EDITION

Nikon® Creative Lighting System

Digital Field Guide SECOND









Creative Lighting System

Digital Field Guide, Gecond Edition

Nikon®

Creative Lighting System

Digital Field Guide, Gecond Edition

J. Dennis Thomas



Nikon® Creative Lighting System Digital Field Guide, Second Edition

Published by Wiley Publishing, Inc. 10475 Crosspoint Boulevard Indianapolis, IN 46256 www.wiley.com

Copyright © 2010 by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

ISBN: 978-0-470-45405-3

Manufactured in the United States of America

10987654321

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, 201-748-6011, fax 201-748-6008, or online at http://www.wiley.com/go/permissions.

LIMIT OF LIABILITY/DISCLAIMER OF WARRANTY: THE PUBLISHER AND THE AUTHOR MAKE NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE ACCURACY OR COMPLETENESS OF THE CONTENTS OF THIS WORK AND SPECIFICALLY DISCLAIM ALL WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. NO WARRANTY MAY BE CREATED OR EXTENDED BY SALES OR PROMOTIONAL MATERIALS. THE ADVICE AND STRATEGIES CONTAINED HEREIN MAY NOT BE SUITABLE FOR EVERY SITUATION. THIS WORK IS SOLD WITH THE UNDERSTANDING THAT THE PUBLISHER IS NOT ENGAGED IN RENDERING LEGAL, ACCOUNTING, OR OTHER PROFESSIONAL SERVICES, IF PROFESSIONAL ASSISTANCE IS REQUIRED. THE SERVICES OF A COMPETENT PROFESSIONAL PERSON SHOULD BE SOUGHT. NEITHER THE PUBLISHER NOR THE AUTHOR SHALL BE LIABLE FOR DAMAGES ARISING HEREFROM. THE FACT THAT AN ORGANIZATION OR WEB SITE IS REFERRED TO IN THIS WORK AS A CITATION AND/OR A POTENTIAL SOURCE OF FURTHER INFORMATION DOES NOT MEAN THAT THE AUTHOR OR THE PUBLISHER ENDORSES THE INFORMATION THE ORGANIZATION OF WEB SITE MAY PROVIDE OR RECOMMENDATIONS IT MAY MAKE. FURTHER, READERS SHOULD BE AWARE THAT INTERNET WEB SITES LISTED IN THIS WORK MAY HAVE CHANGED OR DISAPPEARED BETWEEN WHEN THIS WORK WAS WRITTEN AND WHEN IT IS READ.

For general information on our other products and services or to obtain technical support, please contact our Customer Care Department within the U.S. at (877) 762-2974, outside the U.S. at (317) 572-3993 or fax (317) 572-4002.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress Control Number: 2009935229

Trademarks: Wiley and the Wiley Publishing logo are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates. Nikon is a registered trademark of Nikon, Inc. All other trademarks are the property of their respective owners. Wiley Publishing, Inc. is not associated with any product or vendor mentioned in this book.



About the Author

J. Dennis Thomas is a freelance photographer based out of Austin, Texas. He's been using a camera for fun and profit for almost 25 years. Schooled in photography first in high school then at Austin College, he has won numerous awards for both his film and digital photography. Denny has a passion for teaching others about photography and has taught black and white film photography to area middle school stu-



dents as well as lighting and digital photography seminars in Austin. His photographic subjects are diverse, from shooting weddings and studio portraits to photographing concerts and extreme sports; he enjoys all types of photography. He has written seven highly successful Digital Field Guides for Wiley Publishing and has more in the works. His work has been published by *Rolling Stone* as well numerous magazines, newspapers, and Web sites.

Credits

Senior Acquisitions Editor

Stephanie McComb

Development Editor

Jama Carter

Technical Editor

Ben Holland

Senior Copy Editor

Kim Heusel

Editorial Director

Robyn Siesky

Editorial Manager

Cricket Krengel

Business Manager

Amy Knies

Senior Marketing Manager

Sandy Smith

Vice President and Executive Group Publisher

Richard Swadley

Vice President and Executive Publisher

Barry Pruett

Project Coordinator

Patrick Redmond

Graphics and Production Specialists

Andrea Hornberger Jennifer Mayberry

Mark Pinto

Quality Control Technicians

Laura Albert

Melanie Hoffman

Proofreading and Indexing

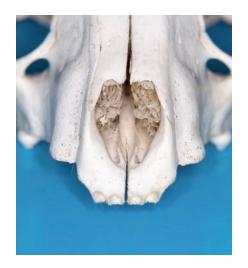
Linda Seifert

Ty Koontz



Acknowledgments

Thanks to Cricket, Stephanie, Courtney, and Laura at Wiley. Thanks to the folks at Precision Camera in Austin, TX, and Jack Puryear at Puryear Photography.







Contents

Acknowledgineits	VIII
Introduction	xxi
The Evolution of the Nikon CLS	xxi
What's in This Book for You?	κχiii
QUICK TOUR	
Getting Started	
Taking Your First Photos with a Speedlight	. 4
CHAPTER 1 Exploring the Nikon Creative Lighting	
System	9
Main Features and Functions	10
Anatomy of the Speedlight	
SB-600	15
Control buttons	19
Combination buttons	
SB-800	
Control buttons	
Combination buttons	26
SB-900	27
Control buttons	30
Camera compatibility	34
D40, D40X, D50, D60, D3000,	
and D5000	
D70/D70s	36
D80, D90, D200, D300/D300s, and D700	37
D2X/D2Xs, D2H/D2Hs, D3/D3X	
Included Accessories	
SB-900	
SS-900 soft case	
AS-21 Speedlight stand	
SJ-900 color filter set	38
SZ-2 color filter holder	39
SW-13H diffusion dome	39

SB-800	40
SS-800 soft case	
SD-800 quick-recycling battery pack	
AS-19 Speedlight stand	
SJ-800 colored filter set	
SW-10H diffusion dome	
SB-600	
SS-600 soft case	
AS-19 Speedlight stand	41
Add-on Accessories	
SU-800 wireless Speedlight	
Commander	41
R1/R1C1 and SB-R200	42
SG-3IR	44
CHAPTER 2	
Setting Up Your Nikon Speedlights	45
Power Requirements	46
Nonrechargeable	46
Rechargeable	47
Navigate the Settings and Menus	
Flash modes	
i-TTL and i-TTL BL	48
Non-TTL Auto Flash/Auto Aperture	50
Guide Number Distance Priority	52
Manual	53
Repeating Flash	54
SU-4 mode	54
SB-900 custom functions and settings	
Non-TTL Auto flash mode	
Master RPT flash	
Manual mode output	
SU-4	
Illumination pattern	
Test firing button	58
Flash output level of test firing in iTTL	58
FX/DX	58
Power zoom	59
AF-Assist	59
Standby	60
ISO	60
	00













LCD panel illuminator	. 61
Thermal cut-out	. 61
Sound monitor	. 62
LCD panel contrast	. 62
Distance unit	. 62
Zoom position setting for wide-flash	
panel	
My Menu settings	
Firmware	
Reset	
SB-800 custom functions and settings	
ISO	
Wireless Flash mode	
Sound monitor	
Non-TTL Auto flash mode	
Standby	
Distance unit	
Power zoom	. 67
Zoom position setting for wide-flash	
panel	
LCD panel illuminator	
LCD panel contrast	
AF-Assist	
Flash Cancel	
SB-600 custom functions and settings .	
Wireless remote flash mode	
Sound monitor	
Remote ready light	
AF-Assist	
Standby	
Power zoomfarida flash	. / 1
Zoom position setting for wide-flash panel	71
LCD illuminator	
LOD marminator	. / 2
CHAPTER 3	
Flash Photography Fundamentals	73
Understanding Flash Exposure	. 74
Key Terms	
Basics of Using Flash	
Achieving proper exposures	
Guide Number	
Aperture	87

Distance	. 87
GN / D = A	. 88
Flash sync modes	. 88
Sync speed	. 89
Front-curtain sync	. 91
Red-eye reduction	. 93
Slow sync	. 93
Rear-curtain sync	. 94
Flash Exposure Compensation (FEC)	. 95
Understanding Color Temperature	. 97
What is Kelvin?	. 97
White balance settings	. 98
Mixed lighting	. 98
Using Repeating Flash	100
Using Bounce Flash	104
Fill Flash	106
Simple Light Modifiers	109
Diffusion Domes	109
Bounce cards	111
Speedlights versus Studio Strobes	112
CHAPTER 4 Advanced Wireless Lighting	115
Advanced Wireless Lighting Flash Setup for Advanced Wireless	
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting	116
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting	116 119
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting	116 119 119
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting	116 119 119 119
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting	116 119 119 119 120
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander. SB-900 SB-800 Built-in flash Setting the Flash Mode.	116 119 119 119 120 120
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander SB-900 SB-800 Built-in flash Setting the Flash Mode SB-900	116 119 119 119 120 120 121
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander. SB-900 SB-800 Built-in flash Setting the Flash Mode. SB-900 SB-800 SB-800	116 119 119 119 120 120 121 122
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander. SB-900 SB-800 Built-in flash Setting the Flash Mode. SB-900 SB-800 SU-800	116 119 119 120 120 121 122
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander SB-900 SB-800 Built-in flash Setting the Flash Mode SB-900 SB-800 SU-800 Setting Up Remotes	116 119 119 120 120 121 122 122 123
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander. SB-900 SB-800 Built-in flash Setting the Flash Mode. SB-900 SB-800 SU-800 Setting Up Remotes SB-900	116 119 119 120 120 121 122 122 123 123
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander. SB-900 SB-800 Built-in flash Setting the Flash Mode. SB-900 SB-800 SU-800 Setting Up Remotes SB-900 SB-800 SB-800	116 119 119 120 120 121 122 122 123 123 123
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander. SB-900 SB-800 Built-in flash Setting the Flash Mode. SB-900 SB-800 SU-800 Setting Up Remotes SB-900 SB-800 SB-800 SB-800 SB-800 SB-800 SB-800	116 119 119 120 120 121 122 123 123 123 124
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander SB-900 SB-800 Built-in flash Setting the Flash Mode SB-900 SB-800 SU-800 Setting Up Remotes SB-900 SB-800 SB-600	116 119 119 120 120 121 122 122 123 123 123
Advanced Wireless Lighting Flash Setup for Advanced Wireless Lighting. Setting Up a Master or Commander. SB-900 SB-800 Built-in flash Setting the Flash Mode. SB-900 SB-800 SU-800 Setting Up Remotes SB-900 SB-800 SB-800 SB-800 SB-800 SB-800 SB-800	116 119 119 119 120 121 122 123 123 123 124 124











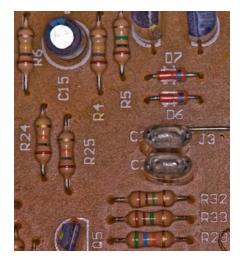


Making Adjustments on the -Fly	. 126
SB-900	. 126
SB-800	. 127
SU-800	. 127
CHAPTER 5	
Setting up a Portable Studio	129
Introduction to the Portable Studio	. 130
Equipment	. 130
Stands	
Brackets and multiclamps	
Umbrellas	
Softboxes	
Flash-mount softboxes	
Stand-mounted softboxes	
Reflectors and diffusers	. 138
Diffusion panel	. 138
Reflectors	. 139
Backdrops	. 140
Seamless paper	. 142
Vinyl	. 143
Muslin	. 143
Canvas	. 144
Background stands	. 144
Filters	. 144
Attaching the filters	. 145
Settings	. 146
Using filters	. 147
Transporting Your Portable Studio	. 152
CHAPTER 6	
Advanced Flash Techniques	155
Action and Sports Photography	. 156
Setup	. 156
Tips and tricks	
Concert Photography	
Setup	. 160
Tips and tricks	. 161
Macro Photography	
Setup	

Night Photography1	167
Setup 1	167
Tips and tricks	167
Portrait Photography	170
Indoor	171
Outdoor	172
Pet Portraits	175
Special Effects Photography 1	177
Setup 1	179
Tips and tricks	180
Still-Life and Product Photography 1	181
	182
F	183
3.3	186
-	187
Tips and tricks	188
APPENDIX A Posing Considerations 1	01
Posino Consinerations	91
_	
Getting Started	
Getting Started	194
Getting Started	194
Getting Started	194
Getting Started	194 200
Getting Started	194 200 03
Getting Started	194 200 03 203
Getting Started	194 200 03 203 203
Getting Started	194 200 03 203 203 203
Getting Started	194 200 03 203 203
Getting Started	194 200 03 203 203 203 203
Getting Started 1 Positioning the Head and Neck 1 Additional Tips 2 APPENDIX B 2 Resources 2 Informational Web Sites 2 Nikon 2 Nikonians.org 2 Photo.net 2 J. Dennis Thomas's Digital Field	194 200 03 203 203 203 203
Getting Started	194 200 03 203 203 203 203 203
Getting Started	194 200 03 203 203 203 203 203
Getting Started	194 200 03 203 203 203 203 203 204 204
Getting Started	194 200 03 203 203 203 203 203 204 204
Getting Started	194 200 03 203 203 203 203 203 204 204
Getting Started	194 200 03 203 203 203 203 204 204 204
Getting Started	194 200 03 203 203 203 203 204 204 204 204
Getting Started	194 200 03 203 203 203 203 204 204 204 204
Getting Started	194 200 03 203 203 203 203 204 204 204 204
Getting Started	194 200 03 203 203 203 203 204 204 204 204 204













Online Photography Magazines and	
Other	. 204
Digital Photographer	. 204
Digital Photo Pro	. 205
Flickr	. 205
Outdoor Photographer	. 205
Photo District News	. 205
Popular Photography & Imaging	. 205
Shutterbug	. 205
APPENDIX C How to Use the Gray Card and	
Color Checker	207
The Gray Card	. 207
The Color Checker	. 208
Glossary	209

Introduction

When Nikon introduced the Creative Lighting System in 2004, it was mostly overlooked. The focus was on the rapidly changing advancement of digital SLR cameras. This disregard was a shame because the Nikon Creative Lighting System was the most amazing development to happen to photographic lighting in decades. The ability to infinitely control the output of multiple lights *and* to be able to do it wirelessly, with full Through-the-lens (TTL) metering was almost unheard of.

The popularity of Nikon's Creative Lighting System has grown exponentially in recent years with more and more people becoming interested in photographic lighting. The fact that these flashes can take care of most of the work for you at an affordable cost is a major factor in the popularity of this system. With the SB-800, the SB-600, the SU-800, and more recently the SB-900 and SB-400, no other company comes close to offering such a multitude of tools for specific lighting needs.

The main feature of CLS is the ability to get the flashes off of the camera and to be able to control them wirelessly. Nikon refers to this as Advanced Wireless Lighting (AWL). Quite simply, when you're stuck with the flash mounted on the camera or even to a flash bracket, your ability to control the lighting is severely impeded — leaving you stuck with full frontal lighting.

With the CLS, you can direct the light. Thus, you can create the same lighting patterns that professionals achieve with expensive studio strobes, at a much lower cost. This is the key to professional-looking images: controlling the lighting to get the effect that you want.

The Evolution of the Nikon CLS

Nikon started toying with wireless Speedlight control in 1994 with the introduction of the SB-26 Speedlight. This flash incorporated a built-in optical sensor that enabled you to trigger the flash with the firing of another flash. While this was handy, you still had to meter the scene and set the output level manually on the SB-26 itself.

Nikon Creative Lighting System Digital Field Guide

With the release of the SB-28 in 1997, Nikon dropped the built-in optical sensor. You could still do wireless flash, but you needed to buy the SU-4 wireless sensor. Wireless flash still had to be set manually because the pre-flashes used by the TTL metering system caused the SU-4 to fire the Speedlight prematurely.

In 1999 Nikon released the SB-28DX; this flash was made to work with Nikon's emerging line of digital SLRs. The only change from the SB-28 was the metering system. The Nikon film-based TTL metering was replaced by DTTL. This metering system compensated for the lower reflectivity of a digital sensor as opposed to film's highly reflective surface.

In 2002 Nikon replaced the SB-28DX with the SB-80DX. The changes were minimal, more power, wider zoom, and a modeling light. They also returned the wireless optical sensor. As before, although you could use this Speedlight wirelessly, you still had to set everything up on the flash itself.

When 2004 rolled in, Nikon revolutionized the world of photographic lighting with the SB-800, the first flash to be used with the new Creative Lighting System. The first camera to be compatible with the CLS was the D2H. Using the D2H with multiple SB-800s enabled you to control the Speedlights individually by setting them to different groups, all which were metered via pre-flashes and could be adjusted separately.

With the introduction of the D70 and later the D70s and D200, users could even control any number of off camera Speedlights using the camera's built-in flash. Of course using the built-in flash had some drawbacks. Using the D70s, you can only control one group of Speedlights, and with the D200, you can only control two groups. Even so, this is remarkable. Never before could you use a Speedlight off camera while retaining the function of the iTTL metering. Today all of Nikon's current dSLR cameras are CLS compatible. Although not all of the cameras allow you to control using a built-in flash, any one of the cameras can be used with one of the Speedlights that act as a commander to control any number of off camera Speedlights.

Eventually, Nikon augmented the CLS line with the SB-600, the little brother to the SB-800. While lacking some of the features of the SB-800, such as the ability to control Speedlights, it's still an amazing little flash. Nikon also released a couple of kits for doing macro photography lighting, the R1 and R1C1. The R1 macro lighting kit has two small wireless Speedlights, the SBR-200, which you can mount directly to the lens via an adaptor. The SBR-200 can also be purchased separately enabling you to use as many lights as you want. The R1C1 kit is essentially the same as the R1 kit, with the addition of the SU-800 commander unit. The SU-800 is a wireless transmitter that enables you to control groups of flashes just like the SB-800 without a visible flash.

Recently Nikon has rounded out the system by adding the bare-bones SB-400 and the newest flagship model, the SB-900.

What's in This Book for You?

While the manuals that come with the Speedlights are informative and contain all the technical data about your Nikon Speedlight, they don't exactly go into detail about the nuances of lighting — the small things and pitfalls you may encounter or the types of settings you might want to use on your camera and lenses.

That's where this book comes in. This book offers you tips and advice acquired in real world situations by a photographer who has been using the Nikon Creative Lighting system almost daily since it was first introduced.

Initially, flash photography is often thought of with dread as mysterious and confusing. However, with this book I hope to dispel that myth and help to get you on the road to using the flash and CLS as another creative tool in your photographic arsenal.