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USACE / NAVFAC / AFCEC **UFGS-26 55 80 (November 2020)**

Preparing Activity: NAVFAC **Superseding**
UFGS-26 55 80.00 20 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2025

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SECTION 26 55 80

SURGICAL, PROCEDURE AND EXAM LIGHTING FIXTURES
11/20

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NOTE: This guide specification covers the requirements for surgical lighting fixtures and similar related specialties.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

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PART 1 GENERAL

1.1 REFERENCES

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NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature

to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASSOCIATION FOR THE ADVANCEMENT OF MEDICAL INSTRUMENTATION (AAMI)

ANSI/AAMI ES60601-1	(2005; R 2012) Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

IEC 60601-2-41	(2013) Medical Electrical Equipment – Part 2-41: Particular Requirements for the Basic Safety and Essential Performance of Surgical Luminaires and Luminaires for Diagnosis

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2023; ERTA 1 2024; TIA 24-1) National Electrical Code
NFPA 99	(2024) Health Care Facilities Code

1.2 SUBMITTALS

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NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy

and Air Force projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Structural Support; G, [_____]

[Structural Shop Drawings; G, [_____]

] SD-03 Product Data

Light Fixtures; G, [_____]

Fixture Arm Supports; G, [_____]

Wall Controls; G, [_____]

SD-09 Manufacturer's Field Reports

Installation Report; G, [_____]

SD-10 Operation and Maintenance Data

Operation and Maintenance Manual; G, [_____]

1.3 OPERATION AND MAINTENANCE MANUAL

Include the following information for each light fixture in the operation and maintenance manual:

a. Vendor/manufacturer product data

b. Assembly information

c. Mounting details: structural support, wiring, transformers, all accessories and co-ordination with architectural features and finishes

d. Wiring diagram(s)

e. Recommended maintenance

f. Infection control measures, [sterile removable fixture covers][or][removable sterilizable handles]

g. Replacement parts list

[h. Structural support shop drawings and supporting calculations

]1.4 QUALITY CONTROL

1.4.1 Structural Support[and Structural Shop Drawings]

Coordinate structural support with vendor/manufacturer, building structural system and other MEP services.[Use[prefabricated] supporting frames with welded joints to the greatest extent possible.] Comply with 26 05 48 SEISMIC PROTECTION FOR ELECTRICAL EQUIPMENT. Include the following information for the structural support submittal for each light fixture:

a. Vendor/manufacturer's structural design data.

b. Structural shop drawings indicating the construction method, materials, arrangement and attachment to the building structure and the light fixture arm[signed and sealed by a registered engineer].

[c. Structural calculations signed and sealed by a registered engineer.

]1.5 DELIVERY, STORAGE, AND HANDLING

Deliver equipment, components, and materials in original packaging, labeled with the manufacturer/vendor, brand name and part number(s) as appropriate. Inspect equipment, components, and materials upon receipt. Remove and replace damaged items. Comply with manufacturers/vendors instructions and recommendations for storage and handling of all equipment, components, and materials. Protect materials and components from deleterious environments including weather, direct sunlight, temperature, moisture, contamination, corrosion, and construction traffic.

PART 2 PRODUCTS

2.1 LIGHT FIXTURES

Submit the following for each light fixture:

a. Vendor/manufacturer product data.

b. Assembly information, including wiring, transformers, all accessories and coordination with architectural features and finishes.

c. Mounting details including structural support.

d. Wiring diagrams for power and communication.

e. Infection control measures.

2.1.1 Design Requirements

Provide surgical lighting fixtures for use in surgical operating rooms, with the following characteristics:

a. Comply with IEC 60601-2-41 and ANSI/AAMI ES60601-1.

b. Electrical service: [120][120-240] volts, [60][50/60] Hz, single-phase, three-wire grounded circuits.

c. Maximum allowable fixture current leakage 0.1 milliampere, measured between metal parts and ground.

d. Restricted frequency ranges for ballasts, drivers, and controls: 20KHz to 25KHz, 32KHz to 39KHz, and above 60KHz. Avoid interference with medical devices.

e. Infection control: [sterile removable fixture covers][or][removable sterilizable handles].

[2.1.2 Surgical Light Fixtures[- JSN [_____]]

Ceiling mounted with [one][two][three] light head[s][and [one][two] flat screen displays on radial arm(s)]. Radial arms to provide [minimum of 330][360][_____] degree rotation[with limit stop]. [LED][_____] light source with illumination level of [160,000][_____] lux at working distance of [32-47][39.37][_____] inches with a[n adjustable] pattern size between [6.5-9.5][_____] inches, and shadow reduction capability. Provide color temperature [between][of][3500-5000][4000][4500][5000][, adjustable] with a color rendering index (Ra) of [96][_____] (minimum) and (R9) of [90][_____] (minimum). Minimum service life [40,000][_____] hours. Provide [recessed][surface mount] wall controller[with ____].[Configure [each][_____] light head for camera installation.]

][2.1.3 Surgical Light Fixtures - Minor Surgery and Procedure Room[- JSN [_____]]

[Ceiling mounted][_____] with [one][two] light head[s][and flat screen display on radial arm]. Radial arm(s) to provide [minimum 330][_____] degree rotation[with limit stop]. [LED][_____] light source with illumination level of [50,000][80,000][125,000][_____] lux at working distance of [at least 12][39.37][_____] inches, with a[n adjustable] pattern size [of at least 6][_____] inches[and shadow reduction capability]. Provide color temperature [between][of][3500-5000][4500][5500][, adjustable] with a color rendering index (Ra) of [at least 95][96][_____] and (R9) of [90][_____] (minimum). Minimum service life [40,000][_____] hours. Provide [recessed][surface mount] wall controller[with [on/off control with dimming][_____]].[Configure[each] light head for camera installation.]

][2.1.4 Exam Light Fixtures[- JSN [_____]]

[Wall Mounted][Ceiling mounted][_____] with one light head. Radial arm to provide [minimum 330][_____] degree rotation[with limit stop]. [LED][_____] light source with illumination level of [20,000][50,000][_____] lux at working distance of [at least 12][_____] inches, with a[n adjustable] pattern size [of at least 4][_____] inches[and shadow reduction capability]. Provide color temperature [between 3600-5500][of ___][with a color rendering index (Ra) of [at least 95][_____]] and (R9) of [90][_____] (minimum). Minimum service life [40,000][_____] hours. Provide [switch mounted on light head][touchless on/off][wall controller][_____].

][2.1.5 Labor and Delivery Light Fixtures[- JSN M7440]

Recessed, ceiling mounted fixture with [one][two] light head[s][, with each light head in a recessed enclosure]. [LED][_____] light source with an illumination level of [43,000][_____] lux with[remote] rotation

adjustment of [25][30][_____] degrees. Provide color temperature [between 3600-5500][4400][with a color rendering index (Ra) of [at least 95][_____]] and (R9) of [90][_____]. Minimum service life [40,000][_____] hours. Provide wall controller to control light intensity and light head position.

]2.2 FIXTURE ARM SUPPORTS

Mount lighthead[s][and flat screen display(s)] on an arm assembly. Configure the lighthead[s][and flat screen display(s)] to rotate within a clearance circle of [15 1/2][_____] feet. Provide vertical height adjustment to allow positioning of fixture[s][and displays] between [3 feet 11 inches][_____] and [7 feet 6 inches][_____] above the floor. Provide control for fixture within[and outside of] sterile field. Enable free, smooth, and silent movement of each arm assembly throughout its range of maneuverability without drifting, regardless of its position.[Provide fully independent repositioning throughout the full range of movement for each arm on a single multi-fixture mount, bypassing other components.]

2.3 WALL CONTROLS

[Recessed][or][Surfaced] mounted. Include[overcurrent protection,] on/off switch located outside the sterile field and indicator light.

PART 3 EXECUTION

3.1 INSTALLATION

Reference section 11 70 00 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT, NFPA 99 and NFPA 70. Install [surgical][,][exam][,][and][labor and delivery] light assembly and fixture arm supports in accordance with the approved installation drawings and manufacturer's instructions and recommendations for each assembly.

3.1.1 Wiring Methods

Provide conduit, wiring, and rough in for each light assembly[and any future add-on option(s)] in accordance with Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM.

3.2 FIELD QUALITY CONTROL

3.2.1 Installation Report

For each assembly submit a [vendor/manufacturer][factory-authorized installer] installation report confirming each light fixture and associated equipment has been properly installed, adjusted and tested, and meets the manufacturer's installation requirements.

-- End of Section --