments +- 200 comments
- ✧ 2011 - Graphics and pictures set up.
- ✧ 2012-2013 - Successive update and modification of document.
- ✧ 2014 - Document ready for review and final graphic
- ✧ 2015 - Committee reviews (sub-committee, main committee, IES technical review committee, IES board)
- ✧ 2016 – printed in spring!



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## IES RP-37 - Table of content

- Introduction
- Characteristics of Airport Areas
- Visual Issues
- Design Criteria
- Essential Safety and Security Lighting
- Environmental Conditions
- Annexes
  - Luminance and illuminance for roadway lighting
  - Field measurement
  - Maintenance Considerations
  - Lighting Equipment
  - Economics
  - Glossary, Reference and Additional Reading
  - General Lighting Terms



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## Trends and issues

- ✧ CCT (Correlated Color Temperature) in Roadway Market
  - Reduction of colour temperature of LED sources 4000, 3000K and even less.
  - Tucson airport – apron flood lighting less than 3000K
- ✧ Glare calculation
  - Based on Candela values and it is calculated with a simulation software
  - New working group created at IES level to develop new criteria
- ✧ Perceived brightness – IPRGC receptor and it's role could influence light levels! (Intrinsically photosensitive Retinal Ganglion Cells)
- ✧ AMA warning! (see next slides)



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## AMA Reaction

### AMA (American Medical Association)

AMA Adopts Community Guidance to Reduce the Harmful Human and Environmental Effects of High Intensity Street Lighting.

The adopted AMA recommendations are:

- 1- **AMA support the proper conversion to community-based LED lighting**, which reduces energy consumption and decreases the use of fossil fuels. (New HOD [AMA's House of Delegates policy-making body] Policy)
- 2- **AMA encourage minimizing and controlling blue-rich environmental lighting** by using the lowest emission of blue light possible to reduce glare. (New HOD Policy)
- 3- **AMA encourage the use of 3000K or lower lighting for outdoor installations** such as roadways. All LED lighting should be properly shielded to minimize glare and detrimental human and environmental effects, and consideration should be given to utilize the ability of LED lighting to be dimmed for off-peak time periods. (New HOD Policy)

Full report at : <http://www.ama-assn.org/ama/pub/about-ama/our-people/ama-councils/council-science-public-health/reports/2016-reports.page>



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## AMA Reaction

### Responses

- ✧ IES <http://ies.org/emails/2016/june/ama-response.html>
- ✧ **Lighting Research Center** at RPI clarifies key points related to **dose** and **duration**: <http://www.lrc.rpi.edu/resources/newsroom/AMA.pdf>
- ✧ **DOE** fact sheets on Lighting for Health: LEDs in the New Age of Illumination and True Colors: LEDs and the Relationship between CCT, CRI, Optical Safety of LEDs, Material Degradation, and Photobiological Stimulation: <http://energy.gov/eere/ssl/technology-fact-sheets>
- ✧ **DOE MSSLC** Light Post provides helpful guidance on blue light characteristics of various outdoor lighting products: [http://energy.gov/sites/prod/files/2016/07/f33/msslc\\_enews\\_jul2016.pdf](http://energy.gov/sites/prod/files/2016/07/f33/msslc_enews_jul2016.pdf)



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## AMA Reaction

### Responses

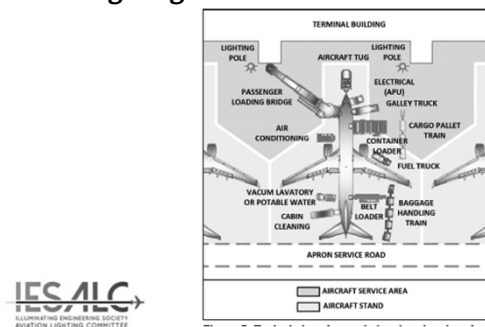
- ✧ **IDA**, Visibility, Environmental, and Astronomical Issues Associated with Blue-Rich White Outdoor Lighting, 2010  
<http://www.ida.darksky.org/assets/documents/Reports/IDA-Blue-Rich-Light-White-Paper.pdf>
- ✧ **NEMA** highlights potential for controlling light distribution of LED products, notes one CCT will not work for all applications:  
<http://www.nema.org/news/Pages/NEMAComments-on-American-Medical-Association-Community-Guidance-Advocating-and-Support-for-Light-Pollution-Control-Efforts.aspx>
- ✧ **IALD** notes key issues that are important for evaluating any lighting system:  
<http://www.iald.org/News/In-the-News/Seeing-Red-About-Blue-Lighting-Designers-Respond>



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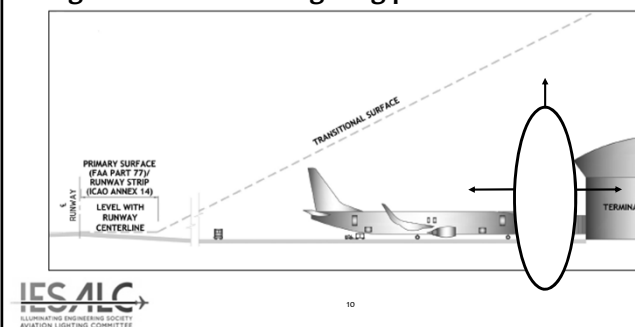
## IES RP-37 - Design Criteria

### Tasks lighting!



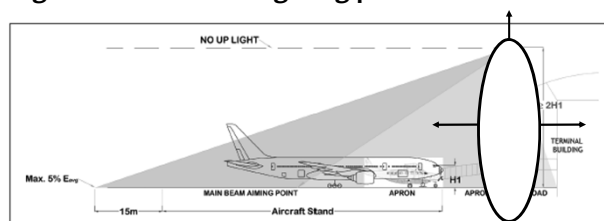
## IES RP-37 - Design Criteria

### Height and Position of lighting poles



## IES RP-37 - Design Criteria

### Height and Position of lighting poles



Don't forget the tower!

## IES RP-37 - Recommendation

- New working group to be formed to revised aviation related definition in IES RP-16.
  - Looking for **new members!**
- Promotion:
  - ICAO, Airport de Paris, Airbus, ...
  - Magazines and airport community – need help!
  - Training package coming out.
- Open up for new membership RP-37 subcommittee
  - Q & A after publication
  - Next version
    - Helipad and heliport
    - OSHA - coordination
    - FAA - tower control review
    - Task lighting
    - Meeting this Wednesday morning at breakfast 7h15.

## Where to buy it!

### IES web site

<https://www.ies.org/store/product/outdoor-lighting-for-airport-environments-rp3715-6392.cfm>

### Electronic copy or Printed copy

Listed price 65\$ member 46\$



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## IES RP-37 - Committee Members

### – THANKS!

- ✧ Heather C. Johnson, Hubbell
- ✧ Heather Mckee, Denver International Airport
- ✧ Eduard Alf, Transport Canada
- ✧ Carl Johnson, Avcon
- ✧ Gilles Lauzière, Urbex
- ✧ Fred Loeffler, CHA – Vice chair
- ✧ Alfred Seiterle, Aeroplan Engineering
- ✧ Irwin Smiley, AECOM
- ✧ Mike Tebeau, Lambert-St Louis International Airport
- ✧ Craig Twibell, RS&H
- ✧ John Wujek, CHA - Secretary
- ✧ Richard Larivée, Avia Rupta Solutions - Chair



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## Question or comments?

Richard Larivée, ing, P.Eng. Chair IES RP-37  
IESALC recommended practices subcommittee

[practices@iesalc.org](mailto:practices@iesalc.org)



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