

# Upcoming RP-37 - Design challenges and tasks oriented illumination for aircraft stand

2014 IESALC Annual Conference  
Coronado Spring Resort , Orlando, Florida

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# Agenda

- ✧ Overview of the upcoming IES RP-37 – *Outdoor Lighting for Airport Environment*.
- ✧ New studies and standards available for outdoor lighting in airport environment.
- ✧ Worldwide apron floodlight installation and possible improvement.
- ✧ Example on how we deal with the actual requirement
- ✧ Tasks around an aircraft and challenges with requirement

# Overview of the upcoming 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 IESNA 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.

# Overview of the upcoming IES RP-37

## Table of content of RP

- Introduction
- Characteristics of Airport Areas
- Visual Issues
- Specific Area Design Criteria
- Essential Safety and Security Lighting
- Environmental Condition and Sustainable Development
- Annexes
  - Light levels for landside
  - Maintenance Considerations
  - Economics
  - Lighting Equipment
  - Definition
  - Reference

# Overview of the upcoming IES RP-37

## Visual Issues

- Airport control towers
  - Visibility throughout airfield and landside
  - Line of sight (pole and luminaire)
  - Obtrusive light
  
- Pilot
  - Approaching the airport
  - Rollout & Taxiing
  - Parking



Credit - Captain Mike Maas  
Regional Airport Safety Coordinator  
Air Line Pilots Association, Intl.

# Overview of the upcoming IES RP-37

## Status of RP-37

- More than 80 pages, close to 50 graphics or pictures, + 10 tables, +60 references, +15 additional reading ...
- Document sent to IESNA - September 2014 to set up format
- To be sent to subcommittee for review
- Will go to IESALC committee - comments and approval
- Will finally get to IES TRC - comments and approval
- ✧ On all review, the subcommittee and chair may reject comments with reason.
- ✧ **Future:** Continuous maintenance of the RP, series of issues to address, may be expanding scope, prepare the next version

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# New studies and standards available

- ✧ RP-08-14 American National Standard Practice for Roadway Lighting
- ✧ RP-20-14 Lighting for Parking Facilities
- ✧ DG-04-14 IES Design Guide for Roadway Lighting Maintenance
- ✧ RP-31-14 Recommended Practice for the Economic Analysis of Lighting
- ✧ More to come
  - RP-33 Lighting for Exterior Environments
  - DG-30 High Mast Lighting for Roadways
  - RP-07 Lighting Industrial Facilities
  - DG-26 Lighting the roadways in work zones
  - DG-28 The Guide for Selection, Installation, Operations and Maintenance of Roadway Lighting Control Systems Design





# New studies and standards available

## ✧ FHWA report

- 14051 – Design Criteria for Adaptive Roadway Lighting
- 14050 – Guidelines for the Implementation of Reduced Lighting on Roadways

## ✧ Research report to come

- ACRP - *Airport Parking Garage Lighting Garage Guidebook*  
*Publication of the guidebook is anticipated in early 2015.*
- Virginia Tech Transportation Institute  
Dirt depreciation of luminaire



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# Apron floodlight installation and possible improvement



# Apron floodlight installation and possible improvement

No light above 90 degree but  
is it shooting far enough!



Doha – Qatar – Old airport

# Apron floodlight installation and possible improvement



Light on the left hand side of the aircraft?

Separation aircraft to lighting pole?

Light pollution?

Maintenance platform!



Nairobi - Kenya



# Apron floodlight installation and possible improvement

From the back is ok but  
nose of aircraft in the dark?

Casablanca - Morroco

# Apron floodlight installation and possible improvement

No light above 90 degree





# Apron floodlight installation and possible improvement

Light above 90 degree

Pole align to centerline!



Tocumen - Panama





# Apron floodlight installation and possible improvement



VAVA'U South Pacific



# Apron floodlight installation and possible improvement



# Apron floodlight installation and possible improvement



Cassidy Airport (Kiribati) – South Pacific

# Apron floodlight installation and possible improvement



# Apron floodlight installation and possible improvement





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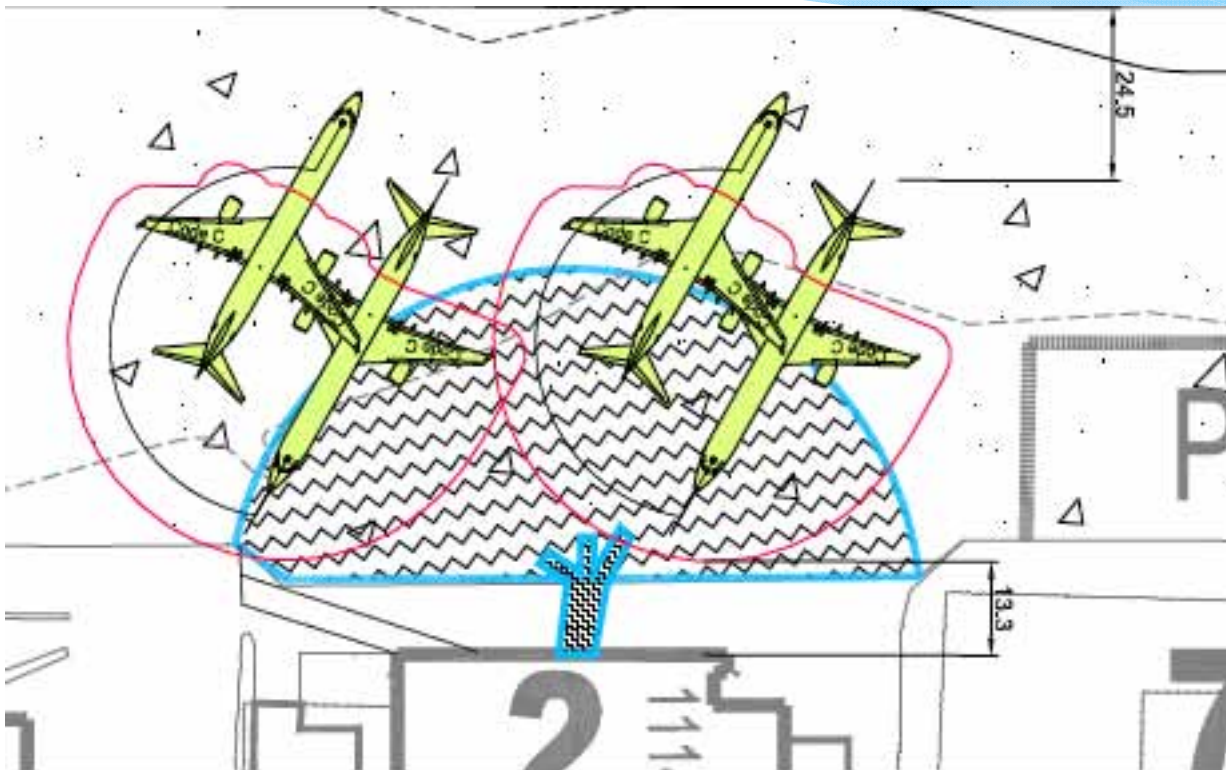
Worldwide apron floodlight installation and possible improvement.

**Example on how we deal with the actual requirement**

Tasks around an aircraft and challenges with requirement

# Example on how we deal with the actual requirement

ole position  
nd height



# Example on how we deal with the actual requirement



Kingston - Canada

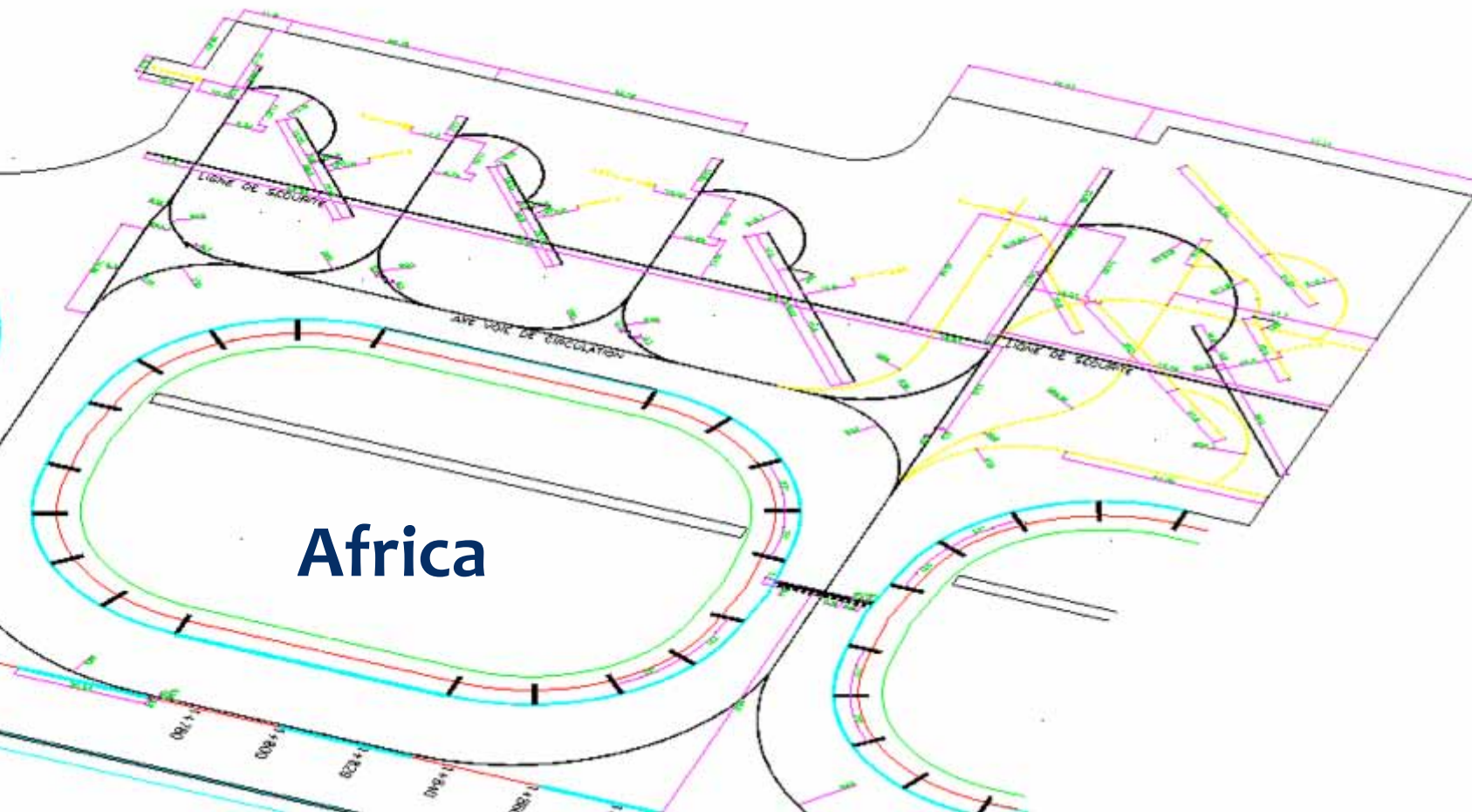
# Example on how we deal with the actual requirement

No light above 90 degree





# Example on how we deal with the actual requirement

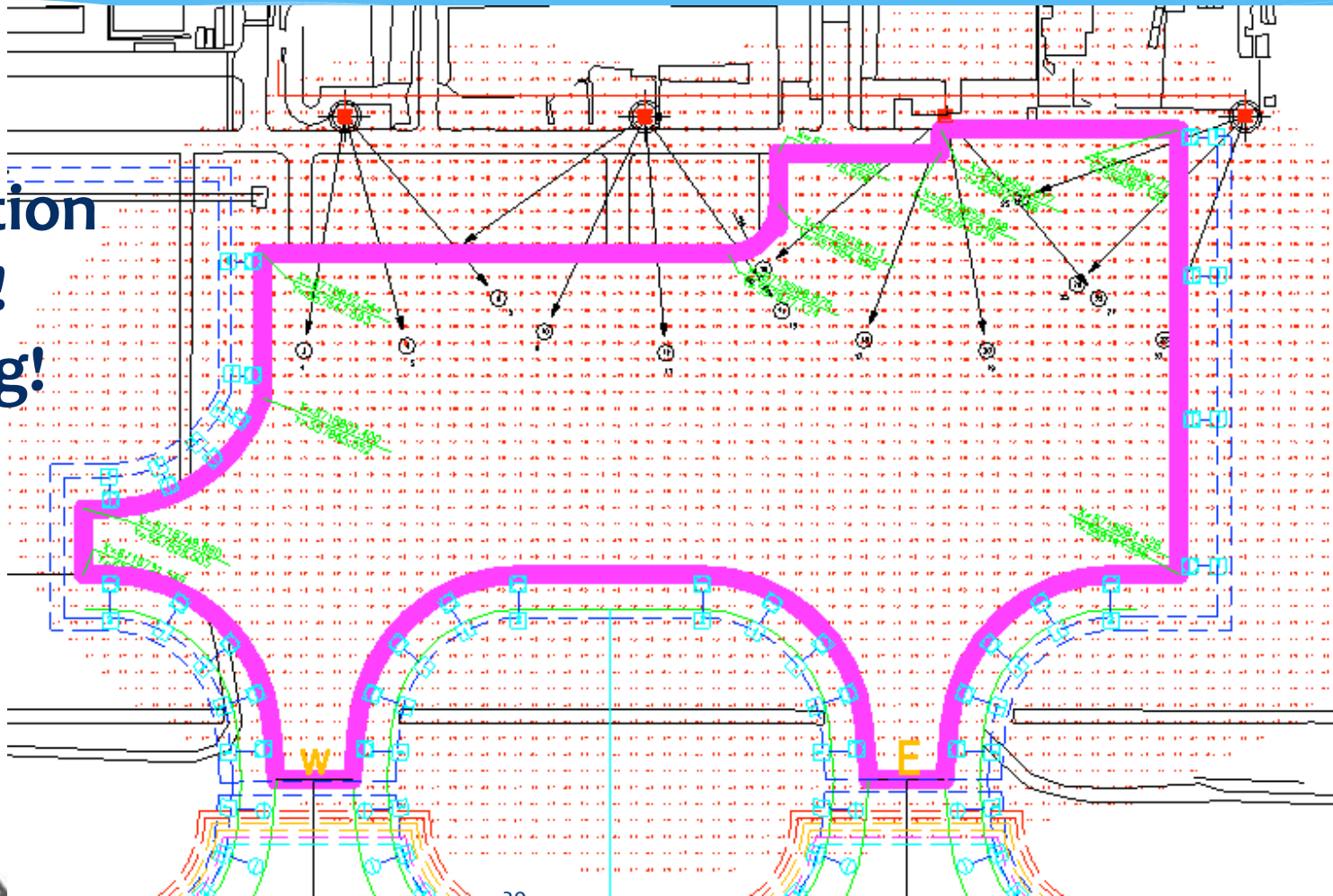


# Example on how we deal with the actual requirement



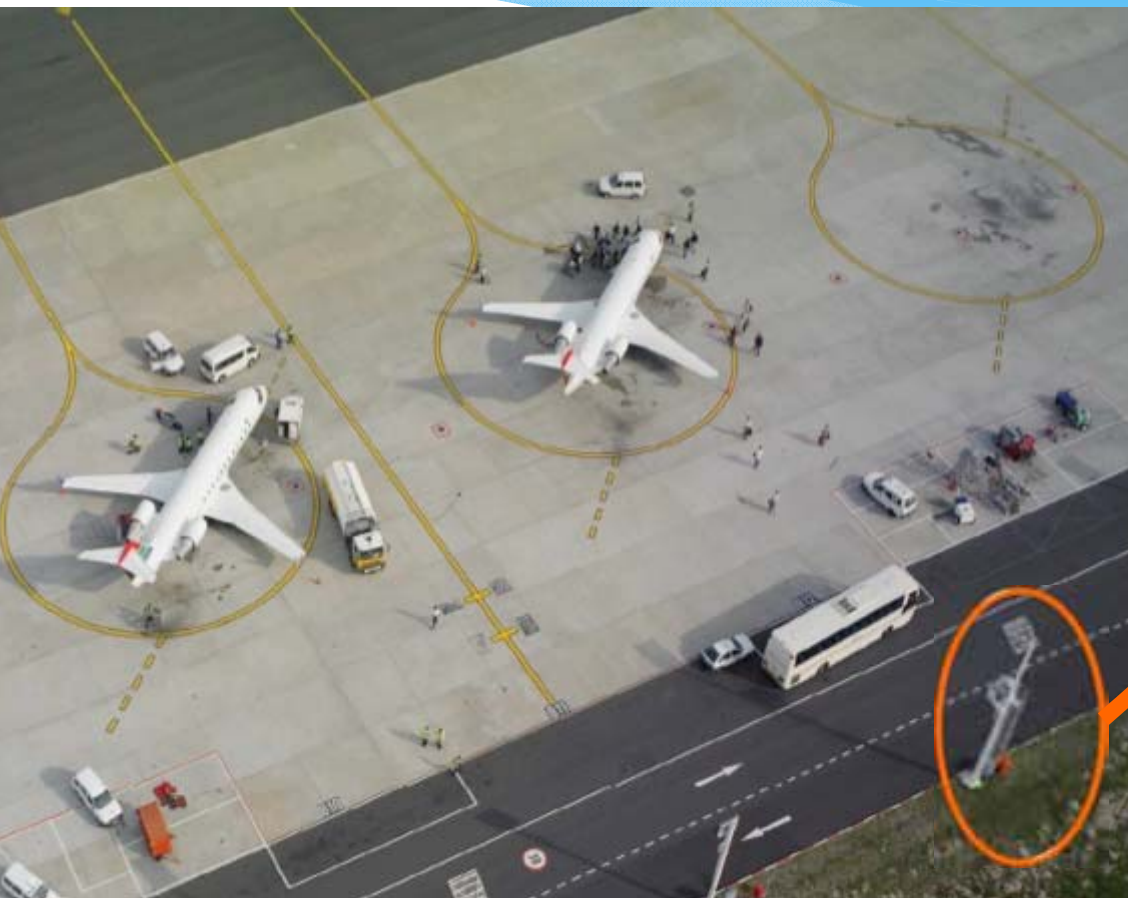
# Example on how we deal with the actual requirement

alculation  
Grid!  
Wrong!

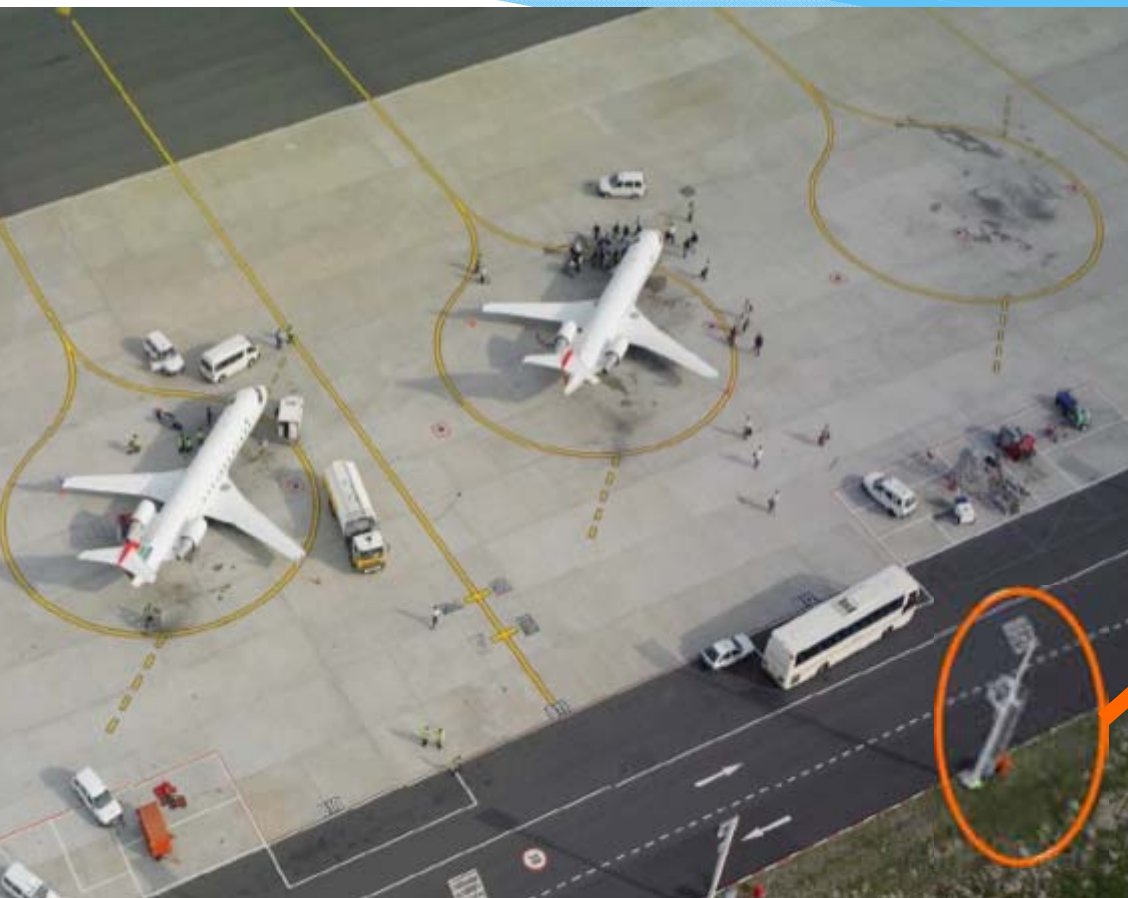




# Example on how we deal with the actual requirement



# Example on how we deal with the actual requirement



# Example on how we deal with the actual requirement



Orlando International Airport

# Example on how we deal with the actual requirement





# Example on how we deal with the actual requirement



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Example on how we deal with the actual requirement

**Tasks around an aircraft and challenges with requirement**

# Tasks around an aircraft and challenges

## QUIZZ!

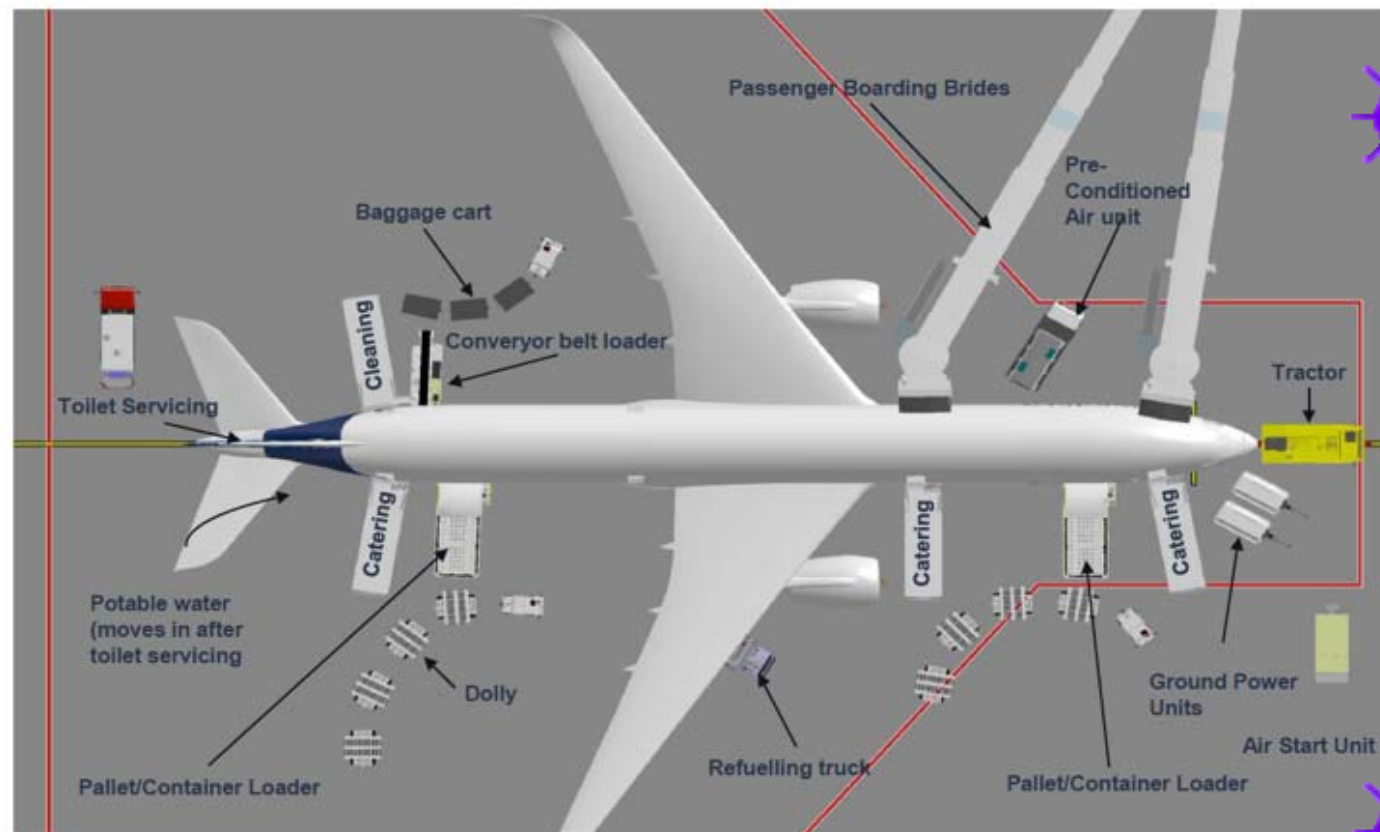
What is the purpose of the apron lighting?

1. Is it for aircraft?
2. Is it for ground personal?
3. Is it for both?

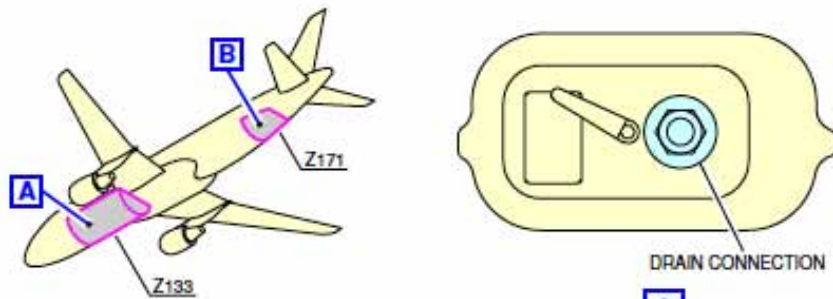


# Tasks around an aircraft and challenges

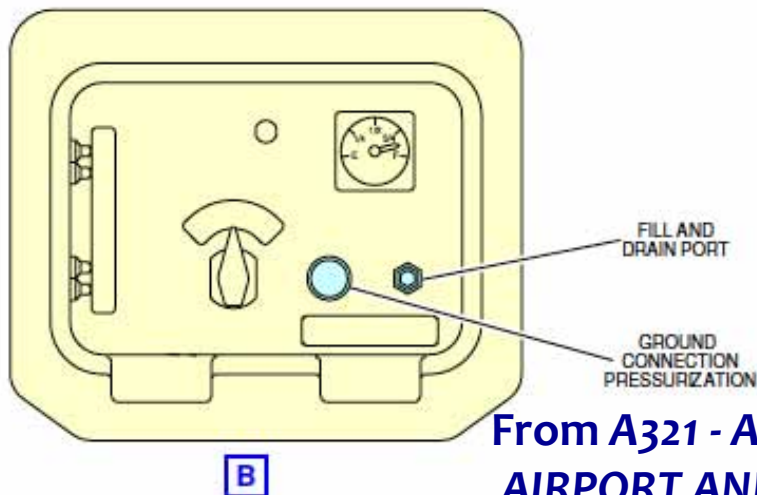
## A350-1000 Ramp Layout



# Tasks around an aircraft and challenges



Ground Service Connections  
**Potable Water Ground Service**  
Panel



From A321 - AIRCRAFT CHARACTERISTICS  
AIRPORT AND MAINTENANCE PLANNING

# Tasks around an aircraft and challenges



# Tasks around an aircraft and challenges





# Tasks around an aircraft and challenges

## CONSTRUCTION

Height limitation and  
obtrusive light



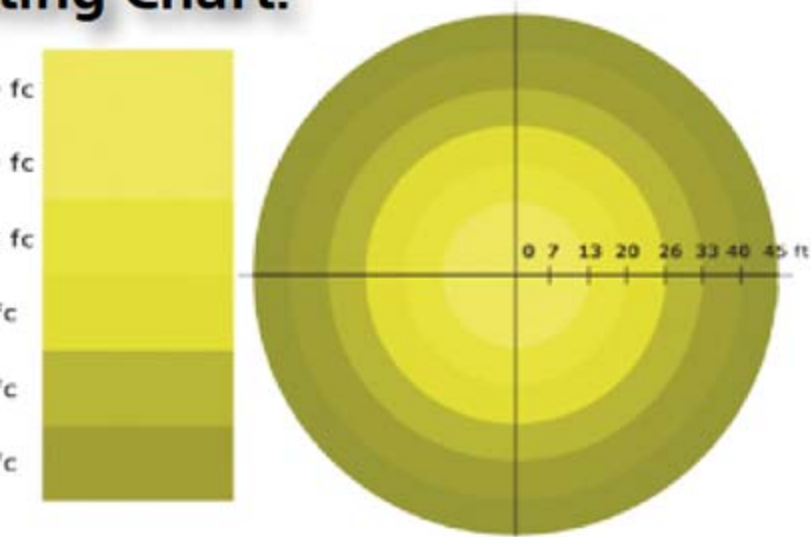
m Vista West Engineering WEB site





# Tasks around an aircraft and challenges

Lighting Chart:



Metal-Halide 1000W - E39 -  
3500K - 110 000 Lumens

*From Airstar Safety Lighting*



*From Airstar Safety Lighting  
2 x 1000 Halogen lamp*

# Tasks around an aircraft and challenges

**QUESTION**

**DO WE NEED OTHER METRICS FOR THE APRON  
FLOODLIGHTING?**

**IF YES, WE WANT YOU!**

# Question or comments?

**Richard Larivée, Chair IESNA RP-37**

**IESALC recommended practices subcommittee**

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

