

LAMPS, REFLECTIVE DEVICES AND ASSOCIATED EQUIPMENT FMVSS-108

Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Supplied by Procarparts (www.procarparts.com)

CALCOAST - ITL

Lighting Technology
4072 Watts Street
Emeryville, CA 94608



January 29, 2002

FINAL REPORT

PREPARED FOR

U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

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Prepared By: Mark A. Evan

Approved By: Mark A. Evan

Approval Date: 29 January 2002

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: Michael Cole

Acceptance Date: 2/21/02

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7. Author(s) Mark A. Evans Photometric Engineer				8. Performing Organization Report No. 1214-1B/01	
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16. Abstract The scope of this testing was limited to photometry and color tests to demonstrate the performance of a headlamp when a Procarparts "9004-hid-phil" HB1 HID conversion kit is substituted for the standardized replaceable light source intended for use in the headlamp. Test failures identified were as follows: upper and lower beam photometry, and headlamp color.					
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INDUSTRIAL TESTING LABORATORY

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TEST REPORT

Report Date: January 29, 2002

Test Component: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Supplied by: Procarparts (www.procarparts.com)

Submitted By: NHTSA

Test Laboratory: Calcoast - ITL
Emeryville, CA 94608

Devices Tested: One (1) Complete Kit with Two(2) Modified D2R Light Sources
and Ballast Assemblies

SUMMARY

Specifications: FMVSS 108

Photometric Tests (Figure 27-1)

Lower Beam using HB1 Bulb.....	PASSED
Upper Beam using HB1 Bulb	PASSED
Lower Beam using HID Conversion Kit	FAILED
Upper Beam using HID Conversion Kit(No UB Function)	FAILED

Color Tests

SAE J578c.....	FAILED
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Note: Tested using 1998 Nissan Frontier RBHL (LH) Manufactured by NAL

Signature of Responsible Laboratory Official:

A handwritten signature in blue ink that reads "Mark A. Evans". The signature is written in a cursive, flowing style.

Mark A. Evans
Photometric Engineer

MAE:cc(2)

DESCRIPTION SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Supplied by: Procarparts (www.procarparts.com)

GENERAL DESCRIPTION:

MARKINGS:

BALLAST: "PHILIPS", "LVQ 212-L300", "Bulbtype D2S/D2R 35W"
See photos for additional markings

IGNITER: N/A

BULB: "OSRAM XENARC", "D2R 35W 66050", "GERMANY", "DOT"

DESCRIPTION:

BULB USED: QUANTITY: Two(2) D2R (Modified)

DESIGN VOLTS: 12.80V

Ballast 1/ Bulb 1	Ballast 2/ Bulb 2
2885 lumens	2751 lumens

TEST DATA SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Supplied by: Procarparts (www.procarparts.com)

COLOR TEST: SAE J578c

Test Method: Tristimulus Method using Minolta Chroma Meter CL100

Lamp Voltage: 12.80V

Test Performed By: Mark Evans

Test Distance: 50 ft

Date: 01/28/2002

RESULTS

Measured xy chromaticity coordinate values:	
White	
Lower Beam w/HID Kit @ 1.5D/2R x=0.4034 y=0.4162	Upper Beam w/ HID Kit @ HV x=0.0000 y=0.0000
xy Chromaticity Coordinate Boundaries:	
White	
$0.38 \leq y < 0.44$ $0.31 \leq x < 0.50$ $y \leq 0.15 + 0.64x$ $y \geq 0.05 + 0.75x$	

Summary:

White- The color of the light emitted from the clear lens on device falls **outside** the acceptable limits for white.

Unable to measure upper beam color- no upper beam function included in kit.

PHOTOMETRIC TEST DATA SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Test Sample: 9004/HB1 Comparison Bulb

Specification: FMVSS 108 Fig. 27-1 (Lower Beam)

Test Lamp: 1998 Nissan Frontier Headlamp (LH)

Luminous Intensity, Candela

Test Points					LOW BEAM		Required	
Degrees		Location			Measured	Reaim	Minimum	Maximum
H	V				1176.81		-	-
4.0U	8.0L				177.54		64	-
4.0U	8.0R				275.79		64	-
2.0U	4.0L				361.76		135	-
1.5U	1.0R TO	3.0R	1.00R		738.63		200	-
1.5U	1.0R TO		R	2.03R	773.43		-	1400
1.0U	1.5L TO		L	1.50L	606.66		-	700
0.5U	1.5L TO		L	1.50L	781.26		-	1000
0.5U	1.0R TO	3.0R	1.00R		1388.99		500	-
0.5U	1.0R TO	3.0R	1.89R		1546.28		-	2700
H	4.0L				744.59		135	-
H	8.0L				449.37		64	-
0.5D	1.5L TO		L	1.50L	1261.39		-	2500
0.5D	1.5R				5498.49	11245.34	8000	20000
1.0D	6.0L				1120.23		750	-
1.5D	2.0R				26546.05		15000	-
1.5D	9.0L				1437.33		750	-
1.5D	9.0R				1612.67		750	-
2.0D	15.0L				953.50		700	-
2.0D	15.0R				900.79		700	-
4.0D	4.0R				10444.10		-	12500
Maximum		2.25D	1.85R		30415.05		-	-
10.0U TO 90.0U	10.02U	0.00			124.08		-	125

Device meets requirements at all points.

Aim: 13H 18V (warm)

Bulb: ITL-779 (HB1/9004)

Voltage: 12.80V / Current: 3.470A / Flux: ~700 lumens

Note: Lamp mounted in fixture designed to hold this lamp.

Lamp laser aimed using ITL Group I aiming plate.

Lamp was reaimed before each test series to assure proper aim.

PHOTOMETRIC TEST DATA SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Test Sample: HB1/9004 Comparison Bulb

Specification: FMVSS 108 Fig. 27-1 (Upper Beam)

Test Lamp: 1998 Nissan Frontier Headlamp (LH)

Luminous Intensity, Candela

Test Points				HIGH BEAM	Required		
Degrees		Location		Measured	Reaim	Minimum	Maximum
2.0U	V			11928.15		1000	-
1.0U	3.0L			11014.29		2000	-
1.0U	3.0R			27710.63		2000	-
H	12.0L			5004.39		750	-
H	9.0L			7113.59		1500	-
H	6.0L			9275.24		3250	-
H	3.0L			15946.30		10000	-
H	V			35226.59		20000	75000
H	3.0R			30645.96		10000	-
H	6.0R			7631.11		3250	-
H	9.0R			4843.55		1500	-
H	12.0R			3378.59		750	-
1.5D	9.0L			6447.86		1500	-
1.5D	V			18406.90		5000	-
1.5D	9.0R			5868.22		1500	-
2.5D	12.0L			3192.83		750	-
2.5D	V			9026.67		2500	-
2.5D	12.0R			2893.74		750	-
4.0D	V			2291.88		-	5000
Maximum		0.61U	1.48R	41740.27		-	75000

Device meets requirements at all points.

Aim: 13H 18V (warm)

Bulb: ITL-779 (HB1/9004)

Voltage: 12.80V / Current: 5.208A / Flux: ~1200 lumens

Note: Lamp mounted in fixture designed to hold this lamp.

Lamp laser aimed using ITL Group I aiming plate.

Lamp was reaimed before each test series to assure proper aim.

PHOTOMETRIC TEST DATA SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Test Sample: HID Conversion Kit

Specification: FMVSS 108 Fig. 27-1 (Lower Beam)

Test Lamp: 1998 Nissan Frontier Headlamp (LH)

Luminous Intensity, Candela

Test Points					LOW BEAM	Required		
Degrees		Location			Measured	Reaim	Minimum	Maximum
H	V				34494.02		-	-
4.0U	8.0L				977.55		64	-
4.0U	8.0R				1030.51		64	-
2.0U	4.0L				6162.61		135	-
1.5U	1.0R TO	3.0R	1.00R		9099.74		200	-
1.5U	1.0R TO		R	2.43R	18036.50	15753.78*	-	1400
1.0U	1.5L TO		L	1.64L	15938.85	13352.45*	-	700
0.5U	1.5L TO		L	2.08L	25208.16	19852.08*	-	1000
0.5U	1.0R TO	3.0R	1.00R		20180.56		500	-
0.5U	1.0R TO	3.0R	3.00R		30998.49	25748.19*	-	2700
H	4.0L				23091.42		135	-
H	8.0L				10376.82		64	-
0.5D	1.5L TO		L	1.50L	56788.39	51663.01*	-	2500
0.5D	1.5R				72821.74	56279.22*	8000	20000
1.0D	6.0L				19436.56		750	-
1.5D	2.0R				49137.68		15000	-
1.5D	9.0L				12141.73		750	-
1.5D	9.0R				14097.40		750	-
2.0D	15.0L				7104.24		700	-
2.0D	15.0R				6820.37		700	-
4.0D	4.0R				9025.79		-	12500
Maximum		0.77D	0.35R		78972.85		-	-
10.0U TO 90.0U	10.04U	1.03R			402.97*		-	125

*** Denotes failure.**

Aim: 13H 18V (warm)

Bulb: Hid Conversion Kit (Ballast #1 / Bulb #1)

Voltage: 12.80V / Current: 3.307A / Flux: 2885 lumens

Note: Lamp mounted in fixture designed to hold this lamp.

Lamp laser aimed using ITL Group I aiming plate.

Lamp was reaimed before each test series to assure proper aim.

PHOTOMETRIC TEST DATA SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Test Sample: HID Conversion Kit

Specification: FMVSS 108 Fig. 27-1 (Upper Beam)

Test Lamp: 1998 Nissan Frontier Headlamp (LH)

Luminous Intensity, Candela

Test Points		HIGH BEAM		Required		
Degrees		Location	Measured	Reaim	Minimum	Maximum
2.0U	V		0.00	0.00*	1000	-
1.0U	3.0L		0.00	0.00*	2000	-
1.0U	3.0R		0.00	0.00*	2000	-
H	12.0L		0.00	0.00*	750	-
H	9.0L		0.00	0.00*	1500	-
H	6.0L		0.00	0.00*	3250	-
H	3.0L		0.00	0.00*	10000	-
H	V		0.00	0.00*	20000	75000
H	3.0R		0.00	0.00*	10000	-
H	6.0R		0.00	0.00*	3250	-
H	9.0R		0.00	0.00*	1500	-
H	12.0R		0.00	0.00*	750	-
1.5D	9.0L		0.00	0.00*	1500	-
1.5D	V		0.00	0.00*	5000	-
1.5D	9.0R		0.00	0.00*	1500	-
2.5D	12.0L		0.00	0.00*	750	-
2.5D	V		0.00	0.00*	2500	-
2.5D	12.0R		0.00	0.00*	750	-
4.0D	V		0.00		-	5000
Maximum		0.00D 0.00R	0.00		-	75000

*** Denotes failure.**

Aim: 13H 18V (warm)

Bulb: Hid Conversion Kit (Ballast #1 / Bulb #1)

Voltage: 12.80V / Current: 0.000 / flux: 0 lumens

Note: Lamp mounted in fixture designed to hold this lamp.

Lamp laser aimed using ITL Group I aiming plate.

Lamp was reaimed before each test series to assure proper aim.

CHART DATA SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Calcoast-ITL Report No. 1214-1B/01
Baseline Replaceable Headlamp With Rated HB1 Light Source
LOWER BEAM - Candela

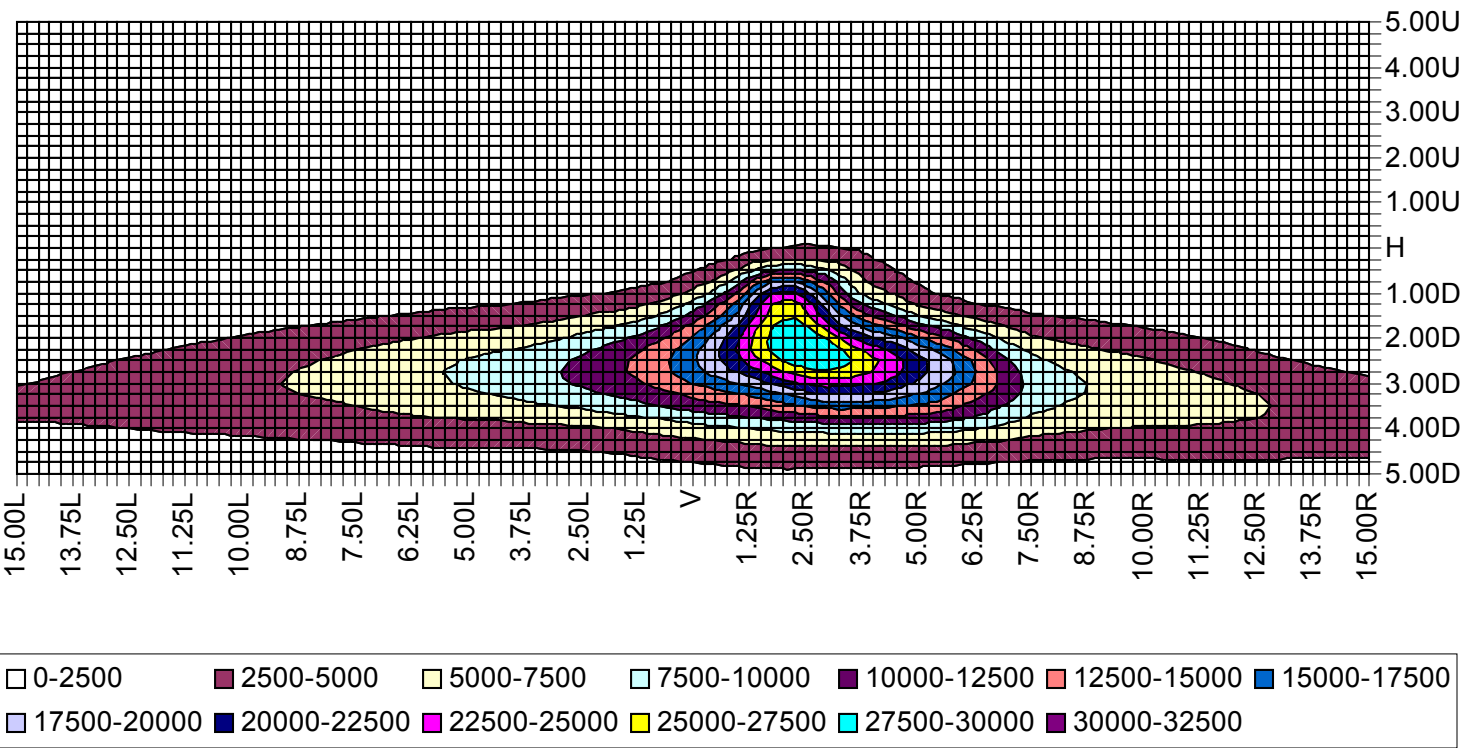


CHART DATA SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Calcoast-ITL Report No. 1214-1B/01
Baseline Replaceable Headlamp With Rated HB1 Light Source
UPPER BEAM - Candela

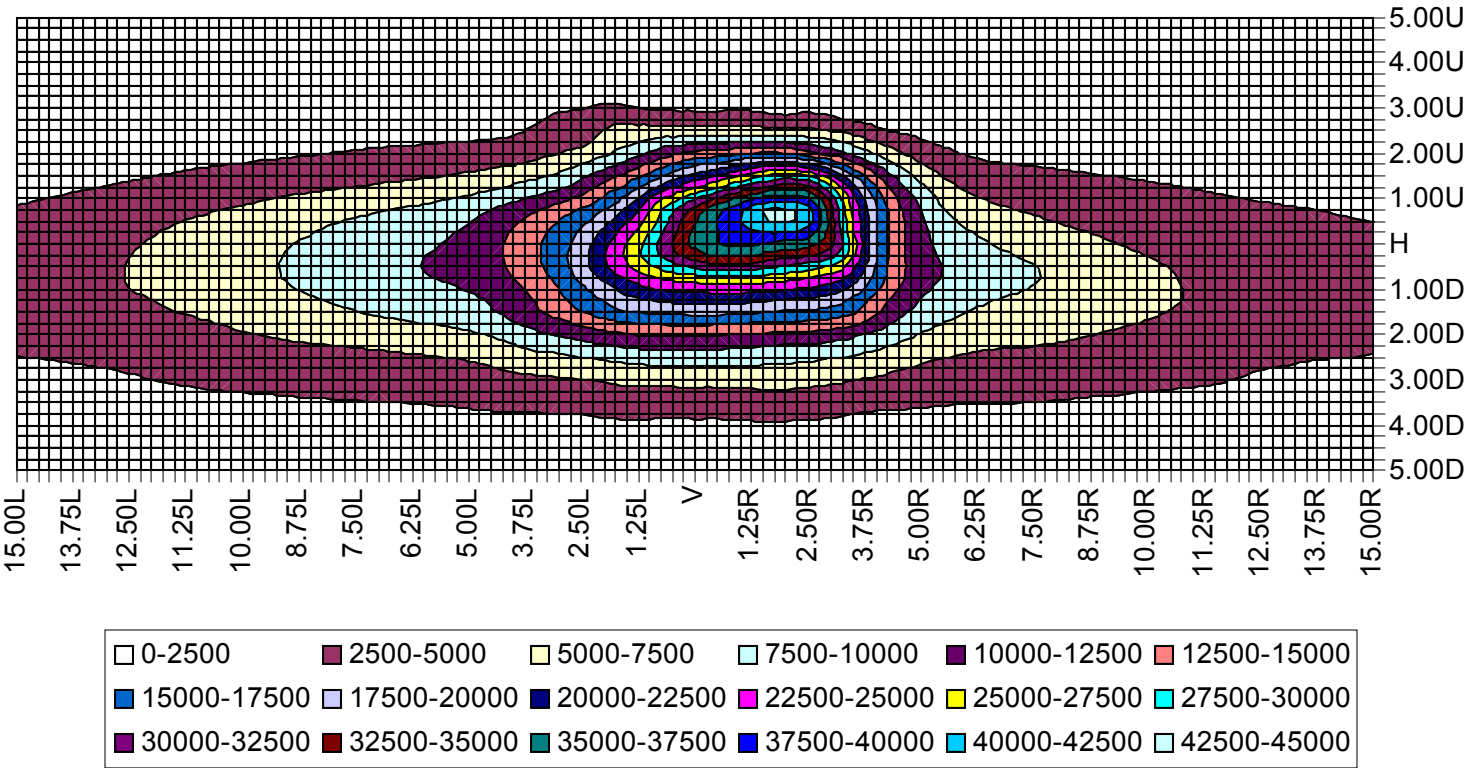
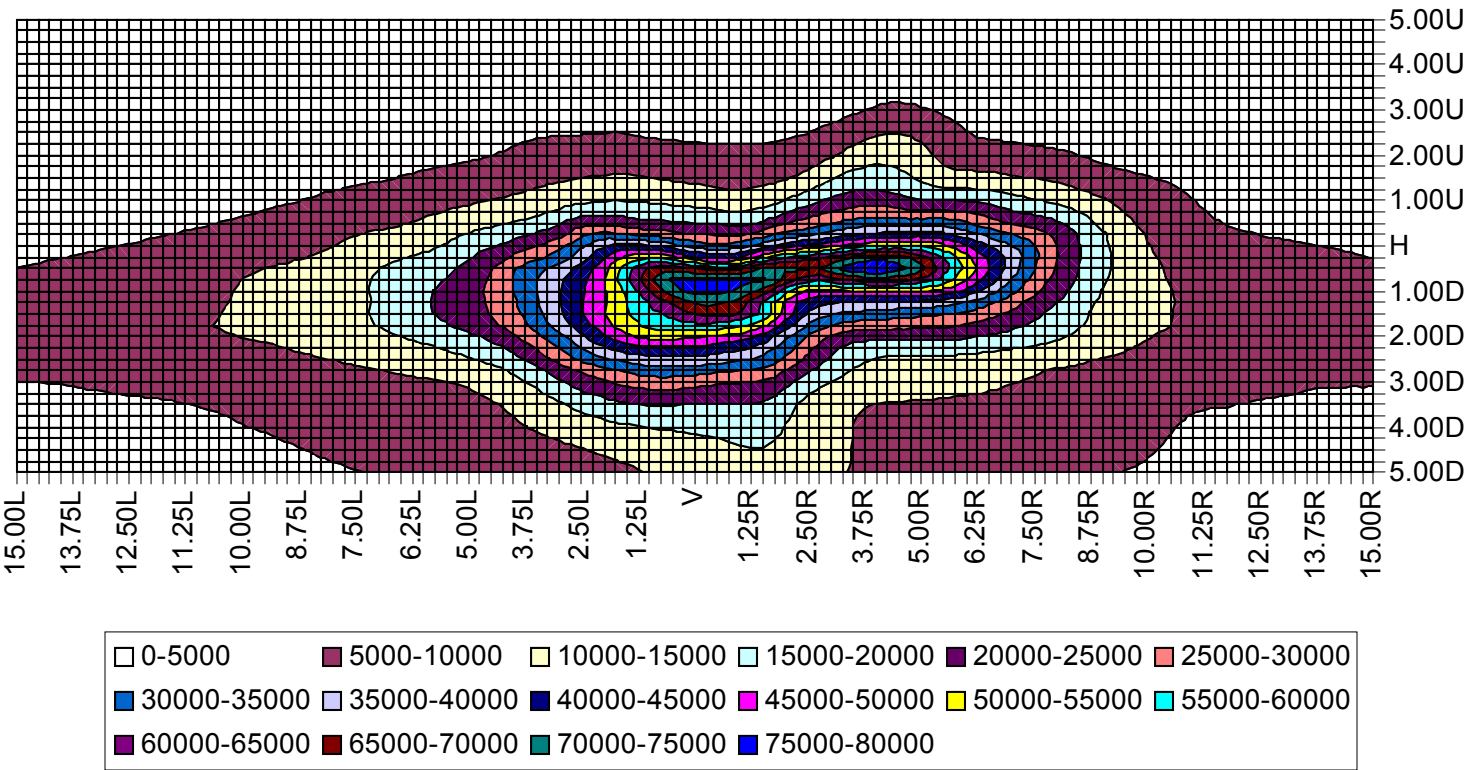


CHART DATA SHEET

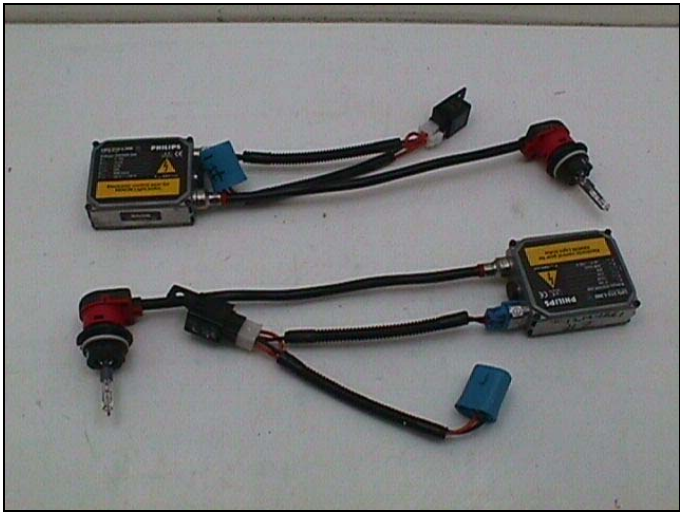
Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

Calcoast-ITL Report No. 1214-1B/01
"9004-hid-phil" HID Conversion Kit
LOWER BEAM - Candela



PHOTOGRAPH SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit



PHOTOGRAPH SHEET

Device Name: Procarparts "9004-hid-phil" HB1 HID Conversion Kit

