

1 Contents

		Power to lighting system, circuiting, etc. Part may be covered in base book power circuit design. Ficker New Chapter? Steve Townsend, Gary Fox, Mike Anthony
2	1. Overview.....	1
3	1.1 Scope.....	1
4	1.2 General Discussion.....	1
5	2. Normative references.....	2
6	3. Definitions, acronyms, and abbreviations	2
7	3.1 Definitions	2
8	3.2 Acronyms and abbreviations.....	12
9	4. Lighting requirements and human factors... [IES Chapter 2, 3, 4 Bob Schuerger]	13
10	4.1 General Discussion.....	13
11	4.2 Illumination Quantity	19
12	4.3 Lighting Quality.....	23
13	5. Light Sources.. [IES Chapter 6, 7, 13 Bob Arno]	28
14	5.1 Major classifications of light sources	28
15	Table 6 Notes:	33
16	5.2 Incandescent Lamps	33
17	5.3 Fluorescent Lamps	37
18	5.4 High-Intensity Discharge (HID) Lamps	50
19	5.5 Light Emitting Diodes (LEDs).....	59
20	5.6 Installation, Operation, and Safety Concerns.....	61
21	5.7 High-Intensity Discharge (HID) Luminaires	62
22	6. Luminaires .. [IES Chapter 8 Jamie Barrett]	66
23	6.1 Luminaire and lamp selection	66
24	6.2 Special lighting distributions	68
25	6.3 Lighting and other building subsystems	68
26	6.4 Glare.....	68
27	6.5 Luminaires and air conditioning	69
28	6.6 Remote illumination systems	69
29	6.7 Lighting application techniques	70
30	7. Lighting Design Techniques... [IES Chapters 11-15,22, 24, 25,27, 30,32 Jamie Barrett]	72
31	7.1 Lighting industry references	72
32	7.2 Electric lighting and daylighting	72
33	7.3 Outdoor area lighting.....	72
34	7.4 Guides for good floodlighting results	72
35	8. Lighting controls .. [IES Chapter 16 Steve Townsend, John Kay]	73
36	8.1 Lighting control systems	73
37	9. Lighting operation and maintenance. [IES RP-36]	83
38	9.1 Luminaire dirt depreciation. Light loss due to dirt, dust, and grime depends upon the type of luminaire, the dirt conditions in the atmosphere, and the time between cleanings of the room surfaces and the luminaire. The IES/NALMCO RP-36-03 Planned Indoor Lighting Maintenance [8] provides the Luminaire Dirt Depreciation for the five CIE Classifications of Luminaires according to the cleanliness of the environment and the months between luminaire cleaning, as shown in Table 27.....	83

1	10. Lighting economics and illuminance calculations [IES Chapter 10, 18]	89
2	10.1 Lifetime cost analysis.....	89
3	10.2 Light loss factors.....	91
4	10.3 Illuminance calculations	92
5	10.4 Lighting and thermal considerations	92
6	11. Emergency lighting... [IES Chapter 25]	94
7	11.1 Codes and standards. Refer to Section 1.2.2.1.2 and 1.2.2.1.3 for a listing of specific codes and	
8	standards that apply to emergency lighting systems. Any Nationally Recognized Testing Laboratory	
9	(NRTL) acceptable to the AHJ may test emergency lighting equipment.....	94
10	11.2 Considerations for emergency lighting.....	95
11	11.3 Duration of emergency lighting	97
12	11.4 Uniformity of emergency lighting. To keep adaptation to changing illuminance levels from	
13	reducing the speed of movement for the occupants to escape, a maximum-to-minimum uniformity ratio	
14	not exceeding 40 to 1 is required.	97
15	11.5 Sources of emergency power	97
16	11.6 Exit signs	99
17	12. Applications	103
18	12.1 Hospital lighting applications	103
19	Annex A (informative) Bibliography.....	113
20	Annex B (normative) References to be used in conjunction with this standard	115
21	Annex C (informative) Online lighting education and software application programs.....	117
22	C.1 Lighting education online programs	117
23	C.2 Lighting design software programs and publishers	117
24	C.3 Lighting calculation online programs	117
25	Annex D (informative) Industry practice standards.....	118
26	D.1 Industry standards for design and application:	118
27	D.2 Standards for product safety	123
28	D.3 Government and industry application information	124
29	Annex E (informative) Lighting controls.....	126
30		